NATIONAL AGRICULTURAL DEVELOPMENT PROGRAMME (NADP)

DISTRICT AGRICULTURE PLAN
RAMANATHAPURAM DISTRICT

Centre for Agricultural and Rural Development Studies (CARDS)
Tamil Nadu Agricultural University
Coimbatore – 641 003

2008

NATIONAL AGRICULTURE DEVELOPMENT PROJECT – DISTRICT AGRICULTURE PLAN

PROJECT TEAM

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FOREWORD

Date .....

The National Development Council resolved that Agricultural Development strategies must be reoriented to meet the needs of farmers and called upon the Central and State governments to evolve a strategy to rejuvenate agriculture with a commitment to achieve four per cent annual growth in the agricultural sector during the 11th plan. The council also recommended special Additional Central Assistance Scheme named National Agriculture Development Programme (NADP) be launched. To implement this, formulation of District level action plans is the pre-requisite and thus District Agriculture Plan of various districts in Tamil Nadu has been prepared with the financial assistance of Government of India.

The task of preparing the District Agriculture Plan has been given to Tamil Nadu Agricultural University by Government of Tamil Nadu. Thus 29 Districts level Plans, excluding Chennai and Nilgris, were prepared by the Centre for Agricultural and Rural Development Studies, Tamil Nadu Agricultural University. Several meetings were held at TNAU during the last few months. Steering committee, district planning unit and plan finalizing team were putting their efforts in shaping up the District Agriculture Plans. All the District Collectors representing the 29 districts have actively participated in the sensitizing meeting organized by TNAU and officials of line departments in the respective districts. The plan documents have identified the major thrust areas in agriculture and allied sectors for achieving the envisioned growth in the district and also in Tamil Nadu state. I appreciate the team work of TNAU scientists and the officials from line departments for bringing out the valuable action plans for each district. I am sure that these plans would also lead to more fruitful exercises like formulation of State level plans and project proposals for funding through NADP.

I solicit the cooperation of the line department officials in implementing these action plans and commit to achieve a better growth in agriculture and allied sectors in each and every district of Tamil Nadu during the 11th plan.

(C. RAM AS AMY)

Coimbatore
June 30, 2008

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Dr. K. Palanisami
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PREFACE

The District Agriculture Plan is brought out based on the details provided by the line department officials of the respective districts. The District Agriculture Plan thus identifies the problems, needed interventions and the financial requirement for the developments in Agriculture and allied sectors of Agriculture viz. Horticulture, Agricultural Engineering, Animal husbandry, Fisheries, Sericulture, Agricultural marketing and Agricultural business and Public Works Department.. The Government sponsored various on-going schemes and programmes in the development of agriculture have also been dovetailed in the preparation of plan. Besides, the plan would also help in formulating the State Agriculture Plan and the project proposals under Stream I and Stream II to be funded by Government of India for the remaining four year plan periods viz. 2008-2012.

My sincere thanks to District Collectors of the respective districts in Tamil Nadu who have been instrumental in providing the felt needs of the farmers and other stakeholders. The help and full cooperation rendered by the line department officials in each district is highly appreciable. Without their assistances, the formulation of the plan will be a mere academic exercise.

My sincere thanks to Shri. Surjit K. Chaudhary I.A.S., Agricultural Production Commissioner and Principal Secretary to Government of Tamil Nadu who is instrumental in integrating the multi-level functionaries and providing valuable guidance in bringing out this plan document.

My sincere thanks to Dr. C. Ramasamy, Vice-Chancellor, Dr. P. Santhana Krishnan, Registrar of Tamil Nadu Agricultural University, for their full administrative and technical support without which the time schedule in preparing the document could not have been adhered to. Special thanks to Dr.S. Natarajan, Director, Soil and Crop Management Studies and Dr. E. Vadivel, Director of Extension Education, for their sustained support in the preparation of the district plans. All the Principal Investigators of the NADP I Phase projects also provided the needed inputs.

I take this opportunity to express my deep sense of gratitude to Commissioner of Agriculture, Commissioner of Horticulture and Plantation crops, Chief Engineer (Agricultural Engineering), Executive Director, Tamil Nadu Watershed Development Agency, Commissioner of Animal Husbandry and Veterinary Services, Commissioner of Fisheries, Commissioner for Milk Production and Dairy Development, Commissioner of Agricultural Marketing and Agri Business, Director of Seed Certification, and Director of Sericulture for providing constructive support and guidance in preparing the document.

I also place on record my sincere thanks to Vice-Chancellor of TANUVAS and his colleagues for providing the action plans for Animal Husbandry and Fisheries in Tamil Nadu.

Sincere thanks to Deans, Heads of Research Stations/KVK's and scientists of TNAU representing different districts and scientists of Directorate of CARDS for helping in collection of data, organising district level workshops and group meetings with stakeholders and preparation of this document.

Date: 30.06.2008

K. Palanisami
Director, CARDS & Nodal Officer (NADP)

EXECUTIVE SUMMARY

Ramanathapuram district has got the 'Backward' status in the past and because of that development projects and schemes have been implemented by the line departments on priority basis in this district. As a part of the exercise on 'National Agriculture Development Project' a 'District Agriculture Plan' was prepared for incorporation in Tamil Nadu State Agriculture Plan. Base line information about Ramanathapuram district was collected from all the line departments. Officials of these department were requested to prepare the plan proposals for their respective departments covering the period 2008-12. These proposals were presented in a meeting chaired by the District Collector and the feed back was obtained from the Panchayat Representatives and officials directly involved in development activities.

Basic information on the district shows good potential for development of agriculture, horticulture, fisheries, dairy, poultry, agribusiness, irrigation and agricultural engineering sectors. The district is endowed with good mineral and raw material resources that can be exploited for the growth of industrial sector which in turn would help developing agriculture in the district. Reclamation of acidic nature of soil may pave way for increasing productivity of crops cultivated. Population structure showed predominance of small and marginal farmers and landless agricultural labourers.

The district is known to get benefit from North East Monsoon; showers during the South West Monsoon and summer periods could also contribute to extend the cropping season. Major source of irrigation in the district was tanks, but they have to be renovated to get the maximum benefit. Cropping pattern in the district showed importance of crops like paddy, millets, groundnut, gingelly, cotton, pulses, vegetables, chillies, and coconut.

I) Agriculture

Strength

The district has a good bio reserve with vast biodiversity in the form of flora and fauna. Soil type in the district is mostly Clay and Alluvium with high Zinc content which is Nature's gift to the district. Another major strength of the district is the water resources from Vaigai, Gundar, Paraliyar and Narayana Cauvery rivers flowing in the district.

Weakness

Strategic location of the district along the route of seasonal cyclones and storms is the weakness of the district that is likely to hinder the efforts taken by the district administration for the development of agricultural sector.

Opportunities

Backward status of the district could attract major junk of Development Fund from the Centre and State Governments. Location of the district on the Eastern Coast of the Sea line of the country creates an opportunity to have trade links with South East and Far East Asian Countries besides, Japan and Philippines.

Challenges

Pace of development in the non agricultural sector like tourism, education and industrial sector may surpass the financial support expected from the Government. Unprecedented natural calamities like tsunami pose a serious threat to agricultural sector.

II) Dairy Sector

Strength

- Infrastructure with department of animal husbandry and Aavin. (63 insemination centers, 182 Dairy co-operative societies, and a milk chilling centre with 10,000 lit. capacity).

Weakness

- Low cattle and Buffalo Population
- Shortage of green and dry fodder
- Lack of sufficient manpower in the main service providing sector viz., animal husbandry department and Aavin.(out of 63 AI centers, 43 remain vacant, and in Aavin no staff in the crucial input services sector).

Opportunities

- Steady increase in demand for milk and milk products

Challenges

- Occurrence of major livestock diseases especially foot and mouth, which cause heavy morbidity in crossbred cattle.
- Increasing cost of milk production due to steady increase in the prices of feed ingredients without proportionate increase in milk prices production.

III) Small Ruminants

Strength

- Good sheep and goat population (2.91 lakhs sheep and 2.83 lakhs goats)
- Vast availability of land area especially cultivable waste lands and fallow lands that can be exploited for sheep and goat grazing.

Weakness

- Poor quality of grazing lands with almost negligible nutritious leguminous grasses
- Poor awareness among sheep and goat farmers about scientific feeding and management

- Lack of sufficient field level manpower in animal husbandry department, which hinders effective disease control measures like periodical deworming and vaccination.

Opportunities

- Increasing demand for chevon and mutton
- Increasing peoples interest in sheep & goat rearing which is reflected by steady increase in their population

Challenges

- Frequent occurrence of killer disease especially Sheep pox and Blue tongue.
- Lack of availability of sufficient quantity of blue tongue vaccine.

IV) Poultry Sector

Strength

- Favourable climate – hot & dry weather
- Vast availability of land

Weakness

- Higher capital requirement for establishing commercial broiler / layer units.
- Lack of awareness

Opportunities

- Very High demand for chicken meat
- Promotion of broiler integration by private hatcheries

Challenges

- Fluctuating prices of egg & chicken meat due to fear of bird flu.

In terms of overall agricultural development rank of Ramanathapuram among the 29 districts of Tamil Nadu varied from 27 to 28 during the 1990-91 to 2005-06. Composite Index developed for the district showed that except fisheries, in all other components, its performance in the period of study is not satisfactory. For example, in irrigation it ranked between 28^{th} and 29^{th} in all the four periods. Similarly in crop variables also it occupied rank between 27^{th} and 28^{th}.

Farming in the district is mostly carried out under rainfed conditions and hence there is a need to popularize dry farming technologies in the district to boost productivity of dry crops. These interventions are thought off to be incorporated in the ongoing schemes of precision farming, contract farming, organic farming, SRI, salinity reclamation project, waste land development programme, Integrated Pest Management, Integrated Nutrient Management, seed multiplication, dry land development programme and the like. Following intervention were identified for the development of agriculture: Increasing production of Rice ,Millets, Maize, Pulses crops Oil seed crops and Cotton, Popularising Dry Farming Technologies for Rain fed crops ,Extension Activities, Development of Agroforestry and Promotion of Organic Farming.

As for as allied sectors are concerned, animal husbandry, dairying and fisheries have a scope for lot of interventions. Huge population of livestock in the district demands intervention in the areas like veterinary care, mobile clinics, mineral nutrition, milk processing, poultry vaccination, semi-intensive sheep/goat farming, animal disease intelligence and farmers' training. In the case of fisheries sector, some interventions in the areas of cage culture of marine fin fishes, sea weed culture, Integrated Coastal Aquaculture, sea ranching, market infrastructure development for fish, fresh water fish culture, and capacity building training to fishermen were suggested.

Plan proposals from **horticulture** department emphasized increasing vegetable production and betelvine production**.** Development interventions in the **agricultural engineering** side are on water harvesting, using lined and unlined farm ponds and soil and water conservation measures.

The experience of state of Tamil Nadu in general and Ramanathapuram district in particular has shown that the existing systems of delivering agricultural inputs and marketing of agricultural out put have not been efficient in reaching the benefits of technology to all the sections of farmers. There are structural weaknesses of agricultural markets like unorganized supply as against organized buyers, weak holding capacity of the producers and the perishable nature of the produce in the absence of any storage infrastructure. Viability of small farm holdings is an important issue and promoting agricultural diversification towards high value crops through an efficient marketing system is considered to be one of the means through which it can be achieved. State government has identified agribusiness development as a strategic priority. In Tamil Nadu and particularly in Ramanathapuram district, agribusiness has a significant role to play in rural and economic development and agro enterprises could be a major source of rural non farm employment an income. For agribusiness development to happen, a more focused approach is needed to compliment the initiatives already covered by different development programmes. Keeping in view the above status of agricultural marketing and agribusiness in the district, following areas of interventions have been identified.

1. Establishing / Organising commodity groups for marketing
2. Facilitating contract farming between farmers and bulk buyers
3. Dissemination of market intelligence
4. Arranging buyers – sellers meet
5. Organising exposure visits for the farmers to know about marketing institutions and functions
6. Strengthening market extension centres for capacity building and dissemination of marketing information

7. Capacity building of farmers' skills
8. Price surveillance
9. Publicity about regulated markets and uzhavar shandies
10. Market infrastructure development

Desilting of entire chain tank is the most important activity identified in the Public Works Department (WRO). In order to expand the benefits derived from the earlier projects like IWRMP and IAMWARM, it is proposed to continue the desilting task further to a distance of 83.20 Kilometres and rehabilitation and standardization of channels to a distance of 85 Kilometres. PWD has proposed the following activities.

1. Renovation of Right Main Canal of Parthibanur regulator and Kalari supply channel
2. Renovation of tank in Bogalur block
3. Renovation of tank in Thiruppullani block
4. Renovation of tank in Ramnad block
5. Renovation of tank in Muthukulathur block
6. Renovation of tank in Thiruvadanai block
7. Renovation of tank in Nainarkoil block
8. Linking of vaigai river and Regunatha Cauvery through koothangal channel
9. Linking of vaigai river and Maladar river through paralai channel
10. De silting Narayana Cauvery Channel and Regunatha Cauvery Channel

The total budget requirement for the development of Agriculture and allied sectors of Ramanathapuram district is furnished below.

Budget Requirement for District Agricultural Plan - Ramanathapuram

(Rupees in Lakhs)

Sl.No.	Department	2008-09	2009-10	2010-11	2011-12	Total
1	Agriculture	503.108	649.198	603.823	602.698	2358.827
2	Horticulture	62.3625	57.3625	57.3625	57.3625	234.45
3	Animal Husbandry	472.115	95.275	95.275	94.775	757.44
4	Fisheries	149.85	256.35	112.35	98.35	616.9
5	Agricultural Engineering	62.55	63	63	63	251.55
6	Agrl. Marketing	17.56	116.12	96.66	67.59	297.93
7	Public Works Department	319.43	1756.32	1375.99	962.46	4414.2
Total		1586.98	2993.63	2404.46	1946.24	8931.30

The Proposed Budget for the period 2008-2012 is approximately Rs.89.31 crores and for the Year 2008-09, the budget requirement would be Rs.15.87 crores.

CHAPTER - I
INTRODUCTION

Concerned by the slow growth in the Agriculture and allied sectors, the National Development Council (NDC), resolved that a special Additional Central Assistance Scheme, named National Agriculture Development Programme (NADP/RKVY) be launched. The NDC also felt that Agriculture Development strategies must be reoriented to meet the needs of farmers and called upon the Central and State governments to evolve a strategy to rejuvenate agriculture with a commitment to achieve four per cent annual growth in the agricultural sector during the 11^{th} plan. To implement this, formulation of action plans by means of developing District Agriculture Plans (DAP) is recommended. It is of the view that such plans would also reflect the felt needs of the farmers and stakeholders. Such District Agriculture Plans aim at moving towards projecting the requirements for development of Agriculture and allied sectors of the district including animal husbandry and fishery, minor irrigation projects, rural development works, agricultural marketing schemes and schemes for water harvesting and conservation, etc. keeping in view the natural resources and technological possibilities in each district.. These plans thus, present the vision for Agriculture and allied sectors within the overall development perspective of the district apart from the financial requirement and the sources of financing the agriculture development plans in a comprehensive way.

Once the preparation of District level agriculture planning exercise is completed, the operationalization of such plan is essential. This follows the preparation of a comprehensive State Agricultural Plan (SAP) by integrating the above District level agriculture plans. The DAP therefore could integrate multiple programmes that are in operation in the district concerned, include the resources and activities indicated by the state, combine the resources available from the other programmes and finalize the plan. With this in mind, the District Agriculture Plan for each district of Tamil Nadu is prepared.

Methodology Adopted for Preparation of District Agriculture Plan

The preparation of the District Agriculture Plan (DAP) is thus an elaborate, exhaustive and iterative process and therefore every care is taken in ensuring that the DAPs are properly and comprehensively made. The task of preparing such District Agriculture Plan is given to Tamil Nadu Agricultural University, Coimbatore. In Coordination with scientists from TANUVAS and officials from Department of Agriculture, Horticulture, Agricultural Engineering, Marketing, Animal Husbandry and Fisheries, Seed certification PWD etc. the task is fulfilled. In what follows, the procedure adopted to prepare the plan is discussed.

Major Areas of Focus

(a) Integrated development of major food crops like paddy, coarse cereals, minor millets, pulses, oilseeds;

(b) Agriculture mechanization;

(c) Activities related to enhancement of soil health;

(d) Development of rainfed farming systems in and outside watershed areas, as also Integrated development of watershed areas, wastelands, river valleys;

(e) Integrated Pest Management schemes;

(f) Strengthening of Market Infrastructure and marketing development;

(g) Strengthening of Infrastructure to promote Extension Services;

(h) Activities relating to enhancement of horticultural production and popularization of micro irrigation systems;

(i) Animal husbandry and fisheries development activities;

(j) Study tours of farmers;

(k) Organic and bio-fertilizers;

(l) Innovative schemes.

Collection of Data

The preparation of district level plan involved basically collection of base line and bench mark details. So a template is developed to collect these particulars from the different districts (29 districts) of Tamil Nadu. In order to dovetail the ongoing schemes, with the action plans, the current ongoing agriculture programs were listed with their physical and financial performance and finally converged as the plan under National Agriculture Development Programme.

Formulation of District Planning Unit

To facilitate the involvement of local representatives in the preparation of plans, planning units in each district was formulated. The composition of the district planning units is as follows:

a) Deans of other campuses / Heads of Krishi Vigyan Kendra or Research Station in respective district and one scientist from each campus.

b) Co-ordinating staff from Directorate of Centre for Agricultural and Rural Development Studies to represent each district.

c) Officials of Line Departments from Agriculture, Horticulture, Agricultural Engineering, Marketing, Animal Husbandry and Fisheries, Seed certification, Public Works Department.

Sensitization Workshop

A series of Sensitization Workshop was conducted from 4.3.08 to 18.3.08 at TNAU Campus. The TNAU Staff from Krishi Vigyan Kendras and Research Stations, officials from line Departments *viz.,* Agriculture, Horticulture, Agricultural Engineering and Tamilnadu Veterinary and Animal Sciences University attended the workshop. Also several meetings were held in Chennai for the National Agriculture Development Programme under the Chairmanship of Agriculture Production Commissioner and Secretary to Government of Tamil Nadu.

The objectives of National Agriculture Development Programme, preparation of District Agriculture Plans, State Agriculture Plan and Formulation of Project proposals under stream - I and stream - II were discussed in the workshop.

Preparation of Draft Action Plan and presentation in District Collectors Meeting

Based on the baseline information and proposals, draft action plan was prepared and this was presented in the District Collectors Meeting held on 2nd June 2008 under the chairmanship of District Collector. This meeting was attended by the scientists from TNAU, officials from line departments and the representatives of local bodies wide coverage was given in the media also.

Finalisation

The feedback received in the District Collectors Meeting was incorporated before finalization of the District Agriculture Plan. The Strategic Research Extension Plan and Agriculture Technology Management Agency reports were also reviewed and relevant details have been incorporated in the draft report.

CHAPTER - II

GENERAL DESCRIPTION OF THE DISTRICT

2.1 Introduction

Ramanathapuram District is located in the Southern part of TamilNadu State on the East Coast of India. Its geographical location is spread between 9° 05’ and 9° 50’ of North Latitude and 78° 10’ and 79° 27’ of East Longitude. It is bordered by Pudukkottai and part of Sivaganga districts on the northern side, by Sivaganga district on the North Western side and by Viruthunagar district on the west. The district has the East coast line as its eastern boundary parting the district from the Bay of Bengal. Hence the Palk Strait is guarding the district on the eastern side and Gulf of Mannar on the South. The district has a long history from the medieval kingdom of Pandiya which was in rule in the South Tamil Nadu. The district takes the honour of being the birth place of Dr.A.P.J. Abdul Kalam, the previous President of India.

2.2 District Administration

There are two Revenue Divisions *viz.,* Ramanathapuram and Paramakudi in the district. Details of total number of hamlets, revenue villages, firkas and taluks in each division are presented in Table 2.1. Further, details of blocks and number of panchayats and hamlets in each block are presented in Table 2.2.

Table 2.1 Details of Revenue Divisions and Taluks of Ramanathapuram District

Name of the Division	Taluks	No. of firkas	No.of Revenue Villages	No.of Hamelet villages
Ramanathapuram	Ramanathapuram	7	67	529
	Tiruvadanai	7	98	635
	Rameswaram	1	2	31
Paramakudi	Paramakudi	6	93	367
	Mudukulathur	6	46	207
	Kamuthi	5	49	352
	Kadaladi	6	45	241
Total		**38**	**400**	**2362**

(Source: Records of Office of the Collector Office, Ramanathapuram)

Table 2.2 Details of Blocks and Panchayats in Ramanathapuram District

Sl.No.	Block Name	No. of Panchayats	No. of Hamlets
1	Tiruvadanai	47	310
2	R.S.Mangalam	35	325
3	Paramakkudi	39	163
4	Bogalur	26	91
5	Nainarkoil	37	113
6	Kamudi	53	346
7	Mudukulathur	46	169
8	Kadaladi	60	285
9	Ramanathapuram	25	120
10	Tiruppullani	33	240
11	Mandapam	28	200
	Total	**429**	**2362**

(Source: Records of Office of the Collector, Ramanathapuram)

Similar to revenue divisions, number of municipalities in the district are also two and they are Paramakudi and Ramanathapuram. These two municipalities comprised nine towns.

2.3 Geology

Most of the area is covered by the unconsolidated sediments of Quaternary age except in the northwestern part, where isolated patches of Archaen Crystallines and Tertiary sandstone are exposed. The Archaeans are mainly represented by the Charnockite group of rocks comprising garnetiferrous granulite and the Khondalite group of rocks made up of quartzite of genesses.

The Tertiary sandstone (Cuddalore Formation) comprise pinkish, yellowish, reddish (variegated colours) medium to coarse grained sandstone and clay stone. It is

overlain by thin alluvium and exposed towards north of Vaigai River. Detached exposures of laterite and lateritic soils are seen in the northwestern part of the district.

A major part of the district is covered with the fluvial, fuvio-marine, Aeolian and marine sediments of Quaternary age. The fluvial deposits which are made up of sand, silt and clay in varying degrees of admixture occur along the active channels of Vaigai, Gundar, Manimuthar and Pambar rivers. They have been categorized into levee, flood basin, channel bar/ point bar and paleo-channel deposits. The paleo channel deposits comprise brown coloured, fine to medium sands with well preserved cross-beddings.

The fluvio-marine deposits are exposed in the Vaigai delta as deltaic plain, paleo-tidal and dune flat deposits. The deltaic plain and dune flats comprise medium and grey brown sands. The paleo tidal flat deposits include black silty clay, black clay and mud. In Rameswaram Island, the fluvio-marine deposits include indurated sand and dune sands.

The Aeolian deposits comprise red sands which are in nature of ancient dunes and occur over a 3.2 Km wide and eight Km long stretch and lie parallel to the sea coast. These are separated by marshy deposits of black clays. The sands are underlain by calcareous hardpan. In Rameswaram Island also brown sand deposits occur around Sambaimadam on either side of NH 49 west of the town.

The marine formation comprises coastal plain deposits of sand and clay in varied proportions. Marine calcareous hardpan occurs as low terraces and platforms, with admixture of quartz, limonite and garnet concentration.

2.3.1. Mineral Resources

Gypsum, limonite, garnet sand, lime shells, salt, clays and building stones are the known mineral potential of the area. The entire occurrence is of local nature only and is not of any economic significance.

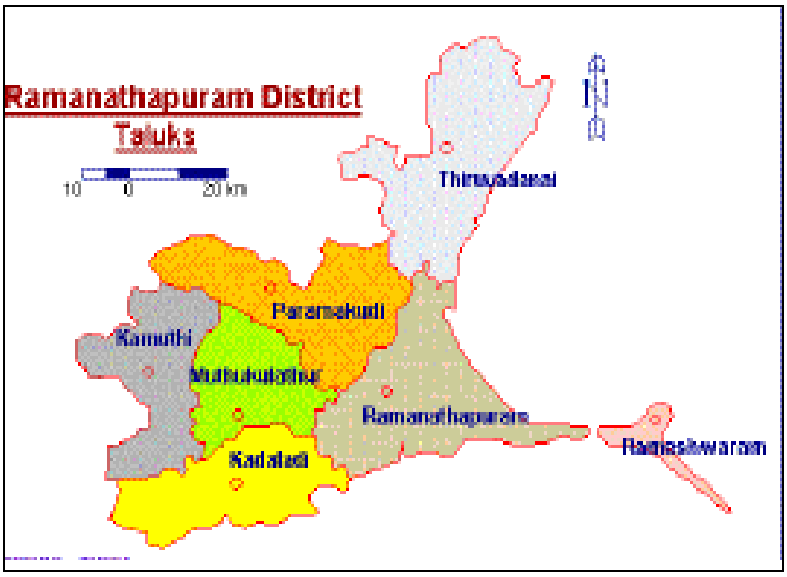


Figure 1. Taluk Map of Ramanathapuram District

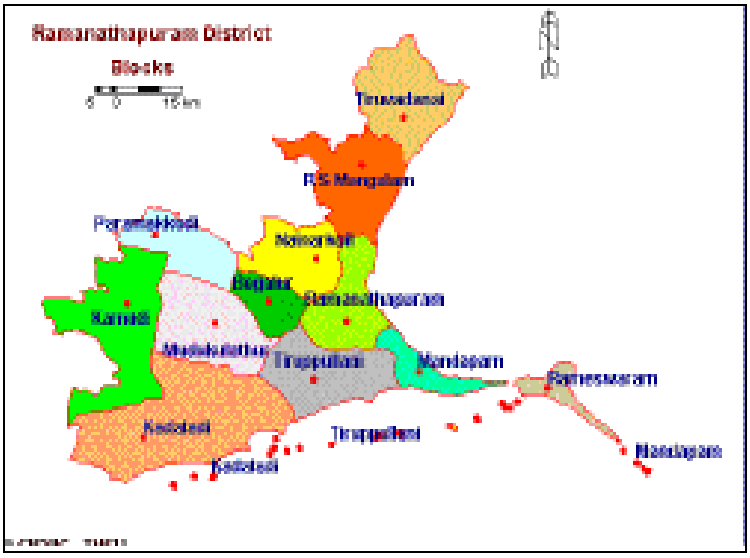


Figure 2. Block Map of Ramanathapuram District

2.3.2 Geomorphology and Geohydrology

Major part of the district is a gently sloping plain except for remnant hills in the western area. Recent Quaternary studies have brought out various erosional and depositional landforms of fluvial and marine regimes. The fluvial landforms comprise flood plains of Vaigai, Varshalei, Pambar, Kottakkarai and Gundar rivers. The marine landforms comprise sand mounds (Teri's) and barrier dunes along the present coast. The erosional processes are manifested in the form of pediments and pedipalin around Kamuthi.

Geohydrologically, the district has been divided into three zones with reference to laterite, flood basin and coastal plain areas respectively. Further, the area is demarcated into Manimuthar-Pambar basin, Vaigai delta and Vaipar-Gundar basin. The Northwestern part of the Ramanathapuram district exposes isolated patches of Archaeans crystallines and Cuddalore Sandstone capped by laterite/lateritic soil. The yields of bore wells of 60 to 90 m depth in the crystallines vary from 3 to 400 lpm draw down of 10 to 12m water head. The saline aquifers in coastal tracts occur to a depth range of 80m from ground level followed by fresh water aquifers. The quality of groundwater varies from alkaline to high saline types in the district.

2.4 Hydrogeological Conditions

In most places, ground water available at a depth beyond 6 to 7m is saline. The fresh water available within 6 to 7 m depths dries up quickly within 2 to 3 months after monsoon. There is acute drinking water shortage in most part of the year. Hydro geologically, the district can be classified as Omtofoir zones as detailed below:

i) Shallow Fresh Zones

Areas covered by sand dunes, beach ridges, pockets of strand plains, pockets of natural levees, pockets of Palaeo channels, pockets of pediments and valley fills covered by crystallines and tertiary sand stones. The depth of water level varies from few cm to 5 M.

ii) Deep and Confined Fresh Water Zones

It occurs in the northern part of the district in Thiruvadanai taluk. The thickness of the cretaceous aquifer is in the order of 20 to 30 M. This is underlined by crystalline basement. In the artesian belt area of Thiruvadanai taluk of Ramanathapuram district, fresh ground water is available at a depth range of 350 m – 450 m in and around Thiruvadanai, Neerkundram, Vellaiyapuram and in some other places of Thiruvadanai taluk.

iii) Moderate Quality Ground Water Zone

This occurs in certain pockets of river course, pockets of Palaeo channels, parts of pediments and valley fills and in major parts of stand plains.

iv) Saline Water zones

This is marine and fluvial marine origin. The formations explored upto 780m is found to be unsuitable for any purpose.

2.5 Soil

The soils of Ramanathapuram district can be assorted into the main types *viz.*,., clay, coastal alluvium, sandy loam, alluvium, sandy and red soil, clay and black cotton soil and the same were believed to have been derived from the Archaen gneisses where calcareous formation are abundant.Calcium carbonate concretions of various sizes and shapes are present in majority of the black soil area and this affects the fertility of the soils. Clay soil, as a whole, constituted about 45 per cent of the total soil. Details are presented in Table 2.3. River alluvium includes alternate layers of sand and clay for a huge thickness. River alluvium occurs in areas bordering the Vaigai river. Coastal alluvium occurs in Kadaladi, R.S.Mangalam, Mandapam, Ramanathapuram, Thiruppullani and Thiruvadanai blocks. There are vast stretches of saline and alkaline soils found in the coastal blocks. Rameswaram Island contains mainly sandy soil. The fertility status of soil showed that nitrogen status of soil is low in all blocks and phosphorus status of soil is also low in all blocks with the exception of Thiruppullani,

Kamudhi and Kadaladi blocks where it is medium. The potash content of soil is high in all the blocks. The mineral resources of the soil include gypsum, limestone and magnesium. While Mudukulathur and Keelakarai regions account for sizable deposits of gypsum, Rameswaram Island contains large quantities of limestone deposits.

Table 2.3 Distribution of Soil Type in Ramanathapuram District

(in hectares)

S.No.	Soil Type	Area	Percentage
1	Sandy Soil	7328	1.79
2	Clay soil	182463	44.62
3	Sandy clay soil	22138	5.40
4	Alluvial soil	43769	10.70
5	Sandy loam soil	63602	15.54
6	Coastal Alluvial soil	71357	17.45
7	Red soil	18390	4.50
	Total	408957	100.00

(Source: Records of the Office of the Joint Director of Agriculture, Ramanathapuram)

It could be noticed from the table that about 45 percent of the area is clay soil followed by coastal alluvial soil (17.45 percent), sandy loam soil (15.54 percent) and alluvial soil (10.70 percent) in that order.

2.6. Area under different Problem Soil Categories

In spite of alluvial soil present in the district, scenario of agricultural production is not showing an encouraging trend because of prevalence of problem soils. It could be understood from Table 2.4 that out of 2,06,290 ha. of area, about 54.42 percent alone could be considered as normal soil, 29.28 percent as moderately acidic and 12.40 percent as moderately alkaline soil types.

Table 2.4. Details of Problem Soils in Ramanathapuram District

(in hectares)

S.No.	Details of soil	Area	Percentage
1	Normal soil (pH7.5 – 8.5)	112263	54.42
2	Moderately alkaline soil (pH 8.6 – 9.0)	25589	12.40
3	Alakaline soil (pH >9.0)	691	0.33
4	Moderately acidic soil (pH 6.0 – 6.5)	60399	29.28
5	Acidic soil (pH > 6.0)	1614	0.78
6	Moderately Saline (EC 1.0 -3.0)	2121	1.04
7	Saline Soil (EC > 5.0)	3613	1.75
	Total	**2,06,290**	**100.00**

(Source: Records of the Joint Director of Agriculture, Ramanathapuram)

2.6.1 Soil Erosion

Yet another problem noticed in the district is soil erosion. From the data presented in Table 2.5, it could be seen that 13.77 percent of the soil area has been identified as severely eroded.

Table 2.5 Details of Eroded soils in Ramanathapuram District

(in hectares)

S.No.	Details of eroded soil	Area (ha.)	Percentage
1	Slightly eroded soil (< 1 per cent slope)	280587	85.17
2	Moderately eroded soil	3476	1.06
3	Severely eroded soil	45371	13.77
	Total	**3,29,434**	**100.00**

(Source: Records of the Joint Director of Agriculture, Ramanathapuram)

2.7 Micro Nutrient Status

Micro nutrient status presented in Table 2.6 shows that in general soil status is low in zinc and high in manganese. Taluks like Paramakudi, Kamuthi and Kadaladi have high content of copper, iron and Managanese. Ramanathapuram, Thiruvadanai and Mudukulathur taluks are deficit (low) in zinc, copper and iron.

Table 2.6 Micronutrient Status of Soil in Ramanathapuram District

S.No.	Taluk	Zinc	Copper	Iron	Manganese
1	Ramanathapuram	Low	Low	Low	High
2	Thiruvadanai	Low	Low	Low	High
3	Paramakudi	Low	High	High	High
4	Kamuthi	Low	High	High	High
5	Mudukulathur	Low	Low	Low	Low
6	Kadaladi	Low	High	High	High

(Source: Records of the Office of the Joint Director of Agriculture, Ramanathapuram)

Table 2.7 Distribution of Different Soil Structures in Ramanathapuram District

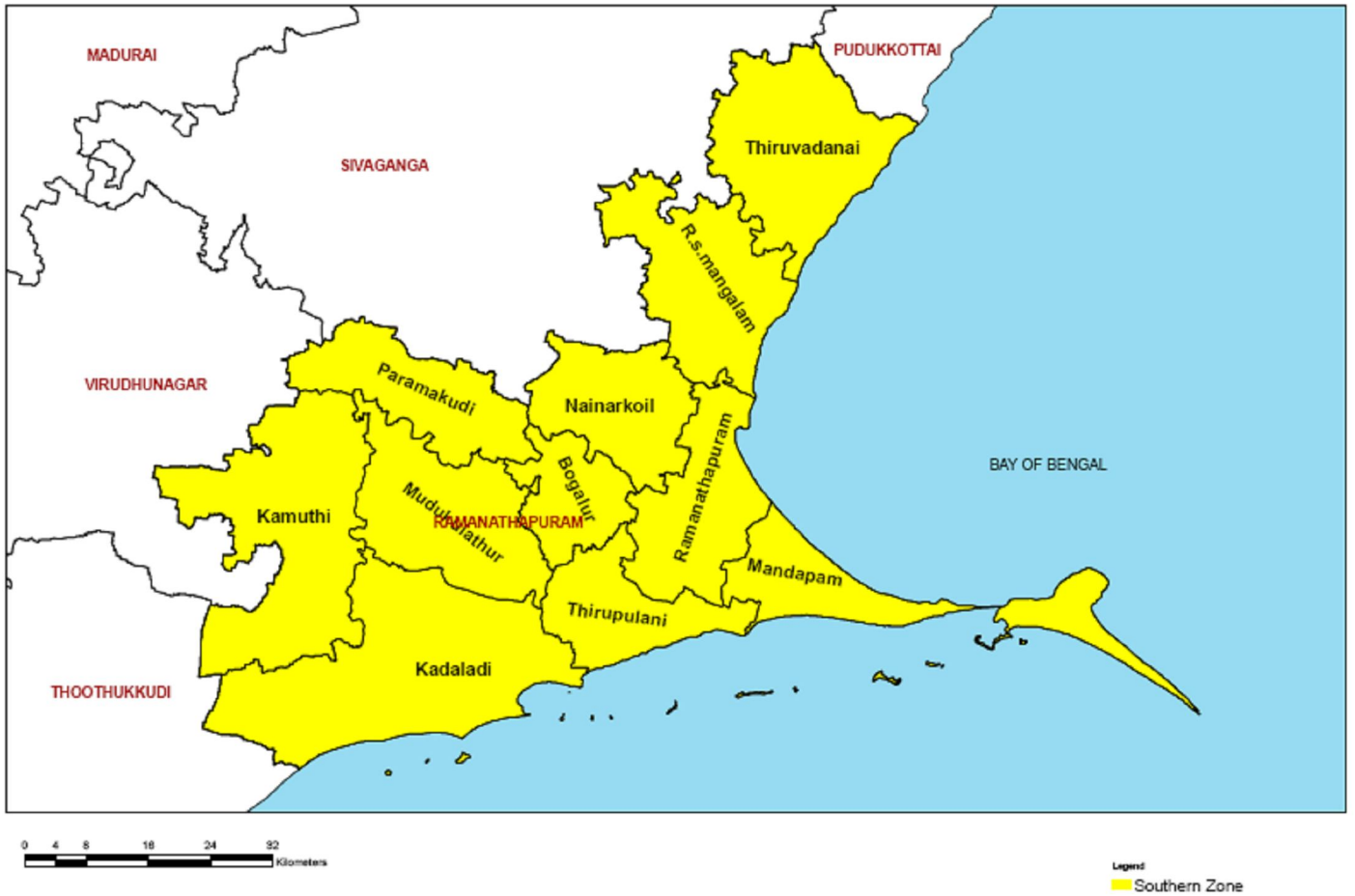
(Area in hectare)

Soil Description	Area (ha.)
Deep, fine, mixed, Alfisols	1,18,833.30
Deep, fine, montmorillonitic, Vertisols	31,243.00
Very deep, fine, montmorillonitic, Vertisols	30,148.09
Deep, fine silty, mixed, Inceptisols	22,807.06
Very deep, coarse loamy, mixed, Entisols	19,436.67
Very deep, coarse loamy, mixed, Inceptisols	16,341.37
Deep, fine loamy, mixed, Inceptisols	11,773.43
Very deep, fine loamy, mixed, Entisols	11,003.18
Very deep, fine loamy, mixed, Alfisols	8,990.90

Table 2.7 Contd… (Area in hectare)

Soil Description	Area (ha)
Very deep, coarse loamy, mixed, Alfisols	8,742.37
Very deep, very fine, montmorillonitic, Inceptisols	8,593.71
Deep, very fine, montmorillonitic, Vertisols	7,345.98
Deep, fine, mixed, Inceptisols	7,324.96
Very deep, fine loamy, mixed, Inceptisols	6,246.87
Moderately shallow, fine loamy, mixed, Inceptisols	6,190.82
Deep, contrasting particle size, mixed, Inceptisols	6,104.92
Very deep, fine, montmorillonitic, Inceptisols	5,157.07
Very deep, contrasting particle size, mixed, Inceptisols	5,089.75
Moderately deep, fine, mixed, Inceptisols	5,065.44
Very deep, sandy, mixed, Alfisols	4,871.80
Moderately shallow, fine loamy, mixed, Alfisols	4,406.27
Moderately deep, fine, mixed, Alfisols	2,643.78
Very deep, fine, kaolinitic, Alfisols	2,561.55
Deep, coarse loamy, mixed, Entisols	1,562.22
Very deep, clayey skeletal, kaolinitic, Alfisols	1,461.33
Very deep, sandy, mixed, Entisols	1,208.75
Moderately deep, very fine, montmorillonitic, Vertisols	946.28
Deep, sandy, mixed, Entisols	745.45
Moderately deep, fine, montmorillonitic, Inceptisols	468.60
Deep, fine loamy, mixed, Alfisols	422.76
Shallow, clayey, mixed, Alfisols	12.49
Deep, coarse loamy, mixed, Alfisols	0.36

AGROCLIMATIC ZONES OF RAMANATHAPURAM DISTRICT



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NORTH EASTERN ZONE

Districts of Thiruvallur, Vellore, Chinglepattu, Thiruvannamalai, Viluppuram, Cuddalore (excluding Chidambaram and Kattumannarkoil taluks), some parts of Perambalur including Ariyalur taluks and also Chennai.

NORTH WESTERN ZONE

Dharmapuri district (excluding hilly areas), Salem, Namakkal district (excluding Tiruchengode taluk) and Perambalur taluk of Perambulur district.

WESTERN ZONE

Erode, Coimbatore, Dindugal, Theni districts, Tiruchengode taluk of Namakkal district, Karur taluk of Karur district and some western part of Madurai district.

CAUVERY DELTA ZONE

Thanjavur, Thiruvarur, Nagapattinam districts and Musiri, Tiruchirapalli, Lalgudi, Thuraiyur and Kulithalai taluks of Tiruchirapalli district, Aranthangi taluk of Pudukottai district and Chidambaram and Kattumannarkoil taluks of Cuddalore district.

SOUTHERN ZONE

Sivagangai, Ramanathapuram, Virudunagar, Tuticorin and Tirunelveli districts and Natham and Dindigul taluks of Dindigul district, Melur, Tirumangalam, Madurai South and Madurai North taluks of Madurai district and Pudukkottai district excluding Aranthangi taluk.

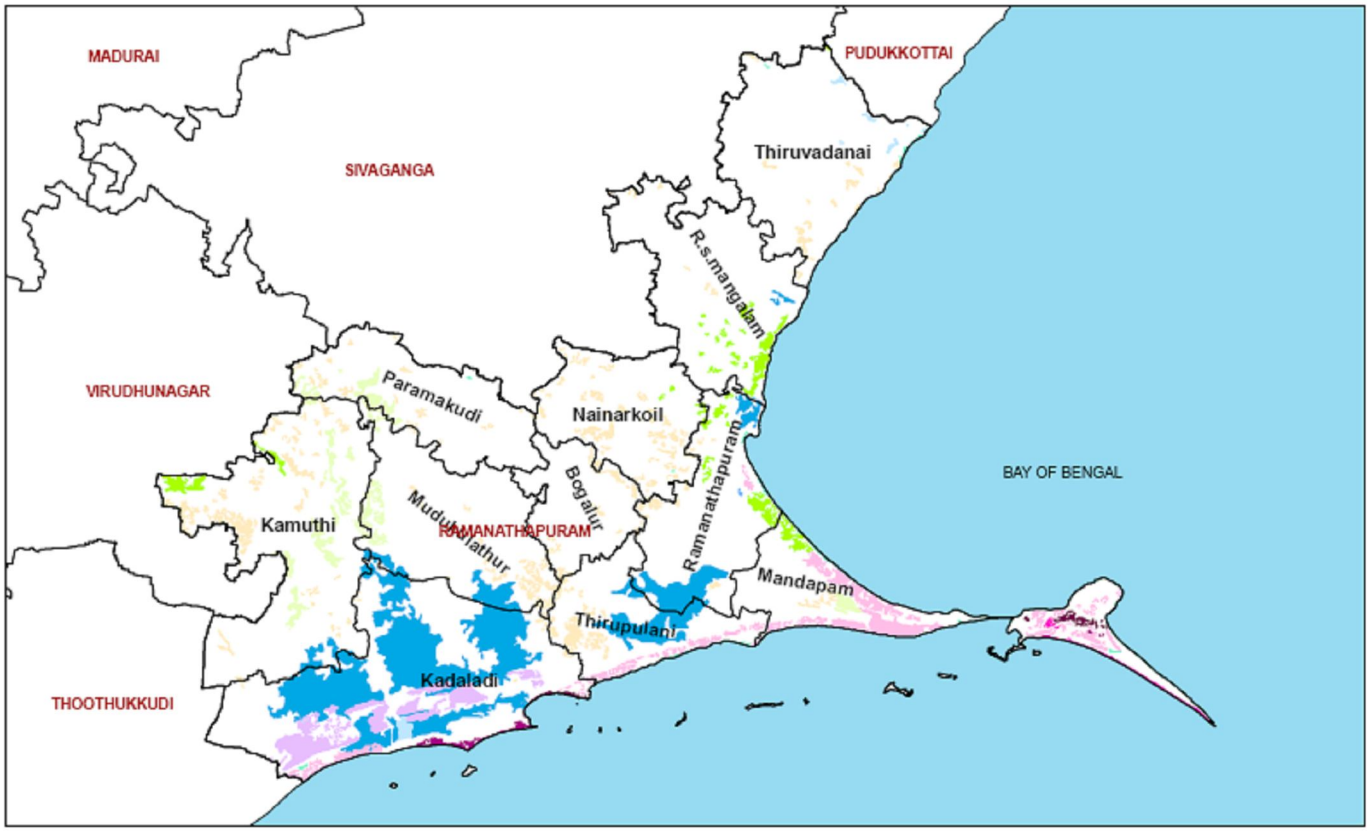
HIGH RAINFALL ZONE

Kanayakumari district.

HIGH ALTITUDE AND HILLY ZONE

Hilly regions, namely the Nilgiris, Shevroys, Elagiri-Javvadhu, Kollimalai, Patchaimalai, Anamalais, Palanis and Podhigaimalais.

LAND DEGRADATION MAP OF RAMANATHAPURAM DISTRICT



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EXPLANATION OF DIFFERENT LAND DEGRADATION CATEGORIES

Land degradation, in general, implies temporary or permanent recession from a higher to a lower status of productivity through deterioration of physical, chemical and biological aspects. The physical processes, which contribute to land degradation, are mainly water and wind erosion, compaction, crusting and water logging. The chemical processes include salinization, alkalization, acidification, pollution and nutrient depletion. The biological processes, on the other hand are related to the reduction of organic matter content in the soil, degradation of vegetation and impairment of activities of micro-flora and fauna.

Water Erosion

Water erosion is the most widespread form of degradation and occurs widely in all agro-climatic zones. The displacement of soil material by water can result in either loss of top soil or terrain deformation or both. This category includes processes such as splash erosion, sheet erosion, rill and gully erosion. The soil erosion is initiated when raindrops fall onto the bare soil surface. The impact of raindrops breaks up the surface soil aggregates and splashes particles into the air. On sloping land relatively more of the detached material will fall down slope resulting in runoff. This subsequently lead to different types of water erosion depending on the gravity of the problem, susceptibility of land and continuity of the process.

1. **Sheet erosion**
   It is a common problem resulting from loss of topsoil. The loss of topsoil is often preceded by compaction and/or crusting, resulting in a decrease of infiltration capacity of the soil. The soil particles are removed from the whole soil surface on a fairly uniform basis in the form of thin layers. The severity of the problem is often difficult to visualize with naked eyes in the field.

2. Rills

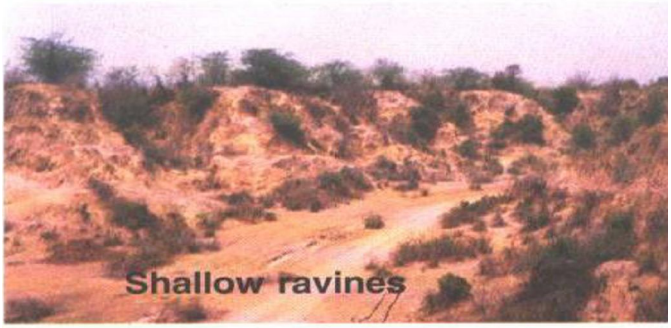
When the surface runoff goes in the form a concentric flow, a tiny water channels are formed in the field. These are small rivulets of such a size that they can be worked over with farm machinery. Rills are generally associated with the cultivated lands and are visible in the ploughed soil after first heavy showers. One important feature of rills is that they do not occur at the same place repeatedly. This is a temporary concentric flow of runoff, which could vanish after ploughing the land.

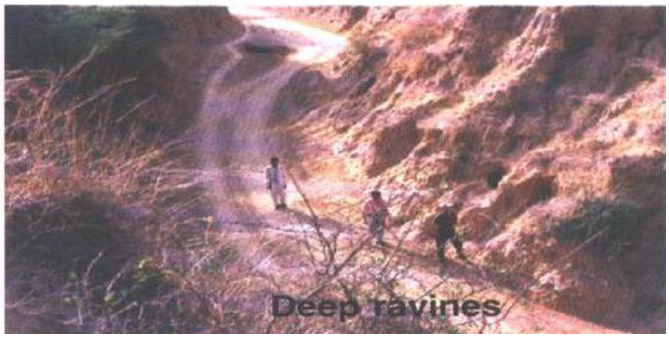
3. Gullies

Gullies are formed as a result of localized surface run-off affecting the unconsolidated material resulting in the formation of perceptible channels causing undulating terrain. If rills are neglected and the erosion continues for a long time, it develops in to gullies. They are commonly found in sloping lands, developed as a result of concentrated run-off over fairly long time. They are mostly associated with stream courses, sloping grounds with good rainfall regions and foot hill regions. These are the first stage of excessive land dissection followed by their networking which leads to the development of ravenous land.

4. Ravines

The word ravine is usually associated not with an isolated gully but an intricate network of gullies formed generally in deep alluvium and entering a nearby river, flowing much lower than the surrounding tablelands. Ravines are basically extensive systems of gullies developed along river courses. Further classification of this category is possible based on the depth, width, bed slope, frequency and morphology of bed material of the ravines. Based on the depth of the ravines, which has a characteristic manifestation on the satellite image, two subcategories are possible for delineation viz., shallow ravinous and deep ravenous lands.





Wind Erosion

It implies uniform displacement of topsoil by wind action. It can result in loss of topsoil and the deposition of the eroded material elsewhere leads to formation dune complexes. The risk of wind erosion is severe in the arid and semi-arid areas. It includes both the removal and deposition of soil particles by wind action and the abrasive effects of moving particles as they are transported. Not only can the wind remove topsoil from good farmland; it can result in additional damage by burying land, buildings, machinery, etc. with unwanted soil. It occurs when soil is left devoid of vegetation either because of poor rainfall to support any vegetal cover or loss of vegetation due to overgrazing. In the sand deposited areas with rainfall the sand gets stabilized partially of fully depending on vegetal cover it establishes.

During high winds the finer, and commonly more fertile, particles are swept high in the air and are sometimes carried for great distances as dust storms; while coarser particles are rolled or swept along on or very near the soil surface to be piled into depressions. The process is highly dynamic and requires careful evaluation of the site and process.

5. Sheet Erosion

It implies uniform displacement of topsoil by wind action as thin layers / sheets. During wind storms, the dry finer soil particles which could be suspended into air will be transported longer distances, while the heavier particles creeps on the surface and generally will be transported to a shorter distances. It may seriously influence the infrastructures (roads. railway lines. buildings. waterways, etc.). The uneven displacement of soil material by wind action leads to deflation hollows and dunes. The lifted medium to coarse soil particles may reduce the productivity of adjacent fertile land when they are deposited in the form of sand castings.

6. Stabilized Dunes / Partially stabilized Dunes

Depending on the rainfall and protection available from grazing, the bare sand dunes gradually establishes vegetal cover thus making them to get stabilized. In partially stabilized dunes, the erosion / deposition will be still active to some extent. When they established a good vegetal cover either in the form of grasses, shrubs and scrubs, they get stabilized and the erosion / deposition activity will be at minimal. By virtue of vegetal cover and physiography, they are discernible on satellite imagery.

Stabilized sandune

Partially stabilized sanddune

7. Un-stabilized dunes

Due to their inherent vulnerability because of lack of vegetal cover, these are quite active during summer season. The sand starts moving and engulfing the adjoining agricultural lands, engineering structures and demands immediate attention for their stabilization. The unstabilized sand dunes changes their location and shape from season to season and hence they are often called shifting dunes.

Water logging

Water logging is considered as physical deterioration of land. It is the affected by excessive ponding / logging of water for quite some period and affects the productivity of land or reduces the choice of taking crops.

8. Surface Ponding

This category addresses the water logging caused by flooding of river water, submergence by rainwater and human intervention in natural drainage systems that adversely affect the natural drainage, where the water stagnates for quite a long time. Depending the number of crops it affects it has been sub-divided into two severity classes, slight- affecting one crop and moderate – affecting more than one crop. Flooding of paddy fields is not included as it is a unique cultural practice rather than degradation of soil.

Waterlogging may be seasonal or permanent. Seasonally waterlogged areas are those low lying or depression areas that get saturated due to heavy rains and are normal in post-monsoon season. Permanent waterlogged areas are those areas where there is continuous surface ponding of water or soil profile is saturated for one or more seasons.

9. Sub-surface Water logging

If the water table is with in 2 m from the surface it adversely affects crop by virtue of saturating the root zone due to capillary rise. These areas are potential threat to get surface ponded in due course of time, if the water accumulation continues. The sub-surface waterlogged areas can be reclaimed with little ease.

10. Salinization / Alkalization

Salinization can result from improper management of canal irrigation water resulting in the rise of water table and consequent accumulation of salts in the root zone in arid, semi-arid and sub humid (dry) conditions and ingress of sea water in coastal regions and/or use of high-salt containing ground water. They also become saline when soils have developed on salt-containing parent materials or have saline ground water. The soils with EC more than 2ds/m in vertisols and >4ds/m in non-vertisols was considered as saline in the present project. Increase in soil pH beyond 8.5 results in sodicity or alkalization that result in increase of exchangeable sodium percentage in soils (> 15). Based on the type of problem, it has been divided into saline, sodic and salinesodic.

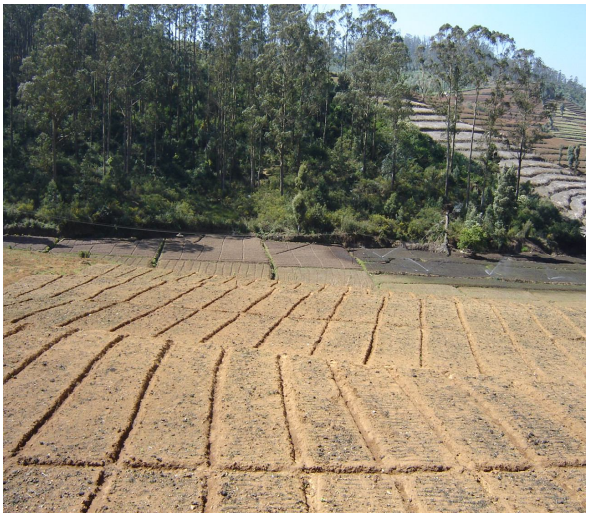
Salinity

Sodic

11. Acidification

pH is one of the most-important soil property that affects the nutrient uptake by plants and there by influencing the crop productivity. Any soil processes or management practices which lead to buildup of hydrogen cations (also called protons) in the soil will result in soil acidification. It also occurs when base cations such as Calcium, Magnesium, Potassium and Sodium are lost from the soil leading to high hydrogen ion concentration. This results in decrease of soil pH below 6.5. It occurs in laterite regions, coastal regions upon drainage or oxidation of pyrite containing soils.

If the pH is 4.5 to 5.5 then they are called *moderate* and if the pH is < 4.5,then they are mapped under *severe* category. The soils respond to lime application, which results in improvement of crop productivity.



Glacial

These are the areas under perpetual snow covered areas confined to Himalayan region. The type of degradation includes frost heaving and snow covered areas.

12. Frost Heaving

Frost heaving is defined as a process in glacial and periglacial environment where intense frost action and freezing of water evolves peculiar forms of rock, regolith and soil. The water crystallizes to ice below the surface horizon leading to micro-relief variations on the surface. This process affects the germination and root growth of several crops there by limiting the productivity of land.

13. Snow covered areas

The area covered with permanent snow cover will limit any vegetation to come up in these areas leading to a desert like conditions. These areas are generally associated with very high mountainous regions. The glacier regions are also included in this category.

Degradation due to anthropogenic factors

Human economic activities like mining, industries etc., have also contributed to decreased biological productivity, diversity and resilience of the land. Mining, brick kiln activities and industrial effluent affected areas are included under this type of degradation.

14. Industrial effluent affected areas

These are areas where the human activity is observed in the form of industry along with other supporting establishments of maintenance. Heavy metallurgical industry, thermal, cement, leather, petrochemical, engineering plants etc., are included under this. These are the lands which have been deteriorated due to large scale industrial effluent discharge. These areas are seen around urban areas and other areas where industrial activity is prominent.

15. Mining and dump areas

These are the areas subjected to removal of different earth material (both surfacial and sub-surfacial) by manual and mechanized operations. Large scale quarrying and mechanizations results in mining and mine dumps. It includes surface rocks and stone quarries, sand and gravel pits, brick kilns, etc. Mine dumps are those areas where waste debris is accumulated after extraction of required minerals. Generally these lands are confined to the surroundings of the mining area.

16. Brick kiln areas

These areas are associated with human activity and are generally seen in the vicinity of urban activity. The areas include brick kiln per se and area dugged for making bricks.

Others

Some of the degraded lands, which could not be included in the above type of land degradation, are included here. They are mass movement/ mass wastage, barren rocky / stony waste areas.

17. Mass movement/ Mass wastage

Landslide areas are mostly included under mass movement/ mass wastage type of land degradation. On sloping land when soil is saturated, the weight of the soil may exceed the forces holding the soil in place. Under such circumstances mass movement in the form of landslides or mudflows may occur. On steep slopes this mass movement may be very rapid, involving the movement of large volumes of soil, usually on an isolated event and localized basis. In geologically recent and unstable mountain areas, such as the Himalayas, and areas prone to seismic and volcanic activity, landslides may be natural phenomena. This class also includes the areas with mass wastage in terms of foothill depositions like scree and bazada zones, where the coarse material like sand and pebbles gets deposited because of erosion in upper catchment area. However, their frequency and severity may greatly increase following destruction of the natural vegetative cover by logging and/or clearing for cultivation

18. Barren rocky / stony areas

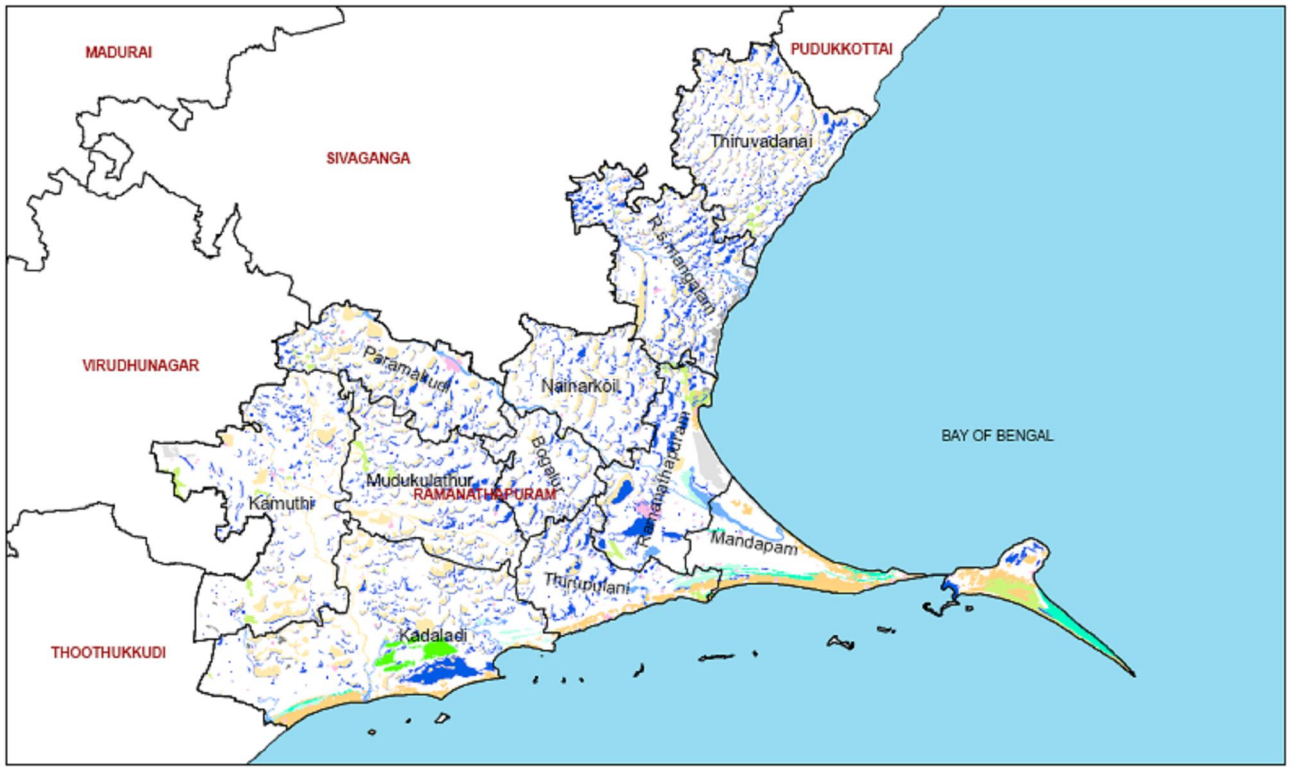
Barren / rocky / stony areas are the rock exposures of varying lithology often barren and devoid of soil and vegetal cover. They occur in hill forests as openings or as isolated exposures on plateau and plains. These can be easily delineated from other type of degraded land because of their severe nature of degradation and typical spectral signature.

19. Miscellaneous

This includes riverine sand areas, sea ingression areas mainly with sand deposition excluding the sandy areas of desert region.

Sea Ingress areas

WASTELAND MAP OF RAMANATHAPURAM DISTRICT



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WASTELAND CLASSIFICATION

Culturable Wastelands

Land which is capable or has the potential for the development of vegetative cover and is not being used due to different constraints of varying degrees is termed as culturable wastelands. Culturable wastelands comprise the following categories.

i. **Agricultural Land inside notified forest:** Lands put under cultivation within the restricted forest areas.

ii. **Degraded forest – Scrub domination:** Lands as noticed under the Forest Act and those lands with various types of forest cover, in which vegetative cover is less than 20% are classified as degraded forest land. Among the vegetative types scrubs and thorny bushes are dominated species.

iii. **Degraded land under plantation crops:** This includes degraded lands containing plantations inside and outside of the notified forest area.

iv. **Degraded pastures / grazing land**: All those grazing land in non-forest areas, whether or not they are permanent pastures or meadows, which have become degraded due to lack of proper soil conservation and drainage measures fall under this category.

v. **Gullied / ravenous land**: The gullies are formed as a result of localised surface run off affecting the friable unconsolidated material resulting in the formation of perceptible channels resulting in undulating terrain. The gullies are the first stage of excessive land dissection followed by their networking which leads to the development of ravinous land. The world 'ravine' is usually associated not with an isolated gully but a network of gullies formed generally in deep alluvium and entering nearby river flowing much lower than the surrounding table lands. The ravines then are extensive systems of gullies developed along river courses.

vi. **Land with or without scrub**: This is the land which is generally prone to degradation and may or may not have scrub over. Such land occupies topographically high locations in the respective systems. This excludes hilly and mountainous terrain.

vii. **Water-logged and marsh:** Surface water-logged land is that land where the water is near the surface and water stands for most of the year. Marsh is a land which permanently or periodically inundated by water and is characterised by vegetation which includes grasses and reeds.

viii. **Salt Affected Lands (Saline / Alkaline):** The salt affected land is generally characterised as the land that has adverse effects on the growth of most of the plants due to the action or presence of excess soluble salts or excess exchangeable sodium. The saline soils have more of soluble salts with electrical conductivity of more than 4 dSm^{-1}. Alkali land has an exchangeable sodium percentage (ESP) of above 15 which is generally considered as the limit between normal and alkali soils. The predominant salts are carbonates and bicarbonates of sodium.

ix. **Sands :** Sandy areas are those areas which have stabilized accumulation of sand, in situ or transported, in tank / river bed, coastal, riverine or inland areas**.**

x. **Mining / industrial Waste lands**: These are lands where large-scale mining operations bring about the degradation of land and resultant mine dumps.

Unculturable Wastelands

Lands which cannot be developed for vegetative cover are defined as unculturable wastelands. Unculturable wastelands are divided into:

i. Barren rocky / stony wastes / sheet rock area.
ii. Steep sloping area – Land with very steep slopes (greater than 35 degrees); Prone to erosion and mass wasting (Landslides).

2.8 Land Use Pattern

Land use pattern in the district between the years 2003-04 and 2005-06 is presented in Table. 2.8. From the table, it is understood that about 45.37 percent of the total geographical area was under net sown area, 13.80 percent were under other fallows, 6.80 percent were under current fallows, and about 21 percent of area was put to non agricultural uses.

Table 2.8 Land Use Pattern in Ramanathapuram District

(Area in ha.)

S.No.	Classification	2003-04	2004-05	2005-06	Percentage
1	Forest	4488	4488	4488	1.10
2	Barren and uncultivable land	4591	4591	4591	1.12
3	Land put to non Agricultural uses	84476	84483	84483	20.66
4	Culturable waste	4245	4245	4245	1.04
5	Permanent pastures & other grazing lands	154	154	154	0.00038
6	Miscellaneous tree crops and groves not included in the net area sown	40425	41116	41210	10.08
7	Current fallows	22467	21618	27784	6.79
8	Other fallows	57843	56439	56439	13.80
9	Net area sown	190268	191823	185563	45.37
	Area sown more than once	-	-	-	
10	Total Geographical area	408957	408957	408957	100.00

(Source: Records of the Office of the Joint Director of Agriculture, Ramanathapuram)

2.9 Land Holding Pattern

Block wise distribution of marginal and small farmers and their respective area are presented in Table 2.9. Percentage of marginal farms to total in the district was found to be the largest in Kamuthi, Muthukulathur, Kadaladi and Thiruvadanai blocks;

percentage of small farms was more in Muthukulathur, Kadaladi, Kamuthi and Paramakudi blocks. Similarly, percentage of agricultural labourers was found to be high in Thirupulani, Muthukulathur, Kamuthi and Kadaladi blocks.

Table 2.9 Details of Land Holding Pattern in Ramanathapuram District

S. No	Block	No. of Marginal Farms	No. of Small Farms	Total area under Marginal Farms		Total area under Small Farms		No. of landless Agrl. labourers
				Wet	Dry	Wet	Dry	
1	Ramanathapuram	21410 (9.43)	2466 (3.93)	1150 (4.32)	4610 (6.14)	970 (5.81)	2310 (4.38)	2180 (4.38)
2	Thirupulani	13808 (6.08)	3534 (5.64)	1120 (4.21)	5102 (6.80)	760 (4.55)	3950 (7.50)	6294 (12.66)
3	Mandapam	12264 (5.40)	2102 (3.35)	954 (3.59)	4220 (5.62)	298 (1.78)	2031 (3.85)	1560 (3.14)
4	Thiruvadanai	29807 (13.13)	6193 (9.88)	3027 (11.38)	8129 (10.83)	2274 (13.62)	5084 (9.64)	4109 (8.26)
5	R.S.Mangalam	18758 (8.26)	3424 (5.46)	3868 (14.55)	4496 (6.00)	2130 (12.76)	3066 (47.60)	3181 (6.40)
6	Paramakudi	17286 (7.61)	7046 (11.25)	3077 (11.57)	4789 (6.38)	2126 (12.74)	3882 (5.81)	4714 (9.48)
7	Bogalur	16870 (7.43)	4389 (7.00)	1975 (7.43)	5536 (7.38)	1139 (6.82)	3324 (6.30)	1868 (3.76)
8	Nainarkoil	14822 (6.53)	5871 (9.37)	1427 (5.37)	4765 (6.35)	1309 (7.84)	3894 (7.38)	2608 (5.24)
9	Kamuthi	40145 (17.68)	9855 (15.73)	2178 (8.19)	11962 (15.94)	1383 (8.29)	10301 (19.53)	4991 (10.04)
10	Mudukulakthur	38628 (17.02)	10483 (16.73)	4887 (18.38)	11503 (15.33)	2823 (16.91)	6444 (12.22)	7143 (14.37)
11	Kadaladi	33189 (14.62)	7292 (11.64)	2925 (11.00)	9924 (13.22)	1476 (8.84)	7575 (14.36)	11070 (22.27)
	Total	**226987 (100.00)**	**62653 (100.00)**	**26588 (100.00)**	**75038 (100.00)**	**16690 (100.00)**	**52731 (100.00)**	**49718 (100.00)**

(Figures in parentheses indicate percentages to column totals)

(Source: Records of the Office of the Joint Director of Agriculture, Ramanathapuram)

2.10 Rainfall Pattern

Season wise distribution of rainfall in the district is presented in Table 2.10. It could be seen from the table that major rainy season in the district was the North East monsoon season wherein 60.65 percent of the normal annual rainfall was received. Next rainy season was the South West monsoon season which received nearly 16 percent and about 15 percent of annual rainfall was received during summer months.

Table 2.10 Season wise Rainfall Distribution in Ramanathapuram District

(in mm)

S.No.	Season	2003	2004	2005	2006	2007	Normal	Percentage
1	Winter	-	5.3	25.5	43.0	89.5	67.4	8.15
2	Summer	108	147.4	346.9	91.2	31.4	122.7	14.84
3	South West Monsoon	65.1	225.2	66.7	54.1	125.5	135.3	16.36
4	North East Monsoon	393.8	796.2	810.5	743.9	622.2	501.6	60.65
	Total	**566.9**	**1174.1**	**1243.2**	**931.9**	**868.6**	**827.0**	**100.00**

(Source: Records of Office of the Joint Director of Agriculture, Ramanathapuram)

2.11. Sources of Irrigation

It could be noticed from Table 2.11 that there were more number of wells followed by tanks in the district. But all the wells are not supporting irrigation as they are normally dry during most part of the year. However, tanks formed the major source of irrigation as they got filled up during monsoon rains.

Table 2.11 Sources of Irrigation in Ramanathapuram District

S.No.	Irrigation Sources	No.
1	Tanks	1694
2	Tube wells	310
3	Open wells	7736
4	Total wells	8046

(Source: Records of Office of the Joint Director of Agriculture, Ramanathapuram)

2.11.1 Net Area Irrigated

A cursory look at the figures presented in Table 2.12 would reveal that tanks were the major source (83 percent) of irrigation in the district and the next source was the wells (17 percent).

Table 2.12 Net Area Irrigated in the District

(in hectares)

S.No.	Source	2003-04	2004-05	2005-06	Average	Percentage
1	Tank	57448	61382	57034	58621.33	82.98
2	Wells	13230	11336	11513	12026.33	17.02
	Total	**70678**	**72718**	**68547**	**70647.67**	**100.00**

(Source: Records of Office of the Joint Director of Agriculture, Ramanathapuram)

2.11.2. Gross area Irrigated

Gross area irrigated in the district which reflected the supplementary irrigation in the second/off season also showed the same scenario as that of net irrigated area.

Table 2.13 Gross Area Irrigated in Ramanathapuram District

(in hectares)

S.No.	Source	2001-02	2002-03	2003-04	2004-05	2005-06	Average	Percentage
1	Tank	54510	54838	57448	61382	57034	57042.40	82.03
2	Wells	13178	13208	13230	11336	11513	12493.60	17.97
	Total	67688	68046	70678	72718	68547	69536.00	100.00

(Source: Records of office of the Joint Director of Agriculture, Ramanathapuram)

2.11.3 Ground Water Potential

Paramakudi and Kamuthi blocks have been identified to be in semi critical stage of ground water exploitation (60-85 per cent exploitation) in the district (Table 2.14).

Table 2.14 Ground Water Potential in Ramanathapuram District

S.No.	Over exploited (100 per cent)	Critical (55-100 per cent)	Semi Critical (60-85 per cent)
1	-	-	Paramakudi
2	-	-	Kamuthi

(Source: Records of Office of the Joint Director of Agriculture, Ramanathapuram)

2.12 Agriculture

Like any other district in the State, in Ramanathapuram also agriculture is the back bone of the district's economy. Out of the total cropped area of 183651 ha, about 37.64 percent receive any form of irrigation, and hence mostly the crops are being raised under rain fed condition (62.36 percent).

2.12.1. Area under Important Crops

Distribution of different crops in Ramanathapuram district is presented in Table. It is clear from the table that about 67 percent of net sown area in the district is under paddy followed by chillies (12 percent). Other major crops cultivated are coconut, oilseeds, cotton, millets and pulses.

I General Cropping Pattern of the District below

2.12.1.1 Paddy

In Ramanathapuram district, paddy is the main food crop cultivated in more than 63 percent of the net area sown. It is cultivated both as irrigated and rainfed. Rainfed sowing generally would commence from August and will extend upto October. In early sown area, farmers used to raise medium and long duration varieties of paddy. There is no marked area for late sowing, but when the monsoon rains delayed, the sowing will be also taken up lately. In the late sown areas, medium and short duration paddy varieties are sown. Farmers are having 10 local paddy varieties in addition to high yielding varieties with the duration ranging from 105-130 days and they will choose varieties according to their needs. Red gram is sown as a mixed crop in rain fed areas and also grown in garden lands to a limited extent. In tank fed ayacut area, irrigated paddy is sown

generally in August to November. Sometimes, sowing will be further extended upto December depending on accumulation of rainwater in the tanks and also release of water from Vaigai Dam to the Vaigai fed system tanks.

Table 2.15 Crop Wise Area Coverage in Ramanathapuram District

(in hectares)

S. No.	Crop	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	Average	Percentage
I	**Agriculture**							
	1) Paddy	**124517**	**126152**	**121031**	**126607**	**127395**	**125140**	**67.30**
	2) Millets	3691	3899	6857	7004	6801		
	3) Pulses	2375	2375	3937	3055	2738		
	4) Oilseeds-edible	9194	8437	14662	10404	9681		
	Oilseeds-non edible	--	--	110	132	200		
	5) Cotton	4415	1529	3310	5413	3733		
	6) Sugarcane	597	685	451	260	361		
	7) Coconut	8111	9120	8343	8472	8526		
	Total	**152900**	**152197**	**158701**	**161347**	**167961**	**158567**	**85.28**
II	**Horticulture**							
	a) Spices -							
	1)Chillies	**18559**	**18115**	**22742**	**23126**	**19021**	**20312**	**10.92**
	2) Coriander	1560	1130	1921	1684	1518		
	3)Others	205	219	238	223	274		
	Total	**20324**	**19464**	**24901**	**25033**	**20813**	**22107**	**11.90**
	b) Fruits							
	1)Banana	175	169	147	131	88		
	2)Mango	122	121	128	122	148		
	3)Guava	46	54	69	49	96		
	4)Cashew	98	124	230	261	375		
	5)Others	31	67	156	165	190		
	Total	**472**	**535**	**730**	**728**	**897**		

Table 2.15 Contd…. **(in hectares)**

S. No.	Crop	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	Average	Percentage
	c) Vegetables	**94**	**150**	**152**	**191**	**165**		
	d) Flowers							
	1)Jasmine	68	80	64	99	68		
	2)Others	2	5	22	2	--		
	Total	**70**	**85**	**86**	**101**	**68**		
	e) Drugs & Norcotics (Betel wine & others)	23	33	36	32	33		
	Horticulture Total	**20983**	**20267**	**25905**	**26085**	**21976**	**23043**	**12.39**
III	**Palmyrah**	**3985**	**4457**	**4435**	**3850**	**3904**		
IV	**Fodder crops**	**307**	**321**	**527**	**433**	**204**		
V	**Other miscellaneous non food crops**	**4769**	**1853**	**700**	**108**	**44**		
	Net Area Sown	**182945**	**179102**	**190268**	**191823**	**185563**	**185940**	**100.00**

(Source : Season & Crop Reports of Tamil Nadu (various issues)

2.12.1.2 Cholam

Rainfed cholam sowing is taken up in dry lands between July and September. Beyond September, there would not be any sowing of cholam crop and cumbu crop will be sown as alternate crop in those areas. Lablab pulses is also sown as mixed crop.

2.12.1.3 Cumbu

Rainfed cumbu sowing is generally taken up between September and November. Only in Ramanathapuram taluk, the sowing will be extended upto December. Irrigated cumbu is taken up from February, March to June, July.

2.12.1.4 Ragi

Rainfed ragi sowing is taken up during September and October. Irrigated ragi is mainly sown in September to October in East Ramanathapuram where the crop is sown in tank fed ayacut areas.

2.12.1.5 Minor Millets

Minor millets are generally sown between July and November and the area is spreaded over throughout the district.

2.12.1.6 Cotton

Rainfed cotton sowing is taken up in September-October. The sowing will be extended sometimes upto December depending upon rainfall. Rice fallow cotton is generally sown in Paramakudi and Kamuthi taluks during January-February months.

2.12.1.7 Pulses

Redgram is sown in June - August. Blackgram, greengram and cowpea are sown as rainfed crops in September and October months. Redgram is sown as mixed crop with millets and groundnut. Blackgram and Greengram are sown as pure crop as well as mixed crop with cotton and sugarcane. The Cowpea is sown as pure crop and also in some places as mixed crop with millets.

2.12.1.8 Groundnut and Gingelly

Groundnut and gingelly are cultivated mostly under rain fed conditions, during the months of December-January and April – May.

2.12.1.9 Chillies

Chillies are cultivated in both rainfed and irrigated conditions. They are directly broadcasted in the month of September. The transplanted chillies will be taken in the fortnight of November.

2.13 Input Distribution in Agriculture

Supply of farm inputs and their usage by the farmers is a pre- requisite in achieving targeted growth rate in agriculture. Hence status of input use by the farmers of Ramanathapuram district is presented in the following table. It could be noticed from the table that on an average 442.21 tonnes of seeds are distributed annually and almost 84 per

cent of them was paddy seeds followed by oilseeds (11.62 per cent). In the case of mineral nutrient mixture, 19.50 per cent of the average quantity of 29.73 tonnes distributed annually, is used in paddy cultivation and about seven per cent in coconut cultivation and only two per cent in pulses cultivation.

Chemical fertilizer use showed that on an average 12,047 tonnes of NPK fertilizers is being used by the farmers and in this about 64 per cent was nitrogenous fertilizers; 24 per cent was phosphoric and 12 per cent was potash. Plant protection liquid chemicals are distributed to the tune of 6400 litres per year and the quantity of dust chemicals was four M.T. On an average 23,000 coconut seedlings were distributed and in this 76 per cent was Tall variety and the remaining 24 per cent was Tall X Dwarf variety.

Table 2.16 Details of Inputs Distribution

Sl. No.	Name of Input	Unit	2005-06	2006-07	2007-08	Average	Percentage
	Seed Distribution						
1	Paddy	Tonnes	327	363.4	417.5	369.30	83.51
2	Millets	Tonnes	4.13	6	6	5.38	1.22
3	Pulses	Tonnes	8.3	6.635	6.16	7.03	1.59
4	Oil Seeds	Tonnes	61.98	56.645	35.57	51.40	11.62
5	Cotton	Tonnes	9.5	8.29	9.52	9.10	2.06
	Total						**100.00**
	Bio Fertilizer		**128263**	**154215**	**138982**	**140486**	
	Mineral Nutrient Mixture						
1	Paddy	Tonnes	18.3	23.7	16.45	19.48	65.53
2	Millets	Tonnes	0.4	0.175	0.934	0.50	1.69
3	Pulses	Tonnes	0.031	0.094	6.05	2.06	6.92
4	Cotton	Tonnes	0.129	0.193	0.35	0.22	0.75
5	Coconut	Tonnes	6.785	7.382	6.616	6.93	23.30
6	Gingelly	Tonnes	0.315	0.412	0	0.24	0.82
7	Ground nut	Tonnes	0.235	0.19	0.45	0.29	0.98
	Total						**100.00**

Table 2.16 Contd….

Sl. No.	Name of Input	Unit	2005-06	2006-07	2007-08	Average	Percentage
	Chemical Fertilizer						
1	Nitrogen	Tonnes	7414	8842	6823	7693	63.86
2	Phosphorus	Tonnes	3084	2943	2496	2841	23.58
3	Potash	Tonnes	1331	1431	1777	1513	12.56
	Total	Tonnes	**11829**	**13216**	**11096**	**12047**	**100.00**
	P.P.Chemicals	Tonnes					
1	Liquid	Litres	31120	35181	18467	28256	6389.72
2	Dust	Tonnes	18.36	23.373	11.16	17.63	3.99
	Distribution of Coconut Seedlings						
1	Tall	Lakhs	0.217	0.149	0.159	0.18	76.09
2	Tall X Dwarf	Lakhs	0.046	0.061	0.058	0.06	23.91
	Total	**Lakhs**	**0.263**	**0.21**	**0.217**	**0.23**	**100.00**

Source: Records of the office of the Joint director of Agriculture, Ramanathapuram

2.14. Gulf of Mannar Marine Biosphere Reserve

Gulf of Mannar is the first Marine Biosphere Reserve not only in India, but also in south and southeast Asia. The International Union of Commonwealth Nation Commission on National Parks and World Wildlife Forum, identified the reserve as being an area of" "**Particular concern**" given its diversity and special multiple- use management status. In addition, as the first marine biosphere reserve declared in India, this area has long been a national priority.

The Gulf of Mannar and its 3,600 Species of flora and fauna is one of the biologically richest coastal regions in all of mainland of India. Some of the islands are veritable "**Biologist's paradise**". It is equally rich in sea-algae, sea grasses, coral reef

pearl banks, fin & shell fish resources, mangroves and endemic & endangered species. It is an important habitat for the highly endangered sea mammal, the *Dugong dugon* commonly called as 'sea cow'. There were 137 species of Corals found in Gulf of Mannar. The Coral come in myriads of shapes. Some have finger like branches and others dome-shaped colony with a net work of ridges and furrows.

Sponges, although at casual glance look like plants, are animals, living singly or in colonies of many individuals. Their colours would vary as much as shape, being green, red, yellow, and even black or white. In the crevices, these sponges were found with many animals, ranging from tiny crabs and brittle star to bivalve mollusks. 275 species under eight orders were found in Gulf of Mannar.

2.15. Fisheries

Presence of coastal line in the district makes fisheries as one of the potential sectors of economic development in the district. Brief description of this sector is presented below:

2.15.1. Coastal Length

Ramanathapuram district is endowed with very good exploitable marine and fisheries resources to support the livelihood of the fishing population. The district had a total coastal length of 271 Kms in which Gulf of mannar had a stretch of 141 kms and the rest was along the Palk Bay.

2.15.2. Fisheries -General Details

There were four boat jetties in the district supporting an approximate fishermen population of 1.20lakhs. There were about 8,400 country boats and 2,860 mechainsed boats operating in the district. In Ramanathapuram block alone there were 5,763 *vallams* and about 1,434 mechanised fishing crafts were in Rameswaram block. As for as fishing gears were concerned there were 59 thousand gill nets, 3,540 trawling nets and 2,412

traps used in fishing. Production from trawl nets were the highest with 49,381 tonnes followed by gill nets (32,375 tonnes), which form about 56.50 and 37 percent of total fish production in the district respectively.

2.15 .3 Research Infrastructure

The Central Marine fisheries Research Institute was established at Mandapam in 1947. Researches are being conducted on various disciplines of fisheries such as Seaweeds culture, Chanks, Pearl culture and Sea Cucumber and new technologies are transferred to fishermen. Kurusadai Marine Biological Research Station at Mandapam, under the control of State Fisheries Department conducts useful research on fauna and flora of the island. A Krishi Vigyan Kendra under the Coastal Saline Research Station is functioning from the year 2003 in the district. Training on modern production techniques like Precision Farming, Integrated Nutrient Management, Integrated Pest Management and Organic Farming are being offered to the aspiring farmers of the district. From this year onwards, Diploma programme in Agriculture is also being offered here.

2.15.4 Pearl Fishery

Ramanathapuram coast is well known for pearl fishing. The Pandyan kings who ruled over this district exploited the pearl fisheries of the East Coast. The cholas who succeeded Pandyas not only patronized pearl fishing but also developed it with great care in the Palk and Gulf of Mannar. Marco Polo (1260-1300) who traveled in India during this period said that the pearl fishing was monopolised by Pandyas. The large quantity of pearls collected from the pearl beds were exported to Mediterranean countries. The Regional center of the Central Marine Fisheries Research Institute, Mandapam which was established in 1947 had developed proven technology for the culture of pearls, edible oyster calm mussel and seaweed. Commercial Pearl Farming had come up near Kurusadai Island and the Tamil Nadu Fisheries Development Corporation Limited maintains it.

2.15.5 Chank Fishery

Ramanathapuram District has distinct chank fishery. Jadhi Chanks are in abundant in the Palk Bay strait and Gulf of Mannar. More than 2,000 fishermen were engaged in active chank diving and sacred chank collected by divers were marketed to West Bengal for making ornaments. This contributes significantly to the development of fisheries.

2.15.6 Prawn Farming

About 160 Prawn farms were operating in the district following intensive type of prawn culture. Prawns harvested from these farms were exported to Japan, USA and European countries, which earned sizable foreign exchange for the country.

2.15.7 Fisheries Industries

In Ramanathapuram district seven fish processing factories were functioning in Tondi and Mandapam. Prawn, squids, cuttle fish, Crabs and fish awee processed by fishing and exported to foreign countries. Many small entrepreneurs were involved in fish drying and dried fish is used in poultry and cattle feed manufacturing.

CHAPTER - III

SWOT ANALYSIS OF THE DISTRICT

3.1 Introduction

General description of the district in the previous chapter threw some light on the resource endowment and development potential of the district. In this chapter, the development possibilities and potentials of the district in terms of Strength, Weakness, Opportunities and Threats are discussed.

3.2 SWOT Analysis of Agricultural Sector in the District

i) Strength of Agriculture Sector

The district has a good bio reserve with vast bio diversity in the form of flora and fauna. Soil type in the district –mostly clay and alluvium with high zinc content is Nature's gift to the district. Another major strength of the district is the water resources from Vaigai, Gundar, Paraliyar and Narayana Cauvery rivers flowing in the district.

ii) Weakness of Agriculture Sector

Strategic location of the district along the route of seasonal cyclones and storms is the weakness of the district that is likely to hinder the efforts taken by the district administration for the development of agricultural sector.

iii) Opportunities of Agricultural Sector

Backward status of the district could attract major chunk of Development Fund from the Centre and State Governments. Location of the district on the Eastern Coast of the sea line of the country creates an opportunity to have trade links with South East and Far East Asian countries besides, Japan and Philippines.

iv) Threats of Agricultural Sector

Pace of development in the non agricultural sectors like tourism, education and industrial sector may snatch away the financial support, intended for the development of agriculture, from the Government. Unprecedented natural calamities like tsunami pose a serious threat to agricultural sector.

3.2 Composite Index of Agricultural Development of Ramanathapuram District

Agricultural Development of a district is a comprehensive multidimensional process involving large number of related indicators. Hence, it can be well represented by composite indices which are used as yardsticks not only to gauge the development of each district but also to compare its performance in relation to other districts. These indices help to classify the sub-regions based on a set of large multivariate data. The information contained in the large set is transformed into a small set of indices which would provide a convenient method for classification. There are many methods of classification based on multivariate data. Among them, one method which is statistically sound is that developed by Iyengar and Sudarshan (1982). This method is simple and easy to apply and it helps to classify the districts into various stages of development, *viz.,,* 'highly developed', 'developed', 'developing', 'backward' and 'very backward'. In this method for each district a 'composite index' is constructed. The index lies between 0 and 1 with 1 representing 100 per cent development and 0 representing no development at all.

It is assumed that there are 'n' districts and 'm' development indicators and that X_{id} is the observed value of i^{th} development indicator for the d^{th} district (i = 1,2,3 … m, d = 1,2,3…n). First these values of development indicators for each district is to be standardized. When the observed values are related positively to the development(as in the case of cropping intensity), the standardization is achieved by employing the formula

$$y_{id} = (X_{id} - Min\ X_{id}) / (Max\ \ X_{id} - Min\ X_{id})$$

where $Min\ X_{id}$ and $Max\ X_{id}$ are the minimum and maximum of $(X_{i1}, X_{i2}, ...X_{in})$ respectively. When the values of X_{id} are negatively related to the development (as in the case of area under wastelands, problem soils etc.,) the standardized values will be computed by the formula

$$y_{id} = (Max\ X_{id} - X_{id}) / (Max\ X_{id} - Min\ X_{id})$$

Obviously the standardized indices lie between 0 and 1. The indices are then used to determine the weights of individual variable and then they are subjected to further statistical analysis by fitting suitable probability distribution to determine the cut-off points for classification of the districts into five categories as mentioned above. The detailed methodology can be found in Iyengar and Sudarshan (1982).

The data base for the current study on Ramanathapuram district is taken from various government publications like Season and Crops Report and Economic Appraisal of Tamil Nadu for the four periods 1990-91, 1995-96, 2000-01 and 2005-06. In all, 25 indicators of agricultural development as given in Table 3.1 were used for estimating the composite index of development for the district. The 25 indicators were grouped into six different 'components': i) Crop-Area-Variables (10) ii) Irrigation (7) iii) Livestock (3) iv) Fisheries (1) v) Fertilizer (3) and vi) Cultivators and Labourers (2).

The analysis showed that Ramanathapuram district was classified as 'very backward' in agricultural development in all the four periods. In terms of overall agricultural development its rank among the 29 districts of Tamil Nadu varied from 27 to 28 during the 1990-91 to 2005-06. As for as the individual components of agricultural development are concerned, its rank in the above periods are summarized in Table 3.2. The table shows that except fisheries, in all other components, its performance in the period of study is not satisfactory. For example, in irrigation it ranks between 28th and 29th in all the four periods. Similarly in crop variables also it occupied ranks between 27th and 28th ranks.

Table 3.1. Selected Indicators of Agricultural Development for Ramanathapuram District

Component	Indicators	No. of Indicators
Crop-Area-Variables	Cropping Intensity	10
	Per cent of Gross Cropped Area to Total geographical area	
	Per cent Share of food grains to Gross Cropped Area	
	Per cent Share of food crops to Gross Cropped Area	
	Per cent Share non food crops to Gross Cropped Area	
	Per cent Share of cultivable waste to total geographical area	
	Per cent Area under High Yielding Variety-Paddy	
	Per cent Area under High Yielding Variety-Cholam	
	Per cent Area under High Yielding Variety-Cumbu	
	Per cent Area under High Yielding Variety-Ragi	
Irrigation	Irrigation Intensity	7
	Per cent of Gross Irrigated Area to Gross Cropped Area	
	Per cent of Net Irrigated Area to net area sown	
	Per cent Area under Canal Irrigation to Gross Irrigated Area	
	Per cent Area under Tank Irrigation to Gross Irrigated Area	
	Per cent Area under Well Irrigation to Gross Irrigated Area	
	Per cent Area under other sources Irrigation to Gross Irrigated Area	
Livestock	Milk production (lakh tons)	2
	Egg production (lakhs)	
Fisheries	Inland + Marine fish production in tons	1
Fertilizer	Consumption of Nitrogen per hectare of Gross Cropped Area (tonnes)	3
	Consumption of Phosphorus per hectare of Gross Cropped Area (tonnes)	
	Consumption of Potassium per hectare of Gross Cropped Area (tonnes)	
Cultivators-Labourers	Per cent of Cultivators to total population	2
	Per cent of Agri.labourers to total workers	
	Total	25

Table 3.2. Rank of Ramanathapuram District in terms of Agricultural Development among other Districts of Tamil Nadu during 1990-91 to 2005-06

Component of Composite Index		Crop-Area-Variables	Irrigation	Livestock-	Fisheries	Fertilizer	Cultivators-Labourers	Overall
Period	1990-91	28	28	23	-	-	13	28
	1995-96	28	29	23	1	26	12	28
	2000-01	27	28	24	1	29	17	28
	2005-06	28	28	28	1	22	7	27

CHAPTER - IV

DEVELOPMENT OF AGRICULTURAL SECTOR

4.1 Base line Data on Crops

Basic information on area and production of important crops cultivated in Ramanathapuram district is presented in what follows.

4.1.1 Paddy

Details of area and production of paddy are presented in Tables 4.1 and 4.2. It could be noticed from the tables that total area under the crop had reduced from 1.32 lakh hectares in 1996-97 to 1.28 lakh hectares in 2005-06. Block wise analysis showed that Thiruvadanai and R.S. Mangalam were the two major paddy growing blocks of the district followed by Mudukulathur and Kadaladi. In spite of declining trend in area of the crop, production of paddy had increased from 2.4 lakh tonnes in 1996-97 to 3.45 lakh tonnes in 2005-06, after reaching the maximum of 4.23 lakh tonnes in 2004-05. This certainly shows the growing trend in productivity levels of the crop.

4.1.2 Millets

Details of area and production of millets are presented in Tables 4.3 and 4.4. It could be noticed from the tables that total area under the crop had increased from 4705 hectares in 1996-97 to 6996 hectares in 2005-06. Block wise analysis showed that Mudukulathur and Kadaladi were the two major millets growing blocks of the district followed by Paramakudi, Nainarkoil and Bogalur in that order. In spite of increasing trend in area of the crop, production of millets was fluctuating between 6660 and 1781 tonnes upto 2003-04 and after that the same has increased to 8342 tonnes and then declined to 6716 tonnes in the year 2005-06. This shows the poor performance of the crops amidst adverse weather condition.

Table 4.1 Area under Paddy in Ramanathapuram District

(in hectares)

Block	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	Average
Ramanathapuram	7432	7030	7036	6778	5803	6785	6933	4100	6607	6750	6525.4
Thiruppullani	4567	5926	6426	5156	4514	5278	5312	5492	5427	5150	5324.8
Uchipuli	2565	3463	2635	2790	2579	3016	3019	3678	2515	2831	2909.1
Sub Total	**14564**	**16419**	**16097**	**14724**	**12896**	**15079**	**15264**	**13270**	**14549**	**14731**	**14759.3**
Paramakudi	9257	12953	8148	8496	7079	8097	7498	7999	6184	8000	8371.1
Nainarkoil	9638	10422	10962	9719	8033	9254	8305	8042	9510	9200	9308.5
Bogalur	6750	6750	5226	6069	5021	5784	5950	4998	6318	6270	5913.6
Sub Total	**25645**	**30125**	**24336**	**24284**	**20133**	**23135**	**21753**	**21039**	**22012**	**23470**	**23593.2**
Thiruvadanai	20446	23118	23142	22975	22732	22400	22204	22139	23112	22748	22501.6
R.S. Mangalam	21770	23223	16747	16638	16498	16250	17918	16485	19882	16600	18201.1
Sub Total	**42216**	**46341**	**39889**	**39613**	**39230**	**38650**	**40122**	**38624**	**42994**	**39348**	**40702.7**
Mudukulathur	22765	21809	21845	22138	21320	19888	20351	19344	17350	22254	20906.4
Kadaladi	14646	16148	15968	15621	15027	14457	15701	15414	17301	15300	15558.3
Sub Total	**37411**	**37957**	**37813**	**37759**	**36347**	**34345**	**36052**	**34758**	**34651**	**37554**	**36464.7**
Kamuthi	12565	13791	14209	13504	15671	13308	12961	13340	12401	12850	13460
Grand Total	**132401**	**144633**	**132344**	**129884**	**124277**	**124517**	**126152**	**121031**	**126607**	**127953**	**128979.9**

Source : Records of the Office of the Joint Director of Agriculture, Ramanathapuram

Table 4.2 Production of Paddy in Ramanathapuram District

(in tonnes)

Sl. No.	Name of the Block	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	Average
1	Ramanathapuram	13697	35565	32211	7598	17328	12966	14774	1205	22107	18225	17567.64
2	Thiruppullani	8417	29980	29418	5780	13479	10086	11320	1615	18159	13905	14215.8
3	Uchipuli	4727	17519	12063	3128	7701	5764	6433	1081	8415	7644	7447.541
	Sub Total	**26841**	**83064**	**73692**	**16506**	**38507**	**28816**	**32528**	**3901**	**48681**	**39774**	**39230.99**
4	Paramakudi	17061	65529	37302	9524	21138	15473	15978	2352	20692	21600	22664.83
5	Nainarkoil	17763	52725	50184	10895	23987	17684	17698	2364	31820	24840	24996.05
6	Bogalur	12440	34148	23925	6803	14993	11053	12679	1469	21140	16929	15558.03
	Sub Total	**47264**	**152402**	**111410**	**27222**	**60117**	**44211**	**46356**	**6185**	**73652**	**63369**	**63218.91**
7	Thiruvadanai	37682	116954	105944	25755	67878	42806	47317	6509	77333	61420	58959.71
8	R.S. Mangalam	40122	117485	76668	18651	49263	31054	38183	4847	66525	44820	48761.8
	Sub Total	**77804**	**234439**	**182612**	**44406**	**117141**	**73860**	**85500**	**11355**	**143858**	**106240**	**107721.5**
9	Mudukulathur	41956	110332	100006	24817	63662	38006	43368	5687	58053	60086	54597.22
10	Kadaladi	26993	81693	73102	17511	44871	27627	33459	4532	57889	41310	40898.56
	Sub Total	**68948**	**192024**	**173108**	**42328**	**108532**	**65633**	**76827**	**10219**	**115942**	**101396**	**95495.78**
11	Kamuthi	23157	69769	65049	15138	46794	25432	27620	3922	41494	34695	35306.85
	Grand Total	**244015**	**731698**	**605871**	**145600**	**371091**	**237952**	**268830**	**35583**	**423627**	**345473**	**340974**

(Source : Records of the Office of the Joint Director of Agriculture, Ramanathapuram

Table 4.3 Area under Millets in Ramanathapuram District

(Hectares)

Sl. No.	Block	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	Average
1	Ramanathapuram	92	46	85	70	82	137	129	96	60	60	85.7
2	Thiruppullani	127	77	42	41	110	204	187	165	110	110	117.3
3	Uchipuli	36	15	40	16	36	63	67	63	30	30	39.6
	Sub Total	**255**	**138**	**167**	**127**	**228**	**404**	**383**	**324**	**200**	**200**	**242.6**
4	Paramakudi	304	349	250	167	213	266	290	560	350	350	309.9
5	Nainarkoil	152	273	81	70	70	132	184	436	520	520	243.8
6	Bogalur	302	375	119	110	114	197	221	263	120	120	194.1
	Sub Total	**758**	**997**	**450**	**347**	**397**	**595**	**695**	**1259**	**990**	**990**	**747.8**
7	Thiruvadanai	29	35	20	7	7	7	9	160	17	17	30.8
8	R.S. Mangalam	36	28	14	8	8	12	16	300	95	95	61.2
	Sub Total	**65**	**63**	**34**	**15**	**15**	**19**	**25**	**460**	**112**	**112**	**92**
9	Mudukulathur	652	618	376	327	234	441	328	1171	1250	1250	664.7
10	Kadaladi	508	534	478	346	364	432	436	736	710	710	525.4
	Sub Total	**1160**	**1152**	**854**	**673**	**598**	**873**	**764**	**1907**	**1960**	**1960**	**1190.1**
11	Kamuthi	2467	2465	3719	2006	2561	1800	2020	2873	3742	3734	2738.7
	Grand Total	**4705**	**4815**	**5224**	**3168**	**3799**	**3691**	**3887**	**6823**	**7004**	**6996**	**5011.2**

(Source : Records of the Office of the Joint Director of Agriculture, Ramanathapuram

Table 4.4 Production of Millets in Ramanathapuram District

(in tonnes)

Sl. No.	Name of the Block	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	Average
1	Ramanathapuram	112	55	108	63	75	128	98	25	71	58	79.36
2	Thiruppullani	155	92	54	37	101	190	142	43	131	106	105.01
3	Uchipuli	44	18	51	14	33	59	51	16	36	29	35.09
	Sub Total	**311**	**164**	**213**	**114**	**210**	**376**	**292**	**85**	**238**	**192**	**219.45**
4	Paramakudi	370	415	319	150	196	248	221	146	417	336	281.82
5	Nainarkoil	185	325	103	63	64	123	140	114	619	499	223.61
6	Bogalur	368	446	152	99	105	183	168	69	143	115	184.83
	Sub Total	**923**	**1186**	**574**	**312**	**365**	**554**	**530**	**329**	**1179**	**950**	**690.26**
7	Thiruvadanai	35	42	26	6	6	7	7	42	20	16	20.69
8	R.S. Mangalam	44	33	18	7	7	11	12	78	113	91	41.56
	Sub Total	**79**	**75**	**43**	**14**	**14**	**18**	**19**	**120**	**133**	**108**	**62.25**
9	Mudukulathur	794	735	479	294	215	411	250	306	1489	1200	617.34
10	Kadaladi	619	635	609	311	335	402	332	192	846	682	496.37
	Sub Total	**1413**	**1371**	**1089**	**606**	**550**	**813**	**582**	**498**	**2334**	**1882**	**1113.71**
11	Kamuthi	3005	2933	4742	1805	2356	1676	1539	750	4457	3585	2684.77
	Grand Total	**5731**	**5730**	**6661**	**2851**	**3495**	**3436**	**2962**	**1781**	**8342**	**6716**	**4770.44**

Source : Records of the Office of the Joint Director of Agriculture, Ramanathapuram

4.1.3 Pulses

Details of area and production of pulses are presented in Tables 4.5 and 4.6. It could be noticed from the tables that total area under pulses had been stabilized at 2300 to 3700 hectares during 1996-97 to 2004-05. Block wise analysis showed that Mudukulathur and Kadaladi were the two major pulses growing blocks of the district followed by Ramanathapuram, Thirupullani and Uchipuli. Production of pulses had been hovering around 1600 to 1800 tonnes with the exception of 2003-2004 when it went down to 600 tonnes. This shows the need for intervention for increasing/stabilizing pulses production in the district.

4.1.4 Oilseeds

Details of area and production of oilseeds are presented in Tables 4.7 and 4.8. It could be noticed from the tables that total area under the crops had stabilized around 8500 to 9000 hectares during 1996-97 to 2002-03 and thereafter increased to 14660 hectares in the next year. Block wise analysis showed that Paramakudi, Nainarkoil and Bogalur were the three major oilseeds growing blocks of the district followed by Mudukulathur and Kadaladi. In spite of almost stabilized area of the crops, production of oilseeds had been oscillating between 11079 tonnes and 2786 tonnes. There is a need to introduce and popularize yield increasing dry land technology for these crops.

4.1.5 Cotton

Details of area and production of cotton are presented in Tables 4.9 and 4.10. It could be noticed from the tables that total area under the crop had been fluctuating between 1529 hectares and 6834 hectares during 1996-97 to 2005-06. Block wise analysis showed that Mudukulathur and Kadaladi.were the two major cotton growing blocks of the district followed by Paramakudi, Nainarkoil and Pogalur.In line with area of the crop, production of cotton was also unstable reaching the minimum of 3972 bales in 2003-04 to the maximum of 13668 bales in 200-01.

Table 4.5 Area under Pulses in Ramnathapuram District

(in hectares)

Sl. No.	Name of the Block	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	Average
1	Ramanathapuram	70	10	17	130	4	77	32	36	66	97	53.90
2	Thiruppullani	156	79	21	38	3	25	89	112	225	161	90.90
3	Uchipuli	72	158	92	90	0	114	124	262	140	127	117.90
	Sub Total	**298**	**247**	**130**	**258**	**7**	**216**	**245**	**410**	**431**	**385**	**262.70**
4	Paramakudi	31	56	19	14	13	16	21	76	74	48	36.80
5	Nainarkoil	16	18	7	11	7	3	5	78	56	18	21.90
6	Bogalur	19	22	14	8	18	17	20	46	127	40	33.10
	Sub Total	**66**	**96**	**40**	**33**	**38**	**36**	**46**	**200**	**257**	**106**	**91.80**
7	Thiruvadanai	14	5	0	4	1	62	2	156	76	162	48.20
8	R.S. Mangalam	18	10	0	11	1	62	2	214	1	126	44.50
	Sub Total	**32**	**15**	**0**	**15**	**2**	**124**	**4**	**370**	**77**	**288**	**92.70**
9	Mudukulathur	194	173	113	113	94	104	104	334	230	240	169.90
10	Kadaladi	474	578	398	311	357	305	377	626	682	485	459.30
	Sub Total	**668**	**751**	**511**	**424**	**451**	**409**	**481**	**960**	**912**	**725**	**629.20**
11	Kamuthi	2672	2492	2357	1984	1939	1590	1569	1997	1378	2620	2059.80
	Grand Total	**3736**	**3601**	**3038**	**2714**	**2437**	**2375**	**2345**	**3937**	**3055**	**4124**	**3136.20**

Source : Records of the Office of the Joint Director of Agriculture, Ramanathapuram

Table 4.6 Production of Pulses in Ramanathapuram District

(in tonnes)

Sl. No.	Name of the Block	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	Average
1	Ramanathapuram	70	10	17	130	4	77	32	36	66	97	53.90
2	Thiruppullani	156	79	21	38	3	25	89	112	225	161	90.90
3	Uchipuli	72	158	92	90	0	114	124	262	140	127	117.90
	Sub Total	**298**	**247**	**130**	**258**	**7**	**216**	**245**	**410**	**431**	**385**	**262.70**
4	Paramakudi	31	56	19	14	13	16	21	76	74	48	36.80
5	Nainarkoil	16	18	7	11	7	3	5	78	56	18	21.90
6	Bogalur	19	22	14	8	18	17	20	46	127	40	33.10
	Sub Total	**66**	**96**	**40**	**33**	**38**	**36**	**46**	**200**	**257**	**106**	**91.80**
7	Thiruvadanai	14	5	0	4	1	62	2	156	76	162	48.20
8	R.S. Mangalam	18	10	0	11	1	62	2	214	1	126	44.50
	Sub Total	**32**	**15**	**0**	**15**	**2**	**124**	**4**	**370**	**77**	**288**	**92.70**
9	Mudukulathur	194	173	113	113	94	104	104	334	230	240	169.90
10	Kadaladi	474	578	398	311	357	305	377	626	682	485	459.30
	Sub Total	**668**	**751**	**511**	**424**	**451**	**409**	**481**	**960**	**912**	**725**	**629.20**
11	Kamuthi	2672	2492	2357	1984	1939	1590	1569	1997	1378	2620	2059.80
	Grand Total	**3736**	**3601**	**3038**	**2714**	**2437**	**2375**	**2345**	**3937**	**3055**	**4124**	**3136.20**

Source : Records of the Office of the Joint Director of Agriculture, Ramanathapuram

Table 4.7 Area under Oilseeds in Ramnathapuram District

(in Hectares)

Sl. No.	Name of the Block	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	Average
1	Ramanathapuram	244	174	323	245	305	425	261	412	503	480	337.20
2	Thiruppullani	545	277	589	401	678	692	641	838	714	625	600.00
3	Uchipuli	235	211	168	131	170	220	430	463	125	120	227.30
	Sub Total	**1024**	**662**	**1080**	**777**	**1153**	**1337**	**1332**	**1713**	**1342**	**1225**	**1164.50**
4	Paramakudi	490	497	534	465	445	548	457	416	693	540	508.50
5	Nainarkoil	1046	874	944	893	857	1058	1135	1224	1284	1055	1037.00
6	Bogalur	1143	676	1075	1235	1195	1088	914	1550	1001	1062	1093.90
	Sub Total	**2679**	**2047**	**2553**	**2593**	**2497**	**2694**	**2506**	**3190**	**2978**	**2657**	**2639.40**
7	Thiruvadanai	53	33	32	27	26	92	31	1588	148	162	219.20
8	R.S. Mangalam	181	57	160	74	70	104	34	2174	7	388	324.90
	Sub Total	**234**	**90**	**192**	**101**	**96**	**196**	**65**	**3762**	**155**	**550**	**544.10**
9	Mudukulathur	261	73	48	76	101	355	71	157	98	87	132.70
10	Kadaladi	1643	1534	1740	1973	1953	1940	2177	3079	2901	2334	2127.40
	Sub Total	**1904**	**1607**	**1788**	**2049**	**2054**	**2295**	**2248**	**3236**	**2999**	**2421**	**2260.10**
11	Kamuthi	2514	2714	2794	2639	2472	2672	2286	2761	2930	2492	2627.40
	Grand Total	**8355**	**7120**	**8407**	**8159**	**8272**	**9194**	**8437**	**14662**	**10404**	**9345**	**9235.50**

Source : Records of the Office of the Joint Director of Agriculture, Ramanathapuram

Table 4.8 Production of Oilseeds in Ramanathapuram District

(in tonnes)

Sl. No.	Name of the Block	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	Average
1	Ramanathapuram	244	169	401	230	336	512	110	78	1063	449	359.18
2	Thiruppullani	545	269	732	377	746	834	269	159	1509	584	602.39
3	Uchipuli	235	205	209	123	187	265	181	88	264	112	186.89
	Sub Total	**1024**	**643**	**1341**	**730**	**1268**	**1611**	**559**	**325**	**2836**	**1145**	**1148.45**
4	Paramakudi	490	483	663	437	490	660	192	79	1464	505	546.34
5	Nainarkoil	1046	850	1172	839	943	1275	477	233	2713	986	1053.38
6	Bogalur	1143	657	1335	1161	1315	1311	384	295	2115	993	1070.81
	Sub Total	**2679**	**1990**	**3171**	**2437**	**2747**	**3246**	**1053**	**606**	**6293**	**2484**	**2670.53**
7	Thiruvadanai	53	32	40	25	29	111	13	302	313	151	106.86
8	R.S. Mangalam	181	55	199	70	77	125	14	413	15	363	151.19
	Sub Total	**234**	**87**	**238**	**95**	**106**	**236**	**27**	**715**	**328**	**514**	**258.05**
9	Mudukulathur	261	71	60	71	111	428	30	30	207	81	135.00
10	Kadaladi	1643	1491	2161	1855	2148	2338	914	585	6130	2182	2144.72
	Sub Total	**1904**	**1562**	**2221**	**1926**	**2259**	**2765**	**944**	**615**	**6337**	**2264**	**2279.72**
11	Kamuthi	2514	2638	3470	2481	2719	3220	960	525	6191	2330	2704.76
	Grand Total	**8355**	**6921**	**10441**	**7669**	**9099**	**11079**	**3544**	**2786**	**21984**	**8738**	**9061.51**

Source : Records of the Office of the Joint Director of Agriculture, Ramanathapuram

Table 4.9 Area under Cotton in Ramnathapuram District

(in Hectares)

Sl. No.	Name of the Block	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	Average
1	Ramanathapuram	4	8	255	14	114	32	14	8	25	22	49.60
2	Thiruppullani	6	7	198	16	91	34	17	32	142	55	59.80
3	Uchipuli	0	0	0	0	0	0	0	0	0	0	0.00
	Sub Total	**10**	**15**	**453**	**30**	**205**	**66**	**31**	**40**	**167**	**77**	**109.40**
4	Paramakudi	162	176	107	59	609	506	82	82	924	910	361.70
5	Nainarkoil	84	98	1218	88	915	759	14	231	294	740	444.10
6	Bogalur	152	151	0	171	269	222	64	264	391	261	194.50
	Sub Total	**398**	**425**	**1325**	**318**	**1793**	**1487**	**160**	**577**	**1609**	**1911**	**1000.30**
7	Thiruvadanai	6	2	56	11	119	118	5	18	66	5	40.60
8	R.S. Mangalam	19	6	56	22	208	198	7	42	27	295	88.00
	Sub Total	**25**	**8**	**112**	**33**	**327**	**316**	**12**	**60**	**93**	**300**	**128.60**
9	Mudukulathur	168	391	573	849	1707	1361	302	1195	1658	1384	958.80
10	Kadaladi	36	63	169	82	315	66	41	158	76	153	115.90
	Sub Total	**204**	**454**	**742**	**931**	**2022**	**1427**	**343**	**1353**	**1734**	**1537**	**1074.70**
11	Kamuthi	1539	1471	1540	1192	2487	1119	983	1280	1810	1600	1502.10
	Grand Total	**2176**	**2373**	**4172**	**2504**	**6834**	**4415**	**1529**	**3310**	**5413**	**5425**	**3815.10**

Source : Records of the Office of the Joint Director of Agriculture, Ramanathapuram

Table 4.10 Production of Cotton in Ramanathapuram District

(in bales)

Sl. No.	Name of the Block	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	Average
1	Ramanathapuram	10	21	668	25	228	86	52	10	60	36	119.55
2	Thiruppullani	15	18	519	29	182	92	63	38	341	89	138.56
3	Uchipuli	0	0	0	0	0	0	0	0	0	0	0.00
	Sub Total	**25**	**39**	**1187**	**54**	**410**	**178**	**115**	**48**	**401**	**125**	**258.11**
4	Paramakudi	405	458	280	106	1218	1366	303	98	2218	1471	792.42
5	Nainarkoil	210	255	3191	158	1830	2049	52	277	706	1197	992.48
6	Bogalur	380	393	0	308	538	599	237	317	938	422	413.18
	Sub Total	**995**	**1105**	**3472**	**572**	**3586**	**4015**	**592**	**692**	**3862**	**3090**	**2198.09**
7	Thiruvadanai	15	5	147	20	238	319	19	22	158	8	94.99
8	R.S. Mangalam	48	16	147	40	416	535	26	50	65	477	181.81
	Sub Total	**63**	**21**	**293**	**59**	**654**	**853**	**44**	**72**	**223**	**485**	**276.80**
9	Mudukulathur	420	1017	1501	1528	3414	3675	1117	1434	3979	2238	2032.33
10	Kadaladi	90	164	443	148	630	178	152	190	182	247	242.35
	Sub Total	**510**	**1180**	**1944**	**1676**	**4044**	**3853**	**1269**	**1624**	**4162**	**2485**	**2274.68**
11	Kamuthi	3848	3825	4035	2146	4974	3021	3637	1536	4344	2587	3395.21
	Grand Total	**5440**	**6170**	**10931**	**4507**	**13668**	**11921**	**5657**	**3972**	**12991**	**8772**	**8402.89**

Source : Records of the Office of the Joint Director of Agriculture, Ramanathapuram

4.1.6 Sugarcane

Details of area and production of sugarcane are presented in Tables 4.11 and 4.12. It could be noticed from the tables that average area under the crop was 385.60 hectares. It varied from 183 hectares in 1997-98 to 685 hectares in 2002-03. Block wise analysis showed that Paramakudi, Nainarkoil and Pogalur were the three major sugarcane growing blocks of the district. Production of sugarcane has increased from 38 thousand tonnes in 1996-97 to 85,625 tonnes in 2002-03 and after that the production declined to 34 thousand tonnes in 2005-06.

4.1.7 Coconut

Details of area and production of coconut are presented in Tables 4.13 and 4.14. It could be noticed from the tables that total area under the crop has been steadily increasing from 6823 hectares in 1997-97 to 8600 hectares in 2005-06. Block wise analysis showed that Ramanathapuram, Thirupullani and Uchipuli were the three major coconut growing blocks of the district followed by Mudukulathur and Kadaladi. Coconut production has been stabilized at 1035 tonnes.

Table 4.11 Area under Sugacane in Ramnathapuram District

(in Hectares)

Sl. No.	Name of the Block	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	Aveage
1	Ramanathapuram	2	2	0	0	0	0	3	4	4	9	2.40
2	Thiruppullani	7	0	0	0	0	0	0	0	0	0	0.70
3	Uchipuli	0	0	0	0	0	0	0	0	0	0	0.00
	Sub Total	**9**	**2**	**0**	**0**	**0**	**0**	**3**	**4**	**4**	**9**	**3.10**
4	Paramakudi	80	112	24	97	99	124	125	91	27	72	85.10
5	Nainarkoil	12	0	18	27	28	35	104	82	21	28	35.50
6	Bogalur	82	0	86	60	60	75	98	37	22	60	58.00
	Sub Total	**174**	**112**	**128**	**184**	**187**	**234**	**327**	**210**	**70**	**160**	**178.60**
7	Thiruvadanai	4	0	0	0	0	19	20	21	9	12	8.50
8	R.S. Mangalam	0	5	0	1	0	0	0	0	2	0	0.80
	Sub Total	**4**	**5**	**0**	**1**	**0**	**19**	**20**	**21**	**11**	**12**	**9.30**
9	Mudukulathur	0	0	0	0	0	0	19	1	0	0	2.00
10	Kadaladi	0	0	0	0	0	0	0	0	0	0	0.00
	Sub Total	**0**	**0**	**0**	**0**	**0**	**0**	**19**	**1**	**0**	**0**	**2.00**
11	Kamuthi	117	64	122	182	262	344	316	219	175	125	192.60
	Grand Total	**304**	**183**	**250**	**367**	**449**	**597**	**685**	**455**	**260**	**306**	**385.60**

Source : Records of the Office of the Joint Director of Agriculture, Ramanathapuram

Table 4.12 Production of Sugarcane

(in tonnes)

Sl. No.	Name of the Block	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	Average
1	Ramanathapuram	0.25	0.25	0	0	0	0	0.396	0.38	0.54	1	0.00
2	Thiruppullani	0.875	0	0	0	0	0	0	0	0	0	0.00
3	Uchipuli	0	0	0	0	0	0	0	0	0	0	0.00
	Sub Total	1.125	0.25	0	**0**	**0**	**0**	**0.396**	**0.54**	**0.54**	**1**	**0.00**
4	Paramakudi	10	14	3	12.125	12.375	15.5	15.625	11.375	3.64	7.92	10.56
5	Nainarkoil	1.5	0	2.25	3.375	3.5	4.375	13	10.25	2.83	308	34.91
6	Bogalur	10.25	0	10.75	7.5	7.5	9.375	12.25	4.625	2.97	6.6	7.18
	Sub Total	21.75	14	16	23	23.375	29.25	40.875	26.25	**0.0944**	**17.6**	**21.22**
7	Thiruvadanai	0.5	0	0	0	0	2.375	2.5	2.625	1.21	1.32	1.05
8	R.S. Mangalam	0	0.625	0	0.125	0	0	0	0	0.27	0	0.10
	Sub Total	0.5	0.625	0	0.125	0	2.375	2.5	2.625	**1.48**	**1.32**	**1.16**
9	Mudukulathur	0	0	0	0	0	0	2.375	0.125	0	0	0.25
10	Kadaladi	0	0	0	0	0	0	0	0	0	0	0.00
	Sub Total	0	0	0	0	0	0	2.375	0.125	**0**	**0**	**0.25**
11	Kamuthi	14.625	8	15.25	22.75	32.75	43	39.5	27.375	23.62	13.75	24.06
	Grand Total	38	22.875	31.25	45.875	56.125	74.625	85.625	56.875	**35.34**	**33.66**	**48.03**

Table 4.13 Area under Coconut in Ramanathapuram District

(in Hectares)

Sl. No.	Name of the Block	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	Average
1	Ramanathapuram	348	356	659	957	1013	1026	1102	1126	1040	1055	868.20
2	Thiruppullani	2916	2918	2984	2234	2364	2395	2402	2445	2604	2668	2593.00
3	Uchipuli	2334	2367	2664	3194	3406	3472	3538	3539	3520	3570	3160.40
	Sub Total	**5598**	**5641**	**6307**	**6385**	**6783**	**6893**	**7042**	**7110**	**7164**	**7293**	**6621.60**
4	Paramakudi	9	12	21	15	15	20	49	49	60	60	31.00
5	Nainarkoil	21	24	12	24	24	26	40	40	42	42	29.50
6	Bogalur	29	39	42	37	0	0	26	26	27	27	25.30
	Sub Total	**59**	**75**	**75**	**76**	**39**	**46**	**115**	**115**	**129**	**129**	**85.80**
7	Thiruvadanai	196	126	126	177	201	201	201	201	201	201	183.10
8	R.S. Mangalam	336	331	331	218	247	247	247	247	247	247	269.80
	Sub Total	**532**	**457**	**457**	**395**	**448**	**448**	**448**	**448**	**448**	**448**	**452.90**
9	Mudukulathur	13	15	25	24	23	23	18	20	67	67	29.50
10	Kadaladi	590	593	573	598	598	641	641	588	608	608	603.80
	Sub Total	**603**	**608**	**598**	**622**	**621**	**664**	**659**	**608**	**675**	**675**	**633.30**
11	Kamuthi	31	33	45	50	51	60	67	62	56	56	51.10
	Grand Total	**6823**	**6814**	**7482**	**7528**	**7942**	**8111**	**8331**	**8343**	**8472**	**8601**	**7844.70**

Source : Records of the Office of the Joint Director of Agriculture, Ramanathapuram

Table 4.14 Production of Coconut in Ramanathapuram District

(in tonnes)

Sl. No.	Name of the Block	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	Average
1	Ramanathapuram	43.152	50.2672	98.30962	114.2658	143.238	131.33	133.342	130.188	155.064	138.469	113.76
2	Thiruppullani	361.584	412.022	445.1531	266.7396	334.27	306.56	290.642	282.691	388.256	350.175	343.81
3	Uchipuli	289.416	334.22	397.4155	381.3636	481.608	444.42	428.098	409.179	524.832	468.563	415.91
	Sub Total	**694.152**	**796.509**	**940.8783**	**762.369**	**959.116**	**882.3**	**852.082**	**822.058**	**1068.15**	**957.206**	**873.48**
4	Paramakudi	1.116	1.6944	3.13278	1.791	2.121	2.56	5.929	5.66538	8.946	7.875	4.08
5	Nainarkoil	2.604	3.3888	1.79016	2.8656	3.3936	3.328	4.84	4.6248	6.2622	5.513	3.86
6	Bogalur	3.596	5.5068	6.26556	4.4178	0	0	3.146	3.00612	4.0257	3.544	3.35
	Sub Total	**7.316**	**10.59**	**11.1885**	**9.0744**	**5.5146**	**5.888**	**13.915**	**13.2963**	**19.2339**	**16.931**	**11.29**
7	Thiruvadanai	24.304	17.7912	18.79668	21.1338	28.4214	25.728	24.321	23.2396	29.9691	26.381	24.01
8	R.S. Mangalam	41.664	46.7372	49.37858	26.0292	34.9258	31.616	29.887	28.5581	36.8277	32.419	35.80
	Sub Total	**65.968**	**64.5284**	**68.17526**	**47.163**	**63.3472**	**57.344**	**54.208**	**51.7978**	**66.7968**	**58.800**	**59.81**
9	Mudukulathur	1.612	2.118	3.7295	2.8656	3.2522	2.944	2.178	2.3124	9.9897	8.794	3.98
10	Kadaladi	73.16	83.7316	85.48014	71.4012	84.5572	82.048	77.561	67.9846	90.6528	79.800	79.64
	Sub Total	**74.772**	**85.8496**	**89.20964**	**74.2668**	**87.8094**	**84.992**	**79.739**	**70.297**	**100.643**	**88.594**	**83.62**
11	Kamuthi	3.844	4.6596	6.7131	5.97	7.2114	7.68	8.107	7.16844	8.3496	7.350	6.71
	Grand Total	**846.052**	**962.137**	**1116.165**	**898.8432**	**1123**	**1038.2**	**1008.051**	**964.618**	**1263.18**	**1128.881**	**1034.91**

Source : Records of the Office of the Joint Director of Agriculture, Ramanathapuram

4.2 On going schemes implemented by the Department of Agriculture in Ramanathapuram District (2007-08)

State Department of Agriculture in collaboration with the Ministry of Agriculture, Government of India has implemented several schemes like Integrated Scheme for Oilseeds, Pulses, Oil Palm and Maize (ISOPOM), Technology Mission Mode Scheme, Macro Management Mode Scheme and Coconut Development Board Schemes with a sanctioned amount of Rs. 59.602 lakhs. Apart from the above schemes, State Department alone has implemented Part I and Part II schemes to the tune of Rs. 86.98 lakhs both adding to Rs.146.58 lakhs. Financial achievements of all these schemes for the period ending 31.03.2008 were above 99 percent except the Coconut Development Board Schemes where it was only 72 per cent. Details on the physical and financial achievements of the revised estimates under individual schemes is presented in the annexure.

4.3 On-going Schemes (2007-2009) implemented by Krishi Vigyan Kendra, Coastal Salinity Research Centre, Tamil Nadu Agricultural University, Ramanathapuram

Basic information on the agricultural sector of the district portrayed the predominance of crops such as paddy, millets, pulses, oilseeds and cotton besides sugarcane and coconut as discussed elsewhere. State department of agriculture and Tamil Nadu Agricultural University have implemented several schemes and programmes for the benefit of Ramanathapuram farmers. They are discussed below.

4.3.1 Names of the Schemes Implemented

1) Part II Plan – Precision Farming
2) NADP – Precision Farming
3) ICAR 50 crore grant Projects on

a. "Studies on principles of root-rhizosphere-water-nutrient management interactions of rice ecosystems in the context of drip and aerobic system".

b. "Developing a high yielding gundu type chilli variety suitable for rainfed areas of Ramnad and Sivangaga districts".

4) Mini portable sprinkler Irrigation system for the Coastal Sandy Soils of Tamil Nadu.

4.3.2 Duration of the Schemes

S.No	Schemes	Duration (year)
1.	Part II plan scheme-Precision farming	1 (2007-08)
2.	NADP-Precision Farming	1 (2008-09)
3.	"Studies on principles of root-rhizosphere-water-nutrient management interactions of rice ecosystems in the context of drip and aerobic system"	3 (2008-11)
4.	"Developing a high yielding gundu type chilli variety suitable for rainfed areas of Ramnad and Sivangaga districts"	3 (2008-11)
5.	Mini portable Sprinkler Irrigation system for the Coastal Sandy soils of Tamil Nadu	3 (2007-10)

4.3.3 Bottlenecks in the Implementation of the Scheme

4.3.3.1 Part II Plan-Precision Farming Scheme: (2007-08)

Financial constraints to get loan from the nationalized banks.

4.3.3.2 Mini Mobile Sprinkler: (2007-08) Nil

4.3.4 Productivity Gaps

S.No	Facilities	Gap
1.	Storage	No storage facilities at Ramasamypatti village
2.	Processing	No Processing facilities of chillies at village
3.	Market	Inadequate facilities

4.3.5 Note on Crop Varieties and their Performance

4.3.5.1 Crop: Paddy **Variety: RMD(R) 1**

Seed Distribution Details

Year	Quantity (Kg)	Type of seed	Purpose
2006-07	400	TFL	Research trails of FLD & OFT
2006-07	350	TFL	Rockfeller foundation scheme
2007-08	690	TFL	Seed Village Scheme
2007-08	350	TFL	Rockfeller foundation Scheme
2008-09	1500	TFL	To be distributed to the farmers

4.3.5.2 Development/Interventions needed and Identified

S.No	Crop	Problem	Interventions
1.	Brinjal	The color of the Mahyco hybrids of brinjal is the major constraint to market the produce.	Suitable hybrids will be suggested.
2.	Chillies	No processing industries	Processing industries on value addition of chillies
3.	Vegetable crops Tomato, Chilli, Brinjal & Fruit crops	Lack of cold storage facilities	Cold storage facilities can be introduced

State Department of Agriculture under the Directorate of Agriculture has implemented several schemes for the welfare of farmers raising paddy, millets, pulses (redgram, black gram and green gram), oilseeds (ground nut and gingelly) and cotton. In order to boost the yield of crops cultivated, mostly as rain fed, following interventions are considered to be worth

- quality seed supply,
- organic manuring,
- vermi compost production,
- supply of farm inputs like zinc sulphate, gypsum, bio fertilizers, micro nutrient mixtures and power tillers.

Besides, there is a need to train the farmers on modern technologies through village campaigns, audio visuals and to establish community structures like rural godowns, thrashing floors and drying yards. These activities would deliver the complete output in full spirit only when the harvested grains and products are protected from rain and shine. Hence the department officials have proposed supply of tarpaulins at subsidized rates to the farmers in need of them. Considering the importance of Farm Yard Manure in maintaining soil health, such interventions as popularizing preparation and application of enriched Farm Yard Manure to different rain fed crops of millets, pulses, oil seeds and cotton were also recommended.

All these activities are combined as the components of a separate proposal entitled, **"Dry Farming Technology for Rain fed Crops".** Ramanathapuram district has already grabbed its share towards establishing seed testing laboratory which is a State level endeavor to ensure supply of quality seeds to farmers of Tamil Nadu. Altogether the department has proposed the following schemes for implementation during the period 2008-2012.

- Increasing the production of rice in Ramanathapuram District.
- Increasing the production of millets in Ramanathapuram District
- Increasing the production of pulses in Ramanathapuram District
- Increasing the production of oil seeds in Ramanathapuram District
- Increasing the production of cotton in Ramanathapuram District
- Dry Farming Technology for Rain fed Crops

CHAPTER - V

ALLIED SECTORS

Activities of allied sectors of agricultural development such as horticulture, animal husbandry, fisheries, agricultural engineering, agricultural marketing and agribusiness, public works department (water resources organization) etc., and the possible interventions to foster agricultural growth to four percent are presented in the following section.

5.1.Horticulture

Among various components of horticulture sector, vegetable cultivation is given prime role keeping in view of the nutritional importance to the commons and ease of cultivation by the small and marginal farmers. At present, vegetable cultivation is being practiced in limited pockets of the district only. Enhancing the nutritional standards of diet taken by the people of district, needs expansion of vegetable cultivation in other parts of the district endowed with appropriate resources. But it has its limitations on account of presence of poor quality soil and availability of sub standard quality irrigated water in non-conventional areas. Hence, kindling the knowledge of farmers on

- Integrated Nutrition Management
- Integrated Pest Management Technologies;
- Offering supporting services like access to farm credit/subsidy for expenses to erect *pandal,* purchase of power sprayer and hand operated sprayers, plastic crates for handling and transport of harvested produce,
- tarpaulin to protect vegetable after harvest; and
- organizing training programmes, district level workshops and inter state exposure visit for the vegetable growers were considered as effective interventions.

As an attempt to utilise the funds under NADP to develop Mandapam block of the district, a proposal is prepared to promote betel vine cultivation. Betel vine comes up well

in this pocket owing to the suitability of soil type and availability of copious back water of Bay of Bengal/Gulf of *Mannar*. Quality of betel leaves grown in this block is renowned in many parts of the State, especially in the southern districts. But venturing into this, needs considerable investment on securing quality planting materials, frequent and timely plant protection measures and inter culture activities like stacking and supporting the twines. Hence, such interventions as

- land preparation,
- quality planting materials,
- plant protection, stacking and supporting to the betel vine at subsidized cost growers are suggested.

Thus two separate proposals on, "Increasing quality production in vegetables" and "Promotion of betel vine cultivation" are proposed under horticulture sector development.

5.2. Animal Husbandry

Live stock is yet another sector supporting agricultural development, particularly the livelihood of down trodden members of the society like small and marginal farmers and land less agricultural labourers. Presence of agricultural labourers and rural workers in the district tend to sustain the demand for live stock in the coming years too.

I. Base line Information regarding Livestock and Poultry Sector

❖ **Species wise Livestock Population of Ramanathapuram (2004)**

S. No.	Category	Population
1	Cattle	129360
2	Buffaloes	3469
3	Sheep	291672
4	Goats	283884
5	Pigs	2069
6	Rabbits	395
Poultry		
1	Fowls	506435

❖ **Average Production of Livestock Commodities (2004-2007)**

S. No.	Name of the commodity	Production
1	Cow milk in 000 tonnes	59.77
2	Buffaloe milk in 000 tonnes	6.55
3	Improved egg in lakh Nos.	2.08
4	Desi egg in lakh Nos.	85.32
5	Poultry meat in tonnes	-
6	Mutton in tonnes	195.36
7	Chevon in tonnes	454.85

❖ **Analysis of Production of Livestock Products (1998-2007)**

Commodity	Annual Compound growth rate in Per cent
Cow milk	-5.2
Buffalo milk	-23.92
Total Milk	-6.7
Desi egg	-3.96
Improved Egg	-24.25
Total Egg	-5.78
Total Meat	17.28

❖ **Demand and Supply of Green Fodder in Ramanathapuram District - (million tonnes per year)**

Type of fodder	Demand	Supply	Deficit	Deficit per cent
Dry Fodder	0.415	0.221	0.194	46.6
Green Fodder	1.3664	0.0703	1.2961	94.9

❖ **No. of Breed able Bovines (2004):**

Cattle : 54331

Buffaloes : 3469

❖ **No. of Artificial Insemination carried out (2007) : 14290**

II. SWOC Analysis

Dairy Sector

Strength

- Infrastructure with department of animal husbandry and Aavin. (63 insemination centers, 182 Dairy co-operative societies, and a milk chilling centre with 10,000 lit. capacity)

Weakness

- Low cattle and Buffalo Population
- Shortage of green and dry fodder
- Lack of sufficient manpower in the main service providing sector *viz.*,., animal husbandry department and Aavin. (out of 63 AI centers, 43 remain vacant, and in Aavin no staff in the crucial input services sector).

Opportunities

- Steady increase in demand for milk and milk products

Challenges

- Occurrence of major livestock diseases especially foot and mouth, which cause heavy morbidity in, crossbred cattle.
- Increasing cost of milk production due to steady increase in the prices of feed ingredients without proportionate increase in milk prices production.

Small Ruminants

Strength

- Good sheep and goat population (2.91 lakh sheep and 2.83 lakh goats)
- Vast availability of land area especially cultivable waste lands and fallow lands that can be exploited for sheep and goat grazing.

Weakness

- Poor quality of grazing lands with almost negligible nutritious leguminous grasses
- Poor awareness among sheep and goat farmers about scientific feeding and management
- Lack of sufficient field level manpower in animal husbandry department, which hinders effective disease control measures like periodical deworming and vaccination.

Opportunities

- Increasing demand for and chevon and mutton
- Increasing peoples interest in sheep & goat rearing which is reflected by steady increase in their population

Challenges

- Frequent occurrence of killer disease especially PPR, Sheep pox and Blue tongue.
- Lack of availability of sufficient quantity of blue tongue vaccine.

Poultry Sector

Strength

- Favourable climate – hot & dry weather
- Vast availability of land

Weakness

- Higher capital requirement for establishing commercial broiler / layer units.
- Lack of awareness

Opportunities

- Very High demand for chicken meat
- Promotion of broiler integration by private hatcheries

Challenges

- Fluctuating prices of egg & chicken meat due to fear of bird flu.

5.2.1. On going Government Schemes

S. No.	Name of the Scheme	Major Activities	Remarks
1	KPT (Kalnadai Pathukappu Thittam)	Vaccination, Deworming, General treatment, AI and prize distribution to selected crossbred heifer calves	Sponsored by Government of TN
2	ASCAD	Vaccination (PPR/BQ and FMD)	Free PPR, BQ and FMD vaccines are supplied to dispensaries

IV. Intervention required Areas

- Feed and fodder development
- Improvement of livestock health
- Strengthening Infertility
- Processing facilities
- Extension facilities
- Genetic up gradation
- Disaster management system during natural calamities

5.2.2 Fisheries Sector

I. Baseline Information

- Inland fishery resource - 281 season tanks (22687ha) and 225 non seasonal tanks (17049ha). Coastal length- 237 Km
- 184 coastal fishing villages
- Marine fish production was 77,311 tonnes (2005-06)
- Major marine fisheries activities - Rameswaram, Pamban, Mandabam, Thondi, Soliyakudi, Keelakarai, Ervadi & Valinokam
- Mechanised boats – 1700; Motorised Vallam-1820; Traditional crafts - 3477 (2005-06)
- 520 ha brackish water resources available
    - fish markets - Rameswaram, Pampan, Mandapam, Thondi, Soliyakudi, Tevipattinam, Uppor, Keelakarai, Ervadi, Munthal, Valinokkam & Roachmanagar
- Great scope for development of Brackish water shrimp / fish farming
- Three private processing plants – at Mandapam and Ramanathapuram.
- 82 private shrimp farms with a water spread area of 257. ha.
- The average annual shrimp production was 400 tonnes.
- One government shrimp farm (11 ha) located at Karangadu
- Shallow continental shelf offers scope for mariculture activities.
- Seaweed farming is picking up
- Gulf of Mannar –one of the unique biotopes of the world, offers rich marine bio-diversity
- Declared Marine National park in Gulf of Mannar area
- Existence of fisheries training centre at Mandapam
- Availability of Regional Centre at CMFRI

Strength

- Fishermen cooperative societies & 95 fisherwomen cooperative societies
- Major marine fisheries activities - Rameswaram, Pamban, Mandabam, Thondi, Sayalkudi, Keelakarai, Ervadi & Valinokam
- Great scope for development of Brackish water Shrimp / Fish farming
- Three private processing plants - Mandapam and Ramanathapuram.
- 82 private shrimp farms with a water spread area of 257. ha.
- Seaweed farming is picking up
- Gulf of Mannar –one of the unique biotopes of the world, Offers rich Marine Bio-diversity
- Declared Marine National park in Gulf of Mannar area
- Existence of fisheries training centre at Mandapam

Weakness

- Over fishing pressure in the limited inshore waters. No scope for offshore fishing diversification.
- Frequent incidence of INBL crossing by fishermen results apprehension and shooting by Sri Lankan Navy
- Lack of berthing facilities
- Lack of post harvest infrastructure facilities like cold storage/ fish processing and marketing.
- Less scope for inland fisheries activities since most of the water bodies are shorts seasonal and rain fed.

Opportunities

- Coastal aquaculture *viz.,.,* shrimp farming, lobster fattening, crab fattening and seaweed culture could be encouraged among the fisher folk.
- Composite fish culture in community ponds could be encouraged at rural level to utilize the tanks, increase fish consumption and improve rural economy.
- In the coastal aquaculture, lobster fattening, crab fattening and sea weed can be undertaken for which technical expertise can be developed among the fishermen population

Challenges

- Investment for coastal aquaculture practices by fisherfolk is a problem.

5.2.3. On going Government Development Schemes

Schemes pertaining to Marine Fisheries Development

- Supply of Out Board Motors / In Board Engines and Nets
- National Fishermen and fisherwomen savings – cum relief scheme
- Group Accident Insurance scheme
- Free housing scheme
- Reimbursement of Central excise duty on High Speed Diesel oil
- Link roads and street Lights – Infrastructure developing
- Sodium vapour lamps to fish landing centres
- Community halls and tube wells disbursement of Tsunami Relief to damaged crafts
- Assistance to states for developing export infrastructure & allied activities (ASIDE) – schemes.
- The Department of Fisheries have proposed construction of fishing harbour at Rameshwaram under Tsunami Emergency Reconstruction Project.

Schemes pertaining to Inland Fisheries Development

- Fishermen Group Accidental Insurance – (Central scheme)
- Fishermen savings – cum Relief scheme
- Anna Marumalarichi Thittam – All Villages
- IAMWARM –
- Fisheries Development Minor programme – popularization of scampi culture
- Interior inland fish culture & marketing schemes.

5.2.4. Intervention required Areas

- Mariculture activities like cage culture of marine fin fishes and seaweed culture
- Development of Integrated Model for Coastal Aquaculture at Karangadu.
- Stock enhancement of marine aquatic species by sea ranching & deployment of artificial reefs
- Infrastructure development for modern marketing facilities at Uppoor and Ervadi
- Extending support for retail fish marketing by subsidy assistance
- Capacity building.

5.3 Agricultural Marketing and Agribusiness

Current agricultural marketing and agribusiness system in the State is the outcome of several years of Government intervention. The system has undergone several changes during the last 50 years owing to the increased marketed surplus; increase in urbanization and income levels and consequent changes in the pattern of demand for marketing services; increase in linkages with distant and overseas markets; and changes in the form and degree of government intervention. An important characteristic of agricultural produce markets in Tamil Nadu has been that private trade has continued to dominate the market. With the large quantities required to be handled by the private trade, the size and structure of markets over time have considerably expanded. There are a large number of wholesalers and retailers to handle the trade in food grains. Apart from traders, processors also play an important role as they also enter in the market as bulk buyers and sellers.

Past interventions to improve technology, infrastructure and access to credit and markets had modest impact on growth of the sector. The policy assumption that more funds and subsidies will lead to the desired results has proved to be incorrect. Steps for ensuring coordination within each value chain have not been recognized. In spite of subsidies, progress has been slow with few effective value chains emerging and few stakeholders investing in market infrastructure such as the cooperative sector in Bangalore. The capacity of individuals, groups and service providers to understand and practice value chain principles and management remains low.

For growth to accelerate substantially, a new way of thinking about agribusiness development in Tamil Nadu and promoting agribusiness is needed. This new way, and the related business practices that go with it, implies overcoming significant coordination failures. This requires appropriate institutional mechanisms that currently do not exist within current policy setting.

Considering the current marketing system in the district, marketing behaviour of farmer producers and traders and failures experienced in implementation of past schemes, following intervention strategies were identified for the department of agricultural marketing and agribusiness.

- Establishment/ organization of commodity groups for marketing in the State
- Facilitation of Contract Farming between farmers and bulk buyers in the State
- Dissemination of Market intelligence
- Arrangement of Buyers - Sellers Meet
- Organizing the exposure visits to important markets within the State and out side the State by commodity groups / farmers and extension functionaries.
- Strengthening of market extension centre at each district/ block level for capacity building and dissemination of marketing information.
- Capacity building of farmer's skill
- Price surveillance
- Regulated Market / Uzhavar Shandies Publicity
- Market Infrastructure

5.4 Water Resources Organisation /PWD

Increasing the Agricultural Production of the Ramanathapuram District is an important objective. The surface water is the main input and the potential of the surface water plays a vital role not only for drinking water but also for irrigation and other purposes. Due to poor rainfall , the ground water potential is reduced to greater extent for

want of recharging sources and in most of the taluk the Ground water is either saline (or) alkaline which is unfit for rrigation purpose.

Therefore improving and strengthening the structures to harvest water and also to increase the water holding capacity alone can bring fruitful results to improve the agricultural production. There are rrigation tanks of large ayacut but in the absence of any appropriate original water storage restoration scheme in the past several years , They are silted up and thick vegetation had grown and as consequently the water holding capacity had come down by more than 50 per cent.

Ramanathapuram District is one among the most backward districts in Tamilnadu. The tanks and channels are in dilapidated condition. However agriculture being the only occupation, the people are depending upon the tanks only for irrigation. Due to deliberated condition and damaged irrigation structure, saline ground water, drinking water scarcity, erratic and unpredictable monsoon, high risk involved in crop cultivation, most of the people in the villages migrated to near by districts for seeking job opportunities for their existence.

The Integrated Water Resources Management Project (IWRMP)of Ramanathapuram District was announced by the Honorable Chief Minister for renovation of all P.W.D tanks in phased manner. The project paper was prepared for the entire PWD tanks in Ramanathapuram district in three phases. The Government has accorded administrative sanction for the Integrated water recourses management project for the Ramanathapuram District Phase I for a value of Rs.2436.00 Lakhs (vide G.O.Ms.No.207 PWD (S1) Dept dated 26.05.2003).After implementing the IWRMP under phase I & II for Ramanathapuram District, 124 nos of PWD tanks,and 68 nos of PWD tanks the surface water potential, sub surface water potential was improved effectively by rain water harvesting. Due to modernization of irrigation field channels the stored water was utilized without loss and it was possible to harvest second crop in this drought district.

Desilting of entire chain tank is most important to store more rain water and flood water during monsoon period ,which will lead to improve ground water in adjacent areas and to raise second crops like pulses, cotton andoil seeds using balance yield apart from first normal crop(paddy).The details of tanks/channels taken up in Phase I are furnished in Table 5.1.

Table 5.1 Details of Tanks / Supply Channels taken up in IWRM (Phase I Project)

Basin	No of tanks taken up		
	System	Nonsystm	Total
Lower vaigai	34	43	77
Manimuthar	13	-	13
Gundar	9	22	31
	56	65	121

The details of tanks/channels taken up in Phase I are furnished in Table 5.2.

Table 5.2 Details of Tanks / Supply Channels taken up in IWRM phase II Project

Basin	No of tanks taken up
Lower vaigai	68
Manimuthar	2
Gundar	27
Total	**97**

1. Total no. of tanks in Ramanathapuram district - 502
2. No of tanks taken under IWRM Phase I - 121
3. No of tanks taken under IWRM Phase II - 97
4. No of tanks executed under Nabard - 24
5. No of tanks executed under IAMWARM - 63

The Gundar basin Division, Madurai maintains lower gundar basin Sub Division Kamuthi & Mudhukalathur regulator. The main water resource for non system tanks is through Paralaiyar, Narayana Cauvery and Sankarathevan Channel and Regunadha cauvery Channel. In IWRMP Phase I & II, all the major tanks under Gundar basin Division, Madurai have been renovated but the supply channel has not been renovated. Hence it is absolutely essential to desilt the supply channel of Narayana Cauvery, Sankarathevan Channel, Regunatha Cauvery & Paralaiyar Channel under NADP Scheme to utilize the rain water and to desilt and standardize the cross masonry structures of Right main canal and in Kalari supply channel.

5.5. Agricultural Credit

5.5.1. Credit Disbursement

Government of India, State Government, Reserve Bank of India and NABARD have taken a number of steps and policy measures for the growth and development of Agriculture and Rural sectors. Besides, they have introduced several innovations in Agricultural Credit flow system to augment access of the rural people to the banking system. Some of the important policy measures / innovations are outlined in what follows.

I. Policy Innovations of Government of India:

1. Agricultural Debt Waiver (For Small Farmers / Marginal Farmers) and Debt Relief (for other Farmers) Scheme covering direct Agricultural Credit.
2. Short Term Crop Loans continued to be disbursed at seven per cent with interest subvention.
3. National Agricultural Insurance Scheme (NAIS) to continue in the present form for Kharif and Rabi 2008-09.
4. Adoption of concept of Total Financial Inclusion (TFI) and meeting the entire credit requirement of Self-Help-Groups.
5. Implementation of Rain-fed Area Development Programme with an allocation of Rs.348 crores with priority to areas not benefited by Watershed Development Schemes.

6. Central Banks and Rural Regional Banks (RRBs) to add 250 accounts every year in Rural and Semi-urban branches.

II. Policy initiatives of Reserve Bank of India:

1. Guidelines on Priority Sector Lending (PSL) revised enlarging its scope.
2. Limits for loans under DRI scheme raised from Rs.6500 to Rs.15000 and that for housing loan under scheme from Rs.5000 to 20000.
3. CBs/RRBs to introduce on a pilot basis in one district, a simplified cyclical credit product whereby the farmers can use core component of 20 per cent of credit limit throughout the year, provided interest is serviced.
4. Banks are allowed to utilize the services of retired bank / Government employees and ex-servicemen as business correspondents.

III. Policy and Development Initiatives of NABARD:

1. NABARD to play an active and supportive role in the implementation of 'Rural Business Hub' Scheme of Ministry of Panchayat Raj envisaging Public-Private-Panchayat Partnership to develop holistic and integrated partnership between decentralized rural production units and larger corporate entities.
2. A new find "Farmers' Technology Transfer Fund" created to support programmes, workshops / seminars on technology transfer, marketing of agriculture produce and imparting training on new technologies / agriculture practices
3. NABARD in collaboration with Department of Posts, Government of India, to set up showcases in 100 post offices across the country to showcase the products of SHGs and rural artisans.
4. Krishak Saathi Scheme introduced to provide refinance to banks to provide loans to farmers to free themselves from the clutches of money lenders.
5. RIDF loan at 90 per cent of the project cost allowed for roads and social sector projects in Hill States; also, higher mobilsation advance at 30 per cent of total RIDF loans allowed for these states.

IV. Policy Initiatives of Government of Tamil Nadu:

1. Rs.1150 crores allocated in 2008-09 for compensating co-op. banks for waiver of crop loans.
2. It is proposed to disburse new crop loans to the tune of Rs.1,500 crores during 2008-09.
3. The rate of interest on crop loan reduced from five per cent to four per cent for prompt repayments in 2008-09.
4. Rs.40 crores to provide 50 per cent Insurance Premium for 25 lakhs farmers towards crop insurance.
5. SRI cultivation of paddy to be extended to all districts at an estimated cost of Rs.64 crores.
6. 25 per cent subsidy to farmers for purchasing farm machinery under NADP.
7. Afforestation Progrmme in 51,500 hectares at a cost of Rs.113 crores. 1,000 check dams and 300 percolation ponds to be constructed throughout the State. Rupees three crores provided for forest roads. Rs.10 crores allocated for planting one crore saplings in private lands.
8. Tamil Nadu Co-operative Milk Producers Federation to provide 10,000 crossbred milch animals to Women Self Help Groups in 200 villages covering 5000 women. This scheme will be implemented at a cost of Rs.22 crores for a period of two years.
9. IAMWARD Project extended to another 16 sub-basins.
10. Construction of 48,500 checkdams and perculation tanks in 232 over exploited blocks for conserving ground water at a cost of Rs.550 crores.
11. State Government to open 4 SEZs in Tirunelveli, Tiruvannamalai, Erode and Vellore Districts.
12. A sum of Rs.504 crores is allocated under "Anaithu Grama Anna Marumalarchi Scheme" for undertaking basic infrastructure related works in 2521 village panchayats.
13. Rs.50 crores provided in 2008-09 for 1625 community developmental works under 'Namakku Naame Thittam'.

Activity wise credit disbursement and projection under agricultural and allied sectors in Ramanathapuram district is furnished in Table 5.3.

Table 5.3. Activity Wise Credit Disbursement and Projections under Agricultural and Allied Sectors in Ramanathapuram District

(Rs. lakh)

Sectors	2008-09	2009-10	2010-11	2011-12
Crop loan	34473.00	36196.65	38006.48	39906.81
Term loan				
Micro Irrigation	1191.00	1250.55	1313.08	1378.73
Land Development	663.00	696.15	730.96	767.51
Farm Mechanization	2242.00	2354.10	2471.81	2595.40
Plantation & Horticulture	843.00	885.15	929.41	975.88
Forestry & Waste land Development	115.00	120.75	126.79	133.13
Dairy Development	1183.00	1242.15	1304.26	1369.47
Poultry	0.00	0.00	0.00	0.00
Sheep/Goat/Piggery	470.00	493.50	518.18	544.08
Fisheries	574.00	602.70	632.84	664.48
Storage Godown & Market yards	256.00	268.80	282.24	296.35
Bio-gas	0.00	0.00	0.00	0.00
Sericulture	0.00	0.00	0.00	0.00
Others	282.00	296.10	310.91	326.45
Sub total - Term loan	7819.00	8209.95	8620.48	9051.48
Total Agriculture Credit (1+2)	42292.00	44406.60	46626.96	48958.29
Non Farm sector	5555.00	5832.75	6124.39	6430.61
Other Priority Sector	15621.00	16402.05	17222.15	18083.26
Grand Total	**63468.00**	**66641.40**	**69973.50**	**73472.16**

From the table it could be seen the projected flow of credit disbursement for agriculture and allied sectors during 2009-10, 2010-11 2011-2012 would be Rs. 66641.40 Rs. 69973.50 and Rs. 73472.16 lakhs respectively. The total flow of agriculture credit in terms of crop loan and term loan in 2011-12 would be Rs. 48958.29 lakhs. The flow of credit for non-farm sector and other priorty sectors in 2011-12 would be Rs. 6430.61 and Rs. 18083.26 lakhs respectively.

CHAPTER - VI

DISTRICT PLAN

6.1 Agriculture

6.1.1 Increasing the Production of Rice in Ramanathapuram District

Increasing the production of rice in Ramanathapuram District is an important objective. The 3.6 tonnes./ha. of rice productivity can be achieved by way of supply quality seeds to farmers, Soil health enhancement, IPM, Farm mechanization Training and by providing community based infrastructure.

i. Budget

The total project cost for 2008 - 09 is Rs. 130.30 lakhs.

ii. Background / Problem Focussed

In Ramanathapuram district, Rice is the major food crop being cultivated in 1.27 Lakh ha. The average productivity of rice is 1362 kg/ha. Since rice is being cultivated under dry and semi-dry conditions, reduced productivity is obtained. More over, the crop is raised in single season owing to complete dependence of North East Monsoon. If season favours, crop will be raised successfully. With this background, the productivity of rice is aimed at 3.6 tonns/ha.

iii. Project Rationale

The proposed project is aimed at quality seeds supply, soil health enhancement, mechanization, IPM Technologies, training and publicity, and community based infrastructure.

iv. Project Strategy

Major project activities are supply of HYV rice seeds, enhancement of soil health, adoption of IPM Technologies, imparting training to farmers and field functionaries, and providing community based infrastructures.

v. Project Goals

At present the productivity of rice in this district is 1362 kg/ha. It is aimed to achieve the Rice productivity of 3.6 tonnes/ha.

vi. Project Component

The major components of the project are Quality seed supply, Soil Health Enhancement, Integrated Pest management, Farm mechanization, Training, Publicity and providing community based infrastructure.

vii. Project Cost and Financing

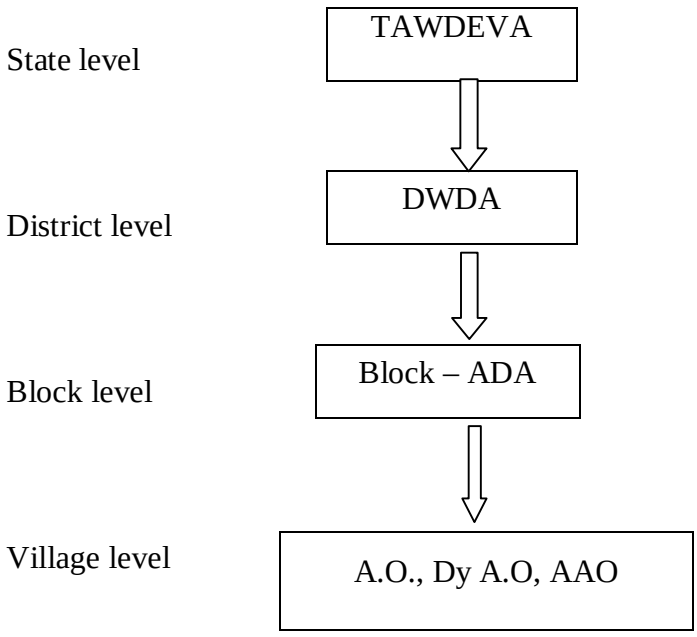
Table 6.1 Project Costs for the Interventions of Paddy

Sl. No.	Component		Unit	2008 - 09	
				Physical	Financial (lakhs.Rs.)
I	**Quality Seed Supply**		-	-	-
II	**Soil Health Enhancement**				
	1	Distribution of Green Manure seed @ 75 per cent subsidy of Rs.15/kg.	Tones	5	0.750
	2	Distribution of Soil Health Card @ Rs.100/card (Soil + Water testing)	No.	36000	36.000
	3	Assistance to start Vermicompost production unit @ Rs.10000/acre (SHG - Women Farmers)	No.	11	1.100
	4	Distribution of Zinc sulphate @ Rs.500/ha. (or) 50 per cent subsidy	L.Ha.	0.010	5.000
	5	Distribution of Gypsum (@ 500 kg./ha.) Rs.750/ha. (or) 50 per cent Subsidy	L.Ha.	0.003	2.250
	6	Distribution of Bio-fertilizer @ 50 per cent subsidy (Rs.3/pkt.)	L.No.	0.500	1.500

Table 6.1 Contd….

Sl. No.	Component		Unit	2008 - 09	
				Physical	Financial (lakhs.Rs.)
III	Integrated Pest Management of Farmers Field School @ 17000/No.		No.	10	1.700
	1	Massive rat control campaign in villages @ Rs.5000/village	No.	200	10.000
IV		Farm Machanisation			
	1	Distribution of Power tillers @ 50 per cent subsidy (1x1 the Rs.65000/No.)	No.	10	6.500
V		Publicity $ Training			
	1	Publicity & training @ Rs.50000/per dist.	No.	1	0.500
	2	Village campaign (Kharif / Rabi @ Rs.1000/campaign)	No.	400	4.000
	3	Production of short film on New technologies each Rs.2.5 lakh/min	No.	1	2.500
	4	Publicity / POL & hiring of vehicle @ Rs.50000/-	No.	7	3.500
VI		Other activities			
	1	Distribution of tarpaulin @ 50 per cent subsity (Rs.5000/No.)	No.	200	10.000
	2	Community thrashing floor @ Rs.3 lakh/No. (20' x 20')	No.	15	45.000
		Total			**130.300**

viii. Implementation Chart of the Project



ix Reporting

The monthly progress report received from block Assistant Director of Agriculture will be consolidated at DWDA and the same will be forwarded to the Tamil Nadu Women in Developing Agriculture (TAWDEVA) and Commissioner of Agriculture office. Necessary records will be maintained at Block & District level.

6.1.2 Increasing the Production of Millets in Ramanathapuram District

Increasing the production of millets in Ramanathapuram District is an important objective. The 900 kg./ha. productivity can be achieved by quality seed supply, transfer of technologies, soil health enhancement and by providing community based infrastructure.

i. Budget

The total project cost for millets for the year 2008 - 09 is Rs.7.40 lakhs.

ii. Background / Problem Focused

In Ramanathapuram district, millets are cultivated in 0.057 Lakh.ha. The average productivity of millets in this district is 878 kg/ha. The important millets cultivated are Cholam, Cumbu, Ragi, Maize and Kuthiravali. Because of rain fed cultivation and confined to single season, the reduced productivity is obtained. If season favours, millets will be raised successfully. With this background, the productivity of millets is aimed at 900 kg./ha.

iii. Project Rationale

The proposed project aims to ensure.

- Quality Seeds supply
- Soil health enhancement
- Technology transfer and
- Infrastructure facilities

iv. Project Strategy

Major activities of the project will be

- Supply of HYV millets seeds
- Enhancement of soil health
- Transfer of technologies and
- Infrastructure facilities

v. Project Goals

At present the productivity of millets in this district is 878 kg/ha. It is aimed to achieve 900 kg / ha. productivity per ha.

vi. Project Component

The major components of the project are as below:

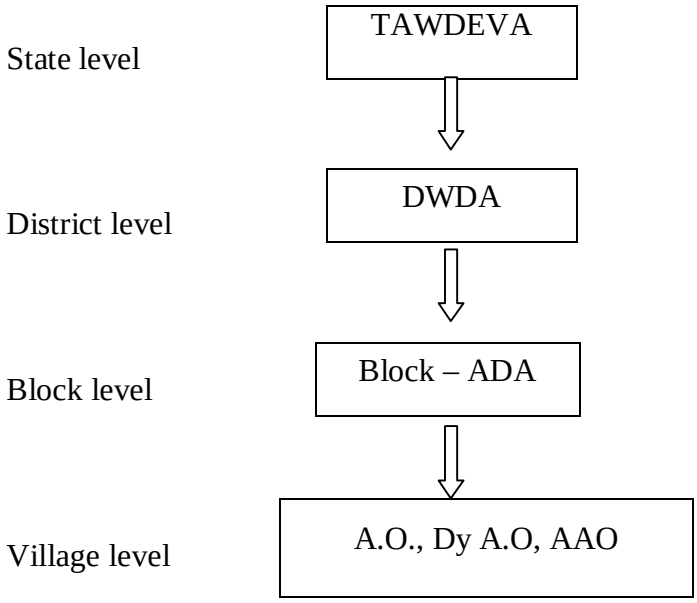
- Quality seed supply
- Soil Health enhancement
- Technology transfer and
- Infra structure facilities.

vii. Project Cost and Financing

Table 6.2 Project Costs for the Interventions of Millets

Sl. No.	Component		Unit	2008 - 09	
				Physical	Financial (L.Rs.)
I	**Quality Seed Supply**		-	-	-
II	**Technology Transfer**				
	1	Technology Demonstration including minor millets (Subsidy @ Rs.2000/ha.)	Ha.	30	0.600
III	**Soil Health Enhancement**				
	2	Distribution of Bio fertilizer @ 50 per cebt subsidy limited to Rs.3/pkt.	Lakh No.	0.60	1.800
IV		**Other activities**			
	3	Distribution of Tarpaulin @ 50 per cent subsidy limited to Rs.5000/No.	No.	100	5.000
		Grand Total			**7.400**

viii. Implementation Chart of the Project



ix. Reporting

The monthly progress report received from block Assistant Director of Agriculture will be consolidated at District Water Development Agency (DWDA) and the same will be forwarded to the office of TAWDEVA and Commissioner of Agriculture. Necessary records will be maintained at Block & District level.

6.1.3 Increasing the Production of Pulses in Ramanathapuram District

Increasing the production of Pulses in Ramanathapuram District is an important objective in Agriculture production. The 500 kg/ha of Pulses productivity can be achieved by supply of Quality seeds, Soil health enhancement, water management, IPM and Training.

i. Budget

The total project cost for 2008 - 09 is Rs. 18.420 Lakhs.

ii. Background / Problem Focused

In Ramanathapuram district, Pulses are important food crop cultivated in 2900 ha. The average productivity of Pulses is 332 kg/ha. Since Pulses are being cultivated in rainfed condition, reduced productivity is obtained. More over pulses are raised in single season owing to complete dependence of rainfall. If season favours, crop will be raised successfully. With this background, the productivity of Pulses is aimed at 500 Kg./ha.

iii. Project Rationale

Out come of the project will result in

- Quality Seeds supply
- Water management
- Soil health enhancement
- Training

iv. Project Strategy

Major activities in the project are

- Supply of HYV seeds.
- Enhancement of soil health
- Water management
- Adoption of IPM and
- Imparting training to farmers.

v. Project Goals

At present the productivity of Pulses is 332 kg/ha. It is aimed to achieve the pulses productivity at 500 kg./ha.

vi. Project Component

The major components of the project are as below:

- Quality seed supply
- Water management
- Soil Health management
- Training
- IPM

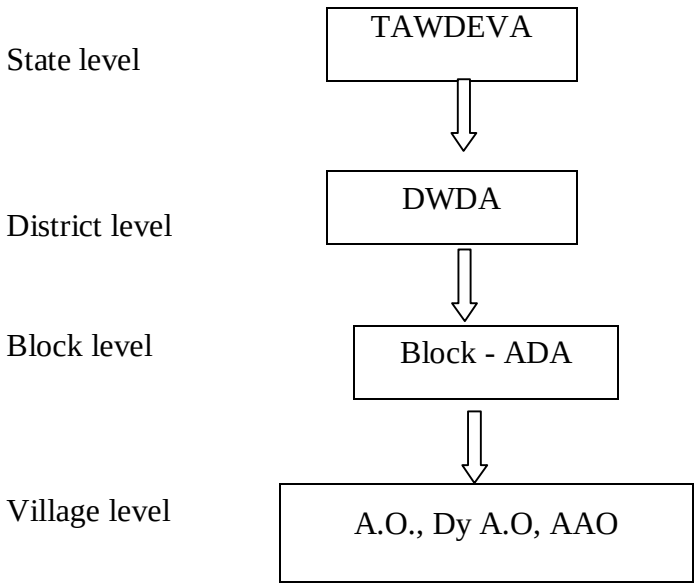
vii. Project Cost and Financing

Table 6.3 Project Costs for the Interventions of Pulses

Sl. No.	Component		Unit	2008 - 09	
				Physical	Financial (L.Rs.)
I	**Quality Seed Supply**		**-**	**-**	**-**
II	**Water management/ precision farming**				
	1	Pipes to carry water to field @ 50 per cent subsidy limited to the 15000/area of 800 m.	No.	10	1.500
	2	Distribution of Rain gun @ 50 per cent subsidy limited to Rs.30000/-	No.	6	1.800
III	**Soil Health Management**				
	3	Distribution of Bio fertilizer @ 50 per cent subsidy Rs.3/No.	Lakh .No.	0.040	0.120
	4	Foliar Nutrient application 50 per cent subsidy limited to Rs.200/-	Ha.	700	1.400*
	5	INM @ Rs.1250/ha.	Lakh .ha.	0.005	6.250
IV		**Training**			
	6	Farmers training 50 farmer for two days Rs.15000/ Training.	No.	40	6.000
V		**IPM**			
	7	Integrated pest management @ Rs.350/ha.	Lakh .ha.	0.003	2.250
		Grand Total			**19.32**

- **Inclusive of 2 per cent DAP spray**

viii. Implementation Chart of the Project



ix.Reporting

The monthly progress report received from block Assistant Director of Agriculture will be consolidated at DWDA and the same will be forwarded to the TAWDEVA and Commissioner of Agriculture. Necessary records will be maintained at Block & District level.

6.1.4 Increasing the Production of Oilseeds in Ramanathapuram District

Increasing the production of oil seeds in Ramanathapuram District is an important objective. Targeted productivity of 1600 kg/ha can be achieved by quality seed supply, transfer of technologies, soil health enhancement and by providing community based infrastructure.

i. Budget

The total project cost for oil seeds for the year 2008 - 09 is Rs.182.563 lakhs.

ii. Background / Problem Focused

Oil seeds crops are cultivated in 9000 ha. The average productivity of oil seeds in 861 kg./ha. Since oil seed crops are raised under rain fed condition, productivity is low in the district. More over crops are raised in single season, owing to complete dependence of North East Monsoon rain fall. If season favours, oil seed crops could be raised successfully. With this background, the productivity of Oil seeds is aimed at 600 kg./ha.

iii. Project Rationale

The project is prepared with the following outputs that would help the oilseed farmers

- Quality Seeds supply
- Soil health enhancement
- IPM
- Precision farming
- Training
- Other infrastructure

iv. Project Strategy

Important activities in the project will be

- Supply of HYV seeds.
- Enhancement of soil health
- Water management
- Adoption of IPM and
- Imparting training to farmers.

v. Project Goals

At present the productivity of Oil seeds is 861 kg./ha. It is aimed to achieve the Oil seeds productivity at 1600 kg./ha.

vi. Project Component

The major components of the project are as under:

- Quality seed supply
- Water management
- Soil Health management
- Training
- IPM

vii. Project Cost and Financing

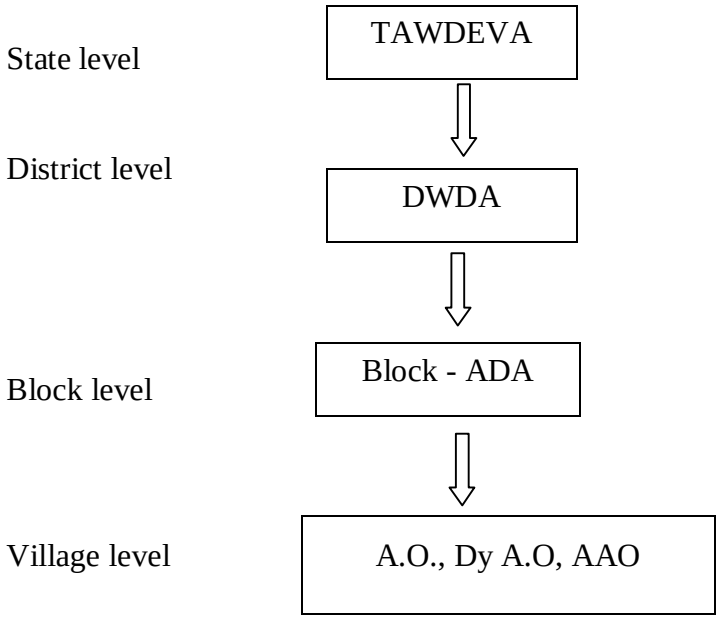
Table 6.4 Project Costs for the Interventions of Oilseeds

Sl. No.	Component	Unit	2008 - 09	
			Physical	Financial (L.Rs.)
I	**Water Management / Precision Farming.**	-		
1	Pipes carrying water from source to field @ 50 per cent subsidy	No.	20	3.000
2	Precision farming (Drip irrigation) 10 ha cluster subsidy @ 90 per cent subsidy limited to Rs.8 Lakhs/Cluster	Nos.	0	0
II	**Soil Health Management**			
3	Bio-fertiliser distribution @ Rs.3/Nos.	Lakh Nos.	0.100	0.300
4	Distribution of Gypsum subsidy @ 50 per cent cost + TC limited to Rs.750/Ha.	Ha.	500	3.750
5	MN Mixture distribution @ 50 per cent cost limited to Rs.500/Ha.	Ha.	100	0.500

Table 6.4 Contd…

Sl. No.	Component	Unit	2008 - 09	
			Physical	Financial (L.Rs.)
III	**Integrated Pest Management**			
6	Farmers field school @ Rs.22680/No.	Nos.	7	1.588
IV	**Training & Publicity**			
7	Farmers Training @ Rs.20000/Training 2 days for 50 farmers	Nos.	25	5.000
8	Publicity /POL/Hiring of Vehicle @ Rs.100000/year/District	Lump sum	0	1.000
V	**Other activities**			
9	Distribution of Tarpaulin subsidy @ Rs.5000/No.	Nos.	50	2.500
10	Construction of Rural godowns and Marketing Centre to stock and distribute seeds and other inputs for TANWABE/FIG @ Rs.10 Lakhs/each	Nos.	12	120.000
	TOTAL Groundnut (Irrigated)		62	122.500
B	**Groundnut (Rainfed)**			
1	Seed Distribution subsidy @ 50 per cent limited to Rs.12/Kg.	tonnes.	30	3.600
2	Distribution of Gypsum subsidy @ 50 per cent cost + TC limited to Rs.750/Ha.	Ha.	150	1.125
3	MN Mixture distribution @ 50 per cent cost limited to Rs.500/Ha.	Ha.	0	0
	Total Groundnut (Rainfed)		180	4.725
2)	**GINGELLY**			
1	Seed Production subsidy @ Rs.10/Kg.	tonnes	0	0
2	Seed Distribution subsidy @ 50 per cent limited to Rs.12/Kg.	tonnes	0	0
3	MN SO4 distribution @ 50 per cent cost limited to Rs.100/Ha.	Ha.	200	0.200
4	Distribution of Tarpaulin subsidy @ Rs.5000/No.	Nos.	0	0
	Total Gingelly			**0.200**
	Total Oil Seeds			**182.563**

viii. Implementation Chart of the Project



Reporting

The monthly progress report received from block Assistant Director of Agriculture will be consolidated at DWDA and the same will be forwarded to the TAWDEVA and Commissioner of Agriculture. Necessary records will be maintained at Block & District level.

6.1.5 Increasing the Production of Cotton in Ramanathapuram District

Increasing the production of Cotton in Ramanathapuram District is an important objective. The 250 kg./ha. productivity can be achieved by quality seed supply, transfer of technologies, soil health enhancement and by providing community based infrastructure.

i. Budget

The total project cost for Cotton for the year 2008 - 09 is Rs.31.80 lakhs.

ii. Background / Problem Focussed

In Ramanathapuram district, Cotton is an important commercial crop cultivated in 3600 ha. The average productivity in cotton is 120 kg. kapas/ha. Since cotton is raised under dry condition during February, March months, the reduced productivity is obtained. Hence, it is aimed to achieve 250 kg./ha. productivity in cotton.

iii. Project Rationale

The proposed project will help in

- Quality Seeds supply
- Precision farming
- IPM and
- Soil health enhancement

iv. Project Strategy

Important activities in the project are

- Supply of HYV seeds.
- Enhancement of soil health
- Water management
- Adoption of IPM and
- To impart training to farmers.

v. Project Goals

At present the productivity of Cotton is 120 kg/ha. It is aimed to achieve the cotton productivity at 250 kg./ha. (kapas).

vi. Project Component

The major components of the project are :

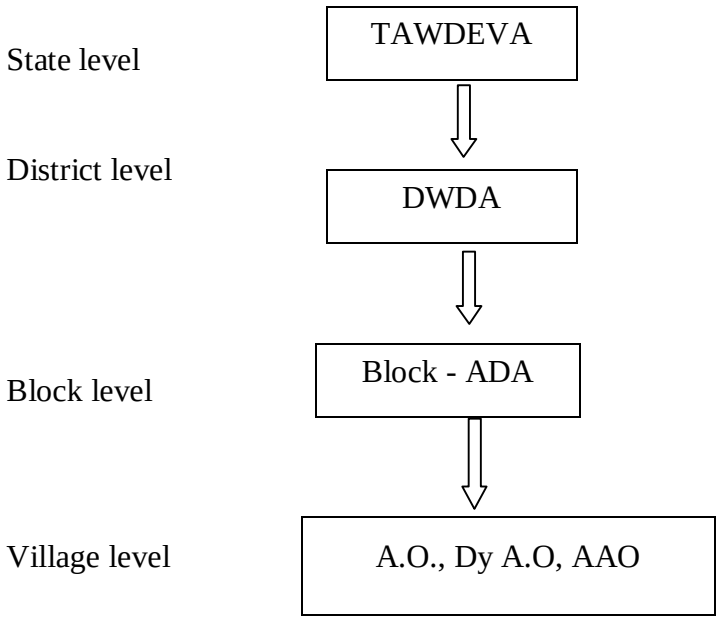
- Quality seed supply , Water management ,Soil Health management and
- Training and IPM

vii. Project Cost and Financing

Table 6.5 Project Costs for the Interventions of Cotton

Sl. No.	Component	Unit	2008 - 09	
			Physical	Financial (Lakh Rs.)
a)	**Cotton (Irrigated)**			
	Precision farming compact block demonstration 10 Ha cluster 90 per cent subsidy limited to Rs.6.0lakh/cluster	Nos.	5	30.00
	Total		**5**	**30.00**
b)	**Cotton (Rainfed)**			
	Seed distribution subsidy @ Rs.20/Kg	Qtl.	90	1.800
	Total Cotton			**31.800**

viii. Implementation Chart of the Project



Reporting

The monthly progress report received from block Assistant Director of Agriculture will be consolidated at DWDA and the same will be forwarded to TAWDEVA and Commissioner of Agriculture. Necessary records will be maintained at Block & District level.

6.1.6 Proposal on Dry Farming Technology for Rainfed Crops

Application of enriched FYM is an important phenomenon of dry farming technology for productivity enhancement in rainfed crops like millets, pulses, oil seeds and cotton.

i. Budget

The total project cost for 2008 - 09 is Rs 50 lakhs.

ii. Background / Problem Focussed

In Ramanathapuram district, millets, pulses, oil seeds and cotton are being raised under rain fed conditions only. Because of rain fed nature of cultivation, application nutrients as basal is almost negligible. Hence the reduced productivity is obtained in all crops. With this background, it is suggested to apply enriched FYM to all the rainfed crops as basal.

iii. Project Rationale

- Application of enriched FYM to Millets, Pulses, Oil seeds & Cotton

iv. Project Strategy

- Basal application of enriched FYM

v. Project Goals

Increasing the productivity of rainfed crops by application of enriched FYM.

vi. Project Component

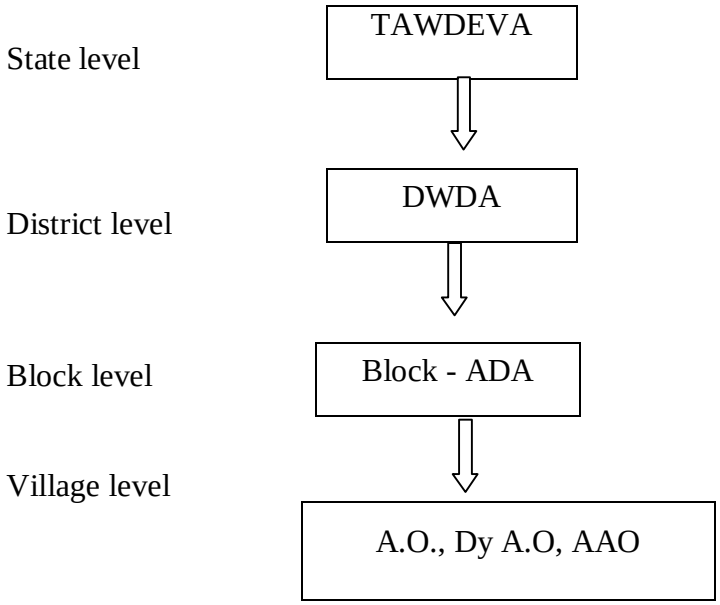
- Enriched FYM application

vii. Project Cost and Financing

Table 6.6 Project Costs for the Interventions of Dry Farming Technology

Sl. No.	Component	Unit	2008 - 09	
			Physical	Financial (Lakh.Rs.)
1.	Enriched FYM application in millets (Rs.750 for FYM + Rs.500/ for fertilizer)	Ha.	1000	12.50
2.	Enriched FYM application in Pulses (Rs.750 for FYM + Rs.500/ for fertilizer)	Ha.	1000	12.50
3.	Enriched FYM application in Oil seeds (Rs.750 for FYM + Rs.500/ for fertilizer)	Ha.	1000	12.50
4.	Enriched FYM application in Cotton (Rs.750 for FYM + Rs.500/ for fertilizer)	Ha.	1000	12.50
	Total		**4000**	**50.00**

viii. Implementation Chart of the Project



Reporting

The monthly progress report received from block Assistant Director of Agriculture will be consolidated at DWDA and the same will be forwarded to TAWDEVA and Commissioner of Agriculture. Necessary records will be maintained at Block & District level.

Budget details for the Agriculture Department are presented in Table.6.7.

Table 6.7 Budget details for Agriculture Department

(in Lakh Rupees)

Sl. No.	Components	Total Cost				
		2008-09	**2009-10**	**2010-11**	**2011-12**	**Total**
1.	Rice	130.300	140.500	130.500	130.500	531.800
2.	Millet	7.400	8.600	8.600	8.600	33.200
3.	Dry Farming Technology for Rainfed crops	50.000	212.500	212.500	212.500	687.500
4.	Maize (Irrigated)	0.000	0.000	0.000	0.000	0.000
5.	Pulses	19.32	103.620	103.620	103.620	330.180
6.	Oil Seeds	182.563	82.203	82.203	81.078	428.047
7.	Cotton	31.800	31.800	31.800	31.800	127.200
8.	Extension Activities	66.975	54.475	20.100	20.100	161.650
9.	Development of agro forestry in Patta dry land in clusters	6.750	13.500	13.500	13.500	47.250
10.	Promotion of Organic farming	2.000	2.000	1.000	1.000	6.000
	Grand Total	**497.108**	**649.198**	**603.823**	**602.698**	**2352.827**

6.1.7 Establishment of Seed Testing Laboratory at Ramanathapuram

Seed the living embryo is considered as the basic and cheapest input in modern agriculture in enhancing and stabilizing the productivity. The cost of seed is usually negligible when compared to total production cost. Yet seed can affect the yield potential of a crop more than any other input factor. The quality seed is one with high physical purity, germinability, vigor, genetic purity and free of pest and diseases.

The main aim of seed testing is to obtain accurate and reproducible results. The seed testing laboratory is an institution in carrying out the seed production and certification program. To meet the increasing demand of farming community, seed growers, seed producers, seed dealers of Tamilnadu and for easy accessibility to the poor farming community for the purpose of enhancing Agricultural production in the district, it is necessary to have a new Seed Testing Laboratory in Ramanathapuram district.

i. Need

As seeds play a vital role in enhancing the agricultural production, it is a must to check the quality of seeds before being used for sowing. The Seed testing Laboratory is the hub of Quality Control. Seed testing services are required from time to time to gain information regarding planting value of seed lots. To carry out the responsibilities effectively, it is necessary that Seed Testing Laboratory is established, manned and equipped in a manner such that whatever samples are received could be analyzed in the least possible time, so that seed quality control work and the need of the seed industry are effectively met.

ii. Budget

New Seed Testing Laboratory is proposed to be established during 2008-2009 at Ramanathapuram district. It is proposed to purchase the laboratory equipments at a total cost of Rs.6 lakhs.

iii. Project Implementation

The Department of Seed Certification shall implement the programme. The Laboratory equipments are expected to be purchased during 2008-09.

iv. Benefits

The Seed Testing laboratory is an important institution in carrying out the seed production and seed certification program. The accuracy and reproducibility in the analysed results is of paramount importance to the seed producer, processor, certification

and seed law enforcement officials. At present, the certified seed samples from Seed Certification wing, Official seed samples from Seed Quality Control wing and Service samples from Seed Producers, Seed dealers and farmers are being sent to Madurai district for analysis. Establishment of seed testing laboratory at Ramanathapuram district will help the farming community, seed dealers and producers in getting the results in time, in getting quality seeds at the sowing period and curtailing the sale of substandard seeds to the farmers well ahead of sowing so that agricultural production of the district is enhanced.

v. Seed Distribution

A considerable quantum of quality seeds are being distributed through licensed seed selling points. The labeled seeds distribution is dominating. Under these circumstances, ensuring the quality of the seed lots before its usage by the farming community is very much essential. The quality of such seed lots can be ensured only by testing these seed lots in the Seed Testing Laboratories for its seed standards. The seed testing of these seed lots which are not covered under the preview of Seed Certification and that are covered to some extent under seed quality control program can be ensured only by inculcating the practice of sending service samples by seed producers, seed dealers and farmers. In the present scenario, where Seed Testing Laboratory is not available in the district the seed producers, seed dealers and farmers find it very difficult to send the seed samples for analysis. Hence, facilitating the seed producers, seed dealers and farmers by establishing Seed Testing Laboratory in the district will be of much use. Accordingly, a Seed Testing Laboratory is proposed to be established in Ramanathapuram district. In order to meet the increasing demand of quality seeds and to ensure that the farmers, dealers, producers receive the results of Seed Testing Laboratories at correct time without delay it is proposed to establish new Seed Testing Laboratory at Ramanathapuram district under National Agricultural Development Programme at a financial outlay of Rs.6.00 lakhs towards provision of laboratory equipments.

vi. Activities Proposed

To establish a Seed Testing Laboratory to test moisture, purity, germination and ODV of the given seed sample the following equipments are necessary.

1. Mixing and Dividing Equipments

Seed samples entering a laboratory should be thoroughly mixed before they are divided for making a purity analysis. Soil type divider is proposed to be purchased as these mixers and dividers are faster and more accurate.

2. Moisture Testing Equipment

Moisture testing equipment is required for making rapid moisture determinations to provide quick moisture percentage on seed lots. Digital moisture meter is to be purchased.

3. Weighing Equipments

It is proposed to purchase Top loading weighing balance and Electronic Weighing balance (to weigh a minimum of 0.1 mg) for weighing the submitted samples and moisture determinations.

4. Purity Analysis Equipment

Purity analysis equipments are used to analyze the physical purity of submitted seed sample which is pre requisite for conducting germination test. The Illuminated purity work board is to be purchased for physical purity analysis.

5. Germination Equipment

Seed Germination in the laboratory should be made under ideal conditions. This necessitates controlled temperature and humidity. For conducting germination test under prescribed temperature and humidity for various agricultural and horticultural crop seed samples Cabinet germinator is very much required. Germination Trays and Petri dishes are necessary for conducting Germination Test. Germination paper and filter paper are the media that are to be purchased for the new Seed Testing Laboratory.

6. Storage Equipment

The Seeds received for testing should be stored at controlled conditions for future use. Hence it is proposed to purchase seed storage racks.

7. General

Thermometer and Hygrometer to measure temperature and humidity respectively are needed. Trolley (Movable) for transporting sand, Air Conditioner to maintain prescribed temperature is required. Work table and work chair are necessary for carrying out various works like germination, purity analysis and for working of equipments etc.

vii. Computers with Accessories

Computer with accessories are needed for declaring the results in the internet and storing data on seed analysis.

viii. Cost Aspects

The Seed Testing Laboratory that is to be established should have the following equipments for the purpose of analyzing seed samples for moisture, physical purity, germination and Other Distinguishable Varieties (Table 6.8).

Table 6.8 Details of Cost of Establishing Seed Testing Laboratory

Sl. No.	Name of the Instrument/Equipment	Qty required for One lab	Cost Per unit rupees	Costfor One lab Rupees
1	Weighing Balance-Top Loading	1	5000	5000
2	Illuminated purity Work board	1	4000	4000
3	Electronic Weighing balance (0.1 mg)	1	30000	30000
4	Soil type divider	1	7500	7500
5	Digital moisture meter with stabiliser	1	17500	17500
6	Germination trays	200	175	35000

Table 6.8 Contd…

Sl. No.	Name of the Instrument/Equipment	Qty required for One lab	Cost Per unit rupees	Costfor One lab Rupees
7	Petri dishes	50	300	15000
8	Thermometer	1	300	300
9	Hygrometer	1	1500	1500
10	Cabinet Germinator (Double door) along with stabliser	1	225000	225000
11	Air Conditioner (split type) along with stabilizer	2	35000	70000
12	Work Table	5	4000	20000
13	Work Chair	4	2500	10000
14	Trolley(Movable)	1	5000	5000
15	Computer with accessories	1	60000	60000
16	Germination Paper (Roll towel) in Kgs	200	165	33000
17	Filter paper (Nos)	50	35	1750
18	Seed Storage Rack	2	6000	12000
19	Telephone Connection with Broad band	1	1250	1250
20	Miscellaneous items			46200
	Total			**600000**

Note: The above list of equipments is tentative. Based on the actual price of the equipments, the quantity and cost indicated for each of the above mentioned items may be altered and some of the equipments may be deleted so as to accommodate the purchase of equipments within the overall provision.

ix. Operation and Maintenance Cost of Running the Laboratory

The staff pattern as proposed in the restructuring shall be accommodated. The recurring expenditure towards pay and allowances for the staff proposed as per restructure proposal and the recurring expenditure towards other items shall be borne by the State Government.

x. Benefits

The Seed Testing laboratory is an important institution in carrying out the seed production and seed certification program. The accuracy and reproducibility in the analyzed results is of paramount importance to the seed producer, processor, certification and seed law enforcement officials. Establishment of seed testing laboratory at Ramanathapuram district will help the farming community, seed dealers and producers in getting the results in time, in getting quality seeds at the sowing period and curtailing the sale of substandard seeds to the farmers well ahead of sowing so that agricultural production of the district is enhanced.

xi. Expected Date of Completion

The equipments for Seed Testing Laboratory are expected to be purchased during 2008-09.

xii. Monitoring and Evaluation

Project on implementation of the proposed project shall be evaluated then and there by Department of Seed Certification which is the implementing department.

6.2 Horticulture

6.2.1 Increasing Quality Production in Vegetables in Ramanathapuram District

Increasing Vegetable production in Ramanathapuram District is a long awaited objective. Since vegetable production has been confined to fewer areas in Ramanathapuram District, its area expansion in other resourceful areas and non conventional areas stands imperative at this juncture.

i. Budget

The total project cost for the proposal is Rs. 57.3625 lakhs.

ii. Problem Focussed

In Ramanathapuram district, vegetables are grown in an area of around 150 Ha. with an average productivity of 10.0 tonnes/ Ha .Its expansion in other non-conventional area is severely restricted by poor soil quality combined with poor irrigation water quality. As a backward district, investment in quality vegetable production is also meager. Poor management of pest & diseases and improper handling of harvested produce constitute major constrains in vegetable production. Supply of plant protection chemicals and assistance in handling and transport of harvested produce will minimize the losses in production. A massive district level workshop for vegetable growers and innovative farmers and taking farmers for exposure visit to other infrastructurally developed places and markets will enable the farmers to convert their practice of Agriculture from subsidence living into a business.

Quality inputs with pre and post harvest management practices will increase the vegetable productivity. With this background the productivity in vegetable cultivation is aimed at 20 tonnes / Ha.

iii. Project Rationale

- Infrastructural support
- INM and IPM Technologies
- Plant protection packages
- Workshop and Exposure Visit and
- Publicity and Propaganda

iv. Project Goal

Increasing the productivity of vegetable to 20 tonnes / Ha from the current level of 10.0 tonnes / Ha.

v. Project Components

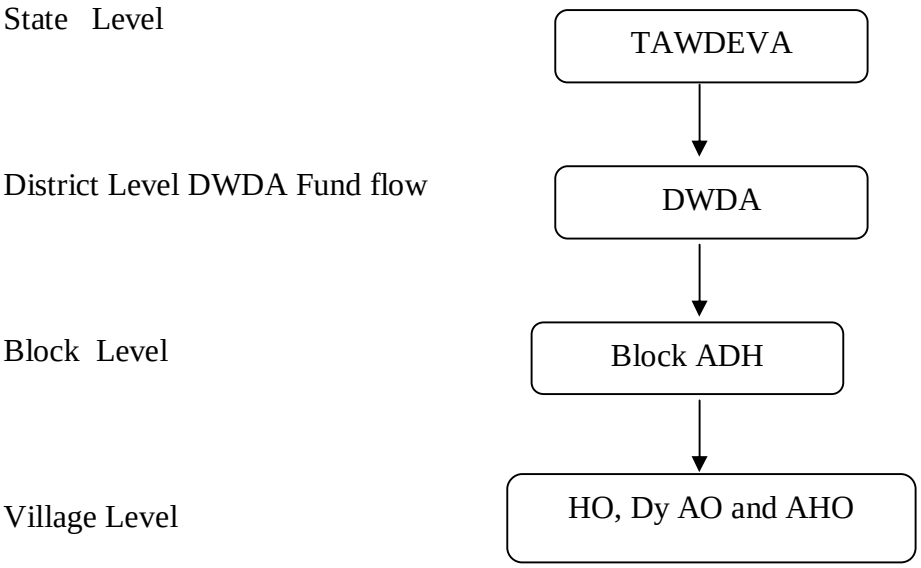
1. Pandal for Vegetable production
2. Materials for handling and transport of harvested produce
3. INM and IPM Technologies
4. Village level pre season campaign
5. District level farmers workshop and Training and
6. Inter-state farmers exposure visit.

vi. Project Cost and Financing

Table 6.9 Project Costs for the Interventions of Vegetable Production

S. No	Component	Unit Cost	2008-09	
			Physical	Finance (L.Rs)
1	Pandal for vegetable production at 100 per cent subsidy	Rs. 1 lakh/Ha	10 Ha	10.00
2	Plastic crates for handling and transport of harvested produce at 50 per cent cost	Rs.125/ No	600 Nos	0.75
3	INM and IPM Technologies			
3(a)	Plant protection Package at 100 per cent subsidy	Rs.3000/Ha	300 Ha	9.00
3(b)	Distribution of Power Sprayer at 75 per cent subsidy	Rs. 3750/ No	20 Nos	0.75
3©	Distribution of Hand operated Sprayer at 75 per cent subsidy	Rs. 1125/ No	50 Nos	0.5625
4	Distribution of Tarpaulin sheets at 50 per cent subsidy	Rs. 5000/No	500 Nos	25.00
5	Village level pre season Campaign (Kharif and Rabi)	Rs. 1000/ No	200 Nos	2.00
6	Publicity and Training at District level	Rs. 50000/ No	2 Nos	1.00
7	District level workshop	Rs. 400/ day/ farmer	200 farmers	0.800
8	Inter-state Exposure visit	Rs.5000/ farmer/ 5 days	100 farmers	5.00
9	POL and Hiring of Vehicles	Rs.50000	5 Nos	2.50
	Total			**57.3625**

vii. Implementation Chart



Reporting

Monthly progress report received from block Assistant Director of Horticulture will be consolidated at DWDA office and the same will be forwarded to the TAWDEVA & Commissioner of Horticulture. Necessary records will be maintained at Block level and District level.

6.2.2 Promotion of Betelvine Cultivation in Ramanathapuram District

Among several plantation crops Betalvine is well known for its medicinal values. Area expansion in newer areas and increase in production could be achieved by sharing initial investment and providing infrastructural facilities and quality planting material.

i. Budget

The total project cost for 2008 – 09 is Rs.5.00 lakhs.

ii. Background

Betelvine is grown only in Mandapam Block in Ramanathapuram District in an extent of 6 Ha. Being a plantation crops it needs huge initial investment and it is a labour intensive crop. Support for initial investment for its expansion in newer areas and supply of quality inputs will increase its productivity.

iii. Project Rationale

- Quality planting materials
- INM / IPM Technology and
- Infrastructural support

iv. Project Strategy

- Supply of quality planting materials
- Adoption of INM / IPM Technologies and
- Providing infrastructural facilities

v. Project Goal

To achieve a productivity target of 25 tonnes per Ha. from current level at 15 tonnes / Ha.

Project Components

Major Components are

- Quality planting material
- Support for land preparation
- Supply of INM / IPM Components and
- Prevision of stacking & shade materials

vii. Project Cost and Financing

Project Costs for the Interventions of Betelvine Cultivation

S.No	Component	Unit Cost	2008 – 09	
			Physical	Financial (L.Rs)
1	Land Preparation	Rs. 1000 / 5 Cent	250 Cents	0.50
2	Supply of Quality Plating Material	Rs. 3 /sapling	100000 Nos	3.00
3	Supply Plat Protection Material	Rs. 2000 / 5 Cent	250 Cents	1.00
4	Supply of Stacking & Supporting Material	Rs. 1000 / 5 Cent	250 Cents	0.50
	Total			**5.00**

viii. Implementation Chart

State Level — TAWDEVA

District Level DWDA Fund flow — DWDA

Block Level — Block ADH

Village Level — HO, Dy AO and AHO

viii. Reporting

Monthly progress report received from block Assistant Director of Horticulture will be consolidated at DWDA office and the same will be forwarded to the TAWDEVA & Commissioner of Horticulture. Necessary records will be maintained at Block level and District level.

Table 6.10 Project Costs for the Interventions of Horticulture Department

(Rupees in lakhs)

S.No	Component	Unit Cost	2008-09		2009-2010		2010-2011		2011-2012		Total Cost	
			Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
1	Pandal for vegetable production at 100 per cent subsidy	Rs. 1 lakh/Ha	10 Ha	10.00	10 Ha	10.00	10 Ha	10.00	10 Ha	10.00	40 Ha	40.00
2	Plastic crates for Handling and Transport of Harvest produce at 50 per cent cost	Rs. 250/ No	600 Nos	0.75	600 Nos	0.75	600 Nos	0.75	600 Nos	0.75	2400 Nos	3.00
3	INM and IPM Technologies											
3(a)	Plant protection Package at 100 per cent subsidy	Rs.3000/ Ha	300 Ha	9.00	300 Ha	9.00	300 Ha	9.00	300 Ha	9.00	1200 Ha	36.00
3(b)	Distribution of Power Sprayer at 75 per cent subsidy	Rs. 5000/ No	20 Nos	0.75	20 Nos	0.75	20 Nos	0.75	20 Nos	0.75	80 Nos	3.00
3©	Distribution of Hand operated Sprayer at 75 per cent subsidy	Rs. 1500/ No	50 Nos	0.5625	50 Nos	0.5625	50 Nos	0.5625	50 Nos	0.5625	200 Nos	2.25
4	Distribution of Tarpaulin sheets at 50 per cent subsidy	Rs. 10000/No	500 Nos	25.00	500 Nos	25.00	500 Nos	25.00	500 Nos	25.00	2000 Nos	100.00

Table 6.10 Cotnd….. **(Rupees in lakhs)**

S.No	Component	Unit Cost	2008-09		2009-2010		2010-2011		2011-2012		Total Cost	
			Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
5	Village level pre season Campaign (Kharif and Rabi)	Rs. 1000/ No	200 Nos	2.00	200 Nos	2.00	200 Nos	2.00	200 Nos	2.00	800 Nos	8.00
6	Publicity and Training at District level	Rs. 50000/ No	2 Nos	1.00	2 Nos	1.00	2 Nos	1.00	2 Nos	1.00	8 Nos	4.00
7	District level workshop	Rs. 400/ day/ farmers	200 farmers	0.800	200 farmers	0.800	200 farmers	0.800	200 farmers	0.800	800 farmers	3.20
8	Inter-state Exposure visit	Rs.5000/ farmer/ 5 days	100 farmers	5.00	100 farmers	5.00	100 farmers	5.00	100 farmers	5.00	400 farmers	20.00
9	POL and Hiring of Vehicles	Rs.50000	5 Nos	2.50	5 Nos	2.50	5 Nos	2.50	5 Nos	2.50	20 Nos	10.00
10	Betevine cultivation	Rs.500000	5 cent	500000	-	-	-	--	-	-	-	-
	Total			**62.325**		**57.3625**		**57.3625**		**57.3625**		**234.45**

6.3 Animal Husbandry Sector

i. Feed and Fodder Development - Components

- Fodder production by Self Help Groups
- Popularizing mineral mixture
- Crossbred heifer calves nutrition programme
- Supply of mineral mixture at subsidized rate
- Supply of bypass protein feed to milch animals.

1. Fodder Production by Self Help Groups

Acute shortage of green fodder is one of the major factors limiting dairy development in Ramanathapuram District. Hence, to augment the availability of green fodder, intensive fodder production will be taken up by the Department of Animal Husbandry, Ramanathapuram covering a total area of 440 acres a the rate of 10 aces per block per year in all the 11 bocks of the district for a total period of 4 years through self help groups and women entrepreneurs at a total cost of 103.4 lakhs.

2. Popularizing Mineral Mixture

Quality mineral mixture containing all the essential macro and micro nutrients will be supplied to the dairy cows through the Department of Animal Husbandry, Ramanathapuram to the small dairy farmers at the rate of Rs.600 per cow per year (one Kg per animal per month; 12.0 Kg for one year @ Rs. 50 per Kg) for 2000 farmers per year for four years. A total of 8000 cross bred milch cows will be supplemented with mineral mixture at a total cost of Rs. 48.0 lakhs.

3. Crossbred Heifer Calves Nutrition Programme

Crossbred heifer calves between the age group of 6 month and one year will be supplemented with concentrated mixture, mineral mixture and heath cover. The concentrate mixture will be provided @ 1.0 Kg per animal for one year. Each calf identified will also be supplemented with mineral mixture 10 pockets of 50 Kg each per year. All the calves will be identified by tagging and will also be dewormed and vaccinated. For all these, the total cost works out to Rs. 5011 per calf per year. 650 calves

will be covered each year for a period of 4 years. In total 2600 heifer calves will be covered with the total cost of Rs. 132.86 lakhs. This programme will be implemented by the Department of Animal Husbandry, Ramanathapuram District.

4. Supply of Mineral Mixture at Subsidized Rate

Aavin, Karaikudi will supply mineral mixture to the milch animals of the dairy co-operative societies in Ramanathapuram district at subsidized cost (50 per cent) @ Rs. 500 per cow for 18 Kg per year per cow. A total number of 1500 animals will be benefited at a total cost of Rs. 7.5 lakhs.

5. Supply of Bypass Protein Feed to Milch Animals

Aavin, Karaikudi will supply bypass protein feed to the milch animals of the members of the dairy co-operative societies in Ramanathapuram district (360 Kg per year per animals @ 50 per cent subsidized cost of Rs. 9.0 per Kg). For 150 cows for four years a total of 600 cows will be covered with the total cost of Rs, 19.80 lakhs.

Budget Cost

(Rs. in lakhs)

Sl. No.	Particulars	Amount
1.	Augmenting fodder production (CO 3) through SHGs/Women entrepreneurs. Rs. 0.235 lakhs per acre. 10 acres per block per year, 12 blocks for four years. 440 acres in total (DAH)	103.40
2.	Popularizing mineral mixture to improve livestock production @ Rs.600 per cow per year for 2000 cows for four years Total 8000 cows (DAH)	48.00
3.	Crossbred heifer calves nutrition programme @ Rs.5110 per calf 650 calves per year. Total for 2600 calves 9 DAH)	132.86
4.	Supply of mineral mixture to milch animals at subsidized cost @ Rs.500 per cow, 375 cows per year for 1500 cows in four years (DAH)	7.50
5.	Supply of bypass protein feed to milch animals @ Rs.3300 per cow 150 cows per year, for 600 cows four years	19.80
	Total	**311.56**

6.3.1. Fodder Production by Self Help Groups

i. Background/Problem Focus

With shrinkage of pastureland, rapid urbanization and conversion of agricultural lands to other purposes, Ramanathapuram District is facing acute shortage of green fodder. At present Ramanathapuram District having 46.6 per cent deficit in dry fodder and 94.9 per cent deficit in green fodder. Due to lack of awareness, most of the farmers in Ramanathapuram District do not supplement mineral mixture in feeding of milch animals. Mineral mixture supplementation will help in improving the milk quality and quantity and also it will reduce infertility problems in dairy cows. Poor dairy farmers whose only concern is the milk-producing cow, could not afford quality concentrate feed and proper health care for their heifer calves. As a result, heifer calves become stunted leading to delayed maturity and associated fertility problems. Hence, the dairy farmers have to be encouraged to rear their heifer calves on scientific lines by providing them with quality concentrate feed and the necessary health cover. By pass protein feeding is a newer technology in dairy nutrition. It enhances milk production and productivity in dairy cows. Conventional feeding although is cheaper, it does not provide a complete feed to the dairy cows leading to nutritional deficiencies and decreased production and productivity.

ii. Project Rationale

There is an acute shortage of fodder and the farmers find difficult to maintain high yielding dairy cows owing to huge demand for green and dry fodder. Hence, intensive fodder production activity has to be taken up to meet this heavy demand. Supplementation of mineral mixture and bypass protein leads to dairy cows is seldom practiced by dairy farmers and hence, farmers have to be sensitized through supply of mineral mixture and by pass protein to their cows at subsidized prices. In order to ensure proper growth of heifer claves so that they can attain sexual maturity at an early age farmers has to be encouraged to rear their heifer calves on modern scientific lines by providing them with concentrate feed, mineral mixture and quality health care.

iii. Project Strategy

1. Self Help Groups and interested women entrepreneurs will be selected from each block. Augmentation in quality and quantity of fodder from common property resources through group approach is proposed. Fodder slips will be procured from Chettinad Livestock Farm and members who have water source alone will be selected. 10 acres of CO-3 fodder will be produced per block involving the SHGs and interested women entrepreneurs. They will be supplied with all inputs for fodder production. Training on scientific fodder production will be given to the SHGs @ Rs.0.035 Lakh/SHG. Inputs for fodder production will be provided @ Rs.0.20 Lakhs/acre. A total number of 11 Groups will be involved in fodder production in all the 11 blocks @ 10 acres/block/year for a period of 4 years. The project will be implemented by the Department of Animal Husbandry, Ramanathapuram.

2. There are 11 blocks in the district with a significant population of cross-breds. Infertility is the major problem and deficiency of minerals in the feed of cattle is common since most of the farmers do not provide a complete feed to their cows. Hence supply of 40 grams of mineral mixture per cow per day for one year will largely help to augment milk production and to improve the fertility rate in the cows. The cost of a kg of mineral mixture is Rs.50/- and is sufficient to feed a cow for one month. A total of Rs.600/- is necessary to provide 40 grams of mineral mixture per day per cow for one year. A total of 8000 cows will be supplied with mineral mixture. This project will be taken up by the Department of Animal Husbandry, Ramanathapuram. Mineral mixture will also be supplied to the milch animals of the members of the society at subsidized cost (50 per cent), @ 18 kg/year/cow @ Rs.375/cow/year. A total number of 1500 cows will be benefited at a total cost of Rs. 7.5 Lakhs.

3. Concentrate feed, mineral mixture and health care will be provided to 650 selected heifer calves each year @ Rs.5110 per calf. A total of 2600 heifer calves will be covered at a total cost of Rs. 132.86 lakhs.

4. The Aavin, Karaikudi will supply bypass protein feed to the milck animals of the members of the society (360 Kg per animal per year) for 600 cows @ 50 per cent subsidy of Rs. 9.0 per Kg. The total cost will be Rs. 19.8 lakhs.

iv. Project Goals

1. Augmenting the fodder availability to meet the shortage of green fodder.
2. Supplementation of mineral mixture in the feed of dairy cows to improve their productivity and reproductive performance.
3. Supplementation of concentrate feed, mineral mixture and providing health care to heifer calves to ensure optimum growth and earlier age at maturity.
4. Supply of rumen bypass protein to milch animals to enhance their milk production.

v. Project Component

1. Fodder production – 440 acres
2. Supply of minral mixtrure to 9500 cows (8000 cows - DAH and 1500 cows - DDD)
3. Crossbred heifer calves nutrition programme to cover 2600 heifer calves.
4. Supply of bypass protein feed to 600 milch cows

vi. Project Cost and Financing

Fodder Production

Fodder production by the Department of Animal Husbandry, Ramanathapuram District – Rs. 0.235 lakhs per acre.

Table 6.11 Fodder Production by the Department of Animal Husbandry, Ramanathapuram District - Rs. 0.235 Lakhs/Acre

I.	**Training Cost**	
S. No.	**Details**	**Amount (in Rs.)**
1.	Incentive @ Rs.100/person/day, for 2 days, for 15 members	3,000.00
2.	Refreshment expenses @ Rs.10/day/person, for 2 days, 15 persons	300.00
3.	Study materials including scribbling pad, pen etc.@ Rs.15/person, for 15 members	225.00
	Total training cost per SHG	**3,525.00**

II.	**Fodder Cultivation of Fodder (CO-3) per acre**	
S.No.	**Name of Operation**	**Amount (in Rs.)**
1 a)	Bush clearance and land reclamation	2,600.00
1.b)	Cost of ploughing	1,600.00
2.	Formation of ridges and furrows/beds and irrigation channels	500.00
3.a)	Cost of fym 10 mt. @ Rs.300/mt.	3,000.00
3.b)	Labour cost for transportation and application, loading and unloading	1,000.00
4.a)	Cost of slips 16,000 numbers @ Rs.0.25 /slip	4,000.00
4.b)	Planting cost	840.00
5.a)	Cost of chemical fertilizers N 150 Kg @ Rs.5.48/kg – 822.00 P 50 Kg @ Rs.10.88/kg – 544.00 K 40 Kg @ Rs.3.85/Kg - 154.00	1,520.00
5. b)	Cost of labour for application	200.00
6.	After cultivation weeding	840.00
7.	Cleaning the channels	500.00
8.	Irrigation charges	800.00
9.	Harvesting charges and transportation	1,600.00
10.	Miscellaneous expenses	800.00
	Total Cost Required Per Acre	**20,000.00**

	Financial Requirement Per Self Help Group:	**Rs. in Lakhs**
1.	Cost of training per SHG	0.035
2.	Cost of fodder cultivation	0.20
	Total Requirement per SHG	**0.235**
	Total requirement for 11 blocks with 11 SHG @ 10 Acres /Block/year for 4 years, 440 acres totally	**103.40**

6.3.2. Mineral Mixture Supplementation and Supply of Rumen Bypass Protein to Milch Animals

1. Supply of mineral mixture to dairy cows @ Rs.600 per cow per year for 8000 cows (DAH) Rs. 48.00 lakhs.

2. Supply of mineral mixture to members of milk society at subsidized cost (50 per cent) @ 18.0 Kg per year per cow @ 375 cows per year for a total of 1500 cows in four years (DDD) Rs.7.50 lakhs

6.3.3. Heifer Calves Nutrition Programme

1. Cost of concentrate feed @ 1.0 Kg per animal per day @ Rs.12.0 per Kg for one year Rs. 4380.00
2. Cost of mineral supplementation @ 10 Kg per animal per year @ Rs. 50 per Kg Rs. 500.00
3. Identification of calves @ Rs.50.0 per calf
4. Deworming and vaccination cost @ Rs, 50.00 per calf
5. Miscellaneous expenditure @Rs.130 per calf Unit cost 5110x2600 units (DAH) Rs.132.86 lakhs.

6.3.4. Supply of Bypass Protein to Milch Animals of Dairy Co-operation

Supply of bypass protein feed to the milch animals of the members of the milk society (360 Kg per animal per year) for 600 cows @ 50 per cent subsidy of Rs. 9.0 per Kg Rs. 19.80 lakhs

i . Implementation Chart of the Project

Activity	2008-2009	2009-2010	2010-2011	2011-2012
Augmentation of fodder production (CO-3) through SHG/women entrepreneurs, Rs.0.235 Lakhs/acre, 10 acres/block/year, 11 blocks, for 4 years, 440 acres totally (DAH)	110 acres	110 acres	110 acres	110 acres
Supply of mineral mixture to dairy cows @ Rs.600/cow/year, for 8,000 cows (DAH)	2000 cows	2000 cows	2000 cows	2000 cows
Supply of mineral mixture at 50 per cent subsidy @ Rs. 375/- for 18 kg (one year supply) for 1500 animals (DDD)	375 cows	375 cows	375 cows	375 cows
Crossbred Heifer calves nutrition programme @ Rs.5110 per calf for 400 calves	650 calves	650 calves	650 calves	650 calves
Supply of by-pass protein feed to the milch animals (360 kg/animal/year) @ 50 per cent subsidy, Rs.9/kg, Rs.3,300/- per animal /year, for 600 cows in a period of 4 years	150 cows	150 cows	150 cows	150 cows

ii. Reporting

1. Fodder and Fodder Seeds and Slips Production

The Regional Joint Director of Animal Husbandry, Ramanathapuram will implement the project. Monthly progress of the project will be submitted to the concerned higher authorities.

2. Supply of Mineral Mixture and By-pass Protein Feed to the Dairy Cows

The General Manager, Aavin Karaikudi and the Regional Joint Director of Animal Husbandry, Ramanathapuram, will implement the projects. Monthly progress of the projects will be submitted to the concerned higher authorities.

3. Crossbred Heifer Calves Nutritional Programme

The regional Joint Director of Animal Husbandry, Ramanathapuram will implement the project. Monthly progress of the project will be submitted to the concerned higher authorities.

6.3.5. Genetic Up gradation of Cattle, Buffaloes, Sheep and Goats, Improvement of Livestock Health, Supply of Goat Units to SHG, popularizing Backyard Poultry Units and Health Care for Existing Desi Birds in Backyard

i. Abstract

a. Tracking the Breedable Bovines in the District

It is estimated that the district has a total number of 1,00,700 breedable bovine population. Tracking the breedable bovines with an ear tag and a passbook at a cost of Rs.20/- per animal is proposed. The total outlay is Rs. 20.14 Lakhs. The project will be jointly implemented by the Department of Animal Husbandry, Ramanathapuram and Aavin, Karaikudi.

b. Establishment of Mobile Veterinary Clinics

Mobile veterinary clinics (7 units) will be established at a total cost of Rs. 40.82 Lakhs @ Rs.5.832 Lakhs/unit under the Department of Animal Husbandry, Ramanathapuram for provision of health cover facilities in remote areas in the district.

c. Strengthening of Veterinary Institutions

A total number of 15 veterinary institutions in the district will be strengthened with basic facilities like fencing, provision of bore-wells, water troughs and minor repair works also will be carried out at a total cost of Rs. 75.0 Lakhs @ Rs.5.00 Lakhs / institution. The project will be implemented by the Department of Animal Husbandry, Ramanathapuram.

d. Control of Parasitic Diseases to Enhance Vaccine Response

The sheep, goats and calves below one year of age will be dewormed 4 times in a year before vaccinating them to enhance the vaccine response in them. The cost of the project will be Rs. 6.5 Lakhs per year. The total cost will be Rs. 26.00 Lakhs for 4 years. The project will be implemented by the Department of Animal Husbandry, Ramanathapuram.

e. Supply of Stall-fed Goat Units

Goat units (20+1) will be supplied to the self help groups in the district @ Rs.0.42 Lakhs /unit. One unit/block/year, for 4 years, 11 blocks, 44 units totally at a total cost of Rs.18.48 Lakhs. The project will be implemented by the Department of Animal Husbandry, Ramanathapuram.

f. Popularizing Backyard Poultry Units

Members of the women self help group will be provided with improved desi chicken/turkeys to augment their house hold income. 10 women per village @ 20 villages per year will be covered. Each selected woman will be provided with one unit (turkey /desi chicken comprises of 8 females and 2 male chicks) @ 200 units per year. A total of 8000 units will be provided at a rate of Rs. 500 per unit and the total cost of the project will be Rs. 4.00 lakhs. The project will be implemented by the Department of Animal Husbandry, Ramanathapuram.

g. Health Care for Existing Desi Birds in Backyard

All the back yard poultry in Ramanathapuram district will be vaccinated against Ranikhet disease to prevent mortality in birds. A total of 50000 birds @ Rs. 1.0 per bird will be covered and the total cost of the project will be Rs. 2.0 lakhs for four years. The project will be implemented by the Department of Animal Husbandry, Ramanathapuram.

h. Establishment of Animal Disease Intelligence unit at Ramnathapuram

One animal disease intelligence unit will be established at Ramanathapuram district at a cost of RS. 24.5 lakhs.

Table 6.12 Project Costs for Genetic Upgradation of Cattle

Sl. No.	Particulars	Amount (Rs. in Lakhs)
1.	Tracking the breedable bovine population with an ear tag and a passbook @ Rs.20/- animal, for 100700 animals (DAH and DDD)	20.14
2.	Establishment of mobile veterinary clinics @ Rs.5.832 Lakhs/unit, 7 units totally (DAH)	40.82
3.	Strengthening of 15 veterinary institutions with basic facilities like fencing, provision of bore-wells, water troughs and minor repair works @ Rs.5.00 Lakhs/unit (DAH)	75.00
4.	Control of parasitic diseases to enhance vaccine response @ Rs.1/- per sheep or goat and Rs.3/- per calf below one year, 4 times /year, Rs. 6.5 Lakhs/year, for 4 years (DAH)	26.0
5.	Supply of stall-fed goat units (20+1) to SHG @ Rs.0.42 Lakhs/unit, one unit/block/year, for 4 years, 11 blocks, 44 units totally	18.48
6.	Popularizing backyard poultry units 10 women per village @ 20 villages per year will be covered. Each selected woman will be provided with one unit of turkey/desi chicken. (one unit comprises of 8 females and 2 male chicks) @ 200 units per year. A total of 8000 units will be provided at a rate of Rs. 500 per unit and the total cost of the project will be Rs. 4.00 lakhs.	4.0
7.	**Health Care for Existing Desi Birds in Backyard** All the back yard poultry in Ramanathapuram district will be vaccinated against Ranikhet disease to prevent mortality in birds. A total of 50000 birds @ Rs. 1.0 per bird will be covered and the total cost of the project will be Rs. 2.0 lakhs for four years. The project will be implemented by the Department of Animal Husbandry, Ramanathapuram.	2.0
8.	Establishment of Animal Disease Intelligence unit at Ramnathapuram at a cost of RS. 24.5 lakhs.	24.5
	Total	**210.94**

i. Background/ Problem Focus

a. Tracking the Breedable Bovines in the District

It is estimated that the district has a total number of 57800 breedable bovine population. Tracking the breedable bovines with an ear tag and a passbook will help to follow the animals and will be the first step in the registration of bovines with accurate details about the animal, its health status etc.

b. Establishment of Mobile Veterinary Clinics

There is a 43 per cent shortfall in the number of veterinarians in the district as against the total livestock population. Further, door-to-door timely health cover facilities especially in the remote villages of the district is very essential.

c. Strengthening of Veterinary Institutions

A total number of 15 veterinary institutions in the district are not provided with certain basic facilities like fencing, provision of bore-wells, water troughs and minor repair works need to be carried out.

d. Control of Parasitic Diseases to enhance Vaccine Response

The sheep, goats and calves below one year of age have to be dewormed 4 times in a year before vaccinating them to enhance the vaccine response in them. At present the practice of deworming the sheep, goat and calves before vaccinating them is not in vogue.

e. Supply of Stall-fed Goat Units

Intensive management with stall-feeding of goats is becoming popular due to decreased availability of grazing lands.

f. Popularizing Backyard Poultry Units

Encouraging rural women folk to take up backyard poultry, as an income-generating venture will help in increasing their house hold income. More over, it will also supplement the vital protein needs of their family.

g. Health Care for Existing Desi Birds in Backyard

Farmers are experiencing heavy mortality in desi birds during the out break of Ranikhet disease. Timely and prophylactic vaccination of desi birds will help in the prevention of this killer disease.

h. Establishment of Animal Disease Intelligence Unit

Diseases cause huge economic loss to the farming community by way of Livestock Mortality and decreased productivity which has a direct impact on food security and rural economy. Control and eradication of many diseases is a must not only for profitable Livestock production but also essential to make our Livestock & Livestock products globally acceptable. Systematic control of diseases will progressively lead to its containment first and eradication ultimately. Information about the prevalence rate and disease burden of the state's Livestock population is critical in the right against Livestock diseases and this forms the basis for planning and initiating disease prevention and control strategies. Moreover, early forecasting of diseases and surveillance is essential to provide early warning signature of outbreaks while epidemiology helps in systematic study of the distribution and determinants of health problems. Hence, establishment of animals disease intelligence unit at Ramanathapuram will help in early forecasting which will help in effective control of animal disease thereby improving animal health and productivity.

ii. Project Rationale

a. Tracking the Breedable Bovines in the District

It is estimated that the district has a total number of 57800 breedable bovine population. Tracking the breedable bovines with an ear tag and a passbook will help to follow the animals and will be the first step in the registration of bovines with accurate details about the animal, its health status etc.

b. Establishment of Mobile Veterinary Clinics

Each mobile veterinary clinic will consist of one VAS and one driver. The staff for the clinic will be sourced from the available staff in the department. The unit will be

provided with one vehicle at a cost of Rs. 4.75 Lakhs. The VAS will be in-charge of the vehicle. The vehicle will cover remote and inaccessible villages on a scheduled programme of operation. Medicines will be sourced from the veterinary institutions available in the block itself. Necessary equipment like gags, scalpels, scissors, suture needles, forceps, A.I. guns etc. apart from Liquid Nitrogen containers and sheath will be provided to each unit. Diesel worth Rs.45,000/- will be provided per year to each unit. The unit will prepare a tour programme on 6 days a week basis and the farmers will be intimated well in advance.

c. Strengthening of Veterinary Institutions in the District

A total number of 15 veterinary institutions in the district will be strengthened with basic facilities like fencing, provision of bore-wells, water troughs and minor repair works also will be carried out at a total cost of Rs. 75.0 Lakhs @ Rs.5.00 Lakhs / institution.

d. Control of Parasitic Diseases to enhance Vaccine Response

The sheep, goats and calves below one year of age will be dewormed 4 times in a year before vaccinating them to enhance the vaccine response in them. The cost of deworming will be Rs.1/- per sheep or goat and Rs. 3/- for a calf below 1 year of age. The deworming will be done 4 times a year, before vaccination. The total cost of the project will be Rs.6.5 Lakhs per year. The total cost will be Rs. 26.0 Lakhs for 4 years. The project will be implemented by the Department of Animal Husbandry, Ramanathapuram.

e. Supply of Stall-fed Goat Units to SHG

Intensive management with stall-feeding of goats is becoming popular due to decreased availability of grazing lands.

f. Popularizing Backyard Poultry Units

Encouraging rural women folk to take up backyard poultry, as an income-generating venture will help in increasing their house hold income. More over, it will also supplement the vital protein needs of their family.

g. Health Care for existing Desi Birds in Backyard

Farmers are experiencing heavy mortality in desi birds during the out break of Ranikhet disease. Timely and prophylactic vaccination of desi birds will help in the prevention of this killer disease. Hence, desi birds have to be protected by proper vaccination.

h. Establishment of Animal Disease Intelligence Unit

Diseases cause huge economic loss to the farming community by way of Livestock Mortality and decreased productivity which has a direct impact on food security and rural economy. Control and eradication of many diseases is a must not only for profitable Livestock production but also essential to make our Livestock & Livestock products globally acceptable. Systematic control of diseases will progressively lead to its containment first and eradication ultimately. Information about the prevalence rate and disease burden of the state's Livestock population is critical in the right against Livestock diseases and this forms the basis for planning and initiating disease prevention and control strategies. Moreover, early forecasting of diseases and surveillance is essential to provide early warning signature of outbreaks while epidemiology helps in systematic study of the distribution and determinants of health problems. Hence, establishment of animals disease intelligence unit at Ramanathapuram will help in early forecasting which will help in effective control of animal disease thereby improving animal health and productivity.

iii. Project Strategy

a. Tracking the Breedable Bovines in the District

It is estimated that the district has a total number of 57800 breedable bovine population. Tracking the breedable bovines with an ear tag and a passbook at a cost of Rs.20/- per animal is proposed. The total outlay is Rs. 11.56 Lakhs.

b. Establishment of Mobile Veterinary Clinics

Each mobile veterinary clinic will consist of one VAS and one driver. The staff for the clinic will be sourced from the available staff in the department. The unit will be

provided with one vehicle at a cost of Rs. 4.75 Lakhs. The VAS will be in-charge of the vehicle. The vehicle will cover remote and inaccessible villages on a scheduled programme of operation. Medicines will be sourced from the veterinary institutions available in the block itself. Necessary equipment like gags, scalpels, scissors, suture needles, forceps, A.I. guns etc. apart from Liquid Nitrogen containers and sheath will be provided to each unit. Diesel worth Rs.45,000/- will be provided per year to each unit. The unit will prepare a tour programme on 6 days a week basis and the farmers will be intimated well in advance.

c. Strengthening of Veterinary Institutions in the District

A total number of 15 veterinary institutions in the district will be strengthened with basic facilities like fencing, provision of bore-wells, water troughs and minor repair works also will be carried out at a total cost of Rs. 75.0 Lakhs @ Rs.5.00 Lakhs / institution.

d. Control of Parasitic Diseases to enhance Vaccine Response

The sheep, goats and calves below one year of age will be dewormed 4 times in a year before vaccinating them to enhance the vaccine response in them. The cost of deworming will be Rs.1/- per sheep or goat and Rs. 3 /- for a calf below 1 year of age. The deworming will be done 4 times a year, before vaccination. The total cost of the project will be Rs.6.5 Lakhs per year. The total cost will be Rs. 26.0 Lakhs for 4 years. The project will be implemented by the Department of Animal Husbandry, Ramanathapuram.

e. Supply of Stall-fed Goat Units to SHG

Supply of stall-fed goat units (20+1) to SHG @ Rs.0.42 Lakhs/unit, one unit/block/year, for 4 years, 11 blocks, 44 units totally.

f. Popularizing Backyard Poultry Units

Encouraging rural women folk to take up backyard poultry, as an income-generating venture will help in increasing their house hold income. More over, it will also supplement the vital protein needs of their family.

g. Health Care for existing Desi Birds in Backyard

All the desi birds will be vaccinated against Ranikhet disease at periodical intervals inorder to protect them from Ranikhet disease.

h. Establishment of Animal Disease Intelligence Unit

One animal disease intelligence unit will be established at Ramanathapuram district at a cost of RS. 24.5 lakhs.

iv. Project Goals

- Tracing the breedable bovines in the district.
- Establishment of 7 mobile veterinary clinics.
- Strengthening of 15 veterinary institutions in the district with basic facilities.
- Control of parasitic diseases in sheep, goats and calves (below one year of age) through deworming to enhance vaccine response.
- To establish 44 stall-fed goat units to promote intensive management of goats.
- Popularizing backyard poultry units to improve the livelihood of rural women
- Providing health care for existing desi birds in back yard
- Establishment of Animal Disease Intelligence unit

v. Project Components

a. Tracking the Breedable Bovines in the District

Tracking the breedable bovines with an ear tag and a passbook when the animal comes for Artificial Insemination.

b. Establishment of Mobile Veterinary Clinics

Each mobile veterinary clinic will consist of one VAS and one driver. The staff for the clinic will be sourced from the available staff in the department. The unit will be provided with one vehicle at a cost of Rs. 4.75 Lakhs. The VAS will be in-charge of the vehicle. The vehicle will cover remote and inaccessible villages on a scheduled programme of operation. Medicines will be sourced from the veterinary institutions available in the block itself. Necessary equipment like gags, scalpels, scissors, suture needles, forceps, A.I. guns etc. apart from Liquid Nitrogen containers and sheath will be provided to each unit. Diesel worth Rs.45,000/- will be provided per year to each unit. The unit will prepare a tour programme on 6 days a week basis and the farmers will be intimated well in advance.

Non-recurring Expenditure

1)	Equipments (Rs.30, 000)	=	Rs.0.30 lakh
2)	LN2 container (Rs. 30,000)	=	Rs.0.30 lakh
3)	Small LN2 container (Rs.5000)	=	Rs.0.05 lakh
4)	Jeep	=	Rs.4.75 lakh

Recurring Expenditure

	Diesel 90 Lit x 12 xRs.40	=	Rs.0.432 lakh
	Total cost	**=**	**Rs. 5.832 lakh**

c. Strengthening of Veterinary Institutions in the District

A total number of 15 veterinary institutions in the district will be strengthened with basic facilities like fencing, provision of bore-wells, water troughs and minor repair works also will be carried out at a total cost of Rs. 75.0 Lakhs @ Rs.5.00 Lakhs / institution.

d. Control of Parasitic Diseases to enhance Vaccine Response

The sheep, goats and calves below one year of age will be de wormed 4 times in a year before vaccinating them to enhance the vaccine response in them. The cost of

deworming will be Rs.1/- per sheep or goat and Rs. 3 /- for a calf below 1 year of age. The deworming will be done 4 times a year, before vaccination. The total cost of the project will be Rs.6.5 Lakhs per year. The total cost will be Rs. 26.0 Lakhs for 4 years. The project will be implemented by the Department of Animal Husbandry, Ramanathapuram.

e. Supply of Stall-fed Goat Units to SHG

Supply of stall-fed goat units (20+1) to SHG @ Rs.0.42 Lakhs/unit, one unit/block/year, for 4 years, 11 blocks, 44 units totally.

f. Popularizing Backyard Poultry Units

Members of the women self help group will be provided with improved desi chicken/turkeys to augment their house hold income. 10 women per village @ 20 villages per year will be covered. Each selected woman will be provided with one unit (turkey /desi chicken comprises of 8 females and 2 male chicks) @ 200 units per year. A total of 8000 units will be provided at a rate of Rs. 500 per unit and the total cost of the project will be Rs. 4.00 lakhs. The project will be implemented by the Department of Animal Husbandry, Ramanathapuram.

g. Health Care for existing Desi Birds in Backyard

All the back yard poultry in Ramanathapuram district will be vaccinated against Ranikhet disease to prevent mortality in birds. A total of 50000 birds @ Rs. 1.0 per bird will be covered and the total cost of the project will be Rs. 2.0 lakhs for four years. The project will be implemented by the Department of Animal Husbandry, Ramanathapuram.

h. Establishment of Animal Disease Intelligence Unit

One animal disease intelligence unit will be established at Ramanathapuram district at a cost of RS. 24.5 lakhs.

Each unit will be provided with the necessary equipment worth Rs.9.00 lakhs and furniture worth Rs.0.50 lakhs. In addition they will be provided with necessary chemicals and glassware's at a cost of Rs.1.00 lakh. Apart from this they will be provided Rs.1.00 lakh for purchase of office equipments like computers and accessories, communication aides such as telephone, fax, etc.

The cost of the vehicle along with equipments will be approximately Rs.12/- lakh. The cost of the vehicle is approximately Rs.11.00 lakh. The cost of microscope will be Rs.0.50 lakh, cost of refrigerator will be Rs.0.25 lakh, cost of centrifuge will be Rs.0.15 lakh, cost of post mortem kits and other chemicals and chemical reagents will be Rs.0.10 lakh. In addition, they will be provided a recurring cost of Rs.1.00 lakh towards petroleum, Oil and Lubricants, Maintenance and purchase of stationeries etc.

Thus each Animal Disease Intelligence Unit will be established at a cost of Rs.24.50 lakhs in which Rs.22.50 lakhs will be the non-recurring cost and Rs.2.00 lakhs will be the recurring cost.

vi. Project Cost and Financing

Table 6.13 Project Costs for Bovine, Sheep, Goats and Poultry Unit

(Amount in Rs. Lakhs)

Activity	2008-2009	2009-2010	2010-2011	2011-2012	Total Cost
1. Tracking the breedable bovine population with an ear tag and a passbook @ Rs.20/- animal, for 57800 animals (DAH)	11.56	-	-	-	11.56
2. Establishment of mobile veterinary clinics @ Rs.5.832 Lakhs/unit, 7 units totally (DAH)	40.82	-	-	-	40.82
3. Strengthening of 15 veterinary institutions with basic facilities like fencing, provision of bore-wells, water troughs and minor repair works @ Rs.5.00 Lakhs/unit (DAH)	75.0	-	-	-	75.0

Table 6.13 Contd….. **(Amount in Rs. Lakhs)**

Activity	2008-2009	2009-2010	2010-2011	2011-2012	Total Cost
3. Strengthening of 15 veterinary institutions with basic facilities like fencing, provision of bore-wells, water troughs and minor repair works @ Rs.5.00 Lakhs/unit (DAH)	75.0	-	-	-	75.0
4. Control of parasitic diseases to enhance vaccine response @ Rs.1/- per sheep or goat and Rs.3/- per calf below one year, 4 times /year, Rs. 6.5 Lakhs/year, for 4 years (31694 calves, 245304 sheep and 234727 goats) (DAH)	6.5	6.5	6.5	6.5	26.0
5. Supply of stall-fed goat units (20+1) to SHG @ Rs.0.42 Lakhs/unit, one unit/block/year, for 4 years, 11 blocks, 44 units totally	4.62	4.62	4.62	4.62	18.48
6. Popularizing backyard poultry units 10 women per village @ 20 villages per year will be covered. Each selected woman will be provided with one unit of turkey/desi chicken. (one unit comprises of 8 females and 2 male chicks) @ 200 units per year. A total of 8000 units will be provided at a rate of Rs. 500 per unit and the total cost of the project will be Rs. 4.00 lakhs.	1.0	1.0	1.0	1.0	4.0
7. **Health care for existing desi birds in backyard** All the back yard poultry in Ramanathapuram district will be vaccinated against Ranikhet disease to prevent mortality in birds. A total of 50000 birds @ Rs. 1.0 per bird will be covered and the total cost of the project will be Rs. 2.0 lakhs for four years. The project will be implemented by the Department of Animal Husbandry, Ramanathapuram.	0.5	0.5	0.5	0.5	2.0
8. Establishment of Animal Disease Intelligence unit	24.5	-	-	-	24.5
Total	**164.5**	**12.62**	**12.62**	**12.62**	**202.36**

vii. Implementation Chart of the Project

Activity	2008-2009	2009-2010	2010-2011	2011-2012
1. Tracking the breedable bovine population with an ear tag and a passbook @ Rs.20/- animal, for 57800 animals (DAH and DDD)	57800 cows	-	-	-
2. Establishment of mobile veterinary clinics @ Rs.5.832 Lakhs/unit, 7 units totally (DAH)	7 units	-	-	-
3. Strengthening of 15 veterinary institutions with basic facilities like fencing, provision of bore-wells, water troughs and minor repair works @ Rs.5.00 Lakhs/unit (DAH)	15 units	-	-	-
4. Control of parasitic diseases to enhance vaccine response @ Rs.1/- per sheep or goat and Rs.3/- per calf below one year, 4 times /year, Rs. 6.5 Lakhs/year, for 4 years (DAH)	-	-	-	-
5. Supply of stall-fed goat units (20+1) to SHG @ Rs.0.42 Lakhs/unit, one unit/block/year, for 4 years, 11 blocks, 44 units totally	11 units	11units	11 units	11 units
6. Popularizing backyard poultry units 10 women per village @ 20 villages per year will be covered. Each selected woman will be provided with one unit of turkey/desi chicken. (one unit comprises of 8 females and 2 male chicks) @ 200 units per year. A total of 8000 units will be provided at a rate of Rs. 500 per unit and the total cost of the project will be Rs. 4.00 lakhs.	200 units	200 units	200 units	200 units
7. Health care for existing desi birds in backyard	-	-	-	-
8. Establishment of Animal Disease Intelligence unit	1 unit	-	-	-

viii. Reporting

a. Tracking the Breedable Bovines in the District

The project will be jointly implemented by the Department of Animal Husbandry, Ramanathapuram and Aavin, Karaikudi and periodical monthly reports will be submitted to the appropriate authorities.

b. Establishment of Mobile Veterinary Clinics

The Regional Joint Director of Animal Husbandry, Ramanathapuram will implement the Scheme and he will submit the report after the establishment of mobile veterinary clinics.

c. Strengthening of 15 Veterinary Institutions with Basic Facilities like Fencing, provision of Bore-wells, Water troughs and Minor Repair Works

The Regional Joint Director of Animal Husbandry, Ramanathapuram will implement the Scheme and he will submit periodical monthly reports to the appropriate authorities.

d. Control of Parasitic Diseases to enhance Vaccine Response

The Regional Joint Director of Animal Husbandry, Ramanathapuram will implement the Scheme and he will submit periodical monthly reports to the appropriate authorities.

e. Supply of Stall-fed Goat Units to SHG

The Regional Joint Director of Animal Husbandry, Ramanathapuram will implement the Scheme and he will submit periodical monthly reports to the appropriate authorities.

f. Popularizing Backyard Poultry Units

The Regional Joint Director of Animal Husbandry, Ramanathapuram will implement the Scheme and he will submit periodical monthly reports to the appropriate authorities.

g. Health Care for existing Desi Birds in Backyard

The Regional Joint Director of Animal Husbandry, Ramanathapuram will implement the Scheme and he will submit periodical monthly reports to the appropriate authorities.

h. Establishment of Animal Disease Intelligence Unit

The Regional Joint Director of Animal Husbandry, Ramanathapuram will implement the Scheme and he will submit periodical monthly reports to the appropriate authorities.

6.3.6. Improvement of Milk Collection, Processing, Value-addition and Marketing Facilities

i. Abstract

Ten portable milking machines will be supplied to the members of the society at a total cost of Rs.1.8 Lakhs @ Rs.0.18 Lakhs/unit. Provision of milking machines will help to improve the collection and quality of milk. One-bulk milk coolers will be established at Paramakudi block to improve the keeping quality of milk until it is processed. The total cost will be Rs.30.0 Lakhs. One unit of walk in cooler will be established at Ramanathapuram block at a cost of 30.0 lakhs. A total of 20 numbers of milk weighing machines will be established at milk producers' co-operative societies for accurate weighment of milk at a total cost of 3.40 Lakhs. One mobile input unit will be established at a cost of Rs.4.50 lakhs.

ii. Budget

Table 6.14 Project Costs for Improvemnet of Milk Collection and Marketing Facilities

(Rupees in Lakhs)

Sl. No.	Particulars	Amount (Rs. in lakhs)
1.	Supply of portable milking machines to members of the Society @ Rs. 0.18 Lakhs, 10 Units totally (DDD)	1.80
2.	Provision of bulk milk coolers @ Rs.30.0 Lakhs/unit, 1 units (DDD)	30.00
3.	Walk in cooler @ Rs. 30.0 lakhs per unit (DDD)	30.0
4.	Supply of 20 milk weighing machines to milk producers' co-operative societies @ Rs. 0.17 Lakhs/unit (DDD)	3.40
5.	Mobile input unit @ 1.0 unit at a cost of Rs.4.50 lakhs.	4.50
	Total	**69.70**

iii. Background/ Problem Focus

Presently hand-milking is practiced by the farmers. There is shortage of milkmen and problems of mastitis are common in hand milking. Automatic milking machines saves time, labour and prevents the occurrence of mastitis in cows. Establishment of bulk milk coolers and walk in coolers will help to maintain the qualtity of milk utill it is processed and marketed. Electronic weighing balances are to be provided to small societies to weigh milk. Lack of mobile input unit hinders efficient health care of dairy animals.

iv. Project Rationale

Milking machines will save labour, time and prevent the occurrence of mastitis in dairy cows. Bulk milk coolers and walk-in-coolers will help to keep the quality of milk until it is processed and marketed. Provision of milk weighing machines to societies will help in the accurate weighment of milk. Provision of mobile input unit will ensure timely health cover, artificial insemination and other services at the door steps of the dairy farmers.

v. Project Strategy

Ten portable milking machines will be supplied to the members of the society at a total cost of Rs.1.8 Lakhs @ Rs.0.18 Lakhs/unit. Provision of milking machines will help to improve the collection and quality of milk. One-bulk milk coolers will be established at Paramakudi block to improve the keeping quality of milk until it is processed. The total cost will be Rs.30.0 Lakhs. One unit of walk in cooler will be established at Ramanathapuram block at a cost of 30.0 lakhs. A total of 20 numbers of milk weighing machines will be established at milk producers' co-operative societies for accurate weighment of milk at a total cost of 3.40 Lakhs. One mobile input unit will be established at a cost of Rs.4.50 lakhs.

vi. Project Goals

- Clean milk production, saving labour and time and prevention of mastitis through installation of milking machines.
- Improvement of the milk quality until processing and marketing through establishment of bulk milk coolers and walk-in-coolers.
- Accurate weighment of milk in societies through supply of weighing machines.
- To establish mobile input unit to provide Veterinary care at the doorsteps.

vii. Project Components

Ten portable milking machines will be supplied to the members of the society at a total cost of Rs.1.8 Lakhs @ Rs.0.18 Lakhs/unit. Provision of milking machines will help to improve the collection and quality of milk. One-bulk milk coolers will be established at Paramakudi block to improve the keeping quality of milk until it is processed. The total cost will be Rs.30.0 Lakhs. One unit of walk in cooler will be established at Ramanathapuram block at a cost of 30.0 lakhs. A total of 20 numbers of milk weighing machines will be established at milk producers' co-operative societies for accurate weighment of milk at a total cost of 3.40 Lakhs. One mobile input unit will be established at a cost of Rs.4.50 lakhs.

viii. Project Cost and Financing

(Rs. in Lakhs)

S. No.	Project	2008-09	2009-10	2010-11	2011-12	Total Cost
1.	Supply of portable milking machines to members of the Society @ Rs. 0.18 Lakhs, 10 Units totally (DDD)	0.72	0.36	0.36	0.36	1.80
2.	Provision of bulk milk coolers @ Rs.30.0 Lakhs/unit, 1 units (DDD)	30.0	-	-	-	30.0
3.	Provision of walk in cooler @ Rs.30.0 Lakhs/unit, 1 units (DDD)	30.0	-	-	-	30.0
4.	Supply of 20 milk weighing machines to milk producers' co-operative societies @ Rs. 0.17 Lakhs/unit (DDD)	0.85	0.85	0.85	0.85	3.40
5.	Mobile input unit @ 1.0 unit at a cost of Rs.4.50 lakhs. The cost is inclusive of salary for the veterinarian, medicines, veterinary equipment and other expenses (DDD).	4.50	-	-	-	4.50
	Total	**66.07**	**1.21**	**1.21**	**1.21**	**69.7**

ix. Implementation Chart of the Project

S. No.	Project	2008-09	2009-10	2010-11	2011-12
1.	Supply of portable milking machines to members of the Society @ Rs. 0.18 Lakhs, 10 Units totally (DDD)	4	2	2	2
2.	Provision of bulk milk coolers @ Rs.30.0 Lakhs/unit, 1 units (DDD)	1	-	-	-
3.	Provision of walk in cooler @ Rs.30.0 Lakhs/unit, 1 units (DDD)	1	-	-	-
4.	Supply of 20 milk weighing machines to milk producers' co-operative societies @ Rs. 0.17 Lakhs/unit (DDD)	5	5	5	5
5.	Mobile input unit @ 1.0 unit at a cost of Rs.4.50 lakhs.	One unit	-	-	-

x. Reporting

The projects will be implemented by the Aavin, Karaikudi and periodical progress reports will be submitted to the concerned authorities.

6.3.7. Training Programme & Village Level Campaign on Livestock Farming and Study Tour of Farmers

i. Abstract

The following training programme will be conducted by Aavin, Karaikudi

- ❖ Farmers study tour
- ❖ Skill development for technical staff of Aavin Karaikudi
- ❖ Orientation training for milk producers

ii. Budget

Training Programmes by the Aavin, Karaikudi.

Table 6.15 Project Costs for the Improvement of Avin

(Rupees in Lakhs)

Activity	2008-2009	2009-2010	2010-2011	2011-2012	Total Cost
1. Farmers study tour @ Rs.5000 per farmer (DDD)	2.0	2.0	2.0	1.50	7.5
2. Skill development for technical staff of Aavin Karaikudi	0.75	0.75	0.75	0.75	3.0
3. Orientation training for milk producers	0.80	0.80	0.80	0.80	3.20
Total Budget for Training	**3.55**	**3.55**	**3.55**	**3.05**	**13.7**

iii. Background/ Problem Focus

The farmers are not aware of the latest technologies available in the areas of clean milk production, milk processing, milk testing and marketing.

iv. Project Rationale

The training programmes are planned to provide the latest technological developments in the field of dairy development.

v. Project Strategy

Aavin, Karaikudi will be conducting skill development training for technical staff, orientation training for milk producers at society level and will be taking the progressive farmers to study tour.

vi. Project Goals

- Capacity building in the areas of dairy farming, clean milk production and preparation of milk products.
- Enlightening the dairy farmers on latest developments in the dairy industry through training programmes and study tours.

vii. Project Components

The following training programme will be conducted by Aavin, Karaikudi

1. Farmers study tour @ Rs.5000 per farmer (DDD)
2. Skill development for technical staff of Aavin Karaikudi
3. Orientation training for milk producers

viii. Project Cost and Financing for Training Programmes by the Aavin, Karaikudi

(Amount in Rs. Lakhs)

Activity	2008-2009	2009-2010	2010-2011	2011-2012	Total Cost
1. Farmers study tour @ Rs.5000 per farmer 150 farmers for 4 years (120 farmer for first three years and 30 farmers for fourth year)	2.0	2.0	2.0	1.50	7.5 **(DDD)**
2. Skill development for technical staff of Aavin Karaikudi @ Rs.5000/- per staff, 60 for 4 years 15 staff per year	0.75	0.75	0.75	0.75	3.0
3. Orientation training/workshop for milk producers' at society level Rs.20,000 per programme, 4 programmes/year, for 4 years	0.80	0.80	0.80	0.80	3.20
Total budget for training	**3.55**	**3.55**	**3.55**	**3.05**	**13.7**

viii. Implementation Chart of the Project

Training Programmes by the Aavin, Karaikudi

Activity	2008-2009	2009 -2010	2010-2011	2011-2012
1. Farmers study tour @ Rs.5000 per farmer (DDD)	40 farmers	40 farmers	40 farmers	30 farmers
2. Skill development for technical staff of Aavin Karaikudi	15 staff members	12 staff members	15 staff members	15 staff members
3. Orientation training for milk producers	4 batches	4 batches	4 batches	4 batches

ix. Reporting

The General Manager, Aavin, Karaikudi will submit the periodical progress report on the training programmes conducted to the higher authorities.

6.3.7. Institutional Development

Establishment of training centre for capacity building programmes for farmers at Ramanathapuram District.

i. Abstract

Establishment of training centre for capacity building programmes for farmers at Ramanathapuram District at a total cost of Rs. 50.00 Lakhs (TANUVAS).

ii. Budget

(Rupees in Lakhs)

1.	Establishment of training centre for capacity building programmes for farmers at Ramanathapuram District at a total cost of Rs. 50.00 Lakhs (TANUVAS).	50.00
	Total	**: 50.00**

iii. Background/ Problem Focus

The Veterinary University Training and Research Centres (VUTRCs), Farmers Training Centres, Krishi Vigyan Kendras and Regional Research Centres are peripheral centres of Tamil Nadu Veterinary and Animal Sciences University aimed at creating information/technology need of the farmers in the districts of Tamil Nadu. These centres are acting like a two way bridge to transfer proven technologies from the University to the farming community and to communicate the field problems from the end users to the research institutes. These centers are imparting training based on the need of the end users, practicing farmers and officers of the line department. Moreover, these centres are involved in immediate and thorough diagnosis of disease in the event of an outbreak with special emphasis on disease reporting system. All these centres are working in coordination with line departments especially Department of Animal Husbandry, Dairy Development Department (Aavin) and Department of Agriculture and Horticulture providing them necessary technical backstopping in the areas of Animal Husbandry and

Agriculture. At present Ramanathapuram District does not have any of the University centres. Hence, it is high time to establish a training centre for capacity building programmes for farmers of Ramanathapuram District (VUTRC).

iv. Project Rationale

The Veterinary University Training and Research Centres (VUTRCs), Farmers Training Centres, Krishi Vigyan Kendras and Regional Research Centres are peripheral centres of Tamil Nadu Veterinary and Animal Sciences University aimed at creating information/technology need of the farmers in the districts of Tamil Nadu. These centres are acting like a two way bridge to transfer proven technologies from the University to the farming community and to communicate the field problems from the end users to the research institutes. These centers are imparting training based on the need of the end users, practicing farmers and officers of the line department. Moreover, these centres are involved in immediate and thorough diagnosis of disease in the event of an outbreak with special emphasis on disease reporting system. All these centres are working in coordination with line departments especially Department of Animal Husbandry, Dairy Development Department (Aavin) and Department of Agriculture and Horticulture providing them necessary technical backstopping in the areas of Animal Husbandry and Agriculture. At present Ramanathapuram District does not have any of the University centres. Hence, it is high time to establish a training centre for capacity building programmes for farmers of Ramanathapuram District (VUTRC).

v. Project Strategy

Establishment of training centre for capacity building programmes for farmers at Ramanathapuram District at a total cost of Rs. 50.00 Lakhs (TANUVAS).

vi. Project Goals

To establish a training centre for capacity building programmes for farmers of Ramanathapuram District.

vii. Project Components

Establishment of training centre for capacity building programmes for farmers at Ramanathapuram District at a total cost of Rs. 50.00 Lakhs (TANUVAS).

Table 6.16 Project Costs for Institutional Development

Sl. No.	Particulars	Amount (Rs. in lakhs)
1.	Civil works (Building)	25.00
2.	Fencing	10.00
3.	Basic Equipments a. Laminar Air Flow (Class – I) Rs. 0.50 b. Centrifuge – Rs. 0.50 c. Airconditioner for Lab – Rs. 2.00 d. Deep freezer – Rs. 1.00 e. Spectrocytometre – Rs. 1.00 f. Analytical instrument – Rs. 10.00	15.00
	Total	**50.00**

viii. Implementation Chart of the Project

Activity	2008-2009	2009-2010	2010-2011	2011-2012
Establishment of training centre for capacity building programmes for farmers at Ramanathapuram District at a total cost of Rs. 50.00 Lakhs (TANUVAS).	One training centre	-	-	-

ix. Reporting

The Head of the proposed VUTRC, Ramanathapuram will implement the project and the progress of the project will be submitted to the Tamil Nadu Veterinary and Animal Sciences University, Chennai.

6.3.8 Disaster Management

i. Abstract

Establishment of a disaster management system to protect livestock during natural calamities at Ramanathapuram District at a total cost of Rs. 110.10 Lakhs (TANUVAS) (Table 6.17).

ii. Budget

Table 6.17 Project Costs for Distaster Management System

(Rupees in Lakhs)

S. No	Details	Budget (Rs in lakh)	
		Physical	**Financial**
1	Training for veterinarians @ Rs.3000/vet	26	0.78
2	Production of Video films on Disaster management – Flood & drought		0.458
3	Multiplication into CDs& Distribution	83	0.042
4	Advertisement charges in News papers - Five Tamil dailies		0.17
5	Telephone facility at Veterinary Institutions	482	0.578
6	Cost of vaccine		3.074
7.	Animal Shelters		105
	Total		**110.102**

iii. Background/ Problem Focus

Disaster management is a holistic approach to emergencies and disasters with the goal of reducing the differences / gap between needed and available resources. For effective natural calamity management, the impact caused due to disaster need to be reduced. This requires mitigation, preparedness, and response and recovery mechanism. The principal responsibility of the government in disaster is to promote animal health and safety through emergency management. Also feed supply, safety, physical and mental well being of animal owners is important. Natural Calamities like drought, floods,

earthquakes, cyclones, epidemics, landslides are the commonly encountered disasters in the state. Each of these requires common preparedness and certain specific requirements. Calamities result in deprivation of life, resources, life support resources, mobility, owners' health and hygiene to the animals.

iv. Project Rationale

Disaster management is a holistic approach to emergencies and disasters with the goal of reducing the differences / gap between needed and available resources. For effective natural calamity management, the impact caused due to disaster need to be reduced. This requires mitigation, preparedness, and response and recovery mechanism. The principal responsibility of the government in disaster is to promote animal health and safety through emergency management. Also feed supply, safety, physical and mental well being of animal owners is important. Natural Calamities like drought, floods, earthquakes, cyclones, epidemics, landslides are the commonly encountered disasters in the state. Each of these requires common preparedness and certain specific requirements. Calamities result in deprivation of life, resources, life support resources, mobility, owners' health and hygiene to the animals. Ramanathapuram District, which is coastal district with lengthy seashore, is highly prone to natural calamities. Hence, establishing a permanent disaster management system is a must for the prevention of loss of valuable livestock wealth during the times of natural calamities.

v. Project Strategy

Establishment of a disaster management system to protect livestock during natural calamities at Ramanathapuram District at a total cost of Rs. 110.10 Lakhs (TANUVAS).

vi. Project Goals

To establish a disaster management system to protect livestock during natural calamities for farmers of Ramanathapuram District.

vii. Project Components

Establishment of a disaster management system to protect livestock during natural calamities at Ramanathapuram District at a total cost of Rs. 110.10 Lakhs (TANUVAS).

viii. Implementation Chart of the Project

Activity	2008 - 2009	2009-2010	2010-2011	2011-2012
Establishment of a disaster management system to protect livestock during natural calamities at Ramanathapuram District at a total cost of Rs. 110.10 Lakhs (DAH).	One disaster management system	-	-	-

ix. Reporting

The Regional Joint Director of Animal Husbandry, Ramanathapuram will implement the project and the progress of the project will be submitted to the Authorities concerned.

Table 6.18 Ramanathapuram District Action Plan – Animal Husbandry Sector

(Rs. in Lakhs)

Sl. No	Project Title	Unit Cost	2008-2009		2009-10		2010-11		2011-12		Grand Total	
			Units	Cost	Units	Cost	Units	Cost	Units	Cost	Total Units	Total Cost
	Cattle & Buffalo											
1	Fodder production by SHGs @ 10 acre/Bl/yr total 11 blocks (DAH)	0.235	110	25.85	110	25.85	110	25.85	110	25.85	440	103.4
2	Identification and traceability of breedable bovine population (DAH)	0.0002	57800	11.56	0.00	0.00	0.00	0.00	0	0.00	57800	11.56
3	Crossbred heifer calves nutrition programme (DAH)	0.0511	650	33.22	650.00	33.22	650.00	33.22	650	33.22	2600	132.875
4	Mobile veterinary clinics @ 1/TK (DAH)	5.832	7	40.82	0.00	0.00	0.00	0.00	0	0.00	7	40.824
5	Popularizing mineral mixture to improve livestock production (DAH) @ 1.0 kg/month for one year	0.006	2000	12.00	2000.00	12.00	2000.00	12.00	2000	12.00	8000	48
6	Control of parasitic diseases through treatment to enhance vaccine response (DAH)			6.50		6.50		6.50		6.50	0	26
	Sheep & Goat										0	0
1	Semi intensive sheep/goat farming to improve meat production by SHG/tribes @ 1/Bl (DAH)	0.42	11	4.62	11.00	4.62	11.00	4.62	11	4.62	44	18.48
	Poultry										0	0
1	Popularizing backyard poultry units (DAH)	0.005	200	1.00	200.00	1.00	200.00	1.00	200	1.00	800	4
2	Health care for existing desi birds in backyard (DAH)	0.00001	50000	0.50	50000.00	0.50	50000.00	0.50	50000	0.50	200000	2

Table. 6.18 contd…

Sl. No	Project Title	Unit Cost	2008-2009		2009-10		2010-11		2011-12		Grand Total	
			Units	Cost	Units	Cost	Units	Cost	Units	Cost	Total Units	Total Cost
	Others										0	0
1	Renovation of existing VDs (DAH)	5	15	75.00	0.00	0.00	0.00	0.00	0	0.00	15	75
2	Establishment of Animal Disease Intelligence unit at Ramnad (DAH)	24.5	1	24.50	0.00	0.00	0.00	0.00	0	0.00	1	24.5
3	Disaster management : Construction of animal sheds, conducting awareness and training programmes (DAH)			110.10	0.00	0.00	0.00	0.00	0	0.00	0	110.1
	DAH-Total			**345.67**		**83.69**		**83.69**		**83.69**		**596.74**
1	Mobile input units (one per 50 DCS) (DDD)	4.50	1	4.50	0.00	0.00	0.00	0.00	0.00	0.00	1	4.5
2	Supply of mineral mixture to the milch animals at subsidised cost (50%) @ 18 kg/ year (DDD)	0.005	375	1.875	375.00	1.875	375.00	1.875	375.00	1.875	1500	7.500
3	Supply of by-pass protein feed to the milch animals (360kgs/ year/animal @ 50% subsidised cost of Rs.9/- per kg.) (DDD)	0.033	150	4.95	150.00	4.95	150.00	4.95	150.00	4.95	600	19.8
4	Portable milking machines for farmers (DDD)	0.18	4	0.72	2.00	0.36	2.00	0.36	2.00	0.36	10	1.8
5	Bulk milk cooler (DDD)	30.00	1	30.00	0.00	0.00	0.00	0.00	0.00	0.00	1	30
6	Walk-in coolers (DDD)	30.00	1	30.00	0.00	0.00	0.00	0.00	0.00	0.00	1	30
7	Milk weighing machine for Milk Producers Co-Op. Societies (DDD)	0.17	5	0.85	5.00	0.85	5.00	0.85	5.00	0.85	20	3.4
8	Farmers study tour @ Rs.5000/- per farmer (DDD)	0.05	40	2.00	40.00	2.00	40.00	2.00	30.00	1.50	150	7.5

Table. 6.18 contd…

Sl. No	Project Title	Unit Cost	2008-2009		2009-10		2010-11		2011-12		Grand Total	
			Units	Cost	Units	Cost	Units	Cost	Units	Cost	Total Units	Total Cost
9	Skill development for technical staff (DDD)	0.05	15	0.75	15.00	0.75	15.00	0.75	15.00	0.75	60	3
10	Orientation training / workshop for milk producers at society level (DDD)	0.20	4	0.80	4.00	0.80	4.00	0.80	4.00	0.80	16	3.2
	DDD-TOTAL			**76.445**		**11.585**		**11.585**		**11.085**		**110.70**
1	Establishment of training centre for capacity building programmes for farmers (TANUVAS)	50	1	50.00	0.00	0.00	0.00	0.00	0	0.00	1	50
	TANUVAS - Total			**50.00**								**50**
	Grand total			**472.115**		**95.275**		**95.275**		**94.775**		**757.44**

6.3.1 Fisheries Sector

I. Promotion of Mariculture Activities

6.3.1 Cage Culture of Marine Finfishes

i. Abstract

In Tamilnadu, the mariculture activities are in its infancy. Tamilnadu has a coastal length of 1076 Kms and there is a vast scope for undertaking mariculture activities particularly cage culture. This activity can be entrusted with SHG with 50 per cent subsidy.

ii. Budget : Rs.30.00 lakhs

iii. Background/Problem Focus

The shallow sub tidal waters of Tamilnadu coast offers scope for cage culture operation which in turn can help to increase the marine fish production.

iv. Project Rationale

Cage culture of fin fishes in the subtidal areas of Ramnad coast will help to increase fish production.

v. Project Strategy

To promote mariculture activities it is proposed to extend 75 per cent subsidy assistance to the tune of Rs.3 lakhs. Additional staff are essentially required for successful implementation of the scheme.

vi. Project Goals

- To promote Mariculture activities such as cage culture of Marine fin fishes, Crab Fattening, Lobster Fattening, Mussel Culture and Seaweed culture.

- To utilize the open marine ecosystem for fisheries production

vii. Project Components

Inshore water, fin and shell fish species, open floating cages

Cage size	: 3 m dia x 2 m depth (Free board : 0.25 m)
No. of cages per unit	: 4 50 m^3)
Species to be stocked	: Sea bass, Milkfish, Pearl spot, etc.
Stocking Density	: 150 / m^3
Fingerlings required	: 7500 / unit
Survival (80 per cent)	: 6000
Average weight	: 500 g
Culture period	: 9 months

viii. Project Cost and Financing

Subsidy to be provided towards:

Cost of one cage (one 3 m dia X 2m depth) (including net cost)	:	Rs. 25,000
Cost of 4 cages in an unit	:	Rs.1,00,000
Cost of platform for feeding and monitoring	:	Rs. 75,000
Cost of floats and anchors	:	Rs. 25,000
Cost of seeds and feed per unit for a crop	:	Rs. 50,000
Management cost including water and ward fuel and electricity ,manpower (coolie wages)	:	Rs. 15,000
Insurance for the materials and stock	:	Rs. 10,000

Cost of 1 unit		**Rs.3,00,000**

Unit cost	:	Rs. 3 lakhs
Subsidy – 75 per cent		
Total no. of units	**:**	**10**
Total cost	**:**	**Rs. 30 lakhs**

ix. Implementation Chart of the Project : Duration: 4 Years

S.No	Particulars	2008-09	2009-10	2010-11	2011-12
1.	Fabrications and installation of cages	√			
2.	Stocking of fish seeds	√	√	√	
3.	Harvesting and sales		√	√	
4.	Training to beneficiaries		√	√	√
5.	Harvesting ,selling ,Reporting,		√	√	

ix. Reporting

To the State Fisheries Department for monitoring and evaluation.

6.3.1.2 Seaweed Culture

i. Abstract

Seaweed is the raw material for the production of agar, algin and carangenan which are in turn used as raw materials for pharmaceuticals and confectionaries. In the case of seaweed culture, the unit cost will be Rs. 32,000 for 45 rafts per unit.Budget: : Rs.6.4 lakhs.Subsidy will be extended to the tune of 50 per cent i.e., Rs. 16,000.

ii. Budget : Rs.6.4 lakhs

iii. Background/Problem Focus

Sea weed is a raw material for many food and confectionary items of commercial value and easily grows in the shore waters in rafts. Coastal fisherfolk do not find difficulty in knowing the techniques. Already womenfolk are culturing sea weed in a small scale as part time work and is remunerative. The source is to be further exploited for sea weed production and resource addition.

iv. Project Rationale

Encouraging the coastal folk for sea weed cultivation for livelihood.

v. Project Strategy

Subsidy and motivation of coastal folk to involve in this lucrative mariculture of sea weeds for employment generation

vi. Project Goals

- ❖ To make use of shore waters for native seaweed culture
- ❖ To help in the rejuvenation of the endangered sea weed from destruction
- ❖ Mass production of seaweeds for commercial utilization

vii. Project Components : Seaweed raft

viii. Project Cost and Financing

Subsidy @ 50 per cent cost

1. Cost of 1 cage (1X1m)	Rs. 150
2. Cost of 1 unit of rafts (45 nos)	Rs. 6,750
3. Cost of poles and installation	Rs. 5,000
4. Cost of seeds and planting (including nutrients)	Rs. 2,500
5. Cost of management per crop	Rs. 1,600

Total subsidy per unit of 45 rafts (watch and ward, harvesting expenses)	Rs. 16,000 ---
Total cost (40 units X 0.16 lakhs)	**Rs. 6.4 lakh**

ix. Implementation Chart of the Project

S.No	Particulars	2008-09	2009-10	2010-11	2011-12
1.	Selection of farmers/fisherfolk	√	√	√	
2.	Raft culture technique/ empowerment	√	√	√	√
3.	Production	√	√	√	√

x. Reporting

To the State Fisheries Department for monitoring and evaluation.

6.3.1.3. Development of Integrated Model for Coastal Aquaculture

i. Abstract

To demonstrate eco-friendly sustainable different coastal aquaculture practices such as marine finfish culture, cage culture, pen culture, crab culture integrating mangrove areas, it is necessary to develop an integrated model at Karangadu in Ramanathapuram District. The centre will have the facilities for training cum demonstration. This will diversify the fisherfolk from capture fisheries to culture fisheries and also to the fish farmers to take up coastal aquaculture as a commercial activity.

ii. Budget : Rs. 158 Lakhs

iii. Project Cost and Financing

Sl. No	Particulars	Amount Rs. in lakhs
1.	Cost of individual component (five components seaweed, crab, fish, shrimp and lobster)	125.00
2.	Cage and pen	15.00
3.	Installation feed, miscellaneous	18.00
	Total Cost	**158.00**

iv. Reporting

- To the State Fisheries Department for monitoring and evaluation
- Expected outcome of the project: Production

6.3.1.4 (a) Stock enhancement of Marine Aquatic Species Sea Ranching

i. Abstract

In the Gulf of Mannar region, to enhance the marine aquatic resources it is essential to introduce the hatchery reared juveniles of various shrimps and fishes into the open sea through the process of sea ranching .

ii. Budget

Unit cost/Year (3 crops)	: 7.00 lakhs
No. of Units	: 20
Total cost	**: 140 lakhs**

iii. Reporting : State Fisheries Department

6.3.1.4. b) Development of Artificial Reefs -Community Fish Aggregating Device (FADs) / Artificial Reef

i. Abstract

In view of depleting fish stock and diversified biodiversity, FAD has to be strengthened. Fish species at the verge of stock depletion have to be governed through FADs.. FADs with community involvement especially in the coastal region would help implementing the programme in a successful way.

ii. Budget : Rs. 150 .0 lakhs

iii. Background / Problem Focus

Fish aggregating device facilitates concentration of various fish species and invertebrate organisms to harbour in a particular locality like coral reef base, heaped boulders, sea grass bed, and will serve as a feeding and spawning ground. In the event of removal of such bases from the natural ecosystem, the fish species scatter themselves for want of protection and threat from predatory fishes and aquatic animals. Dredging of sea bottom constantly would drive away the fish population from one territory to another territory. Blasting of the sea and dynamite fishing has caused enormous threat to the fish aggregating locality in the past and they have to be rehabilitated by artificial means to sustain the fishery and conserving from destruction. Fish aggregation devices would help fish to find their feeding and breeding grounds for prolifying themselves easily. So FADs are novel ways to make the distant fish species to be attracted towards an artificial device. This would also help the fisher folk to involve themselves collectively to rejuvenate the coastal fauna and flora to meet out their fishing needs and livelihood.

iv.Project Rationale

- To enrich the inshore waters with diversified fish species
- To help the fishermen for good catch of fish
- To provide a protected ground for various fauna and flora
- To retain the semi natural ecosystem

v. Project Strategy

To implement the programme of community FADs in all the coastal districts to support marine fishery and stock retention.

vi. Project Goals

- ❖ To identify suitable ground along the coast to install FADs like concrete structures, boulders, and other fibre reinforced structures without polluting the coastal ecosystem.

- ❖ To give awareness to the fishermen and coastal fisher folk about the value of FADs to implement the programme with fishermen participation for community development.

vii. Project Components

Installation of FADs of various shapes and with different components like stone pitchments, barrels, tyres, hollow material and dead corals.

viii. Project Cost and Financing : Cost of one unit

Sl.No.	Components	Rs in lakhs
1.	An FAD of 10 metre diameter and 5 mt. height made up of concrete or FRP materials	5.00
2.	Anchorage	5.00
3.	Floor mast	1.50
4.	Training fisher folk	1.00
5.	Management cost (coolie wages, fuel, miscellaneous cost)	1.50
	Total	**15.00**
	Total (10 units X 15 lakhs)	**150**

ix. Project Implementation Chart

S. No	Particulars	2008-09	2009-10	2010-11	2011-12
1.	Identification of suitable coastal site for installation	√	√	√	√
2.	Design and fabrication of FADs	√	√	√	√
3.	Installation	√	√	√	√
4.	Training	√	√	√	√
5.	Sampling and fish catch	√	√	√	√

x. Reporting

The efficiency of FADs kept installed in the coast will be periodically monitored and aggregation of fish species will be observed and reported to the authorities through fisher folk with community involvement.

6.3.1.5 Capacity Building

Farmers / Fishermen Training

i. Abstract

To conduct training programmes on freshwater fish culture technologies for adoption. The training programmes will also include various demonstrations on fish culture activities.

ii. Budget : Rs. 20.00 lakhs

iii. Background / Problem Focus

The inland fisheries sector of Tamilnadu is endowed with a total water spread area of 3,18,790 ha with as major irrigation and long seasonal tanks (97,690 ha), short seasonal tanks/ponds (1,58,100 ha), estuaries and backwaters (56,000 ha) derelict waters, swamps etc. (7,000 ha). While these resources have a potential to yield 2.46 lakhs tonnes of fish, the present yield is only 1.14 lakhs tonnes. About 60per cent culturable area has been brought under culture practices.]

iv. Project Rationale

Imparting training in such fish culture practices would generate employment opportunities and make them self reliant and socially and economically empowered.

v. Project Strategy

To conduct training programme on freshwater fish culture for the farmers so as to improve their socio economic conditions.

vi. Project Goals

- ❖ To conduct 200 training programmes on freshwater fish culture
- ❖ To conduct follow up studies.

vii. Project Components

- ❖ Composite fish culture
- ❖ Ornamental fish culture
- ❖ Integrated fish farming
- ❖ Cat fish culture
- ❖ Economics and Marketing

viii. Project Cost and Financing

S.No.	Particulars	App. Budget
1.	Stipend@ Rs. 100/ participant for 25 participants/ 3days	Rs. 7500
2.	Extension materials	Rs. 2000
3.	Miscellaneous	Rs. 500
Total		**Rs. 10000**

ix. Implementation of Client of the Project

S. No	Particulars	2008-09	2009-10	2010-11	2011-12
1.	Identification of villages	√	√	√	√
2.	Selection of participants	√	√	√	√
3.	Conducting training programmes	√	√	√	√
4.	Evaluation of training programmes	√	√	√	√

x. Reporting

The progress of the project will be reported to the concerned authorities quarterly.

6.3.1.6 To provide Subsidy for Motor Cycle with Ice Box.

i. Abstract

The mopeds with ice box will be provided to inland fishermen for hygienic marketing.

ii. Budget : Rs. 7.50 lakhs

iii. Background / Problem Focus

For transporting and marketing fish hygienically.

iv. Project Rationale/ Project Strategy / Project Goals

- ❖ Fishermen and vendors will be provided with ice box and mopeds that could make available the fish in time with quality.
- ❖ Making available mopeds and ice box at affordable price to meet the fishermen needs.
- ❖ To promote and sale of fish of high quality

v. Project Components

Supply of 30 units of mopeds with ice box at 50 per cent subsidy.

vi. Project Cost and Financing

Subsidy for

Sl.No	Particulars	Amount Rs. in lakhs
1.	Cost of one unit (moped with ice box)	0.15
2.	No of units	50
3.	Total Cost (50 unit X 0.15)	7.5

vii. Implementation Chart of the Project

S. No	Particulars	2008-09	2009-10	2010-11	2011-12
1.	Supply of moped with ice box	√	√	√	√

viii. Reporting

Progress of the project will be reported periodically.

6.3.1.7Infrastructure Development for Modern Marketing

i. Abstract

Retail market will have 20-25 fish stalls where facilities like ice boxes, crates, electronic balance and dressing table are provided along with electricity, draining and water facilities

ii. Budget: Rs.100 lakhs

iii. Project Cost and Financing (one unit)

1. Cost of construction of fish mall (200m.squ.) : Rs.20, 00,000

2. Cost of refrigeration facilities : Rs.25, 00,000
   centralized cold storage (200 tonnes capacity)

3. Cost of water line, fish dressing chamber : Rs. 5, 00,000
   waste disposal and sampling provision

Total **Rs. 50,00,000**

6.3.1.8 Expansion of Fish Culture hitherto unutilized Freshwater Bodies by Stocking Fingerlings (50 per cent subsidy)

i. Abstract

To expand fish culture in 1000 ha of water bodies additionally.

ii. Budget : Rs. 5.00 lakhs

iii. Background / Problem Focus

It is proposed to cover 1000 ha of water bodies additionally to bring under fish culture by extending subsidy assistance for stocking fingerlings.

iv. Project Rationale

The fish production will be enhanced through utilization of water bodies.

v. Project Strategy

To supply fish seeds at a subsidy of 50 per cent to the fish farmers.

vi. Project Goals

To utilize water bodies for fish culture by supply of fish seeds to the farmers.

vii. Project Components

To stock fingerlings in 1000 ha water bodies at 1000 ha / year

viii. Project Cost and Financing : Rs. 5.00 lakhs @ 50 per cent subsidy

Unit cost	0.01 lakhs * 50 per cent subsidy for 1000 ha for fish seed production
No. of units	1000 ha
Total cost	0.01lakhs for 1000 ha at 50 per cent subsidy= 5.00 lakhs

ix. Implementation Chart of the Project

S. No	Particulars	2008-09	2009-10	2010-11	2011-12
1.	Production & supply of fish seeds	√	√	√	√

Table 6.19 Ramanathapuram District Action Plan – Fisheries Sector

(Rs.in lakh)

Sl. No.	Components	Implementing Agency	Unit cost	Total units	2008-09		2009-10		2010-11		2011-12		Total cost
					Units	cost	Units	cost	Units	cost	Units	cost	
1	Promotion of Mariculture Activities												
	a. Cage culture of Marine fin fishes(75% subsidy)	Fisheries Department	3.00	10	3	9.00	3	9.00	1	3.00	3	9.00	30.00
	b. Seaweed culture(50% subsidy)	Fisheries Department	0.16	40	10	1.60	10	1.60	10	1.60	10	1.60	6.40
2	Development of Integrated Model for Coastal Aquaculture	TNFDC	158.00	1			1	158.00					158.00
	a. Sea ranching programmes	Fisheries Department	7.00	20	5	35.00	5	35.00	5	35.00	5	35.00	140.00
	b. Deployment of artificial reefs	TAFCOFED	15.00	10	3	45.00	3	45.00	1	15.00	3	45.00	150.00
3	To provide subsidy for Moped with Ice Box (50% subsidy)	TAFCOFED	0.15	50	20	3.00	10	1.50	10	1.50	10	1.50	7.50
4	Infrastructure Development for modern market	Fisheries Department	50.00	2	1	50.00			1	50.00			100.00
5	Expansion of fish culture hitherto Unutilized freshwater bodies by stocking fingerlings (50%subsidy)	Fisheries Department	0.01	1000	250	1.25	250	1.25	250	1.25	250	1.25	5.00
	Fisheries - Total					**144.85**		**251.35**		**107.35**		**93.35**	**596.90**
1	Capacity Building Farmers / Fishermen Training	TANUVAS	0.10	200	50	5.00	50	5.00	50	5.00	50	5.00	20.00
	TANUVAS - Total					**5.00**		**5.00**		**5.00**		**5.00**	20.00
	Grand Total					**149.85**		**256.35**		**112.35**		**98.35**	**616.90**

6.4 Agricultural Engineering

6.4.1 Soil and Water Technologies

Agriculture in the district is mostly rain fed and so performance of crop production depends on the rainfall pattern in a year. In order to harvest the rain water, affluent farmers follow the practice of digging farm ponds. But this does not benefit the capital starved small and marginal farmers. Helping the farmers in water harvesting would ease their burden in farming to a greater extent. Efforts of the Department of agricultural engineering towards popularizing and implementing soil and water technologies are pooled together in the form of a proposal. Intervention measures thought of in this aspect are construction of unlined farm ponds, plastic lined farm ponds and compartmental bunding (all at 90 per cent subsided cost) to the beneficiaries.

i. Budget

The total project cost for the year 2008-09 is Rs. 62.55 lakhs.

ii. Background

Performance of agriculture sector in the district is not showing encouraging trend in the past due to erratic and unevenly distributed rainfall. In the absence of any scientific device to harvest the rain water, it is not possible to maximize the production of field crops in the district. Farmers of the district realize the need for an effective water harvesting structure with possible financial support from the government. Hence a Soil and Water Technologies Project is proposed under NADP.

iii. Project Rationale

- Rain Water Harvesting
- Creation of water harvesting structure on farm
- Improvement in water holding capacity of the soil
- Generation of employment to rural labour
- Preservation of valuable top soil and
- Cultivation in the second season

iv. Project Strategy

- Construction of unlined farm ponds
- Plastic lined ponds
- Soil and Water conservation through compartmental bunds and
- Land cultivation in the second/summer season

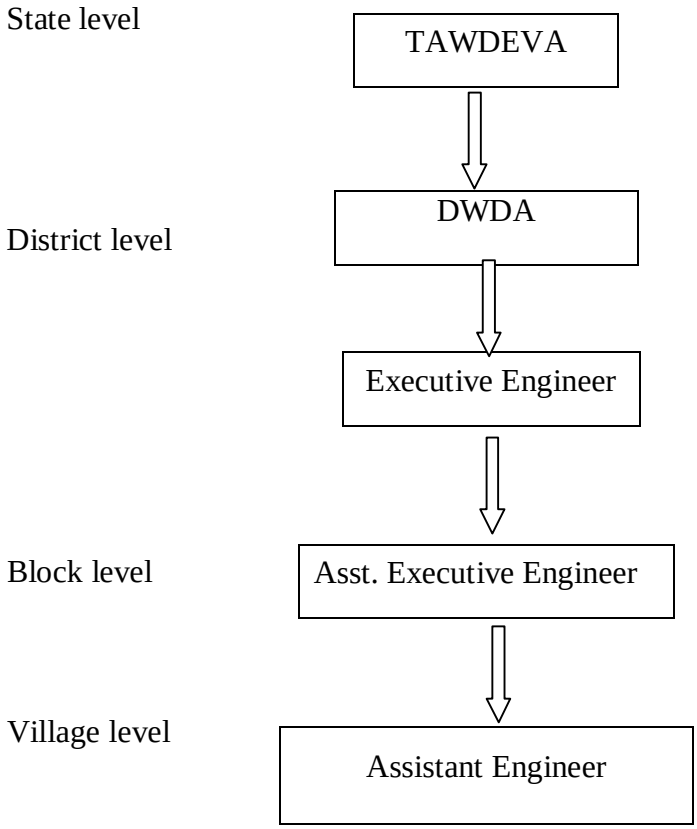
v. Project Goal

Harvesting rain water effectively *in – situ* and using it in the deficit season.

vi. Project Component

Major components of the project are Rain Water Harvesting, Construction of Un-lined Ponds, Construction of Lined Ponds, Soil and Water Conservation and Increasing Cropping Intensity.

vii. Project Implementation Chart



viii. Project Costs

The details of the Project costs are furnished in Table 6.20 through 6.23.

ix. Project Reporting

Assistant Engineer in the project area will report the monthly progress of the project to the Assistant Executive Engineer. After consolidation, it will be submitted to Executive Enginner and the same will be forwarded to DWDA for incorporation in the district report. Nodal Officer DWDA will forward the report to the TAWDEVA and Commissioner of Agriculture. Necessary records will be maintained at block and district level.

Table 6.20 Project Proposals for Soil and Water Technology for the Year 2008-09

Phy. in Nos./ ha; Fin .in.lakhs

S.No	Name of the work	Price / unit	Proposal subsidy (Per cent)	Paramakudi block		Mudukulathur block		Kamudhi block		Kadaladi block		Total	
1	Plastic lined Farm Pond	3.00	90	4	10.80	4	10.80	4	10.80	4	10.80	16	43.20
2	Unlined Fram Pond	0.50	90	1	0.45	2	0.90	2	0.90	2	0.90	7	3.15
3	Compartmental bunding	0.03 hec	90	150	4.05	150	4.05	15	4.05	150	4.05	600	16.20
Total				**155**	**15.30**	**156**	**15.75**	**156**	**15.75**	**156**	**15.75**	**623**	**62.55**

Table 6.21 Project Proposals for Soil and Water Technology for the Year 2009-10

S.No	Name of the work	Price / unit	Proposal subsidy (per cent)	Paramakudi block		Mudukulathur block		Kamudhi block		Kadaladi block		Total	
1	Plastic lined Farm Pond	3.00	90	4	10.80	4	10.80	4	10.80	4	10.80	16	43.20
2	Unlined Fram Pond	0.50	90	2	0.90	2	0.90	2	0.90	2	0.90	8	3.60
3	Compartmental bunding	0.03 hec	90	150	4.05	150	4.05	150	4.05	150	4.05	600	16.20
Total				**156**	**15.75**	**165**	**15.75**	**156**	**15.75**	**156**	**15.75**	**625**	**63.00**

Table 6.22 Project Proposals for Soil and Water Technology for the Year 2010-11

S.No	Name of the work	Price / unit	Proposal subsidy (per cent)	Paramakudi block		Mudukulathur block		Kamudhi block		Kadaladi block		Total	
1	Plastic lined Farm Pond	3.00	90	4	10.80	4	10.80	4	10.80	4	10.80	16	43.20
2	Unlined Fram Pond	0.50	90	2	0.90	2	0.90	2	0.90	2	0.90	8	3.60
3	Compartmental bunding	0.03 hec	90	150	4.05	150	4.05	150	4.05	150	4.05	600	16.20
Total				**156**	**15.75**	**156**	**15.75**	**156**	**15.75**	**156**	**15.75**	**624**	**63.00**

Table 6.23 Project Proposals for Soil and Water Technology for the Year 2011-12

S.No	Name of the work	Price / unit	Proposal subsidy (per cent)	Paramakudi block		Mudukulathur block		Kamudhi block		Kadaladi block		Total	
1	Plastic lined Farm Pond	3.00	90	4	10.80	4	10.80	4	10.80	4	10.80	16	43.20
2	Unlined Fram Pond	0.50	90	2	0.90	2	0.90	2	0.90	2	0.90	8	3.60
3	Compartmental bunding	0.03 hec	90	150	4.05	150	4.05	150	4.05	150	4.05	600	16.20
Total				**156**	**15.75**	**156**	**15.75**	**156**	**15.75**	**156**	**15.75**	**624**	**63.00**

6.5 Agricultural Marketing and Agribusiness

6.5.1 Strengthening of Agricultural Marketing and Agribusiness Development in Tamil Nadu through NADP Funding

i. Current Status of Agribusiness

Agriculture, as a primary sector provides livelihood to 56 per cent of the population and contributes around 13 per cent of the State GDP. In value terms between 65 and 75 per cent of agricultural produce is transacted in markets, usually through long marketing chains, regulated markets and an emerging commercialized retail system in urban centers. Unorganized small players (handling less than 0.5 t/day) process more than 75 per cent of industry output. The Government is taking efforts to achieve targeted growth rate of four per cent in Agriculture during XI Plan period. Though fertile soil, good quality water, and long period of sunlight which are the basic requirements for Agriculture are available in abundance in Tamil Nadu, still the productivity has not been enhanced to its potential level.

The Government is taking efforts to attain sustainable agricultural development by bringing agriculture as a commercial venture by switching over from the present method of cultivation through adoption of new scientific method of cultivation to increase the productivity to manifold, value addition, processing, and utilization of marketing opportunities. To improve the marketing opportunities for agricultural produce, the Uzhavar Santhai, post harvest management, cold storage facilities for perishables, food processing, establishment of export zones and terminal markets have been taken up. To reduce the loss of the food products which are upto 30 per cent necessary provisions are made in the Agricultural Industrial Policy to ensure remunerative price to the produce, encourage food processing sector and export to earn foreign exchange by increasing the food processing from the present level of one per cent to 10 per cent out of the total production, increasing value addition from seven per cent to 30 per cent. Under this policy, all assistance which is provided to other industries will be

extended to agro based industries, agricultural machineries and industries manufacturing micro irrigation equipments.

One Deputy Director of Agriculture (Agri Business) for each district, one Agricultural Officer for every two blocks and one Assistant Agricultural Officer for one block have been posted as per restructuring to regulate Agri Business and encourage entrepreneurs. In 103 Uzhavar Shandies, 51 Agricultural Officers and 52 Deputy Agricultural Officers are posted. After restructuring 239 original posts have been enhanced to 906 posts in Agricultural Marketing and Agri Business Department.

ii. Agribusiness and the National Development Goals

The Planning Commission's Mid-Term Appraisal (MTA) of the Tenth Plan notes that achieving higher growth rates depends on reversing the decline in growth of the agricultural sector and requires a move away from 'business as usual'. Under the eleventh Plan, areas identified for special attention in the agriculture sector included among others: (i) diversification to high value crops and activities; (ii) increasing cropping intensity; (iii) strengthening of marketing, processing and value addition infrastructure; (iv) revamping and modernizing the extension systems and encouraging the private sector to provide extension services; and (v) bridging the gap between research and farmers' yields.

For the agriculture sector, the eleventh Plan projected an annual growth rate of four per cent which was seen as achievable if growth of six to eight per cent could be achieved in horticulture. These growth rates have not eventuated largely because constraints identified in the Plan have not been overcome. These constraints include lack of modern and efficient infrastructure, poor technological support, and post harvest management, underdeveloped and exploitative market structures, inadequate research and extension to address specific agricultural problems and linkages with farmers and industry. The strong relationship between agriculture and rural poverty means that current plans, policy and sector performance will be unable to address the needs of rural poor.

The two most important programs related to agribusiness development are the Technology Mission for Integrated Development of Horticulture (TM) and the National Horticultural Mission (NHM). The focus of the TM is production of horticultural products in Hill states, whereas post harvest management and processing have only a nominal presence. The NHM has a broader coverage of states and addresses issues of market infrastructure development and processing. However, the key issue of coordination within value chains is not addressed. There needs to be a better understanding of why despite generous subsidies in the past, progress has been slow with private investment in market infrastructure and development of the processing industry. At present 21 Market committees are functioning in Tamil Nadu at district Level There are 277 Regulated Markets, 15 Check Posts, 108 Rural Godowns and 108 grading centres functioning under the Market Committees.

iii. Major Constraints and Challenges in Agricultural Marketing and Agribusiness Development in the State

Current agricultural marketing and agribusiness system in the state is the outcome of several years of Government intervention. The system has undergone several changes during the last 50 years owing to the increased marketed surplus; increase in urbanization and income levels and consequent changes in the pattern of demand for marketing services; increase in linkages with distant and overseas markets; and changes in the form and degree of government intervention. An important characteristic of agricultural produce markets in Tamil Nadu has been that private trade has continued to dominate the market. With the large quantities required to be handled by the private trade, the size and structure of markets over time have considerably expanded. There are a large number of wholesalers and retailers to handle the trade in food grains. Apart from traders, processors also play an important role as they also enter in the market as bulk buyers and sellers.

Agricultural development continues to remain the most important objective of State planning and policy. The experience of agricultural development in the State has

shown that the existing systems of delivery of agricultural inputs and marketing of agricultural output have not been efficient in reaching the benefits of technology to all the sections of farmers. The timely, quality, and cost effective delivery of adequate inputs still remains a dream despite the marketing attempts of the corporate sector and the developmental programmes of the State. Also, the farmers are not able to sell their surplus produce remuneratively. There are plenty of distress sales among farmers both in agriculturally developed as well as backward regions in the State. There are temporal and spatial variations in the markets and the producers' share in consumers' rupee has not been satisfactory, except for a few commodities. In fact, in some commodities like tomato in some regions in the State, producers end up making net losses at the same time traders make substantial profits from the same crop. However, it needs to be recognized that producers' relative share in the final price of a product certainly goes down with the increase in the number of value-adding stages, and therefore, cannot be used as an indicator of a market's efficiency or inefficiency. Nevertheless, the other aspects of the market performance like absolute share of the producer in terms of remunerability, fluctuations in prices across seasons, large spatial price differences and lack of proper market outlets itself, are the issues which have become increasingly crucial in the present context. There are structural weaknesses of agricultural markets like unorganized suppliers as against organized buyers, weak holding capacity of the producers and the perishable nature of the produce in the absence of any storage infrastructure. In the presence of these characteristics of the market, the rural producers cannot simply be left to fend for themselves so far as marketing of their produce is concerned. And if the marketing system does not assure good returns to producers, not much can be achieved in the field of product quality and delivery which are critical for processing and manufacturing sectors. In the environment of liberalization and globalization, the role of the State in agricultural marketing and input supply is being reduced, and an increasing space is being provided to the private sector to bring about better marketing efficiency in input and output markets. On the other hand, processors and/or marketers face problems in obtaining timely, cost effective, and adequate supply of quality raw materials.

Small farms produce more than 35 percent of State total grain, and over half of total fruits and vegetables despite being resource constrained. The marginal holdings have higher cropping intensity compared with that of the small, medium and large farmers, mainly owing to higher irrigated area as percentage of net sown area. The small and marginal farmers are certainly going to stay for long time in State though they are going to face a number of challenges. Therefore, what happens to small and marginal farmers has implications for the entire State and people's livelihood. But, they can adequately respond to these challenges only if there is efficient marketing system for handling their small surpluses. Otherwise, they will only be losers in the process of globalization and liberalization. The viability of the small holdings is an important issue and promoting agricultural diversification towards high value crops through an efficient marketing system is argued to be one of the means through which this can be achieved. Hence there is an urgent need for specific intervention in agricultural marketing in Tamil Nadu.

iv. Sector Problem Analysis

The core problem for agribusiness development in Tamil Nadu is the general failure in coordinating the decisions of private stakeholders (e.g. farmers, traders and agro-processors in the case of the agrifood system) and service providers from the public, private and nongovernmental organizations (NGO) sectors.

Farmers fail to link among themselves effective producer organizations able to undertake joint decisions in production and marketing. Farmers have weak linkages with enterprises and often fail to link effectively to markets because of limited access to relevant market intelligence and inadequate market infrastructure. Farmers are also poorly linked to research and extension providers to address their specific technology and knowledge needs that would enable them to innovate into high value production systems.

Entrepreneurs have weak linkages with farmers through contracts and vertical integration arrangements and are distant from consumers because of the absence of

organized retail chains. Linkages with service providers are characterized by a lack of confidence particularly in the case of research and extension organizations. The absence of proper certification, quality assurance systems and inadequate infrastructure continues to limit the integration of production with international markets.

Most of Service Providers fail to link with each other, particularly during implementation of national programs. Links between states and central agencies are often limited. Service providers from the public sector are often unable to provide effective services due to lack of funding, bureaucratic hurdles and the lack of a culture that is client and business oriented. Most NGOs are not used to working in the field of enterprise development and their presence in the agribusiness sector is marginal. Service providers from the private sectors are emerging but are mainly oriented to the needs of corporate clients rather than small and medium enterprises or producer groups that dominate total production.

Past interventions to improve technology, infrastructure and access to credit and markets had modest impact on growth of the sector. The policy assumption that more funds and subsidies will lead to the desired results has proved to be incorrect. Steps for ensuring coordination within each value chain have not been recognized. In spite of subsidies, progress has been slow with few effective value chains emerging and few stakeholders investing in market infrastructure such as the cooperative sector in Bangalore. The capacity of individuals, groups and service providers to understand and practice value chain principles and management remains low.

For growth to accelerate substantially a new way of thinking about agribusiness development in Tamil Nadu and promoting agribusiness is needed. This new way, and the related business practices that go with it, implies overcoming significant coordination failures. This requires appropriate institutional mechanisms that currently do not exist within current policy setting.

v. Project Rationale

The rationale for the proposed Augmentation of Agricultural Marketing and Agribusiness development in Tamil Nadu through NADP funding is based on the following:

1. The rate of agricultural growth over the past decade has been declining in Tamil Nadu. Agribusiness through its linkages to production, industry and services has the potential to transform the agricultural system into a more dynamic sector.

2. As urbanization and incomes grow, there is a growing demand for a wider range of agrifood products of higher quality and greater convenience to use in Tamil Nadu. Meeting this demand requires organized retailing and effective agribusiness supply chains.

3. Agribusiness contributes to the production of higher value products and diversification away from staple foods. Through this diversification and the development of the value chain between producers and consumers, the rural economy benefits from innovation and the creation of non-farm employment.

4. Tamil Nadu has a comparative advantage in a number of agricultural commodities. Increasing integration with global markets and the potential to become a stronger player in agricultural trade requires quality assurance and competitive advantage.

5. The State Government has identified agribusiness development as a strategic priority. In Tamil Nadu, agribusiness has a significant role to play in rural and economic development, and agro-enterprises could be a major source of rural non-farm employment and income.

6. The existing government programs to promote agricultural diversification are broad-based programs with multiple objectives. For agribusiness development to happen, a more focused approach is needed to complement the initiatives already covered by the different national programs.

vi. Project Strategy

The project will promote the Agri-business practices and models required to support agribusiness development in Tamil Nadu, allowing the sector to contribute to economic growth, particularly in rural areas. New Agri-business practices will be introduced relating to: (i) farmers and entrepreneurs engaging service providers to solve specific technology problems (ii) learning to work together in the value chain (iii) making effective use of market intelligence in decision making; and (iv) making investments in supply chain infrastructure and market places.

vii. Project Approach

The project aims at improving business practices needed for agribusiness development in Tamil Nadu. Profit motivations are critical to the improvement of business practices. Rather than starting from a production point of view, stakeholders are encouraged to start from understanding market requirements and opportunities. The project will help stakeholders to access the relevant technologies and knowledge services needed for realizing the identified profit opportunities. Those profit opportunities are realized by working together with other stakeholders in the value chain, and by improving linkages through investments and existing in physical infrastructure.

viii. Project Goals

The expected impact of the project will be an increasingly competitive agribusiness sector, informed by the adoption of improved business practices in the Agriculture sector, leading to diversification, higher value addition, and higher incomes for farmers, farm workers and entrepreneurs and reduced rural poverty. The expected outcome of the project will be increased benefits (incomes) for farmers, farm workers and entrepreneurs in the selected value chains.

Through the adoption of improved agribusiness practices, the project will facilitate the development of a competitive agribusiness sector in Tamil Nadu, promoting diversification and contributing to the transformation of agriculture into a system producing higher value and contributing to the reduction of poverty in rural areas.

The envisaged project's interventions will provide higher value for consumers, value that will be shared as distributed benefits to value chain stakeholders including farmers, entrepreneurs and workers. This will be achieved through activities that improve business practices related to use of market information, investment in technology transfer and knowledge services, development of value chain linkages and investment in market infrastructure. The distributed benefits will provide incentive for ongoing involvement and further innovation from which the sector can extend its development.

The project **impact** is to develop an increasingly competitive agribusiness sector in Tamil Nadu attained through the adoption of improved business practices in the horticultural sector leading to higher value addition and higher income of farmers, farm workers and entrepreneurs, particularly women amongst them.

The project **outcome** is increased benefits to farmers, entrepreneurs and workers who are involved in selected value chains in Tamil Nadu

ix. Project Components

1. Establishment/ organization of commodity groups for marketing in the State
2. Facilitation of Contract Farming between farmers and bulk buyers in the State
3. Dissemination of Market intelligence
4. Arrangement of Buyers - Sellers Meet
5. Organizing the exposure visits to important markets within the state and outside the State by commodity groups / farmers and extension functionaries.
6. Strengthening of market extension centres at each district/ block level for capacity building and dissemination of marketing information.
7. Capacity building of farmer's skill
8. Price surveillance
9. Regulated Market / Uzhavar Shandies Publicity and
10. Market Infrastructure

6.5.2 Project Components Description

1. Establishment/ Organization of Commodity Groups for Marketing in the State

i. Project Rationale

According to Government sources, the inefficient marketing system leads to an avoidable waste of around Rs 50,127 crores. A major part of this can be saved by introducing scale and technology in agricultural marketing. Milk and eggs marketing are two success areas of role of scale and technology in marketing. The extent to which the farmer-producers will benefit (out of saving of avoidable waste) depends on the group-marketing practices adopted by the farmers. In this sense, Farmers' Groups/ Commodity Groups need to be promoted for undertaking marketing activities on behalf of the individual members of the group.

Based on the international experience, in view of expanding retail trade, organizing the farmers and equipping the commodity groups can facilitate the aggregation of produce and also enhance the bargaining power of the farmers. The experience in Malaysia, Thailand and Philippines indicated that the retail chains will depend on some intermediary agency for sourcing the produce. If this role can be taken by the farmers' commodity groups, the commodities can move directly to the market without any intermediary. Further, adoption of technology both in production and post-harvest management which is expected to flow from the organized retailers and other research institutions can be efficient through the farmers' commodity groups. There is no single model for organizing the farmers for the whole country. Depending on the strength of the existing farmers' institutions, various models could be adopted. The model of farmers' marketing commodity groups cannot be the same throughout the country. It can be Cooperatives, SHGs or any other form. Therefore, it is proposed to organize the commodity groups for marketing of agricultural commodities in Tamil Nadu over the period of four years.

ii. Project Strategy

Formation of commodity groups for group marketing in the State with financial assistance from NADP.

iii. Project Goals

Organizing Group Marketing of major agricultural commodities for realizing higher prices through establishing commodity groups.

iv. Project Components

1. Organising meetings with large number of farmers
2. Identification of willing / co operating Farmers
3. Organising the willing farmers in to groups and
4. Periodical meeting with groups and coordinating the activities

v. Project Cost and Financing

Arranging / organising Commodity Groups involves several rounds of meeting with large number of farmers to begin with and finally arriving at about required number of farmers for group cultivation of marketing. To organize these an amount of Rs.20000/- is provided per group.

In this project it is proposed to organize 22 commodity groups in four commodities for marketing of agricultural commodities in Ramanathapuram district over the period of four years. This will require resources of Rs 5.12 Lakhs for the period of four years.

vi. Reporting

1. Quarterly progress reports to be sent to the Deputy Director (Agricultural Marketing and Agri Business) by the concerned Agricultural Officer (Agricultural Marketing and Agri Business) and Secretaries of Marketing Committees.

2. Periodical Inspection to be undertaken by the Deputy Director (Agricultural Marketing and Agri Business).

6.5.3. Facilitation of Contract Farming between Farmers and Bulk Buyers in the State

i. Project Rationale

Apart from linking the farmer to consumer through farmers' organizations, another initiative for reducing transaction cost is establishment of direct channel between farmer-processor/bulk consumers, through contract farming (CF). For different reasons, both farmers and farm product processors/distributors may prefer contracts to complete vertical integration. A farmer may prefer a contract which gives access to additional sources of capital and a more certain price by shifting part of the risk of adverse price movement to the buyer. Farmers also get an access to new technology and inputs, including credit, through contracts which otherwise may be beyond their reach. For a processor or distributor, contracts are more flexible in the face of market uncertainty, make smaller demands on scarce capital resources, and impose less of an additional burden of labour relations, ownership of land, and production activities, on management.

At more macro economic level, contracting can help to remove market imperfections in produce, capital (credit), land, labour, information and insurance markets; facilitate better coordination of local production activities which often involve initial investment in processing, extension etc.; and can help in reducing transaction costs. It has also been used in many situations as a policy step by the State to bring about crop diversification for improving farm incomes and employment. CF is also seen as a

way to reduce costs of cultivation as it can provide access to better inputs and more efficient production methods. The increasing cost of cultivation was the reason for the emergence of CF in Japan and Spain in the 1950s and in the Indian Punjab in the early 1990s. Though there are concerns about the ability of the small farms and firms to survive in the changing environment of agribusiness, still there are opportunities for them to exploit like in product differentiation with origin of product or organic products and other niche markets. But, the major route has to be through exploitation of other factors like external economies of scale through networking or clustering and such other alliances like CF.

Marketing tie-ups between farmers and processors or bulk purchasers have special significance for small farmers, who have small marketed surplus and do not have staying power. Such arrangements are being encouraged to help in reducing price risks of farmers and to also expand the markets for farm products. It is to be noted that contract farming of sugarcane is going on for more than 50 years in Tamil Nadu. In case of cotton, maize and medicinal plants there are few cases of contract farming. Contract farming in milk, eggs and broiler production is successfully taking place in large scale in Tamil Nadu. The lessons taught in case of sugarcane, cotton and other commodities have to be taken into account during formulation of the project. For this in this NADP programme facilitation contract farming between the traders and producer is proposed.

ii. Project Strategy

Facilitation contract farming between the traders and producers by organising buyers and sellers meet in the block levels.

iii. Project Components

- Organising meeting with farmers, large scale buying firms, crop insurance companies and banks.
- Identification of willing / co operating Farmers/ commodity clusters

- Organising the willing farmers in to groups
- Arranging the Groups to have contract/agreement with select large scale buyers, banks and crop insurance firms and
- Periodical watching of contracts and conflict management.

iv. Project Cost and Financing

Arranging / organising Commodity Groups involve several rounds of meeting with large number of farmers and traders, train them in contract specification and monitor them. To organize these an amount of Rs.10,000/- is provided.

In this project it is proposed to organize the meeting on various crops regarding contract farming between farmers and bulk buyers in Ramanathapuram district for marketing of agricultural commodities in Tamil Nadu over the period of four years. This will require resources of Rs 6.90 lakhs for the period of four years.

v. Reporting

1. Quarterly progress reports to be sent to the Deputy Director (Agricultural Marketing and Agri Business) by the concerned Agricultural Officer (Agricultural Marketing and Agri Business) and Secretaries of Marketing committees.

2. Periodical Inspection undertaken by the Deputy Director (Agricultural Marketing and Agri Business).

6.5.4. Dissemination of Market Intelligence

i. Project Rationale

Rural (primary and periodic) Markets are the first contact points of farmers with the market economy, both for selling and buying. As there have been high price differentials many times between the Wholesale Markets and the Rural Markets, there is

room for arbitrage which is being exploited by the traders to their advantage. Therefore, it is imperative to make the Wholesale Markets as the price discovery point and the Rural Markets as the price takers with due consideration for transport and other costs. As the Rural Markets have few traders, the tendency to collude among them is high. In the Wholesale Markets, as traders are many, one can expect a fair price. In a country like India with 70 percent of its population living in about 6.25 lakhs villages and depending on agriculture as their main occupation, accurate and timely information about the market prices of the agricultural commodities is of extreme significance.

The most important marketing information is price data. Agricultural price data are based on thousands or millions of transactions, many of them on a small scale, that are taking place every day all over the country. Collecting an adequate sample and making sure that these are representative enough to be useful is not an easy task. As farmers become more market oriented, extension workers need to be in a position to advise them not only on how to grow crops but also on how to market them. Knowledge of produce handling, storage and packaging is also essential. An understanding of costs and margins is essential for all those involved in agricultural marketing. Before any agro-processing venture is started, or before an existing venture decides to expand its product line, an understanding of the market for the planned products is essential. Market research can never guarantee success but it can certainly increase the likelihood that the new business will turn out to be profitable. Hence in this project is included the dissemination of market intelligence provided by the Domestic and Export Market Intelligence Cell, Centre for Agricultural and Rural Development Studies, Tamil Nadu Agricultural University, Coimbatore and other agencies.

ii. Project Strategy

Dissemination of Market intelligence provided by the Domestic and Export Market Intelligence Cell, Centre for Agricultural and Rural Development Studies, Tamil Nadu Agricultural University, Coimbatore and other agencies through different mass media.

iii. Project Components

1. Procurement of market intelligence reports and
2. Dissemination of Market intelligence to all the Stake holders through different mass media.

iv. Project Cost and Financing

In this project it is proposed to disseminate Market intelligence of agricultural commodities to all the Stake holders through different mass media in Ramanathapuram district over the period of four years. This will require resources of Rs.5.1 lakhs for the period of four years.

v. Reporting

1. Quarterly progress reports to be sent to the Deputy Director (Agricultural Marketing and Agri Business) by the concerned Agricultural Officer (Agricultural Marketing and Agri Business) and Secretaries of Marketing committees.

2. Periodical Inspection undertaken by the Deputy Director (Agricultural Marketing and Agri Business).

6.5.5. Arrangement of Buyers - Sellers Meet

i. Project Rationale

Indian farmers usually produce diverse goods and services to meet the family requirements. Marketable surpluses, if any, are disposed off immediately after harvest to meet the cash requirements when prices are generally depressed and often to specific buyers who have provided credit.

There is limited market for all good and services produced by the farmers in the vicinity. In contrast, quite often, they buy goods and services in lean period when prices are generally higher. Therefore, the nature, degree and the complexity of the problems faced vary among the farmers, regions, and markets.

Several alternatives are available within each market for the farmers. Critical evaluation of the alternatives is important in deciding a profitable set to determine the overall profitability of the farms.

The most important aspect of the agricultural market intelligence is to create awareness about the demand and quality requirements for various agricultural produce among farmers and also to build knowledge on the availability of various agricultural commodities among the traders.

There is increasing pressure on all segments of the agriculture produce economy to respond to the challenges that the global markets pose in the new post WTO world trade order.

Buyers and sellers meet functions as platform linking agribusiness community namely farmers, traders, commission agents, agricultural processed food organizations, millers, machinery manufacturers in an egalitarian exchange of ideas and materials.

It is beautifully explained as a business partnership between producers and buyers to enhance their knowledge for mutual gain.

Arrangement of these meetings brings together the two important aspect of success i.e. technology and human resources. Besides display of agricultural commodities through exhibitions, the meet aspect covers all the latest market related interventions and provides need based solutions to farmers through direct contact with experts.

ii. Project Cost and Financing

In this project it is proposed to arrange for 70 buyers sellers meet in Ramanathapuram district over the period of four years. This will require resources of Rs.16.40 Lakhs for the period of four years.

6.5.6. Organizing the Exposure Visits to Important Markets within the State and outside the State by Commodity Groups / Farmers and Extension Functionaries

i. Project Rationale

The goal of four percent growth in agriculture can only be achieved by increasing productivity per unit of land. Considering the costs and constraints of resources such as water, nutrients and energy, the genetic enhancement of productivity should be coupled with input use efficiency. This can be made possible only by creation and utilization of new and improved technology. Since new technology creation and development is a slow process, for attaining the desired four percent growth during the XIth Plan period, we will have to rely more on known and proven technology. Agriculture research system claims to have a large number of promising technologies to achieve high growth and promote farming systems that improve natural resource base. However, these are not seen at farmers' fields at large. Visit of other areas, where new technologies are implementing successfully i.e., exposure visits is an important thing to enlighten the farmers for implementing those technologies in their areas also. It is easy to know the new technology through demonstration. Farmers will be selected to visit different places within the State where the technologies are well adopted. Therefore it is proposed to organize the exposure visit to important markets within the State and outside the State by commodity groups / farmers and extension functionaries in the state for marketing of agricultural commodities in Tamil Nadu over the period of four years.

ii. Project Strategy

Organizing the exposure visits to important markets within the State and outside the State by commodity groups / farmers and extension functionaries.

iii. Project Goals

Organizing the exposure visit to important markets within the State and outside the State by commodity groups / farmers and extension functionaries in the State for marketing of agricultural commodities in Tamil Nadu over the period of four years from NADP funding.

iv. Project Components

1. Organizing the exposure visit to important markets within the State by commodity groups / farmers
2. Organizing the exposure visit to important markets outside the State by commodity groups / farmers
3. Organizing the exposure visit to important markets within the State and outside the State by extension functionaries

v. Project Cost and Financing

Visit of important markets, where new opportunity for marketing of the commodity and consumer preference i.e., exposure visits to SAFAL market Bangalore is an important thing to enlighten the farmers for marketing their produce as well as consumer preference. It is easy to know the marketing of the commodity through observation and participation in the well developed markets. Farmers will be selected to visit different market places within the State where the new opportunities for marketing of commodities exist. This will require resources of Rs.92,000 for the period of four years.

vi. Reporting

1. Quarterly progress reports to be sent to the Deputy Director (Agricultural Marketing and Agri Business) by the concerned Agricultural Officer (Agricultural Marketing and Agri Business) and Secretaries of Marketing committees.

2. Periodical Inspection undertaken by the Deputy Director (Agricultural Marketing and Agri Business).

6.5.7. Strengthening of Market Extension Centre at each District/ Block Level for Capacity Building and Dissemination of Marketing Information

i. Project Rationale

Over the last few years, mass media has seen a phenomenal growth in the country both in terms of reach and advance in technology. This medium has not been exploited to its full potential for the purpose of agricultural extension specifically market led extension. A concerted and well-coordinated effort now needs to be made to use the electronic media in the Extension strategy by strengthening infrastructure facility. Market led Extension is now becoming more diversified, technology intensive, knowledge oriented and more demand-driven. This requires the extension workers at the cutting edge level to be master of so many trades, which is neither practicable nor possible. Use of IT in extension enables the extension workers to be more effective in meeting the information needs of farmers. The growing information and communication technology is used widely in the entire developmental sector except in agricultural sector. Use of interactive multimedia and such other tools will help the extension workers to serve the farmers better. Similarly, extension systems have to utilize the existing print and electronic mass media for faster dissemination of information to farmers. The technological advancement in telecommunication and space technology has to be fully tapped for devising appropriate programs for farmers. Hence there is a urgent need to strengthening of market extension centre at each district/ block level with LCD projectors and lap top computer including internet facilities.

ii. Project Strategy

Strengthening of market extension centre at each district/ block level for capacity building and dissemination of marketing information.

iii. Project Goals

Strengthening of market extension centre at each district/ block level for capacity building and dissemination of marketing information in Tamil Nadu over the period of four years from NADP funding.

iv. Project Components

Strengthening of market extension centre at each district/ block level

v. Project Cost and Financing

Over the last few years, mass media has seen a phenomenal growth in the country both in terms of reach and advance in technology. This medium has not been exploited to its full potential for the purpose of agricultural extension specifically market led extension. A concerted and well-coordinated effort now needs to be made to use the electronic media in the Extension strategy by strengthening infrastructure facility. In this project, it is proposed to strengthening market extension centre in Ramanathapuram district over the period of four years. This will require resources of Rs.5 Lakhs for the period of four years.

vi. Reporting

1. Quarterly progress reports to be sent to the Deputy Director (Agricultural Marketing and Agri Business) by the concerned Agricultural Officer (Agricultural Marketing and Agri Business) and Secretaries of Marketing committees.

2. Periodical Inspection undertaken by the Deputy Director (Agricultural Marketing and Agri Business).

6.5.8. Capacity Building of Farmers' Skill

i. Project Rationale

Apart from pursuing policies and creating formal organizations to intervene in agricultural marketing, governments have adopted several programmes of providing market support services. It appears that the types of programmes initiated cover a very wide spectrum of possible solutions to help small and marginal farmers. However, the benefits have not adequately reached the intended target groups. The main reason is that agricultural marketing and business related aspects of training, education and research have remained neglected in our country. The role of the market as knowledge and

information exchange amongst the converging farmers needs to be appreciated and harnessed. Farmers get benefit from deregulation of markets, minimum guaranteed price scheme, contract farming, and crop/income insurance, only to the extent they organize in marketing groups, self-help groups, cooperatives or companies and learn skills suited to the new marketing environment. Understanding quality standards (including FAQ), learning the terms of contract and insurance, and choosing and preparing the produce for the market are going to be essential skills for farmers. There is a need for greater synergy between extension services and market. State Marketing Departments and Boards, APMCs, Krishi Vigyan Kendras (KVKs), Marketing Cooperatives, NGOs and PRIs should pay increasing attention to train the farmers in marketing related skills. All stakeholders in the Supply Chain (i.e. from farmers to consumers) should be exposed to the following characteristics and complexities of the marketing system to make it more efficient. Hence in this project the following training programmes are proposed with budget requirement of Rs. 3.83 Lakhs

- Training on Warehousing and storage
- Training on Grading
- Training on Market intelligence
- Training on Post Harvest Management of selected commodities
- Massive awareness programme is to be undertaken to demistify the commodity futures markets and enable the farmers to enter into futures contract so as to insure their price risk.
- Training to farmers on selected commodities for Export Promotion.

ii. Project Strategy

Training will be organized for farmers / commodity groups on Warehousing and storage, Grading, Market intelligence, Post Harvest Management of selected commodities and awareness programme is to be undertaken to demistify the commodity futures markets and enable the farmers to enter into futures contract so as to insure their price risk in the state with financial assistance from NADP.

iii. Project Components

Organising training to farmers / commodity groups on Warehousing and storage, Grading, Market intelligence, Post Harvest Management of selected commodities and awareness programme is to be undertaken to demistify the commodity futures markets and enable the farmers to enter into futures contract so as to insure their price risk.

iv. Project Cost and Financing

In this project it is proposed to organize about 33 trainings under Capacity Building of Farmers Skill titles for marketing of agricultural commodities in Ramanathapuram district over the period of four years. This will require resources of Rs 3.83 Lakhs for the period of four years.

v. Reporting

1. Quarterly progress reports to be sent to the Deputy Director (Agricultural Marketing and Agri Business) by the concerned Agricultural Officer (Agricultural Marketing and Agri Business) and Secretaries of Marketing committees.

2. Periodical Inspection undertaken by the Deputy Director (Agricultural Marketing and Agri Business).

6.5.9. Strengthening of Selected Market Infrastructure (equipment) through NADP Funding

i. Rationale

Considering the importance of different Markets, there is an urgent need to develop these markets in a phased manner with necessary infrastructural amenities to have a strong base of the marketing channel. Suitability and adequacy of marketing infrastructure depends on the type and quantity of marketed surpluses of agricultural produce in the State. The estimated marketed surpluses of various commodities given below reflected the need for improvement in the market infrastructure in coming years.

Estimates of Marketed Surpluses of Various Commodities

Commodity	Marketed surplus (per cent)
Rice	51.9
Wheat	53.8
Jowar	39.7
Bajra	45.4
Maize	46.2
Other Coarse Cereals	57.1
Pulses	53.9
Oilseeds	79.6
Sugarcane	92.9
Fruits and Vegetables**	88.2
Cotton	100.0
Fish	100.0
Milk	60.0
Mutton and Goat Meat	100.0
Beef and Buffalo Meat	100.0
Meat (Total)	100.0
Eggs	88.2

****** Source of Marketed Surplus (MS) Output Ratio for Fruits and Vegetables is Achyra, S S (2003). Agril. Marketing in India, (as a Part of Millennium Study of Indian Farmers), P134 (Original Source- Agril Statistics at a Glance 2001. Agril. Statistics Division, Directorate of Economics and Statistics, Ministry of Agriculture, New Delhi).

ii. Project Components

1. Purchasing and establishing price display board and mobile controlled display board
2. Purchasing and establishing collection centres
3. Purchasing and establishing chilli dryers
4. Purchasing and establishing cool Chambers/cold storage
5. Purchasing and establishing Price Display Mechanism and Electronic Weighing Machines
6. Purchasing and establishing moisture meter
7. Purchasing and distribution of Tarpaulins, Plastic crates and storage bins

iii. Project Cost and Financing

In this project it is proposed to strengthen market infrastructure in Ramanathapuram district over the period of four years. This will require resources of Rs.36,000 for the period of four years.

iv. Reporting

1. Quarterly progress reports to be sent to the Deputy Director (Agricultural Marketing and Agri Business) by the concerned Agricultural Officer (Agricultural Marketing and Agri Business) and Secretaries of Marketing committees.
2. Periodical Inspection undertaken by the Deputy Director (Agricultural Marketing and Agri Business).

6.5.10. Establishment of Price Surveillance Mechanism through NADP Funding

i. Rationale

Collection of real time data in the open markets for major agricultural commodities and further analysis is essential for forecasting of prices well in advance of the sowing season so that farmers can take their sowing decisions on a scientific basis. This will enhance the income of the farmers which is one of the objectives of the project.

ii. Project Components

This involves collection of data on prices of different commodities in the unregulated markets in the notified area. This entails collection of time series and current/real time data which will be sent to Domestic and Export Market Intelligence Cell of Tamil Nadu Agricultural University, for processing and further analysis to forecast prices of major agricultural commodities.

iii. Project cost and Financing

In this project, it is proposed to collect data at a minimum interval of one month from major assembly markets on a continuous basis in Ramanathapuram district over the period of four years.

iv. Reporting

1. Quarterly progress reports to be sent to the Deputy Director (Agricultural Marketing and Agri Business) by the concerned Agricultural Officer (Agricultural Marketing and Agri Business) and Secretaries of Marketing committees.

2. Periodical Inspection undertaken by the Deputy Director (Agricultural Marketing and Agri Business).

6.5.11. Strengthening of Regulated Market and *Uzhavar Shandies* Publicity through NADP Funding

i. Rationale

Arrivals to market yards of regulated markets is only about 15 percent of the marketed surplus in Tamil Nadu. Similarly sale through *Uzhavar Shandies* is also limited in case of fruits and vegetables. Hence it is necessary to have publicity programme on the benefits of sale through regulated markets and *Uzhavar* Shandies so that the net price realized by the farmers could be increased. To achieve this, publicity and propaganda programmes will be undertaken in this district for the next four years.

ii. Project Components

Hoardings, publicity through F.M. radio, posters, folders, wall paintings, and village cultural programmes will form the components.

iii. Project Cost and Financing

In this project it is proposed to have the publicity programmes with the above components in this district with a financial outlay of Rs.23 Lakhs over the period of four years.

iv. Reporting

1. Quarterly progress reports to be sent to the Deputy Director (Agricultural Marketing and Agri Business) by the concerned Agricultural Officer (Agricultural Marketing and Agri Business) and Secretaries of Marketing committees.

2. Periodical Inspection undertaken by the Deputy Director (Agricultural Marketing and Agri Business).

11 Project Cost

The total cost for development of agricultural marketing so as to increase the profitability of farmers would be Rs. 297.93 Lakhs for this district for the eleventh plan period.

12 Implementation

Department of Agricultural Marketing and Agribusiness, Government of Tamil Nadu will be the implementing agency for proposed project. The Deputy Director of Agricultural Marketing along with the team of Officials and the Secretary of District

Market Committees and team of Officials of Market Committee and Regulated Markets will be implementing the project jointly.

13. Project Performance Monitoring System

Outcomes of the project will be measured against initial baseline data which will provide a benchmark for future interventions. The details of each monitoring and evaluation activity will be refined and finalized during the first six months of the project, as a joint effort of the management of the project, the stakeholders and technical assistance by the Performance Monitoring Evaluation unit.

14. Sustainability

Project sustainability refers to the continuation of benefits generated by the project even after project completion. Through the project activities, stakeholders will improve their capacity in identifying market opportunities and taking sound business decisions regarding investment, production and marketing. The improved capacity will result in the emergence of profitable enterprises better able to adapt to market conditions and seize existing opportunities and benefits; the enterprises and the benefits will continue to exist even after the completion of the project. However, the success of the project also depends on the sustainability of some of the institutional mechanisms (for example DEMIC) introduced by the project. In some cases, the institutional support will have to be continued for the benefits to continue to flow after the completion of the project and result in the models and practices introduced by the project to be replicated by other stakeholders in the agricultural sector in the state.

Table 6.24 A. Original Project Proposals for Agricultural Marketing and Agri-Business

(Rs. in lakhs)

S.No	Components	2009			2010			2011			2012			
		Unit cost	Physical	Financial	Unit cost	Physical	Financial	Unit cost	Physical	Financial	Unit cost	Physical	Financial	Total
1	Commodity group formation													
	Major Crops*	20000	4	80000	22000	6	132000	24000	6	144000	26000	6	156000	**512000**
2	Market Intelligence dissemination													
	MI Dis Touch Screen	10000	5	50000	11000	0	0	12000	0	0	13000		0	**50000**
	Farmers training	10000	10	100000	11000	10	110000	12000	10	120000	13000	10	130000	**460000**
	Purchase of marketing materials	10000	0	0	11000	0	0	12000	0	0	13000	0	0	**0**
3	Facilitation of contract farming													
	Crop insurance	50000	1	50000	55000	1	55000	60000	1	60000	65000	1	65000	**230000**
	Meetings	15000	10	150000	16500	10	165000	18000	10	180000	19500	10	195000	**690000**
4	Exposure visit to markets	20000	1	20000	22000	1	22000	24000	1	24000	26000	1	26000	**92000**
	Visit to national market	150000	0	0	165000	0	0	181500	0	0	199650	0	0	**0**
5	Arrangement of buyer seller meetings	20000	10	200000	22000	20	440000	24000	20	480000	26000	20	520000	**1640000**
6	Streng. Of market extension centre	250000	2	500000	275000	0	0	300000		0	325000		0	**500000**
7	Streng. Of village shandies	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8	Market price surveillance	10000	0	0	11000	0	0	12000	0	0	13000	0	0	**0**
9	Publicity - regulated market	500000	1	500000	550000	1	550000	600000	1	600000	650000	1	650000	**2300000**

Table 6.24 A. Contd….

(Rs. in lakhs)

S. No	Components	2009			2010			2011			2012			
		Unit cost	Physical	Financial	Unit cost	Physical	Financial	Unit cost	Physical	Financial	Unit cost	Physical	Financial	Total
10	Trainings on													
	Commodity Markets	10000	2	20000	11000	2	22000	12000	2	24000	13000	2	26000	**92000**
	Post Harvest	10000	1	10000	11000	2	22000	12000	3	36000	13000	3	39000	**107000**
	Export promotion	10000	2	20000	11000	2	22000	12000	2	24000	13000	2	26000	**92000**
	Minimizing PH losses													
	Trans Incentives	10000	2	20000	11000	2	22000	12000	2	24000	13000	2	26000	**92000**
	Value addition													
	Trainings	10000	0	0	11000	0	0	12000	0	0	13000	0	0	**0**
11	Market infrastructure activities													
	Moisture meter	18000	2	36000	19800	0	0	21780	0	0	23958	0	0	**36000**
	*** Chillies, Pulses, Paddy, Groundnut**		**53**	**1756000**	**1246300**	**57**	**1562000**	**1361280**	**58**	**1716000**	**1478108**	**58**	**1859000**	**6893000**

Table 6.24 B. Additional Project Proposals for Agricultural Marketing and Agri-Business (DDA(AB) and Market Committee)

Rs.in lakhs

Sl. No.	Possible Development Interventions	2009-10		2010-2011		2011-2012		Total	
		Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
I.	**Infrastructure**								
1	Construction of rural godowns in the premises of the regulated markets	1	25.00	1	25.00	1	25.00	3	75.00
2	Storage godowns for storing produce under lock and key for few days	0	0.00	0	0.00	0	0.00	0	0.00
3	Construction of new drying yards/renovation of dilapidated ones	0	0.00	0	0.00	0	0.00	0	0.00
4	Construction of new auction halls/modernizing the existing ones	0	0.00	0	0.00	0	0.00	0	0.00
5	Construction of money disbursement halls/counters	0	0.00	0	0.00	0	0.00	0	0.00
6	Construction of office buildings and staff quarters	1	50.00	0	0.00	0	0.00	1	50.00
7	Installation of processing units/purchase of new instruments in the premises of the regulated markets	0	0.00	0	0.00	0	0.00	0	0.00
	(i) Mechanical drier	0	0.00	0	0.00	0	0.00	0	0.00
	(ii) Mechanical winnower	0	0.00	0	0.00	0	0.00	0	0.00
	(iii) Groundnut decorticator	0	0.00	0	0.00	0	0.00	0	0.00
	(iv) Sieving machine	0	0.00	0	0.00	0	0.00	0	0.00
	(v) Cotton Ginning Unit / Pressing Unit	0	0.00	0	0.00	0	0.00	0	0.00
	(vi) Coconut Kernel drying and oil processing units	0	0.00	0	0.00	0	0.00	0	0.00
	(vii) Packaging Units	0	0.00	0	0.00	0	0.00	0	0.00

Table 6.24 B. Contd.,

Sl. No.	Possible Development Interventions	2009-10		2010-2011		2011-2012		Total	
		Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
8	Strengthening the State Ghee and Oil Grading Laboratories	0	0.00	0	0.00	0	0.00	0	0.00
9	Strengthening the Commercial Grading Centres with Laboratory facilities (more numbers can also be included)	0	0.00	0	0.00	0	0.00	0	0.00
10	Strengthening the infrastructure facilities in the Uzhavar Shandies	0	0.00	0	0.00	0	0.00	0	0.00
11	Construction of cold storage facilities in Uzhavar Shandies and in rural godowns	0	0.00	0	0.00	0	0.00	0	0.00
12	Office automation with computer facility for billing etc. in regulated markets	0	2.00	0	2.00	0	2.00	0	6.00
13	Lawying and relawying of village link roads	0	0.00	0	0.00	0	0.00	0	0.00
14	Provision of Oil moisture meters	0	0.00	0	0.00	0	0.00	0	0.00
15	Provision of Oil testing machines	0	0.00	0	0.00	0	0.00	0	0.00
16	Provision of Electronic weighing machines	0	0.00	0	0.00	0	0.00	0	0.00
17	Others if any (Specify)	0	0.00	0	0.00	0	0.00	0	0.00
II.	**Publicity and Propaganda**	0	0.00	0	0.00	0	0.00	0	0.00
1	Market committee-wise strengthening of the Publicity and Propaganda units	0	0.10	0	0.10	0	0.10	0	0.30
2	Market committee-wise purchase of extension education aids	0	0.10	0	0.10	0	0.10	0	0.30

Table 6.24 B. Contd.,

Sl. No.	Possible Development Interventions	2009-10		2010-2011		2011-2012		Total	
		Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
3	Strengthening the regional Publicity and Propaganda wings of the Marketing Board and establishing more regional units	1	0.50	1	0.50	0	0.00	2	1.00
4	Pre-harvest campaigns on large scale	0	3.00	0	4.00	0	3.00	0	10.00
5	Others if any (Specify)	0	0.00	0	0.00	0	0.00	0	0.00
III.	**Public relations**	0	0.00	0	0.00	0	0.00	0	0.00
1	Construction of bus-stop shed un front of the regulated markets and in selected villages	0	0.00	0	0.00	0	0.00	0	0.00
2	Taking up public relations activities in the villages	2	0.20	2	0.20	2	0.20	6	0.60
3	Construction of common village threshing floors	1	2.50	1	3.00	1	3.50	3	9.00
4	Construction of village common discussion (Chavadi) hall	1	2.00	0	0.00	0	0.00	1	2.00
5	Distribution of tarpaulins to small and marginal farmers	200	10.00	200	10.00	200	10.00	600	30.00
6	Installation of electric light facilities including solar lights in the community threshing floors	0	0.10	0	0.80	0	0.10	0	1.00
7	Construction of over head tanks, laying of street pipelines and provision of public drinking water taps in a village or two wherein the market arrivals are more	1	1.00	1	0.80	1	1.00	3	2.80
8	Provision of Education loan to the children of a few regular customers	20	2.00	20	2.00	20	2.00	60	6.00
9	Celebrating the regulated market fortnight in each district (just like co-operative weeks/fortnight)	1	2.00	1	2.00	1	2.00	3	6.00

Table 6.24 B. Contd.,

Sl. No.	Possible Development Interventions	2009-10		2010-2011		2011-2012		Total	
		Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
10	Others if any (Specify)	0	0.00	0	0.80	0	0.00	0	0.80
IV.	**Facilities to farmers / Stakeholders**	0	0.00	0	0.00	0	0.00	0	0.00
1	Construction of rest/stay rooms for farmers I regulated markets	0	0.00	0	10.00	0	0.00	0	10.00
2	Construction/modernization of the common toiletry facilities in the regulated markets	0	0.00	0	0.80	0	0.00	0	0.80
3	Provision of parking lot facilities in the needy centers	0	0.00	0	0.80	0	0.00	0	0.80
4	Providing drinking water facilities to animals	0	0.00	0	0.80	0	0.00	0	0.80
5	Provision of transport facilities/routing the vehicle to transport commodities to the regulated markets	0	0.00	0	10.00	0	0.00	0	10.00
6	Creating farm inputs retailing facilities	0	0.00	0	5.00	0	0.00	0	5.00
7	Others if any (Specify)	0	0.00	0	0.80	0	0.00	0	0.80
V.	**Any other innovative interventions (specify)**								
	Grand Total	**229**	**100.50**	**227**	**79.50**	**226**	**49.00**	**682**	**229.00**

Budget Abstract

(Rs.in lakhs)

Sl.No.	Particulars	2008-09	2009-10	2010-11	2011-12	Total
A.	Original Project	17.56	15.62	17.16	18.59	68.93
B.	Additional Project DDA(AB) and Market committee	-	100.50	79.50	49.00	229.00
	Grand Total	**17.56**	**116.12**	**96.66**	**67.59**	**297.93**

6.6 Public Works Department (Water Resources Organisation)

Ramanathapuram district is one among the most backward districts in Tamil Nadu. The tanks and channels are in dilapidated condition but, agriculture is the major occupation People are depending upon the tanks only, for irrigation, because of salinity status of ground water in the most parts of the district. Due to dilapidated condition of irrigation structure and tanks, saline ground water, drinking water scarcity, erratic and unpredictable monsoon, high risk involved in crop production. Further, most of the people in the village migrated to nearby districts seeking job opportunities for their existence.

i. Project Rationale

- Water is an important determining factor in agricultural production.
- Only the flash flood occurring during monsoon is diverted to tanks by anicuts/diversion head works through supply channels.
- The surplus water escaping from one tank feeds the lower tank and so on.
- Desilting of entire chain tank is most important to store more rain water and flood water during monsoon period which will lead to improvement in ground water status in the adjacent areas and subsequently to cultivation of land in the second season to produce crops like pulses, cotton and oilseeds.

ii. Project Objective

1. To desilt the supply channel of Narayana Cauvery, Sankarathevan, Regunadha Cauvery and Paraliyar Channels and rehabilitation and standardization to the distance of 27.25 kms.
2. To rehabilitate the Right Main Canal.

iii. Project Cost

Total budget for the project covering four years period from 2007-08 to 2011-12 is Rs. 44.14 crores. The details are fuirnished in Table.

Table 6.25 Project Costs for the Interventions of Public Works Department

(Rupees in lakhs)

S.No	Components	2008-09		2009-10		2010-11		2011-12		Total	
		No.of units	Total cost	No.of units	Total cost	No.of units	Total cost	No.of units	Total cost	No.of units	Total cost
A	**LOWER VAIGAI BASIN DIVISION, PARAMAKUDI**										
I	**Renovation of RMC of Parthibanur Regulator and Kalari Supply Channel**										
1	Standardisation of Kalari Supply Channel	15 reech	63.55	--	--	--	--	--	--		63.55
2	Standardisation of RMC from L.S.25740 to LS 43200	15 reech	66.45	--	--	--	--	--	--		66.45
3	Standardisation of RMC from L.S.0 to 22165	17 reech	85.00	--	--	--	--	--	--		85.00
4	Construction of Syphon in RMC	4 Nos.	14.00	--	--	--	--	--	--		14.00
5	Standardisation of Marungur Supply Channel	2 Nos.	10.00	--	--	--	--	--	--		10.00
6	Renovation of Vellaranthal Anicut	3	15.00	--	--	--	--	--	--		15.00
7	Renovation of Senthamangalam Tank	3 reech	15.00	--	--	--	--	--	--		15.00
	Total		**269.00**	--	--	--	--	--	--		**269.00**

Table 6.25 Contd…. **(Rupees in lakhs)**

S.No	Components	2008-09		2009-10		2010-11		2011-12		Total	
		No.of units	Total cost	No.of units	Total cost	No.of units	Total cost	No.of units	Total cost	No.of units	Total cost
II	**Renovation of tank in Bogalure Block**										
1	Strengthening of tank Bund	--	--	40.50 km	129.58	22.50	11.10	39.30 km	125.78		266.46
2	Reconstruction of Sluices	--	--	60	68.53	38	41.77	56	60.62		170.92
3	Reconstruction of Weir	--	--	15	50.50	14	17.50	15	44.50		112.50
4	Desilting of Supply Channel Surplus Course	--	--	43	29.57	24	10.72	14	9.37		49.66
5	Selective lining of field Channel	--	--	14	82.50	14	16.50	15	81.00		180.00
6	Cattle feeding pond	--	--	14	3.50	14	3.50	15	3.75		10.75
	Total	--	--		**364.18**		**101.09**		**325.02**		**790.29**
III	**Renovation of tank in Thiruppullani Block**										
1	Strengthening of tank Bund	--	--	21.36 km	68.35	39.2	125.30	--	--		193.65
2	Reconstruction of Sluices	--	--	35	36.73	65	75.32	--	--		112.05
3	Reconstruction of Weir	--	--	14	20.50	16	89.50	--	--		110.00
4	Desilting of Supply Channel Surplus Course	--	--	4	1.47	16	11.04	--	--		12.51

Table 6.25 Contd…. **(Rupees in lakhs)**

S.No	Components	2008-09		2009-10		2010-11		2011-12		Total	
		No.of units	Total cost	No.of units	Total cost	No.of units	Total cost	No.of units	Total cost	No.of units	Total cost
5	Selective lining of field Channel	--	--	15	28.00	15	135.00	--	--		163
6	Cattle feeding pond	--	--	15	3.75	15	3.75	--	--		7.5
	Total	--	--		**158.80**		**439.91**	--	--		**598.71**
IV	**Renovation of tank in Ramnad Block**										
1	Strengthening of tank Bund	--	--	31.31 km	100.31	33.02 km	105.66	--	--		205.97
2	Reconstruction of Sluices	--	--	41	49.42	54	58.6	--	--		108.02
3	Reconstruction of Weir	--	--	12	43.00	11	34.00	--	--		77.00
4	Desilting of Supply Channel Surplus Course	--	--	122	106.92	96	49.54	--	--		156.46
5	Selective lining of field Channel	--	--	11	57.00	11	74.00	--	--		131.00
6	Cattle feeding pond	--	--	11	2.75	11	3.75	--	--		6.50
	Total	--	--		**359.40**		**325.55**	--	--		**684.95**

Table 6.25 Contd…. **(Rupees in lakhs)**

S.No	Components	2008-09		2009-10		2010-11		2011-12		Total	
		No.of units	Total cost	No.of units	Total cost	No.of units	Total cost	No.of units	Total cost	No.of units	Total cost
V	**Renovation of tank in Muthukulathur Block**										
1	Strengthening of tank Bund	--	--	--	121.00	--	--	--	--		121.00
2	Reconstruction of Sluices	--	--	--	61.00	--	--	--	--		61.00
3	Reconstruction of Weir	--	--	--	31.00	--	--	--	--		31.00
4	Desilting of Supply Channel Surplus Course	--	--	--	21.50	--	--	--	--		21.50
	Total	**--**	**--**	**--**	**234.50**	**--**	**--**	**--**	**--**		**234.50**
VI	**Renovation of tank in Thiruvadanai Block**										
1	Strengthening of tank Bund	--	--	--	46.50	--	--	--	--		46.50
2	Reconstruction of Sluices	--	--	--	76.30	--	--	--	--		76.30
3	Reconstruction of Weir	--	--	--	9.50	--	--	--	--		9.50
4	Desilting of Supply Channel Surplus Course	--	--	--		--	--	--	--		
	Total	**--**	**--**	**--**	**132.30**	**--**	**--**	**--**	**--**		**132.30**

Table 6.25 Contd…. **(Rupees in lakhs)**

S.No	Components	2008-09		2009-10		2010-11		2011-12		Total	
		No.of units	Total cost	No.of units	Total cost	No.of units	Total cost	No.of units	Total cost	No.of units	Total cost
VII	**Renovation of tank in Nainarkoil Block**										
1	Strengthening of tank Bund	--	--	--	71.50	--	--	--	--	--	71.50
2	Reconstruction of Sluices	--	--	--	33.50	--	--	--	--	--	33.50
3	Reconstruction of Weir	--	--	--	26.00	--	--	--	--	--	26.00
4	Desilting of Supply Channel Surplus Course	--	--	--	6.00	--	--	--	--	--	6.00
	Total	**--**	**--**	**--**	**137.00**	**--**	**--**	**--**	**--**	**--**	**137.00**
VIII	Liniking of vaigai River and Regunatha Cauvery Through Koothangal Channel.	--	--	--	--	--	--	--	--	--	--
IX	Liniking of Vaigai River and Maladar through Paralai Channel	--	--	--	--	--	--	--	--	--	--

Table 6.25 Contd…. **(Rupees in lakhs)**

S.No	Components	2008-09		2009-10		2010-11		2011-12		Total	
		No.of units	Total cost	No.of units	Total cost	No.of units	Total cost	No.of units	Total cost	No.of units	Total cost
B	**GUNDAR BASIN DIVISION, MADURAI**										
1	Desilting of Narayana Cauvery channel from LS 1040m to 6290m in kamuthi Block of Ramanathapuram Dist. Course	11 reach	50.43	--	--	--	--	--	--	--	50.43
2	Desilting of Narayana Cauvery channel from LS 6290m to46250m in kamuthi Block of Ramanathapuram Dist. Course	--	--	81 reach	370.14	--	--	--	--	--	370.14
3	Desiling of Regunatha cauvery Channel from LS 800m to 87420m in Kamuthi Block of Ramanathapuram Dist.	--	--	--	--	109 reach	509.44	--	--	--	509.44

Table 6.25 Contd…. **(Rupees in lakhs)**

S.No	Components	2008-09		2009-10		2010-11		2011-12		Total	
		No.of units	Total cost	No.of units	Total cost	No.of units	Total cost	No.of units	Total cost	No.of units	Total cost
4	Rehabilitation and Standartisation of Paralaiyar Channel from LS 6090m to 34840m in Kamuthi Block of Ramanathapuram Dist.	--	--	--	--	--	--	116 reach	555.68		555.68
5	Rehabilitation and Standartisation of Sankaradhevan Channel from LS 0m to 19740m in Kamuthi Block of Ramanathapuram Dist.	--	--	--	--	--	--	18 reach	81.76		81.76
	Total		**50.43**	**--**	**370.14**	**--**	**509.44**	**--**	**637.44**	**--**	**1567.45**
	GRAND TOTAL		**319.43**	**--**	**1756.30**	**--**	**1375.99**	**--**	**962.46**	**--**	**4414.20**

Table 6.26 Budget Proposal for District Agricultural Plan - Ramanathapuram

(Rupees in Lakhs)

Sl.No.	Department	2008-09	2009-10	2010-11	2011-12	Total
1	Agriculture	503.108	649.198	603.823	602.698	2358.827
2	Horticulture	62.3625	57.3625	57.3625	57.3625	234.45
3	Animal Husbandry	472.115	95.275	95.275	94.775	757.44
4	Fisheries	149.85	256.35	112.35	98.35	616.9
5	Agricultural Engineering	62.55	63	63	63	251.55
6	Agrl. Marketing	17.56	116.12	96.66	67.59	297.93
7	Public Works Department	319.43	1756.32	1375.99	962.46	4414.2
Total		**1586.98**	**2993.63**	**2404.46**	**1946.24**	**8931.30**

The Proposed Budget for the period 2008-2012 is approximately Rs.89.31 Crores and for the Year 2008-09, the budget requirement would be Rs.15.87 crores.

PROCEEDINGS OF THE DISTRICT COLLECTOR'S MEETING

1. Date of meeting : 2.6.2008

2. Venue : Conference Hall of the Collectorate

3. Time : 2.30 P.M.

4. Present

1. District Collector
2. Personal Assistant to Collector
3. Joint Director of Agriculture
4. Assistant Director of Seed Certification
5. Deputy Director of Seed Certification
6. Deputy Director of Agriculture (Agribusiness)
7. Assistant Engineer (PWD/WRO)
8. Assistant Executive Engineer (PWD/WRO)
9. Accounts Officer, o/o, Joint Director of Agriculture
10. Assistant Engineer (PWD/WRO) , Muthukulathur
11. Regional Joint Director, Animal Husbandry
12. Deputy Director of Horticulture
13. Assistant Director of Horticulture
14. Executive Engineer Agrl. Engg. Department
15. Assistant Director of Horticulture, Thiruvadanai
16. Assistant Director of Horticulture, Paramakudi.
17. Assistant Director of Horticulture, Nainarkoil.
18. Inspector of Fisheries
19. Horticulture Officer, Bogalur
20. Horticulture Officer, Kadaladi.

21. Horticulture Officer (Tech).
22. Assistant Director of Horticulture, Ramanathapuram.
23. Assistant Director of Horticulture, Thirupullani.
24. Assistant Director of Horticulture, Mandapam.
25. Assistant Director of Horticulture, R.S.Mangalam.
26. Assistant Director of Horticulture, Mudhukulathur.
27. Horticulture Officer, Kamuthi.
28. Chairman, Thirupullani.
29. Chairman, Mandapam Union.
30. Associate Professor and Head, CSRC, Ramanathapuram.
31. Associate Professor (Agricultural Economics), TNAU, Coimbatore.
32. Associate Professor (Agrl.Extension), KVK, CSRC, Ramanathapuram.
33. Associate Professor (SS&AC), KVK, CSRC, Ramanathapuram.
34. Programme Assistant (Tech), KVK, CSRC, Ramanathapuram.

PROCEEDINGS

Joint Director of Agriculture, Ramanathapuram welcomed the gathering and District Collector delivered the inaugural speech. Dr.S.Senthilnathan, Associate Professor of Agricultural Economics offered the introductory remarks about NADP and presented the proposals received from various development departments to the audience. District Collector initiated the discussion and the officials gave the feed back. After short deliberation over the proposals the forum has accepted them for incorporation in the District Agricultural Plan. District Collector has requested the officicals of departments of horticulture, fisheries, animal husbandry and Public Works Department to revise the proposal in line with the suggestions given by the group.

At the end Dr.G.Srinivasan, Associate Professor and Head, CSRC, Ramanathapuram thanked the participants for their response and attendance and the meeting ended by 5.00 P.M.

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TNAU Scientist explaining the District Plan Proposals

Discussion Meeting in progress

Guidance from District Collector about Plan preparation

Line Department Official answering the Query

Mosaic of participants in the Meeting

TNAU Scientists consolidating the Plan Documents