NATIONAL AGRICULTURAL DEVELOPMENT PROGRAMME (NADP)

DISTRICT AGRICULTURE PLAN

KANYAKUMARI DISTRICT

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

2008

NATIONAL AGRICULTURE DEVELOPMENT PROJECT – DISTRICT AGRICULTURE PLAN

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FOREWORD

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)

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June 30, 2008

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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)

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EXECUTIVE SUMMARY

1.1. A Brief Introduction to the District, its Location, Features, etc.

Kanyakumari district was formed on 1st November 1956 from the territories transferred to the then Madras State from the erstwhile Travancore-Cochin State. Kanyakumari district is the southern most district of Tamil Nadu. The district lies between 77^{o} 15' and 77^{o} 36' of the eastern longitudes and 8^{o} 03' and 8^{o} 35' of the northern latitudes. The district is bound by Tirunelveli district on the north and the east. The South Eastern boundary is the Gulf of Mannar. On south and southwest, the district is bound by Indian Ocean and Arabian Sea and in west and northwest, it is bound by Kerala State.

1.2. Main Points of SWOT of the District

Kanyakumari district has 47 per cent of the total geographical area as net sown area in 2006-07. The district has got good forest cover, accounting around 32 per cent of the geographical area and receives good rainfall from both southwest and northeast monsoons. Some of the weaknesses with agriculture in Kanyakumari district are non-adoption of recommended technologies, labour scarcity during major activity, frequent incidence of RTD and stem borer during rabi season, soil acidity etc. Net sown area was 47 per cent, area sown more than once was eight per cent and the gross cropped area was 55 per cent during 2006-07. Paddy, banana and tapioca are the important annual crops and coconut and rubber are the important perennial crops. The yield gaps in the crops were (Paddy (50%), banana (15%), tapioca (25%) and coconut (55%)) high and there is scope for increasing the yield through appropriate technological interventions. Heavy rains during harvest of kharif affect the harvest and post harvest activities as well. Crop damage due to wind is more pronounced in banana crop. Pastures and grazing lands were very low and it is decreasing over years.

1.3. Areas / Sectors, which Need to be Addressed in the District

Area needs to be addressed include certified seed production and distribution, incentive for seed production to self help groups, seed distribution subsidy for the seeds

produced by self help groups, supply of quality certified seeds at nominal cost to enhance the Seed Replacement Ratio (SRR), distribution of green manure seeds, distribution of soil health card, assistance to start vermicompost production unit, dolomite and bio-fertiliser. Distribution of machineries and equipments, demonstration on SRI/ hybrid rice, village campaigns, production of short film on new technologies, paddy model farm, establishment of seed testing lab, strengthening of district information centre, trainings on INM , IPM and value addition in horticulture, trainings on post harvest handling of fruits, vegetables and spices, pine apple cultivation and subsidies for support system for banana, corm injector, banana bunch cover and a ten hectares mega demonstration plot. Agricultural marketing needs to be strengthened through commodity group formation, market intelligence dissemination and market price surveillance. Besides interventions like soil and moisture conservation and popularisation of Agricultural Mechanisation also require attention.

1.4. Various on-going Programmes in the District – a Brief Contextual Gist

1. Seed mini kit
2. Integrated cereal development program
3. ISO POM (Pulses)
4. Pulses development scheme
5. Coconut development Scheme
6. TANWABE
7. Farmers Interest Group
8. Integrated Horticulture Development Scheme
9. Western Ghat Development Programme
10. National Horticulture Mission
11. National Marine Fishermen Savings cum Relief Scheme 2007-2008
12. TamilNadu State Government Fisherwomen Savings cum Relief Scheme 2007-08
13. Motorisation of Country Crafts
14. Westernghat Development Programme
15. Rain Water Harvesting and Runoff Management Programme
16. Agricultural Mechanisation Programme
17. Replacement of Old Pumpsets

1.5 The District Plan at a Glance

The total district agriculture plan to be implemented by agriculture and seven other allied departments are given below.

(Rs. in lakhs)

Particulars	2008-09	2009-10	2010-11	2011-12	Total
Agriculture	291.610	201.860	201.860	201.860	897.190
Horticulture	617.275	629.775	612.275	624.775	2484.100
Animal husbandry	481.189	132.404	120.614	117.074	851.281
Fishery	184.180	214.810	48.500	106.000	553.490
Engineering	33.815	34.295	49.470	54.280	171.860
Marketing	20.700	20.020	22.590	22.970	86.280
Forestry	24.770	29.050	33.600	38.790	126.210
PWD	2689.050	2689.050	2689.050	2689.050	10756.200
Grand Total	**4342.589**	**3951.264**	**3777.959**	**3854.799**	**15926.61**

1.6 Expected Outcomes as a Result of Implementation of the Plan

The proposed scheme is expected to increase the production and productivity of the important crops in Kanyakumari district like rice, coconut, pulses and banana. The scheme is expected to enable the farmers through better extension infrastructure and other activities carried out by animal husbandry, fishery, marketing and agricultural engineering departments. The implementation of the scheme would help in achieving four per cent growth in agriculture as contemplated in XI plan.

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 etc. the task are fulfilled.

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 Collector Meetings held on 12.05.2008 and 20.05.2008 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

2.1 Introduction

i) Map of the District – General Map

There are four taluks in Kanyakumari district viz., Thovalai , Agastheeswarm, Kalkulam and Vilvancode, which are depicted in Fig.1.

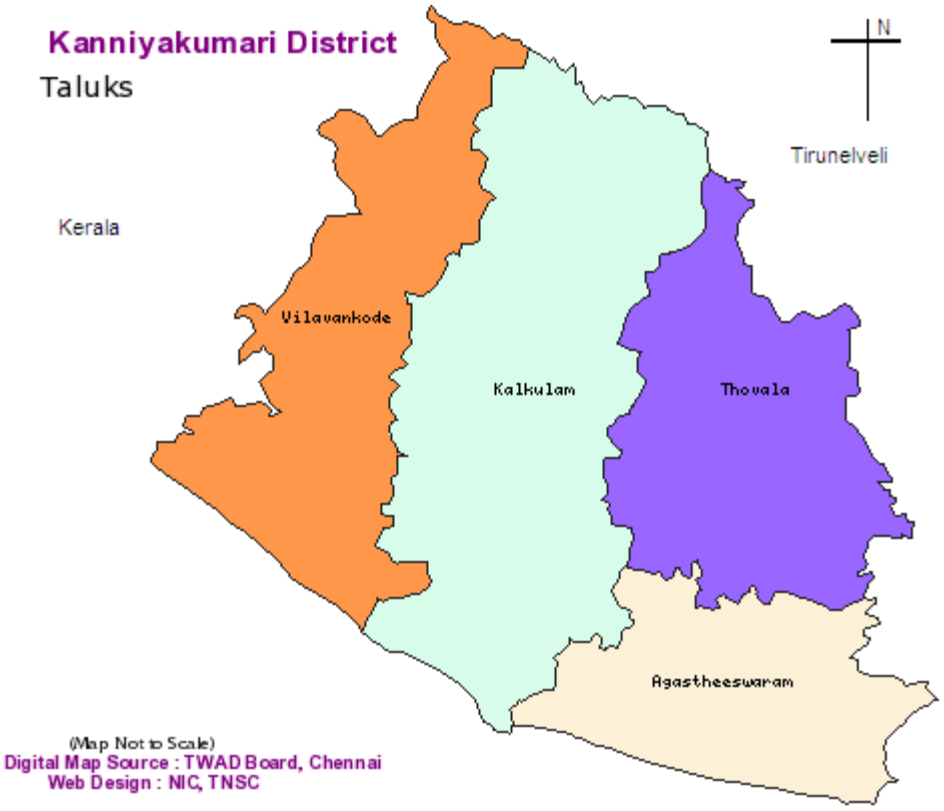

Fig. 1.Map Showing the Taluks in Kanyakumari District

Kanyakumari district comprises of nine blocks viz., Thovalai, Agastheeswaram, Rajakamangalam, Kurunthencode, Thackalay, Thiruvattar, Melpuram, Killiyoor and Munchirai and they are shown in Fig 2.

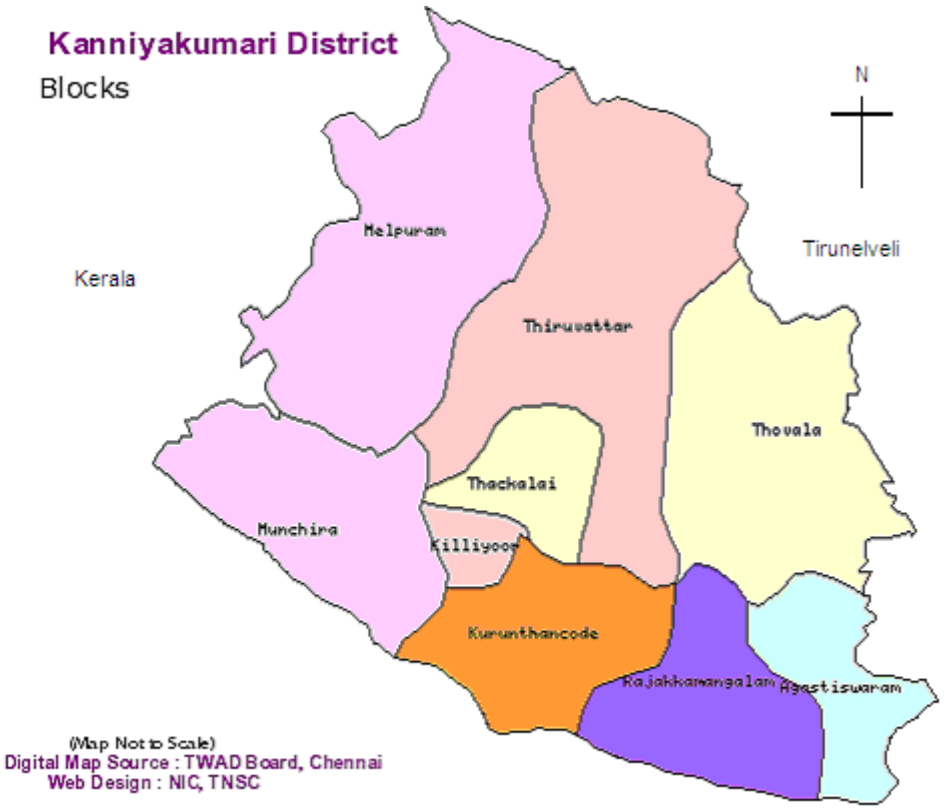

Fig. 2. Map Showing the Blocks in Kanyakumari District

ii) General Statistics

Total geographical area of the district is 1.67 lakh hectares and more than half of the geographical area is under the cultivation of crops. During 2006-07, the gross cropped area was 92,533 ha, and it accounted for 55.35 per cent of the total geographical area. The coastal ecosystem of this district comprises 68 Km in length and is studded with 44 coastal fishing villages. Since this district is situated at the extreme south of the Indian subcontinent, the coastline is formed nearly by three seas, namely, Arabian Sea, Indian Ocean and Bay of Bengal. But the main part of the coast faces the Arabian Sea. The major soil type in the district is Red soil (65,608 ha), which constituted about 67 per cent of the total cultivated area. Lateritic soil (20,003 ha) is the next major soil type, which formed 22 per cent of the total cultivated area in the district. District is endowed

with five rivers and six dams constructed across them. The rivers are Thamiraparani, Pazhayar, Valliar, Ponniavaikal and Paralizar. The major river in the district is Thambaraparani. This river has two major distributaries viz., Kodayar and Paralayar. Total area under irrigation in Kanyakumari district was 27,096 ha during 2006-07. Canals (53 per cent) and tanks (32 per cent) were the major sources of irrigation. Wells were minor sources of irrigation in the district.

iii. Crops / Breeds / Fisheries, etc., Activities in the District

Several high yielding varieties of major crops are grown in the district. In rice, ASD16, ADT37, Ponmani and TPS3 are the popular HYVs. ADT5, T9 and Vamban 3 are the popular HYVs of black gram. East coast tall and T x D hybrid are the major coconut HYVs. Tapioca, Srijaya and Srivisakam are the HYVs widely grown in the district. Robusta, G9, Nendran, Red Banana and Rasthali are the popular banana HYVs grown in the district. Kattisamba is the popular local rice variety and Kanyakumari green is the popular local variety of coconut. Noorumuttan and Kariyilaipoian are the local varieties of Tapioca and Nendran, Poovan, Rastali, Matti and Karpooravalli are the popular local varieties of banana.

Dairy animals in the district include crossbred Jersey, Holstein Friesian, Murrah and indigenous cows. The district has potential for development of both inland and marine fisheries.

2.2 District at a Glance

2.2.1. Location and Geographical Units

The district lies between 77^{o} $15^{'}$ and 77^{o} $36^{'}$ of the eastern longitudes and 8^{o} $03^{'}$ and 8^{o} $35^{'}$ of the northern latitudes. The district is bound by Tirunelveli district on the north and the east. The South Eastern boundary is the Gulf of Mannar. On south and south west, it is bound by Indian Ocean and Arabian Sea and in west and north west it is bound by Kerala State. The details of taluks, blocks and agricultural divisions of Kanyakumari district are furnished in Table 2.1.

Table 2.1. Taluks, Blocks and Agricultural Divisions in the District

Name of the Taluks(4)	Name of the Blocks (9)	Name of Agrl. Division(9)
Thovalai	Thovalai	Thovalai
Agastheeswarm	Agastheeswaram	Agastheeswaram
Kalkulam	Rajakamangalam	Rajakamangalam
Vilvancode	Kurunthencode	Kurunthencode
	Thackalay	Thackalay
	Thiruvattar	Thiruvattar
	Melpuram	Melpuram
	Killiyoor	Killiyoor
	Munchirai	Munchirai

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

Kanniyakumari District consists of two Revenue Divisions viz., Nagercoil and Padmanabhapuram. The Nagercoil Revenue Division consists of two taluks, viz., Agasteeswaram with its headquarters at Nagercoil and Thovalai with its headquarters at Boothapandi. The Padmanabhapuram Revenue Division consists of two taluks, Kalkulam with its headquarters at Thuckalay and Vilavancode with its headquarters at Kuzhithurai. There are nine Panchayat Unions, 56 Town Panchayats and 99 Village Panchayats in the district. There are four Municipalities in Kanyakumari district viz., Nagercoil, Padmanabhapuram, Colachel and Kuzhithurai.

2.2.2. Demographic Profile

The total population of the district as per 2001 census was 16.70 lakhs of which 8.30 lakhs were males and 8.40 lakhs were females. The literacy rate of the district was 88 per cent. The total workers in the district were 4.64 lakhs of which 3.95 lakhs were males and 0.69 were females.

- **Total Population** : 1669763 (100%)
  - Male : 829642 (49.68%)
  - Female : 840221 (50.32%)
  - Rural : 1330240 (79.67%)
  - Urban : 270109 (16.18%)
  - SC : 76862 (4.60%)
  - ST : 5223 (0.31%)
  - Literates : 1148778 (68.80%)

- **Occupation**
  - Total workers : 464087 (100%)
    - Male : 395041 (85.12%)
    - Female : 69046 (14.88%)
    - Rural workers : 387350 (83.46%)
    - Urban workers : 76737 (16.54%)

  - Cultivators : 243710 (100%)
    - Small farmers : 9345 (3.83%)
    - Marginal farmers : 229581 (94.20%)
    - Big farmers : 4784 (1.97%)

  - Agrl labours : 177410 (100%)
    - Male : 159305 (89.79%)
    - Female : 18105 (10.21%)

    - Household Industry : 13377
    - Other workers : 235777
    - Non workers : 1112218

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

2.2.3. Topography and Agro Climatic Characteristic Features

Based on the agro-climatic and topographic conditions, the district can be divided into three regions, namely :-

1. The uplands : Comprising of hills and hill bases suitable for growing crops like Rubber, Cloves, Nutmeg, Pepper, Pineapple etc.

2. The Middle lands : Comprising of plains and valleys fit for growing crops like Paddy, Tapioca, Banana, Coconut etc. and

3. The low lands : Comprising of the coastal belt ideal for growing Coconut and Cashew

2.2.4. Land Use Pattern and Land holdings

In Kanyakumari district, more than half of its total geographical area is being under the cultivation of crops. During 2006-07, the gross cropped area was 92,533 ha, which accounted for 55.35 per cent of the total geographical area. During the recent years, more fallow lands were brought under cultivation, which was indicated by the declining area under current and other fallow lands. However, increasing area under barren and uncultivable lands and land put to non-agricultural uses did not affect the net sown area and gross cropped area in the district. At the same time, it is important to note that area sown more than once is slowly declining during the recent years. Kanyakumari district is blessed with good forest cover, which accounted for nearly 33 per cent of total geographical area. The details of land utilization are furnished in Table 2.2

Table 2.2. Land Use Pattern of Kanyakumari District -2004-2007

(Area in hectares)

S. No.	Classification	2004-05	2005-06	2006-07
1	Forest	54,155 (32.39)	54,155 (32.39)	54,155 (32.39)
2	Barren and Uncultivable uses	3,335 (1.99)	3,149 (1.88)	4,006 (2.40)
3	Land put to Non-agricultural uses	26,337 (15.75)	26,890 (16.08)	28,177 (16.85)
4	Cultivable waste	-	-	-
5	Permanent pastures and other grazing lands	2 (0.001)	133 (0.08)	103 (0.06)
6	Land under miscellaneous tree crops and groves not included in net area sown	550 (0.33)	581 (0.35)	541 (0.32)

Table 2.2. Contd…

(Area in hectares)

S. No.	Classification	2004-05	2005-06	2006-07
7	Current Fallow	2,457 (1.47)	1,433 (0.86)	-
8	Other fallow lands	1,828 (1.09)	1,536 (0.92)	-
9	Net Area Sown	78,536 (46.97)	79,323 (47.44)	80,218 (47.98)
10	Area sown more than once	13,877 (8.30)	12,484 (7.47)	12,335 (7.38)
11	Gross Area Sown	92,413 (55.27)	91,807 (54.91)	92,553 (55.35)
12	Total Geographical Area	1,67,200 (100.00)	1,67,200 (100.00)	1,67,200 (100.00)

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

2.2.5. Irrigation and Ground Water

District is endowed with five rivers and six dams constructed across them. The rivers are Thamiraparani, Pazhayar, Valliar, Ponniavaikal and Paralizar. The major river in the district is Thambaraparani, locally known as Kuzhithuraiar. This river has got two major distributaries viz., Kodayar and Paralayar. There are many distributaries for Kodayar river of which Chittar I and Chittar II are the major ones. The origin of Tambaraparani River is Western Ghats and the river confluences with Arabian sea near Thengapattanam. The dams in the district are Pandiyan Dam, Puthen Dam, Pechipparai Dam, Perunchani Dam, Chittar Dam – I and Chittar Dam – II. Of these, Pechipparai is the high volume (4450 Mcft) storage dam and Perunchani is significantly larger with the storage capacity of 2890 Mcft. There are other low volume storage dams namely Chittar I, II and Poigai and the details of the capacity of the dams are furnished in Table. 2.3.

Table 2.3. Capacity of Dams in Kanyakumari District

Sl. No	Name of Dam	Full level capacity (feet)	Full Storage (Mcft)
1	Pechiparai	48	4450
2	Perunchani	77	2890
3	Chittar I	18	393
4	Chittar II	18	600
5	Poigai	42	95

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

Total area under irrigation in Kanyakumari district was 27,096 ha during 2006-07. Canals (53 per cent) and tanks (32 per cent) were the major sources of irrigation. Thovalai, Agastheeswaram and Rajakamangalam blocks depend mainly on canals for irrigation. Tanks served as main source of irrigation in Thackalay, Thiruvattar and Melpuram blocks. Kurunthencode depends equally on canals and tanks for irrigating the crops. Wells were minor sources of irrigation in the district. The block wise details of net area irrigated from 2004-05 to 2006-07 are furnished in Table 2.4 through Table 2.6. Likewise, the block wise details of gross area irrigated from 2004-05 to 2006-07 are provided in Table 2.7 through Table 2.9.

Table 2.4. Block wise Net Area Irrigated - 2006-07

(Area in hectares)

S. No	Name of the Block	2006-07					
		Canal	Tank	Tube well	Ordinary well	Others	Total
1.	Thovalai	4793.1	489.0	-	-	-	5282.1
2.	Agastheeswaram	4202.2	1360.4	-	-	-	5562.6
3.	Rajakamangalam	2614.2	846.8	156.9	59.5	-	3677.4
4.	Kurunthencode	1573.3	1440.1	-	184.5	-	3197.9
5.	Thackalay	985.4	2543.9	-	19.0	3.0	3551.3
6.	Thiruvattar	588.0	1078.7	-	12.0	94	1772.7
7.	Melpuram	268.8	1072.5	-	6.2	26.1	1373.6
8.	Killiyoor	765.7	960.1	-	35.0	52.0	1812.8
9.	Munchirai	254.0	568.7	-	31.0	12.0	865.7
	Total	**16044.6**	**10360.1**	**156.9**	**347.2**	**187.1**	**27096.1**

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

Table 2.5. Block wise Net Area Irrigated - 2005-06

(Area in hectares)

S. No.	Name of the Block	2005-06					
		Canal	Tank	Tube well	Ordinary well	Others	Total
1.	Thovalai	4685	260	28	59	18	5050
2.	Agastheeswaram	5215	449	-	315	-	5979
3.	Rajakamangalam	2335	638	494	577	-	4044
4.	Kurunthencode	813	2199	-	185	4	3201
5.	Thackalay	1021	2529	-	19	3	3572
6.	Thiruvattar	588	1112	-	12	94	1806
7.	Melpuram	335	983	-	6	55	1379
8.	Killiyoor	667	1058	-	35	52	1812
9.	Munchirai	254	554	-	31	12	851
	Total	**15913**	**9782**	**522**	**1239**	**238**	**27694**

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

Table 2.6. Block wise Net Area Irrigated-2004-05

(Area in hectares)

S. No.	Name of the Block	2004-05					
		Canal	Tank	Tube well	Ordinary well	Others	Total
1.	Thovalai	4718	260	28	59	-	5065
2.	Agastheeswaram	5389	449	-	315	-	6153
3.	Rajakamangalam	2088	638	494	577	-	3797
4.	Kurunthencode	811	2184	-	185	4	3184
5.	Thackalay	1025	2660	-	15	3	3703
6.	Thiruvattar	684	1211	-	12	94	2001
7.	Melpuram	334	999	-	5	58	1396
8.	Killiyoor	664	1061	-	30	54	1809
9.	Munchirai	257	567	-	28	12	864
	Total	**15970**	**10029**	**522**	**1226**	**225**	**27972**

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

Table 2.7. Block wise Gross Area Irrigated - 2006-07

(Area in hectares)

S. No	Name of the Block	2006-07					
		Canal	Tank	Tube well	Ordinary well	Others	Total
1.	Thovalai	8159.8	774.2	-	-	-	8934.0
2.	Agastheeswaram	5440.9	2462.6	-	-	-	7903.5
3.	Rajakamangalam	4655.4	1187.0	199.9	88.3	-	6130.6
4.	Kurunthencode	2678.7	1701.3	-	184.5	-	4564.5
5.	Thackalay	1080.0	3329.8	-	29.0	3.0	4441.8
6.	Thiruvattar	609.0	1110.5	-	12.0	94.0	1825.5
7.	Melpuram	304.4	1237.7	-	6.2	26.1	1574.4
8.	Killiyoor	802.5	1641.5	-	35.0	52.0	2531.0
9.	Munchirai	259.0	871.0	-	31.0	12.0	1173.0
	Total	23989.5	14315.6	199.9	386.0	187.1	38078.3

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

Table 2.8. Block wise Gross Area Irrigated -2005-06

(Area in hectares)

S. No.	Name of the Block	2005-06					
		Canal	Tank	Tube well	Ordinary well	Others	Total
1.	Thovalai	8232	390	30	59	18	8729
2.	Agastheeswaram	7141	780	-	460	-	8381
3.	Rajakamangalam	2616	1112	883	718	-	5329
4.	Kurunthencode	1474	2934	-	185	4	4597
5.	Thackalay	1060	3469	-	29	3	4561
6.	Thiruvattar	620	1145	-	12	94	1871
7.	Melpuram	383	1231	-	6	55	1675
8.	Killiyoor	757	1690	-	35	52	2534
9.	Munchirai	259	906	-	31	12	1208
	Total	22542	13657	913	1535	238	38885

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

Table 2.9. Block wise Gross Area Irrigated -2004-05

(Area in hectares)

S. No.	Name of the Block	2004-05					
		Canal	Tank	Tube well	Ordinary well	Others	Total
1.	Thovalai	8234	300	28	59	-	8711
2.	Agastheeswaram	7090	780	-	460	-	8330
3.	Rajakamangalam	2580	1112	883	718	-	5273
4.	Kurunthencode	1471	2892	-	185	4	4552
5.	Thackalay	1060	3634	-	29	3	4726
6.	Thiruvattar	707	1312	-	12	94	2125
7.	Melpuram	378	1221	-	5	58	1662
8.	Killiyoor	672	1578	-	30	54	2334
9.	Munchirai	262	902	-	28	12	1204
	Total	22434	13821	911	1526	225	38917

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

Table 2.10. Ground Water Potential

Over Exploited (100%)	Critical (85-100%)	Semi Critical (60-85%)
Nil	Nil	Nil

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

2.2.6 Soil health

The major soil type in the district is Red soil (65,608 ha), which constituted about 67 per cent of the total cultivated area. Lateritic soil (20,003 ha) is the next major soil type, which accounted for 22 per cent of the total cultivated area in the district. There are minor soil types like coastal alluvium and alluvium, which are found around four and two per cent to the total area respectively. The details of soil types are furnished in Table 2.11.

Table 2.11. Soil Types of Kanyakumari District

(in hectares)

Soil Type	Characteristics	Area
Lateritic soil	Reddish brown sandy clay loam	20,033
Red soil	Red to Yellow sandy clay or sandy loam	65,608
Coastal alluvium	Pale brown sand	3,830
Alluvium	Brown sandy clay loam	1,590

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

The area under different problem soils in the district is given in Table 2.12. Medium acidic soil with the pH ranging from 5.6 to 6.0 is spread over 46,265 ha (around 50 per cent of the total cultivated area) across the places like Thiruvattar, Thovali, Colachal, Navalkadu and Thuckalay. Next to this, strongly acidic soil is spread over 20,835 ha in Marthandam and Mullucode regions. Nearly 20 per cent of the total cultivated area is blessed with neutral soil (18,873 ha) and spread over Thalukudi, Kanyakumari, Thengampudur, Suchindram, Kottaram, Kumarakoil and Kalkulam. Soil is slightly acidic in Thengaipattinam and Dharmapuram where as it is mild alkali in Aramboly and Therur regions.

Table 2.12.Area under Problem Soils in Kanyakumari District
(in hectares)

S.No	Problem soil	Place	Area
1	Strongly acidic (pH 5.1 -5.5)	Marthandam Mullucode	20835
2	Medium acidic (pH 5.6 – 6.0)	Thiruvattar Thovali Colachal Navalkadu Thuckalay	46265
3	Slightly acidic (pH 6.1 – 6.5)	Thengaipattinam Dharmapuram	2626
4	Neutral (pH 6.6 – 7.3)	Thalukudi, Kanyakumari, Thengampudur, Suchindram, Kottaram, Kumarakoil, Kalkulam	18,873
5	Mild alkaline (pH 7.4 -7.8)	Aramboly, Therur	2,462

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

The blockwise area under different problem soil is given in Table 2.13. In general, acidic soil (varying from slight to strong acidic) is found widely in the district. Soils of Rajakamangalam block is affected by slight to medium acidity while Thovalai and Thackalay blocks are affected by medium acidic soils. Medium to strong acidic soils are found in Kurunthencode, Thiruvattar and Melpuram blocks while strong acidic soils are found in Killiyoor and Munchirai.

Table 2.13. Block wise Area under Problem Soils

S.No	Block	Problem Soils
1	Thovalai	Medium acidic
2	Agastheeswaram	----------
3	Rajakamangalam	Slight to medium acidic
4	Kurunthencode	Medium to strong acidic
5	Thackalay	Medium acidic
6	Thiruvattar	Medium to strong acidic
7	Melpuram	Medium to strong acidic
8	Killiyoor	Strong acidic
9	Munchirai	Strong acidic

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

Different types of soils in the district and their coverage in hectares are given in Table 2.14 along with the Soil map of Kanyakumari district.

Kanniyakumari district soil legend

Table 2.14. Kanyakumari Soils and Area in Hectare

Soil Description	Area (ha)
Deep, fine loamy, mixed, Inceptisols	20557.84
Deep, fine, montmorillonitic, Vertisols	14557.70
Shallow, loamy, mixed, Inceptisols	13101.91
Deep, clayey skeletal, mixed, Inceptisols	10501.78
Deep, fine, mixed, Alfisols	9973.74
Moderately deep, fine, mixed, Inceptisols	9916.07
Very deep, coarse loamy, mixed, Mollisols	9444.96
Deep, fine, mixed, Inceptisols	9334.69
Moderately deep, fine, mixed, Alfisols	6045.33
Deep, coarse loamy, mixed, Mollisols	5336.33
Deep, clayey skeletal, mixed, Alfisols	4852.14
Very deep, fine, mixed, Inceptisols	4552.02
Shallow, clayey, mixed, Inceptisols	4203.58
Shallow, loamy skeletal, mixed, Inceptisols	3407.69
Deep, fine loamy, mixed, Alfisols	3038.25
Very deep, clayey skeletal, kaolinitic, Alfisols	3003.94
Very deep, very fine, montmorillonitic, Inceptisols	2873.68
Very deep, coarse loamy, mixed, Inceptisols	2488.33
Deep, contrasting particle size, mixed, Entisols	2308.62
Very deep, fine, mixed, Mollisols	2015.77
Very deep, fine, mixed, Alfisols	1720.58
Very deep, fine loamy, mixed, Inceptisols	1687.62
Moderately shallow, fine, mixed, Inceptisols	1247.48
Very deep, fine loamy, mixed, Alfisols	1198.00
Very deep, contrasting particle size, mixed, Inceptisols	775.46
Very deep, sandy, mixed, Entisols	481.93
Shallow, clayey skeletal, mixed, Inceptisols	426.59
Very deep, fine, kaolinitic, Alfisols	399.65
Deep, sandy, mixed, Entisols	397.57
Deep, fine loamy, mixed, Entisols	378.88
Moderately deep, coarse loamy, mixed, Entisols	248.10
Deep, contrasting particle size, mixed, Inceptisols	226.60
Moderately deep, very fine, montmorillonitic, Vertisols	221.24
Very deep, fine, montmorillonitic, Vertisols	206.11
Shallow, clayey, mixed, Ultisols	154.13
Moderately shallow, fine loamy, mixed, Inceptisols	150.72
Moderately deep, fine, montmorillonitic, Vertisols	116.85
Very shallow, clayey skeletal, mixed, Entisols	78.98
Deep, coarse loamy, mixed, Entisols	74.23
Very deep, coarse loamy, mixed, Entisols	69.23
Moderately deep, fine loamy, mixed, Entisols	33.88

Source: Remote Sensing and GIS Centre, Tamil Nadu Agricultural University, Coimbatore

2.3. Development Vision and Strategy

Kanyakumari district had 55 per cent of the total geographical area as gross cropped area during 2006-07. Net sown area and area sown more than once accounted for 47 per cent and eight per cent respectively. Paddy was grown in 23 per cent of the area and coconut was grown in 26 per cent of the area. The district received good rainfall from both southwest and northeast monsoons. The yield gap was high in crops like Paddy (50%), banana (15%), tapioca (25%) and coconut (55%) and there is scope for increasing the yield through appropriate technological interventions. Some of the weaknesses with agriculture in Kanyakumari district are non-adoption of recommended technologies, labour scarcity during major activity, frequent incidence of pests and diseases, soil acidity, micronutrient deficiency etc. The strategy for agricultural development needs to address these areas of concern so that four per cent growth in agriculture can be achieved.

CHAPTER - III
SWOT ANALYSIS

3.1 Introduction

SWOT analysis is a tool for planning and helps to focus on key issues. *SWOT* stands for strengths, weaknesses, opportunities and threats. The SWOT analysis provides a good framework for reviewing strategy and direction of plan proposals. The SWOT analysis of the district is furnished in Table 3.1

Table.3.1. SWOT Analysis of Kanyakumari District

Strengths	Kanyakumari district has 47 per cent of the total geographical area as net sown area. Fallow lands constitute less than three per cent of the area. The district has got good forest cover, accounting around 32 per cent of the geographical area and receives good rainfall from both Southwest and Northeast monsoons.
Weaknesses	Some of the weaknesses with agriculture in Kanya kumari district are non adoption of recommended technologies, labour scarcity during major activity, frequent incidence of RTD and stem borer during Rabi season, soil acidity, summer rains affecting rice fallow pulses, no micronutrient application, unavailability of high yielding variety and Pseudo stem borer /wilt damage
Opportunities	There is scope for increasing the yield through appropriate technological interventions.
Threats	Heavy rains during Kharif affect the harvest and post harvest. Banana crop is affected due to wind. Pastures and grazing lands are very low and it is decreasing over years.

3.2: Accommodating SWOT – Addressing Issues Emerging out of the Analysis

The following proposals are made to address the above issues.

In rice, the schemes for increasing productivity include schemes for the supply of quality seeds, distribution of green manure seeds and soil health card, assistance to start vermicompost production unit and supply of dolomite and bio-fertiliser. To control the

pest management in important crops the following technologies are recommended: Seed treatment, massive rat control campaign, village publicity & training. To tackle with the labour scarcity, machinery and equipment for agricultural operations will be supplied. For effective transfer of technology, the following activities will be undertaken. Strengthening of District Information Centre, providing Laptop, printer, LCD, copier etc. Formation of FIG , interstate exposure visit , District level exhibition/ Kissan mela , publicity & propaganda, printing of literature, display boards, conduct of press meet, technology transfer through TV, Radio & other mass media and farmers training through FTC.

In Coconut, assistance will be given to the maintenance of existing coconut gardens to improve production and productivity and to start coir pith composting units besides distribution of micro nutrient mixture and green manure seeds will be undertaken. For pest control, pheromone trap for Red Palm Weevil will be popularized. Other schemes for coconut development include distribution of coconut climbers (Kerala type), training to FIG/ Farmers in value addition of coconut products and exposure visit to other states.

In pulses, importance will be given for supply of quality seeds, integrated nutrient management and training in the latest crop production technologies. In Banana, schemes relates to support system for Banana, Corm Injector, and Banana Bunch Cover. Other schemes include, use of plastic crates for handling fruits and vegetable, popularizing mango harvester and horticulture air drier for spices.

Besides crop specific schemes, other schemes are proposed with the objective of increasing productivity, getting higher prices and being competitive in the market. These include steps to improve marketing infrastructure, soil and water conservation and agricultural mechanization.

3.3 Composite Index of Agricultural Development of Kanyakumari 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. These 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 Kanyakumari district is taken from various government publications like Season and Crops Report and Economic Appraisal of Tamil Nadu for the four periods viz., 1990-91, 1995-96, 2000-01 and 2005-06. In all, 25 indicators of agricultural development as given in Table 3.2 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 Kanyakumari district which was classified as 'backward' in agricultural development during 90-91 and 1995-96 became 'very backward' in agriculture during 2000-01and then became 'developing' during 2005-06. In terms of overall agricultural development its rank among the 29 districts of Tamil Nadu varied from 19 to 24 during 1990-91 to 2005-06. As far as the individual components of agricultural development are concerned, its ranks in the above periods are summarized in Table 3.3. The table shows that except in fisheries and irrigation variables, in all other components its performance in the period of study is not satisfactory. For example, in crop variables its ranks are between 26^{th} and 27^{th} rank in all the four periods. Similarly in livestock variables also it occupied between 18^{th} and 25^{th} rank.

Table 3.2. Selected Indicators of Agricultural Development for Kanyakumari District

Component	Indicators	No. of Indicators
Crop-Area-Variables	Cropping Intensity	10
	% of Gross Cropped Area to Total geographical area	
	% Share of food grains to Gross Cropped Area	
	% Share of food crops to Gross Cropped Area	
	% Share non food crops to Gross Cropped Area	
	% Share of cultivable waste to total geographical area	
	% Area under High Yielding Variety-PADDY	
	% Area under High Yielding Variety-CHOLAM	
	% Area under High Yielding Variety-CUMBU	
	% Area under High Yielding Variety-RAGI	
Irrigation	Irrigation Intensity	7
	% of Gross Irrigated Area to Gross Cropped Area	
	% of Net Irrigated Area to net area sown	
	% Area under Canal Irrigation to Gross Irrigated Area	
	% Area under Tank Irrigation to Gross Irrigated Area	
	% Area under Well Irrigation to Gross Irrigated Area	
	% 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	% of Cultivators to total population	2
	% of Agri.labourers to total workers	
	TOTAL	25

Source: NADP Cell, Tamil Nadu Agricultural University, Coimbatore

Table 3.3. Rank of Kanyakumari 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	27	3	18	-	-	22	23
	1995-96	27	7	24	5	14	27	19
	2000-01	26	11	18	3	16	29	24
	2005-06	26	11	25	5	12	1	20

Source: NADP Cell, Tamil Nadu Agricultural University, Coimbatore

CHAPTER VI
DISTRICT PLAN

Kanyakumari district was formed on 1st November 1956 from the territories transferred to the then Madras State from the erstwhile Travancore-Cochin State. Kanyakumari district is the southern most district of Tamil Nadu. The district lies between 77° 15' and 77° 36' of the eastern longitudes and 8° 03' and 8° 35' of the northern latitudes. The district is bound by Tirunelveli District on the north and the east. The south eastern boundary is the Gulf of Mannar. On south and south west, it is bound by Indian Ocean and Arabian Sea and in west and north west it is bound by Kerala State.

1. Growth Drivers

Kanyakumari district has 47 per cent of the total geographical area as net sown area. Fallow lands constituted less than three per cent of the area. The district has got good forest cover, accounting for 32 per cent of the geographical area and receives good rainfall from both Southwest and Northeast monsoons. Net sown area is 47 per cent and area sown more than once is eight per cent and the gross cropped area is 55 per cent. Paddy, banana and tapioca are the important annual crops and coconut and rubber are the important perennial crops. Literacy rate is high and sex ratio is also favourable.

2. Innovative Schemes

Proposed schemes include certified seed production and distribution, incentive for seed production to self help groups , seed distribution subsidy for the seeds produced by self help groups , supply of quality certified seeds at nominal cost to enhance the SRR, distribution of green manure seeds , distribution of soil health card, assistance to start vermicompost production unit, dolomite and bio-fertiliser distribution of machineries and equipments, demonstration on SRI/ hybrid rice, village campaigns, production of short film on new technologies, paddy model farm, establishment of seed testing lab and strengthening of district information centre. Trainings will be given on INM, IPM and value addition. In horticulture trainings will be given in post harvest handling of fruits, vegetables and spices, pine apple cultivation and subsidies will be provided for support system for banana, corm injector, banana bunch cover and a ten hectares

mega demonstration plot will also be established. Agricultural marketing will be strengthened through commodity group formation, market intelligence dissemination and market price surveillance. In Agrl. Engineering, intervention-Soil and Moisture Conservation and Popularisation of Agricultural Mechanisation schemes are proposed.

3. Vision of XI Plan

The 11th Plan provides an opportunity to restructure policies to achieve a new vision of growth that will be much more broad based and inclusive, bringing about a faster reduction in poverty and helping to bridge the divides that are currently the focus of so much attention. One of the major challenges of the 11th Plan must be to reverse the deceleration in agricultural growth from 3.2 per cent observed between 1980 and 1996-97 to a trend average of only 1.5 per cent subsequently. This deceleration is undoubtedly at the root of the problem of rural distress that has surfaced in many parts of the country. To reverse this trend, corrective policies must be adopted .There is a need to raise the growth rate of agricultural GDP to around four per cent

6.1 Agriculture

6.1.1 Paddy

Paddy is the main crop of the District. It is cultivated in 20000 Ha. every year. It is grown in two seasons. First crop is sown in the months of April - June (Kannipoo) and the second crop is raised in the months of September - October (Kumbapoo)

i) Rationale/ Strategy/ Goals

- Promoting mechanised cultivation in Paddy.
- Popularising SRI technology in Paddy cultivation.
- Linking farmers to market areas.
- Formation of crop specific Self Help Group (as Farmers Interest Groups)
- Promoting Organic Farming in Paddy cultivation

ii) Problem Focus

In Kanyakumari district, paddy is the main crop. In the past one decade, the area under Paddy had reduced from 33,000 Ha. to 20000 Ha. This is attributed mainly to the high production cost, labour problems, high wages to agricultural labourers etc. Under these circumstances and hurdles, to motivate the farmers to go for paddy cultivation becomes a big task. So it is proposed to give incentives to farmers for seed production, and supply inputs at higher subsidy rates. Moreover application of balanced fertilizers to paddy crop is not practiced by most of the farmers because of the high price of fertilizers and timely availability etc. So to tackle these problems and to promote integrated nutrient management practices supply of green manure seeds and soil testing etc. at subsidised cost are proposed. To promote organic farming, it is proposed to give assistance to start Vermi Compost Production Units.

Most of the soils in Kanyakumari District are acidic in nature. So to reclaim such soils and to improve the productivity of such soils, supply of lime at subsidised cost is proposed.

To promote SRI technology in paddy cultivation, demonstration and village campaigns are proposed to be conducted at subsidised cost.

To promote mechanisation in paddy cultivation and to overcome labour problem and to reduce the cost cultivation in paddy and to make agricultural operations much easier, supply of agricultural machineries like paddy transplanter, tractor etc. at more subsidised rates are proposed.The action plan and the budget for the interventions of paddy is furnished in Table 6.1.

Table 6.1. Action Plan and Budget for Rice

(Rs. in lakhs)

				2008-09		2009-10		2010-2011		2011-2012		Total	
S.No	Components	Unit	Subsidy per unit	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost
	I. Agriculture												
	1.1 Rice												
1.1.1	**SEED**												
1	One time grant to TANWABE / FIG to undertake certified seed production and distribution @ Rs. 50000/- per group	No.	0.500	1.000	0.500	1.000	0.500	1.000	0.500	1.000	0.500	4.000	2.000
2	Incentive for seed production to Self Help Groups @ Rs. 3/- kg- TABWABE Groups/FIG	MT	0.030	30.000	0.900	30.000	0.900	30.000	0.900	30.000	0.900	120.000	3.600
3	Seed distribution subsidy for the seeds produced by Self Help Groups @ Rs. 5 /kg. TANWABE/ FIG	MT	0.050	30.000	1.500	30.000	1.500	30.000	1.500	60.000	1.500	150.000	6.000
4	Supply of Quality Certified Seeds at nominal cost to enhance the SRR @Rs. 5 /- per kg. (Public & private seeds) or 50% whichever is less	MT	0.050	200.000	10.000	200.000	10.000	200.000	10.000	200.000	10.000	800.000	40.000
5	Seed Minikit of new HYV @ Rs. 100/- minikit	Nos.	0.001	50.000	0.050	50.000	0.050	50.000	0.050	50.000	0.050	200.000	0.200
	TOTAL				**12.950**		**12.950**		**12.950**		**12.950**		**51.800**

Table 6.1. contd…

(Rs. in lakhs)

				2008-09		2009-10		2010-2011		2011-2012		Total	
S.No	Components	Unit	Subsidy per unit	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost
1.1.2	**Integrated Nutrient Management**												
1	Distribution of Green Manure seeds at 90% subsidy of Rs. 20/ kg.	MT	0.200	20.000	4.000	20.000	4.000	20.000	4.000	20.000	4.000	80.000	16.000
2	Distribution of Soil Health Card @ Rs. 25/- per card (Soil + water testing) and Preparation and lamination of soil tested	Nos.	0.000	9000	2.250	9000	2.250	9000	2.250	9000	2.250	36000	9.000
3	Assistance to start vermicompost production unit @ Rs. 10000 per unit (Self Help Group women farmers)	Nos.	0.300	9.000	2.700	9.000	2.700	9.000	2.700	9.000	2.700	36.000	10.800
4	Dolomite 500 kg/ ha @ Rs. 1000/-Ha.	L.Ha.	1000.000	0.005	5.000	0.005	5.000	0.005	5.000	0.005	5.000	0.020	20.000
5	Bio-fertiliser @ 50% subsidy @ Rs. 3/-per No.	L. No.	3.000	0.500	1.500	0.500	1.500	0.500	1.500	0.500	1.500	2.000	6.000
	TOTAL				**15.450**		**15.450**		**15.450**		**15.450**		**61.800**
1.1.3	**Integrated Pest Management**												
1	Farmers Field School @ 25000/ No.	Nos.	0.250	18.000	4.500	18.000	4.500	18.000	4.500	18.000	4.500	72.000	18.000

Table 6.1. contd…

(Rs. in lakhs)

				2008-09		2009-10		2010-2011		2011-2012		Total	
S.No	Components	Unit	Subsidy per unit	**Units**	**Total cost**	**Units**	**Total cost**	**Units**	**Total cost**	**Units**	**Total cost**	**Units**	**Total cost**
2	Seed Treatment Rs. 65/Ha. Or 50% of subsidy whichever is less	L.Ha.	20.000	0.005	0.100	0.005	0.100	0.005	0.100	0.005	0.100	0.020	0.400
3	Massive Rat control campaign in village @ Rs. 5000 /- Village	Nos.	0.050	20.000	1.000	20.000	1.000	20.000	1.000	20.000	1.000	80.000	4.000
4	Publicity & Training @ Rs. 50000/- per district	Nos.	0.500	1.000	0.500	1.000	0.500	1.000	0.500	1.000	0.500	4.000	2.000
	TOTAL				**6.100**		**6.100**		**6.100**		**6.100**		24.400
1.1.4	**Machineries and Equipments**												
1	Promotion of SRI Distribution of Marker, Rotary, Conoweeder and other items @ Rs. 4000 / Ha.	L.Ha	4000.0	0.005	20.000	0.010	40.000	0.010	40.000	0.010	40.000	0.035	140.000
2	Transplanter to TANWABE / FIG / farmers @ Rs. 100000 /- each or 75% subsidy	No.	1.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	20.000	20.000

Table 6.1. contd…

(Rs. in lakhs)

				2008-09		2009-10		2010-2011		2011-2012		Total	
S.No	Components	Unit	Subsidy per unit	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost
3	Tractor with accessories(35 HP) Rs. 1.5000 each or 50% subsidy	No.	1.500	5.000	7.500	5.000	7.500	5.000	7.500	5.000	7.500	20.000	30.000
4	Harvester 50% subsidy at Rs.300000/-	No.	3.000	2.000	6.000	2.000	6.000	2.000	6.000	2.000	6.000	8.000	24.000
5	Spade, Crowbar, Iron Pan @ Rs. 75/- subsidy or Rs. 400/-	No.	0.004	500.000	2.000	500.000	2.000	500.000	2.000	500.000	2.000	2000.000	8.000
6	Hand operated Sprayer 75% subsidy or Rs. 1000/- whichever is higher	No.	0.010	100.000	1.000	100.000	1.000	100.000	1.000	100.000	1.000	400.000	4.000
7	Tarpaulin @ Rs. 2000/- Nos. or 75% subsidy whichever is higher	No.	0.020	100.000	2.000	100.000	2.000	100.000	2.000	100.000	2.000	400.000	8.000
	TOTAL				**43.500**		**63.500**		**63.500**		**63.500**		**234.000**
1.1.5	**Technologies**												
1	Demonstration on SRI / Hybrid Rice @ 1 demonstration / 10 Ha. @ closer of 10 Ha. Rs. 40000/- Demonstration	No.	0.040	90.000	3.600	90.000	3.600	90.000	3.600	90.000	3.600	360.000	14.400
2	Village campaigns - Kharif / Rabi @ Rs. 1000/-per campaign	No.	0.010	81.000	0.810	81.000	0.810	81.000	0.810	81.000	0.810	324.000	3.240

Table 6.1. contd…

(Rs. In lakhs)

				2008-09		2009-10		2010-2011		2011-2012		Total	
S. No	Components	Unit	Subsidy per unit	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost
3	Production of short film on New technologies each Rs. 2.5 lakhs	No.	2.500	1.000	2.500	1.000	2.500	1.000	2.500	1.000	2.500	4.000	10.000
4	Paddy model farm	No.	0.100	9.000	0.900	9.000	0.900	9.000	0.900	9.000	0.900	36.000	3.600
	TOTAL				**7.810**		**7.810**		**7.810**		**7.810**		**31.240**
1.1.6	**Establishment pf Seed Testing Lab (Break up expenditure is given in Table 6.4)**				**6.000**								**6.000**
	TOTAL				**6.000**								**6.000**
1.1.7	**Extension Activities**												0.000
1	Strengthening of District Information Centre, providing Laptop, Printer, LCD, Copier etc.	No.	3.000	1.000	3.000							1.000	3.000
2	Formation of FIG @ Rs. 12500/- group for training and Office automation, 20 card, District Meeting etc. @ Rs. 12500/-	No.	0.125	20.000	1.250	20.000	1.250	10.000	1.250	10.000	1.250	60.000	5.000

Table 6.1.contd…

(Rs. in lakhs)

				2008-09		2009-10		2010-2011		2011-2012		Total	
S.No	Components	Unit	Subsidy per unit	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost
3	Exposure visit interstate for 10 days @ 30 farmers/Tour, Rs. 600/-day/farmer Rs. 1.8 lakh each	No.	1.800	3.000	5.400	3.000	5.400	3.000	5.400	3.000	5.400	12.000	21.600
4	Exposure visit interstate @ 50 farmers/Tour, 5 days @ Rs. 300/day/farmer (Rs. 0.75 lakhs each)	Nos.	0.750	3.000	2.250	2.000	1.500	2.000	1.500	2.000	1.500	9.000	6.750
5	District level exhibition/ Kisan mela @ Rs. 2.0 lakh/District	Nos.	2.000	1.000	2.000	1.000	2.000	1.000	2.000	1.000	2.000	4.000	8.000
6	Publicity & Propaganda, Printing of lit, Display boards, conduct of press tour, Technology transfer through TV, Radio & other mass media @ Rs. 2.00 lakh for district and Rs. 1.0 lakh per 9 blocks	Nos.	1.100	10.000	11.000	10.000	11.000	10.000	11.000	10.000	11.000	40.000	44.000
7	Vedio Conferencing facilities to District HQ @ Rs. 10.0 lakh in blocks and District HQ	Nos.	10.000	10.000	100.000							10.000	100.000

Table 6.1. contd….

(Rs. In lakhs)

				2008-09		2009-10		2010-2011		2011-2012		Total	
S.No	Components	Unit	Subsidy per unit	**Units**	**Total cost**	**Units**	**Total cost**	**Units**	**Total cost**	**Units**	**Total cost**	**Units**	**Total cost**
8	Farmers Training through FTC @ 40 training (2 days) year @ 50 farmers/training Rs. 20000/- training	Nos.	0.200	40.000	8.000	40.000	8.000	40.000	8.000	40.000	8.000	160.000	32.000
9	Exposure visit to Technical Officers (5) and farmers (20) to other States for 10 days	Nos.	2.500	1.000	2.500	1.000	2.500	1.000	2.500	1.000	2.500	4.000	10.000
10	Exposure visit to Technical Officers and farmers to other Countries for 15 days Lumpsum provision	Nos.		0.000	35.000	0.000	35.000	0.000	35.000	0.000	35.000		140.000
11	Publicity / POL - Hiring of vehicles @ Rs. 100000/- per district	No.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	4.000	4.000
	TOTAL				**171.400**		**67.650**		**67.650**		**67.650**		**374.350**
	RICE TOTAL				**263.210**		**173.460**		**173.460**		**173.460**		**783.590**

6.1.2. Pulses

Pulses are raised in rice-fallows and as inter crop in Tapioca. The important pulses are blackgram and cowpea. In the months of April - May and September – October, pulses are grown as inter crop with tapioca. In the month of February – March, pulses are raised as pure crop in rice-fallows. Blackgram is cultivated as rice – fallow crop in 2000 Ha. and Cowpea is cultivated as inter crop in 500 Ha.

i) Rationale/ Strategy/ Goals

* Increasing the area of Pulses crop in Kanyakumari District.
* Promoting Integrated Nutrient Management in pulses cultivation.
* Increasing the production and productivity of pulses and
* Popularising the latest technologies in pulses cultivation.

ii) Problem Focus

In Kanyakumari district, the area under pulses had reduced from 5000 Ha. to 2000 Ha. over a period of past 5 - 10 years. So to bring more area under rice fallow pulses and to increase the production and productivity, it is proposed to supply quality seeds, bio-fertilisers and micro-nutrients at subsidised cost and it is proposed to conduct more trainings and campaigns to motivate the farmers in pulses cultivation

iii) Budget

The total budget requirement for the four years from 2008 – 09 would be Rs.22.00 lakhs and the details are furnished in Table 6.2.

Table 6.2. Action Plan and Budget for Pulses

(Rs. in lakhs)

S.No	Components	Unit	2008-09			2009-10		2010-2011		2011-2012		Total	
			Subsidy per unit	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost
	1.3 Pulses												
1.3.1	**Seed**												
1	Seed production subsidy @ Rs. 10/kg	MT	0.100	4.000	0.400	4.000	0.400	4.000	0.400	4.000	0.400	16.000	1.600
2	Seed Treatment (Pseudomonas)	Kg	0.002	300.000	0.450	300.000	0.450	300.000	0.450	300.000	0.450	1200.00	1.800
	TOTAL				**0.850**		**0.850**		**0.850**		**0.850**		3.400
1.3.2	**INM**												0.000
1	Distribution of Bio-fertiliser @ 50% susbsidy Rs. 3/No.	L.No.	3.000	0.050	0.150	0.050	0.150	0.050	0.150	0.050	0.150	0.20	0.600
2	Foliar Nutrient application (2% DAP spray) subsidy @ 50% cost limited to Rs. 200/Ha.	Ha.	0.002	1500.000	3.000	1500.000	3.000	1500.000	3.000	1500.000	3.000	6000.00	12.000
3	Distribution of micro-nutrient mixture @ 35/kg.	MT	0.350	3.000	1.050	3.000	1.050	3.000	1.050	3.000	1.050	12.00	4.200
	Total				**4.200**		**4.200**		**4.200**		**4.200**		**16.800**
1.3.3	**Training**												0.000
	Farmers Training 50 farmers for 2 days/ Rs. 15000/- Training	No.	0.150	3.000	0.450	3.000	0.450	3.000	0.450	3.000	0.450	12.00	1.800
	TOTAL				**0.450**		**0.450**		**0.450**		**0.450**		1.800
	PULSES TOTAL				**5.500**		**5.500**		**5.500**		**5.500**		**22.000**

6.1.3 Coconut

Coconut is an important cash crop of this district. The main planting season is May to July. Coconut is cultivated in 23000 Ha., but the maintenance of coconut gardens are very poor. The production and productivity of the old gardens (50 - 60 years) are very low. So this project is proposed as a special case.

i) Rationale/ Strategy/ Goals

* Increasing the production and productivity of Coconut.
* Promoting Integrated Nutrient Management in Coconut.
* Promoting Integrated Pest Management in Coconut.
* Promoting value addition of Coconut products.

ii) Problem Focus

The production and productivity of the very old Coconut gardens of 50 - 60 years old of Kanyakumari district are very low. So it is proposed to give assistance to maintain such existing gardens to increase its productivity. The availability of coirpith waste from Coconut gardens are more. So to convert such waste into Organic manure and to utilize it at the maximum and to promote organic farming, it is proposed to give assistance to farmers to start Coirpith composting units at subsidised rates. Moreover, to produce value added products of Coconut, it is proposed to give training and organize exposure visits to farmers to such units and motivate the farmers to start value added product units in Kanyakumari district. To overcome the labour problem in Coconut harvest and to reduce the cost incurred in coconut tree climbing, it is proposed to supply Coconut Climbers at subsidised cost. In Kanyakumari district, the rainfall is very high. So micro-irrigation (or) drip irrigate is not required for Coconut.

iii) Budget

The total budget requirement from 2008 – 09 to 2011 – 12 would be Rs.91.600 lakhs and the details are furnished in Table 6.3.

Table 6.3. Action Plan and Budget for Coconut

(Rs. in lakhs)

S. No	Components	Unit	2008-09			2009-10		2010-2011		2011-2012		Total	
			Subsidy per unit	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost
	1.2 Coconut												
	1.2.1. MAINTENANCE												
1	Maintenance of existing coconut gardens to improve production and productivity Rs. 17500/- per Ha.	L.Ha.	0.175	0.0005	8.750	0.0005	8.750	0.0005	8.750	0.0005	8.750	0.002	35.000
	TOTAL				**8.750**		**8.750**		**8.750**		**8.750**		35.000
	1.2.2. INM												
1	Distribution of micro-nutrient mixture @ Rs. 30/- kg. or 75% subsidy which ever is higher	MT	0.300	25.000	7.500	25.000	7.500	25.000	7.500	25.000	7.500	100.000	30.000
2	Assistance to start coirpith composting unit @ 30000/- per unit (SHG/farmers)	Nos.	0.300	9.000	2.700	9.000	2.700	9.000	2.700	9.000	2.700	36.000	10.800
3	Distribution of Green Manure seeds at 90% subsidy of Rs. 20/ kg.	MT	0.200	5.000	1.000	5.000	1.000	5.000	1.000	5.000	1.000	20.000	4.000
	TOTAL				**11.200**		**11.200**		**11.200**		**11.200**		**44.800**
	1.2.3. IPM												
1	Pheromone trap for Red Palm Weevil @ 75% subsidy or Rs. 300 whichever is higher	Nos.	0.003	300.000	0.900	300.000	0.900	300.000	0.900	300.000	0.900	1200.000	3.600
	TOTAL				**0.900**		**0.900**		**0.900**		**0.900**		**3.600**
	1.2.4. MACHINERIES												
1	Distribution of Coconut climbers (kerala type) @ 75% subsidy or Rs. 2000/- whichever is higher	Nos.	0.020	50.000	1.000	50.000	1.000	50.000	1.000	50.000	1.000	200.000	4.000
	TOTAL				**1.000**		**1.000**		**1.000**		**1.000**		**4.000**
	1.2.5. VALUE ADDITION												0.000
1	Training to FIG/ Farmers in value addition of coconut products 30 farmers 2 days training Rs.15000/training	Nos.	0.150	1.000	0.150	1.000	0.150	1.000	0.150	1.000	0.150	4.000	0.600
2	Exposure visit inter state (value addition/ production units) @ 30 farmers/Tour, 5 days @ Rs. 600/day/farmer (Rs. 0.90 lakhs each)	Nos.	0.900	1.000	0.900	1.000	0.900	1.000	0.900	1.000	0.900	4.000	3.600
	Total				**1.050**		**1.050**		**1.050**		**1.050**		**4.200**
	Coconut Total				**22.900**		**22.900**		**22.900**		**22.900**		**91.600**

6.1.4. Establishment of Seed Testing Laboratory at Kanyakumari

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 (included in Table 6.1 under the section 1.1.6)

New Seed Testing Laboratory is proposed to be established during 2008-2009 at Kanyakumari 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 Tirunelveli district for analysis. Establishment of seed testing laboratory at Kanyakumari 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) Objectives of Seed Testing

The main objective of Seed Testing in these laboratories will be to obtain accurate and reproducible results regarding the purity composition, moisture content, the occurrence of weed seeds and the percentage of germination to produce normal seedlings under favorable conditions. In some instances such additional information such as the presence of seed borne diseases and pests and varietal purity is desired. Seed testing will be a guide to the person who will plant the seed and for seed quality control purposes. In all these cases, the ultimate purpose of making the test is to determine the value of seed for planting.

vi) Role of Seed Testing Laboratories in Seed Quality Control

On analysis of the past data on productivity and quantity of seeds distributed to farming community, it is well understood the seed is very important among all other factors which influences agricultural production considerably. While encouraging distribution of Quality seeds, regulation of seeds distributed to farmers is also very much required to safe guard the interests of the farmers and to keep up the agricultural production.

vii) Seed Quality control activities

Past performance depicts that intensification of regulatory activities have led to reduction in distribution of sub standard seeds in the State. Tamil Nadu stands first among other States and Union territories in implementation of the Seeds Act, 1966, The Seeds Rule 1968 and the Seed Control Order 1983.

To safeguard the interests of farming community and to increase agricultural production in the district, a strong seed production program and quality control mechanism plays a vital role.

Seed testing plays a pivotal role in modern agriculture. It is being carried out to analyze the factors like germination, physical purity, moisture, seed health and admixture of other distinguishable varieties. Seed testing is carried out in the notified seed testing laboratories. The seed testing results are very important for the successful implementation of seed certification program and seed law enforcement programs, certified seed samples, Official seed samples from quality control wing and the service samples sent by the farmers, seed dealers and seed producers are tested in the laboratories.

viii) Need For Establishing Seed Testing Laboratory

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 Tirunelveli district for analysis. This process results in the delay of results due to transportation of the seed from the place of sampling to the laboratory. To overcome this problem and render timely supply of quality seeds to the farming community, seed producers and seed dealers, it is necessary to establish Seed Testing Laboratory at Kanyakumari district.

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 from the district could be analyzed in the least possible time, so that seed quality control work and the need of the seed industry are effectively met.

ix) Seed Distribution

A considerable quantum of quality seeds are being distributed through licensed seed selling points. The labelled 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 Kanyakumari district.

In order to meet the increasing demand of quality seeds and to ensure that the farmers, dealers and producers receive the results of Seed Testing Laboratories at correct time without delay it is proposed to establish new Seed Testing Laboratory at Kanyakumari district under National Agricultural Development Programme at a financial outlay of Rs.6.00 lakhs towards provision of laboratory equipments.

x) 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 intended 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 and Air Conditioner to maintain prescribed temperature is required. Work table and chair are necessary for carrying out various works like germination, purity analysis and for working of equipments etc.

8. Computers with accessories

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

xi) 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 6.4)

Table 6.4 Budget for establishment of Seed Testing Lab

Sl.No.	Name of the Instrument/Equipment	Approx. Qty. req. for One lab	Approx .cost Per unit rupees	Aprox. cost For 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
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**

(Rupees Six lakhs only)

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.

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

xii) 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 Kanyakumari 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.

xiii) Expected Date Of Completion

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

xiv) 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 Scheme For Banana Development Programmes in Kanyakumari District

i) Back Ground / Problem Focus

a) Banana is an important cash crop of Kanyakumari District and 6000 Ha are under Banana cultivation. Nendran variety is predominantly preferred by farmers as an alternate crop to paddy as the age of this variety is 9 - 10 months. The area is also increasing year by year. However, this Banana variety is invariably affected by the seasonal wind. The pseudostem of this variety is weak and slender. Providing support with casuarina pole will reduce the intensity of wind damage considerably. But the cost of casuarina pole is more and the small / marginal farmers are not able to bear the higher investment cost on cultivation. Hence assistance to procure casuarina poles for support to Banana will reduce the loss and increase the production of same in this District.

b) Incidence of bunchy top, stem borer and wilt disease are encountered in banana cultivation which adversely affects the yield in Kanyakumari District. Corm (or) stem Injection is recommend to protect the crop against this vulnerable problems, which would in turn help to increase the yield.

c) Covering the Banana bunch with dried banana leaf (or) basket made out of coconut frond (Vallam) is common practice in Kanyakumari District to improve the colour and quality of Banana bunch before harvesting in Red and Nendran Varieties. This practice sometimes leads to infection. Instead of this, use of plastic cover will serve the purpose with less cost and increases the benefits to the banana farmers of this district.

ii) Project components

- Support System for Banana
- Banana Stem / Corm Injector and
- Banana Bunch Cover

iii) Project Strategy

a) Assistance will be given to the selected beneficiaries for procuring casurina poles to provide support to Banana to protect the crop against wind damage.

b) Subsidy will be provided for the stem / corm injector with a view to do plant protection as per the recommendation against major pest and disease problems like bunch top, steam borer and wilt.

c) Subsidy will be provided as an incentive to introduce the practice of covering the bunch with polythene bags to improve the quality of the bunch.

iv) Project Goal

Increasing the production and productivity of Banana in Kanyakumari District by reducing the loss due to wind, pest & diseases. The average production and productivity of Banana in Kanyakumari District is 1,65,300 tonnes and 31.83 tonnes respectively. 20 to 25 per cent increase in production and productivity is anticipated by implementing the above proposed scheme.

iv) Budget

The budget for the aforesaid interventions would be Rs.2261.50 lakhs and the details are furnished in Table 6.5

Table 6.5. Action Plan and Budget for Banana

(Rs. in Lakhs)

S.No	Components	Unit		2008-09		2009-10		2010-2011		2011-2012		Total	
			Subsidy per unit	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost
	2.1 Banana												
1	Support system for Banana	(Ha)	1.125	500.000	562.500	500.000	562.500	500.000	562.500	500.000	562.500	2000.000	2250.000
2	Corm Injecter	No.	0.002	250.000	0.375	250.000	0.375	250.000	0.375	250.000	0.375	1000.000	1.500
3	Banana Bunch Cover	L No.	5.00	0.500	2.500	0.500	2.500	0.500	2.500	0.500	2.500	2.000	10.000
	Banana Total				**565.375**		**565.375**		**565.375**		**565.375**		**2261.500**

6.2.2 Scheme For Post Harvest Handling Of Fruits, Vegetables And Spices

i) Back Ground / Problem Focus :

a) Truck loads of fruits, vegetables and flowers are being transported to Trivandrum from Kanyakumari district for exporting to gulf countries and Maldives without proper handling procedures. Use of plastic crates for handlings these produce will fetch better market price.

b) In Kanyakumari district, mango is mostly grown in home gardens. It is very difficult to get labour for harvesting. Light weight harvesters with net bags are useful in harvesting these mangoes by the farmers themselves without damage to the fruits.

c) Export earning Spices crops like Clove, Nutmeg, Pepper etc are grown in 800 Ha of area in Kanyakumari district. Drying of these harvested spices are usually interrupted by summer rains in Kanyakumari district which adversely affects the quality of the spices resulting in heavy loss to the growers. Hot air drier will be useful to produce quality spices even during the adverse climatic conditions.

ii) Project Components

(i) Use of plastic crates for handling of fruits and vegetables.
(ii) Mango harvester and
(iii) Hot air drier for spices.

iii) Project Strategy

a. Plastic Crates of suitable size will be supplied to the farmers and traders for safe handlings of fruits, vegetables and flowers.
b. Light weight telescope type mango harvesters will be supplied to the selected beneficiaries
c. Hot air spices dryers with all fittings (including installation charges and electrification charges) are included under this scheme cost.

iv) Project Goal

It is estimated that 10 to 12 per cent of the produces are being wasted due to inadequate (or) improper handling of perishables like fruits and vegetables. The proposed project components under the scheme will reduce the loss and help to improve the quality and thus increasing the profitability of the important export earring produces like fruits, vegetables, flowers and spices grown in this district.

v) Budget

The budget requirement would be Rs.16.00 lakhs and the details are furnished in Table 6.6

Table 6.6. Action Plan and Budget for Post Harvest Handling of Fruits, Vegetables and Spices

(Rs. in lakhs)

S. No	Components	Unit	2008-09			2009-10		2010-2011		2011-2012		Total	
			Subsidy per unit	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost
	2.2 Post harvest handling of fruits, vegetables and spices												
1	Use of Plastic crates for Handling to Fruits and Vegetable	No.	0.001	1000.00	1.250	1000.00	1.250	1000.00	1.250	1000.00	1.250	4000.00	5.000
2	Mango Harvester	No.	0.003	100.000	0.250	100.000	0.250	100.000	0.250	100.000	0.250	400.000	1.000
3	Horticulture Air Drier for Spices	No.	1.000	5.000	5.000	5.000	5.000				0.000	10.000	10.000
	Post Harvest Handling Total			**1105.00**	**6.500**	**1105.00**	**6.500**	**1100.00**	**1.500**	**1100.00**	**1.500**	**4410.00**	**16.000**

6.2.3 Scheme for Human Resource Development

i) Back Ground / Problem Focus

Eventhough the horticultural crop growers in Kanyakumari district are mostly literate, they are still following the conventional cultivation practices. The benefits of micro irrigation, organic farming, precision farming etc are yet to be realized. Conducting periodical workshops on specific topics to create awareness and exposure visit for training the growers on latest cultivation practices will change the attitude of the farmers, which would in turn pave the path to increase the productivity manifold.

ii) Project Components

(i) District Level Farmers Workshop.

(ii) Inter State Exposure Visit (5 days).

iii) Project Rationale

The Assistant Director of Horticulture, Horticulture officers / Deputy Agriculture Officer and Assistant Agricultural Officer of the concerned blocks will select the beneficiaries. The workshop will be organized by the Horticulture Department at district level on specific topic whereas the exposure will be conducted as per the approved tour programme by the Director of Horticulture and Plantation Crops, Chennai.

iv) Project Strategy

(i) The cost for conducting District Level Farmers workshop would be Rs.400/ Farmer / Day. The cost includes the expenditure towards hall rent, transport charges, honorarium to resource persons, refreshment charges, stationeries, printing charges, etc. 100 per cent assistance will be provided under this scheme and the workshop will be organized by Horticulture Department.

(ii) 100 per cent assistance will be provided for transport, boarding & lodging expenses including documentation charge. The tour will be organized by the Horticultural Department. The estimated cost is @ Rs.5000/ farmer / 5 days.

v) Project Goal

(i) To create awareness among the farmers about the new schemes, latest cultivation practices like organic farming, Bio-dynamic farming, INM / IPM technology, etc., for improving production and productivity of horticultural crops

(ii) To impart training to the progressive farmers of this district about the latest cultivation practices and better understanding of marketing avenues for horticultural produces through exposure visits.

vi) Budget

The budget requirement would be Rs.11.60 lakhs and the details are furnished in Table 6.7

Table 6.7. Action Plan and Budget for Human Resource Development (Horticulture)

(Rs. in lakhs)

S.No	Components	Unit	2008-09			2009-10		2010-2011		2011-2012		Total	
			Subsidy per unit	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost
	2.3 Human Resource Development												
1	District Level Farmers workshop and training on Pineapple and Banana cultivation		0.004	100.000	0.400	100.000	0.400	100.000	0.400	100.000	0.400	400.000	1.600
2	Inter State Exposure Visit (5 days) @ Rs.5000 / Farmers / 5 days		0.050	50.000	2.500	50.000	2.500	50.000	2.500	50.000	2.500	200.000	10.000
	HRD TOTAL			**150.000**	**2.900**	**150.000**	**2.900**	**150.000**	**2.900**	**150.000**	**2.900**	**600.000**	**11.600**

6.2.4. Other Schemes for Strengthening the Farm Infrastructure / Farm Implements for Horticulture Development in Kanyakumari District

i) Back Ground / Problem Focus

a) Most of the Horticultural Crops in Kanyakumari District are raised under rainfed cultivation as this district receives rainfall both in southwest and northeast monsoon seasons. However, the rainfall is not uniform in all the places. Though the annual average rainfall is 1400mm, in some places it is more than 2500mm and in some other places it is less than 600mm. So the yield and performance of the horticultural crops grown in this district are also not uniform. Providing regular irrigation will increase the yield considerably. Further absence of permanent water source like Bore wells / Wells is one of the important shortcoming to implement Micro Irrigation Scheme in Kanyakumari District.

b) As the Department's involvement in supply of agricultural inputs to the farmers is stopped, the farmers are forced to rely upon the commercial private retail shop for their requirements. In order to make available the required agricultural inputs and implements at reasonable cost at their place of cultivation, involving the enterprising the farmers association is much useful. Further this attempt will be helpful to introduce custom hire system for co-operative farm operations in this district.

c) The important horticulture crops grown in Kanyakumari district like Banana, Tapioca, Mango, Flowers, Spices etc are infested by seasonal pests & diseases which adversely affects the yield of these crops. Spraying the recommended dose of plant protection chemicals through appropriate equipments like hand operated knapsack Sprayer for field crops and Gator Rocker Sprayer with higet gun for Tree Crops are inevitable to protect the crops from the pest & diseases and to increase the yield. As the cost of these plant protection chemicals and the plant protection equipments are not affordable by the farmers of all categories, it reduces the interest of the farmers to

undertake plant protection in time. Distribution of plant protection inputs with equipments (Sprayers) as a package will increase the practice of timely plant protection which will increase the production considerably.

d) In Kanyakumari district, Banana and Tapioca are grown as an important alternate crop in paddy lands. Disposal of Pseudostems and stumps after harvesting of these crop, are labour intensive and difficult to manage. Farm waste shredders are useful in converting these waste material into useful organic matter which is ready to be applied in the field as Green leaf Manure. This practice will reduce cost on organic manure, besides it would save the labour for the disposal of the waste from the field. Further, shredders are also useful for orchards and spices garden to manage the weeds and pruned branches.

ii) Project Components

(i) Project for Bore Well with Casing Pipes.
(ii) Farm Waste Shredder / Vegetable Shredder.
(iii) Enterprising Farmers Association and
(iv) Package for plant protection.

iii) Project Rationale

The Assistant Director of Horticulture, Horticulture officers / Deputy Agriculture Officer and Assistant Agricultural Officer of the concerned blocks will select the beneficiaries and implement the scheme at block level besides providing technical advice to the farmers.

iv) Project Strategy

a) Assistance will be provided for Borewells under this scheme as an incentive to create awareness among the farmer to install Micro Irrigation Scheme, wherever possible in this district. The estimated unit cost would be as under, Drilling 6” Dia borewell upto 600 feet based on geological survey.

b) The unit cost for a borewell with all fittings would be Rs. 1.5 Lakhs / unit and subsidy will be provided under this scheme.

c) Portable farm waste shredders will be supplied at 50 per cent cost to the farmers / Farmers groups for effective disposal of farm wasters.

d) The details of cost for Enterprising Farmers Association will be based on the project submitted by the concerned association. Accordingly, the grant will also be decided case by case. However, the assistance will be 50 per cent with a maximum of Rs.12.500 Lakhs / unit. The assistance will be released as back ended subsidy.

e) Plant protection equipments (Sprayers) with plant protection chemicals will be distributed to the selected beneficiaries at 50 per cent cost as a package.

v) Project Goal

- To increase the irrigated crop area under Horticulture.
- To increase the productivity of Horticulture Crops.
- To increase the area under Micro Irrigation System.
- To dispose the farm waste materials by converting into useful organic matter for soil application as organic manure, and thereby reduce the cost of organic manure.
- To make available Farmer friendly inputs and implements at right cost at right place and right time.
- To encourage the farmers to undertake co-operative activities for mutual benefits. To introduce Custom – Hire system for co-operative farm operations.
- To increase the production and productivity of the Horticultural Crops by timely application of plant protection Chemicals like pesticides and fungicides by plant protection equipments.

vii) Budget

The budget requirement would be Rs.95.00 lakhs and the details are furnished in Table 6.8.

Table 6.8. Action Plan and Budget for Strengthening the Farm Infrastructure / farm Implements (Horticulture)

(Rs. in lakhs)

S. No	Components	Unit	2008-09			2009-10		2010-2011		2011-2012		Total	
			Subsidy per unit	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost
	2.4 Strengthening the farm infrastructure / farm implements												
1	Project for Bore Well with Casing Pipe		0.750	20.000	15.000	20.000	15.00	20.000	15.000	20.000	15.000	80.000	60.000
2	Farm waste shredder / vegetable waste shredder		0.200	5.000	1.000	5.000	1.000	5.000	1.000	5.000	1.000	20.000	4.000
3	Enterprising Farmers Association		12.50		0.000	1.000	12.50		0.000	1.000	12.500	2.000	25.000
4	Package for plant protection		0.015	100.000	1.500	100.000	1.500	100.000	1.500	100.000	1.500	400.000	6.000
	Farm Mech. otal				**17.500**		**30.00**		**17.500**		**30.000**		**95.000**

6.2.5. Scheme for 10 Ha Mega Demonstration Plots

i) Background / Problem Focus

In Kanyakumari district 8000 Ha area are under tapioca cultivation. Tapioca is mostly raised as rainfed crop and recommended dose of manures and fertilizers are hardly applied. Further incidence of mosaic and whitefly adversely affects the yield of tapioca in Kanyakumari district. The propagation is only through setts without proper selection parameters. As tapioca in this district is of edible variety and an important alternate crop to paddy, importance is to be given to increase the production, productivity and quality of this crop.

ii) Project Components

Tapioca 10 Ha Mega Demonstration Plot.

iii) Project Rationale

The CTCRI, Thriuvanandhapuram & Horticulture Research Station, Pechipparai will be involved for all technical inputs including new var for introduction. The site for the demonstration will be selected based on the nature of land, availability of water resources and involvement of farmers etc. The Assistant Director of Horticulture of the concerned block will organise the programme.

iv) Project Strategy

(i) The expenditure for laying act this demonstration plot includes, cost of cultivation, erection of insect proof net house for raising nursery, establishment of irrigation source (Bore well), transportation & honorarium to resource persons, documentation charges etc.

(ii) 100 per cent assistance will be provided under the scheme for the entire programme.

v) Project Goal

- To introduce new edible variety of tapioca for Kanyakumari District.
- To create awareness for advanced crop production technology for increased productivity.
- To introduce community nursery practice for quality disease free planting materials.
- To introduce Organic Cultivation in Tapioca.

vi) Budget

The budget requirement would be Rs.1.00 crores and the details are furnished in Table 6.9.

Table 6.9. Action Plan and Budget for Ten Hectares Mega Demonstration Plot (Horticulture)

(Rs. in lakhs)

S. No	Components	Units	2008-09			2009-10		2010-2011		2011-2012		Total	
			Subsidy per unit	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost
	2.5 Ten hectares mega demonstration plot												
1	Tapioca 10 Ha Mago Demonstration plot	No.	25.000	1.000	25.000	1.000	25.000	1.000	25.000	1.000	25.000	4.000	100.000
	Mega Demo Total			**1.000**	**25.000**	**1.000**	**25.000**	**1.000**	**25.000**	**1.000**	**25.000**	**4.000**	**100.000**

6.3 Animal Husbandry Sector

6.3.1. Feed & Fodder Development

i) Abstract (Summary of the Project)

Intensive fodder production activity will be taken up by the Department of Animal Husbandry and Dairy Development Department, Kanyakumari district. Subsidy will be given for cultivation of 10 acre of green fodder in each block per year to SHG women in all the 9 blocks by Department of Animal Husbandry for 4 years to encourage fodder cultivation. Subsidy will be given for cultivation of fodder in IDF villages and farmers field to 20 farmers (i.e. 20 acres) per year by Dairy Development Department for 4 years. The SHG beneficiaries will be given 2 days training on fodder cultivation

Subsidy will be given for concentrate feed for heifer calf rearing scheme @ 100 kg / calf for 25 calves per block for all the 9 blocks per year by Department of Animal Husbandry for 4 years.

Mineral mixture will be supplied to dairy cows @ 1kg per cow per month for one year for 3000 cows per year by Department of Animal Husbandry for 4 years. Supply of mineral mixture to the milch animals at subsidized cost (50%) @ 18 KG/ year for 375 milch animals per year by Dairy Development Department for 4 years.

Supply of By-Pass protein feed to milch animals @ 360 kg per animal per year @ 50% subsidized cost for 200 animals per year by Dairy Development Department for 4 years.

Subsidy will be given for concentrate feed for intensive system of Goat (20+1) rearing scheme to SHG women @ 200 kg / unit. 1 unit per block per year for all the 9 blocks by Department of Animal Husbandry for 4 years.

Supply of hand operated small type Chaff cutter to 20 elite farmers per year by the Dairy Development Department for 4 years.

ii) Budget : Rs.235.02 lakhs

iii) Background / Problem focus :

Over 80 percent of cattle population in Kanyakumari district are high yielding crossbred cattle. However, the green fodder production to feed these productive animals is in short supply due to scarcity of pasture land or grazing land in the district. The district is 89.2% deficit in green fodder. Many farmers do not supplement minerals in the feed of dairy cattle due to lack of awareness. By-pass protein feeding is a newer technology in dairy nutrition. It enhances milk production and nutrient utilization with an overall improvement in production and productivity in dairy cows Further the cost of concentrate feed is very high. Animals are maintained in poor plane of nutrition. The plane of nutrition and vis-à-vis milk production of these animals could be improved by green fodder and mineral supplementation.

Goat rearing is on the increase in the district during the past few years. High cost of feed is the worrying factor to the goat farmers.

iv) Project Rationale

Though several strains of new fodder varieties are released from time to time, the adoption rate among farmers is very poor which is reflected on the huge green fodder deficiency in the district. The possible reasons could be the small land holding, high land cost, hesitation on the part of farmers to cultivate fodder in preference to cash crops.

Hence there is a need to take a holistic approach to nullify the hurdles listed above by motivating and encouraging the land holding farmers for intensive cultivation of green fodder by giving subsidy and also giving subsidy for concentrate feed and mineral mixture. Farmers will be motivated to produce fodder in their land and supply fodder to other members also. Supplementation of by-pass protein feed to dairy cows is not a common practice and sensitization of the farmers through supply of mineral mixture for their cows will help them to realize their importance. Chopping of fodder will help in the effective utilization of nutrients.

v) Project Strategy

- Subsidy for cultivation of 10 acre of green fodder in each block per year for 4 years to SHG women by Department of Animal Husbandry to encourage fodder cultivation.

- Subsidy for cultivation of fodder in IDF villages and farmers field to 20 farmers per year for 4 years by Department of Dairy Development.

- Subsidy for small type Chaff cutter to 20 elite farmers per year for 4 years by Department of Dairy Development.

- Subsidy for concentrate feed for heifer calf rearing scheme @ 100 kg / calf for 25 calves per block per year for 4 years by Department of Animal Husbandry.

- Supply of mineral mixture to dairy cows @ 1kg per cow per month for one year for 3000 cows per year for 4 years by Department of Animal Husbandry.

- Supply of mineral mixture to the milch animals at subsidized cost (50%) @ 18 KG/ year for 375 milch animals per year for 4 years by Department of Dairy Development.

- Supply of By-Pass protein feed to 200 milch animals per year @ 360 kg per animal per year for 4 years@ 50% subsidized cost by Department of Dairy Development.

- Subsidy for concentrate feed for intensive system of Goat (20+1) rearing scheme to SHG women @ 200 kg / unit. 1 unit per block per year for 4 years by Department of Animal Husbandry.

vi) Project Goals

- Augmentation of fodder production to meet the fodder shortage.

- Supplementation of mineral mixture to dairy cows to enhance production and fertility.

- Enhancement of nutrient utilization in fodder by use of hand-operated and mechanized chaff cutters to enhance the nutrient utilization.

- Supply of by-pass protein to milch animals to enhance production.

- Subsidized concentrate feed to heifers and goat units to minimize expenditure towards feed.

vii) Project components

- Subsidy for cultivation of 10 acre of green fodder in each block per year to SHG women by Department of Animal Husbandry to encourage fodder cultivation. *(10 acre x 9 blocks = 90 acres/yr x 4 yrs = 360 acres)*

- Subsidy for cultivation of fodder in IDF villages and farmers field to 20 farmers per year by Department of Dairy Development. *(1 acre x 20 farmers = 20 acres/yr x 4 yrs = 80 acres)*

- Subsidy for small type Chaff cutter to 20 elite farmers per year by Department of Dairy Development *(1 chaff cutter x 20 farmers= 20 cutters / yr x 4yrs = 80 chaff cutter)*

- Subsidy for concentrate feed for heifer calf rearing scheme @ 100 kg / calf for 25 calves per block per year by Department of Animal Husbandry. *(25units/block x 9 blocks = 225 units/yr x 4 yrs = 900 units x100kg = 90000kg)*

- Supply of mineral mixture to dairy cows @ 1kg per cow per month for one year for 3000 cows per year by Department of Animal Husbandry. *(1kg/cow/month for 1 year=12kg. 3000 cows/yr x 4yrs = 12000 cows x12kgs = 144000 kgs*)

- Supply of mineral mixture to the milch animals at subsidized cost (50%) @ 18 KG/ year for 375 milch animals per year by Department of Dairy Development. *(18kg/yr/animal x 375 animals/yr= 6750 kgs/yr. x 4 yrs = 18kg x1500 animals= 27000 kgs)*

- Supply of By-Pass protein feed to 200 milch animals per year @ 360 kg per animal per year @ 50% subsidized cost by Department of Dairy Development. *(360kg/animal/yr x 200 animals/yr = 72000kg/yr . x 4yrs = 360kg x 800 animals = 288000 kgs).*

- Subsidy for concentrate feed for intensive system of Goat (20+1) rearing scheme to SHG women @ 200 kg / unit. 1 unit per block per year by Department of Animal Husbandry. *(1unit/block x 9 blocks = 9 units/yr x 4 yrs = 36 units x200kg = 7200kg)*

viii) Project cost and financing

S. No	Scheme component	Unit Cost	No of Units / year	2008 -09	2009 -10	2010 -11	2011 -12	Total units	Total cost
1	**Subsidy to SHG for fodder cultivation.10 acre/block/yr**								
	1. Subsidy for fodder cultivation work								
	2. Training cost:	0.20	90	18.00	18.00	18.00	18.00	360	72.00
	a. Incentive @ Rs.100/person/day for 2 days for 15 members.	0.03							
	b. Refreshment @ Rs.10/day/person for 15 members.	0.003							
	c. Study material – scribbling pad, pen @ Rs.15/person for 15 members	0.00225							
	Total Training cost/ SHG	0.035	90	3.15	3.15	3.15	3.15	360	12.60
	Total	**0.235**	**90**	**21.15**	**21.15**	**21.15**	**21.15**	**360**	**84.60**
2	**Subsidy for fodder cultivation in IDF villages & farmers field:**								
	1. Subsidy for fodder cultivation work								
	2. Training cost:								
	a. Incentive @ Rs.100/person/day for 2 days for 15 members.	0.20	20	4.00	4.00	4.00	4.00	80	16.00
	b. Refreshment @ Rs.10/day/person for 15 members.	0.03							
	c. Study material – scribbling pad, pen @ Rs.15/person for 15 members	0.003							
	Total Training cost/ SHG	0.00225							
	TOTAL	0.035	20	0.70	0.70	0.70	0.70	80	2.80
		0.235	**20**	**4.70**	**4.70**	**4.70**	**4.70**	**80**	**18.80**
3	Subsidy for small type Chaff cutter to Elite farmers	0.20	20	4.00	4.00	4.00	4.00	80	16.00

Project cost and financing contd…

S. No	Scheme component	Unit Cost	No of Units / year	2008 -09	2009 -10	2010 -11	2011 -12	Total units	Total cost
4	Subsidy for concentrate feed for heifer calf rearing scheme @ 100 kg / unit. 25units/ block/yr	0.01	225	2.25	2.25	2.25	2.25	900	9.00
5	Supply of mineral mixture to dairy cows @ 1kg per cow per month for one year	0.006	3000	18.00	18.00	18.00	18.00	12000	72.00
6	Supply of mineral mixture to the milch animals at subsidized cost (50%) @ 18 KG/ year	0.005	375	1.88	1.88	1.88	1.88	1500	7.50
7	Supply of By-Pass protein feed to milch animals @ 360 kg per animal per year @ 50% subsidized cost	0.033	200	6.60	6.60	6.60	6.60	800	26.40
8	Subsidy for concentrate feed for intensive system of Goat (20+1) rearing scheme to SHG women @ 200 kg / unit. 1unit/block/yr.	0.02	9	0.18	0.18	0.18	0.18	36	0.72

ix) Implementation Chart of the Project

S.No.	Action Plan	2008-09	2009-10	2010-11	2011-12
1	Subsidy to SHG women for fodder cultivation.10acre/block/yr. 9 blocks/ yr. & conducting training on fodder cultivation.	●	●	●	●
2	Subsidy for cultivation of fodder in IDF villages and farmers field. 20 farmer/yr. & conducting training on fodder cultivation.	●	●	●	●
3	Subsidy for small type Chaff cutter to Elite Farmers.20 farmer/yr	●	●	●	●
4	Subsidy for concentrate feed for heifer calf rearing scheme @ 100 kg / unit. 25units/block/yr . 9 blocks/yr	●	●	●	●
5	Supply of mineral mixture to dairy cows @ 1kg per cow per month for one year 3000 cows/yr	●	●	●	●
6	Supply of mineral mixture to the milch animals at subsidized cost (50%) @ 18 KG/animal/year. 375 animals/yr.	●	●	●	●
7	Supply of By-Pass protein feed to milch animals @ 360 kg per animal per year @ 50% subsidized cost.200 animals/yr.	●	●	●	●
8	Subsidy for concentrate feed for intensive system of Goat (20+1) rearing scheme to SHG women @ 200 kg / unit. 1unit/block/yr.	●	●	●	●

x) Reporting

Monthly progress report will be submitted to the concerned higher authorities.

6.3.2. Genetic Upgradation

i) Abstract

Kanyakumari district has 9 blocks. During the project period of four years, every year 25 farmers will be selected from each block and each will be given subsidy for a heifer calf by the Department of Animal Husbandry to improve milk production in the district.

It is proposed that 53100 breedable female bovines are to be identified by ear tag with plastic (polyurethane) tags with laser printed unique numbers. Also, to provide a detail pass book with animals and owner details for the animals brought to the AI centers for AI and AI done by AI workers to enable unique identification and collection of data. The project will be jointly implemented by the Department of Animal Husbandry, and dairy Development Department of kanyakumari district.

To improve meat production in the district, during the project period of four years, every year 1 SHG women will be selected from each block by the Department of Animal husbandry and each will be given subsidy for intensive system of Goat (20+1) rearing.

As a pilot study, one elite farmer in the district will be selected by the Department of Animal husbandry and given subsidy for the purchase of 5+1 Boer goat unit to establish Boer goat model unit in the district and one elite farmer will be given subsidy for the purchase of 5+1 Sirohi goat unit to establish Sirohi goat model unit in the district.

To promote backyard poultry rearing to improve meat and egg production and socio economic status of rural women in the district, during the project period of four years, every year 100 SHG women will be selected from each block by the Department of Animal Husbandry in all the 9 blocks and each will be given Nandhanam B2 chicken (9+1) backyard unit.

To promote piggery farming in the district, during the project period of four years, every year 2 farmers will be selected from each block by the Department of Animal Husbandry in all the 9 blocks and each will be given (3+1) piggery unit.

ii) Budget : Rs.162.96 lakhs

iii) Background / Problem Focus

The climatic and environmental conditions of Kanyakumari district are suitable for rearing high yielding crossbred milch cattle, goat and poultry. There is always heavy demand for milk, meat and egg consumption in the district. Poultry are the main source of nutrition and family income in rural areas of the state. The backyard poultry still accounts for 10-20 % of the total poultry production. Goat population is on the increase in the district during the past few years. Goat rearing is an important means of livelihood in the rural areas. While supporting agricultural activities, it provides supplementary employment and income to rural communities. Piggery is developing in the district as there is demand in the neighboring state. In the present scenario there is no system of identifying animals exist.

iv)Project Rationale

Since milk production in the district is not adequate to meet the heavy demand, at present a considerable quantity of milk is being procured from the nearby districts. Rearing of cross bred cattle not only benefits the milk consumers but also benefits the farmers who rear the animals. It improves their economic status.

To promote livestock sector and to tap the potential for rural employment generation, the Government (state and Government of India) is implementing various schemes. Along with ensuring more effective disease control measures and improving the genetic quality of animals, a mechanism of assured protection to the livestock owners needs to be provided against eventual losses of such animals for which identification of livestock is a must

v) The Identification of Bovine is Essential

- For collection of accurate data of animals
- For tracking of sales, transfers and death of animals

- For monitoring and maintenance of general health and reproductive health of animals
- For assessing the utility and success of Programmes implemented
- To design new programmes for economic animal husbandry practices
- To monitor AI, verify pregnancy and calf birth of the bovine population
- For helping the genuine farmers during natural calamities and disasters
- For the purpose of insuring the animals
- For identifying beneficiaries for the different schemes of the Government and other organizations
- To identify repeat breeding animals for further treatment.

The software that is being developed for the monitoring of breeding activities has the breedable females identity as the critical input and the software cannot be made operational without unique identification of the animals. Hence, the identification of animal is very essential.

Goat population has increased in Kanyakumari district over the years. There is always good marketing price and marketing potential available in the district. Goat rearing as an intensive activity can, therefore, provide the much needed diversification to the rural economy; create sustainable employment and income opportunities, particularly women. It is now well documented that livestock activities can improve family nutrition, be an important and growing source of alternative income and form an important means of accumulating savings under the direct control of women.

It is a well known fact that a fairly significant proportion of the landless and marginal farmers earn their living from poultry and other small ruminants. Backyard poultry requiring hardly any infrastructure set-up is a potent tool for upliftment of the rural poor. Besides income generation, rural backyard poultry provides nutrition supplementation in the form of valuable animal protein and empowers women. There is always heavy demand for poultry meat and egg in this district. Marketing price is also good. Motivating the rural self help group women to rear back yard poultry will improve their socio economic status.

There is always heavy demand for pork in the district and the neighboring state Kerala. Marketing price is also good. Motivating the rural youth and farmers to

venture into piggery farming will provide employment opportunity and improve their socio economic status.

vi)Project Strategy

1. Selection of beneficiaries by the Veterinary assistant surgeons working in the veterinary dispensaries of all the 9 blocks. During the project period of four years, 25 farmers will be selected from each block per year and subsidy will be given for one heifer calf each beneficiary.

2. The identification system will record

   - ❖ All breeding related details of the individual Animal
   - ❖ The disease status / health status.
   - ❖ Vaccination status
   - ❖ Deworming details
   - ❖ Details of previous illnesses
   - ❖ The status of insurance (if insured) and the scheme in which the animal is covered will be mentioned
   - ❖ Name and address of owner/ owners
   - ❖ Physical identification markings of the animal (including tag nos.)
   - ❖ Any other relevant detail

To enable the unique identification of breedable female bovine, it is proposed to ear tag the animals with plastic (polyurethane) tags with laser printed unique numbers and provide a detailed pass book with animals and owner details to all the animals brought to the AI centers for AI and AI done by AI workers. This work will be undertaken by the Department of Animal husbandry and Dairy development department and will be completed in the first year of the project period.

3. During the project period of four years, every year 1 SHG woman will be selected from each block by the Department of Animal husbandry and each will be given subsidy for intensive system of Goat (20+1) rearing to improve meat production in the district.

4. One elite farmer in the district will be selected by the Department of Animal husbandry and given subsidy for the purchase of 5+1 Boer goat unit to establish Boer goat model unit in the district.

5. One elite farmer in the district will be selected by the Department of Animal husbandry and given subsidy for the purchase of 5+1 Sirohi goat unit to establish Sirohi goat model unit in the district.

6. During the project period of four years, 100 SHG women will be selected from each block per year by the Department of Animal husbandry and Nandhanam B2 chicken (9+1) backyard unit will be supplied to each beneficiary.

7. During the project period of four years, 2 farmers will be selected from each block per year and 3+1 piggery unit will be supplied to each beneficiary.

vii) Project Goals

1. To enhance milk, meat and egg production to meet the heavy demand in the district and to improve the economic status of livestock farmers, and rural women in the district.

2. To provide animal health officials with the capability to identify all animals and premises that have had a direct contact with a disease of concern.

3. Identify beneficiaries for implementing various schemes.

4. Selection of elite animals from the field for field based "Progeny testing scheme".

5. Selection of animals for breeding strategy. Thus, the Animal identification system will track animal movements from birth to death and for the purpose of disease tracking and other purposes.

Animal Identification and providing animal passbook to all the breedable females coming under AI coverage is the aim of the project. The success of any programme is dependant on the collection of data and the quality of data collected. Any data collected should be unique and mutually exclusive for maximum utility. One of the major deficiencies in collecting data on bovine breeding is lack of unique identification of animals.

viii) Project components

- Selection of beneficiaries by the Department of Animal husbandry in all the 9 blocks. 25 beneficiaries will be selected from each block per year. (25 × 9 blocks = 225/year × 4 yrs = 900 beneficiaries in 4 years).Each beneficiary will be given subsidy for a crossbred heifer calf.

- It is proposed that female bovines brought to the AI center, or female bovines that are inseminated at the farmers doorstep shall be tagged with a tag having unique computer generated number which shall be a multipurpose identification device and the animal owner shall be issued a pass book after filling the details of the animals and this shall be used for all follow up and other related activities.

- The identification of the animal is the key for monitoring of bovine breeding activities It is proposed that 53100 breedable female bovines are to be identified by ear tag with plastic (polyurethane) tags with laser printed unique numbers. Also, to provide a detail pass book with animals and owner details for the animals brought to the AI centers for AI and AI done by AI workers to enable unique identification and collection of data. The programme is to be implemented through the Department of Animal Husbandry and Dairy Development Department.

- During the project period of four years, every year 1 SHG woman will be selected from each block by the Department of Animal husbandry and each will be given subsidy for intensive system of Goat (20+1) rearing to improve meat production in the district. *(1 SHG Woman × 9 blocks = 9 SHG women / year x 4 years = 36 SHG women in 4 years. Each beneficiary will be given 20+1 goat unit.).*

- One elite farmer in the district will be selected by the Department of Animal husbandry and given subsidy for the purchase of 5+1 Boer goat unit to establish Boer goat model unit in the district. *(1 unit of 5+1 boer goat).*

- One elite farmer in the district will be selected by the Department of Animal husbandry and given subsidy for the purchase of 5+1 Sirohi goat unit to establish Sirohi goat model unit in the district. *(1 unit of 5+1 Sirohi goat).*

- Selection of 100 beneficiaries (self help group women) from each block in Kanyakumari district by the Department of Animal husbandry. Each beneficiary will be given 9 +1 Nandhanam B2 chicken backyard unit. *(100 SHG Women × 9 blocks = 900 SHG women / year. Totally 3600 SHG women in 4 years = 3600 units).*

- During the project period of four years, 2 farmers will be selected from each block per year and 3+1 piggery unit will be supplied to each beneficiary. (2 farmers x9 blocks/yr = 18 farmers per year x4 yrs = 72 farmers (units) in 4 yrs.

ix) Project cost and financing

S. No	Scheme component	Unit cost	No of Units / year	2008-09	2009-10	2010-11	2011-12	Total units	Total cost
1	Subsidy for heifer calf rearing scheme @ 1 calf /unit. 25units/ block/yr 9 blocks /yr.	0.070	225	15.75	15.75	15.75	15.75	900	63.00
2	Identification & traceability of breedable bovines	0.0002	56100	11.22	-	-	-	56100	11.22
3	Subsidy to SHG women for intensive system of Goat (20+1) rearing. 1 unit / block/yr. 36 units in 4yrs.Rs.2000/goat. Rs.42000/unit.	0.42	9	3.78	3.78	3.78	3.78	36	15.12
4	Subsidy to elite farmer for 5+1 Boer goat unit. Rs.15000 / buck & Rs.10000 / doe. Rs.65000/unit.	0.65	1	0.65	-	-	-	1	0.65
5	Subsidy to elite farmer for 5+1 Sirohi goat unit. Rs.5000 / buck & Rs.4000 / doe.Rs.25000/unit	0.25	1	0.25	-	-	-	1	0.25
6	Supply of Nandanam B2 chicken (9+1) backyard units to SHG women, @ Rs. 500/unit, 100 units/ block/year, 3600 units for 4 years	0.005	900	4.5	4.5	4.5	4.5	3600	18.00
7	Supply of piggery units (3+1 unit) to farmers @ Rs.0.76 Lakhs/unit, 2 units/ block/year, 18 units/ year, 72 units in 4 years	0.76	18	13.68	13.68	13.68	13.68	72	54.72

x) Implementing Chart of the Project :

S.No	Action Plan	2008-09	2009-10	2010-11	2011-12
1	Subsidy for heifer calf rearing scheme @ 1 calf /unit.25units/ block/yr 9 blocks /yr	●	●	●	●
2	Identification & traceability of breedable bovines	●			
3	Subsidy to SHG women for intensive system of Goat (20+1) rearing	●	●	●	●
4	Subsidy to elite farmer for 5+1 Boer goat unit.	●			
5	Subsidy to elite farmer for 5+1 Sirohi goat unit .	●			
6	Supply of Nandanam B2 chicken (9+1)backyard units to SHG women, @ Rs.500/unit, 100 units/ block/year, 3600 units for 4 years	●	●	●	●
7	Supply of piggery units (3+1) to 2 farmers/block	●	●	●	●

xi) Reporting

Monthly progress report will be submitted to the concerned higher authorities.

6.3.3. Improvement of Livestock health

i) Abstract

The following schemes are proposed to improve livestock and poultry health in Kanyakumari district. The Department of Animal husbandry will establish Mobile Veterinary units in 2 taluks in Kanyakumari district to facilitate door step insemination, vaccination, deworming and treatment , Establish Animal disease intelligence unit for disease investigation and surveillance, Strengthen infrastructure facilities in 24 veterinary institutions in Kanyakumari district with basic facilities like fencing, bore wells, water trough, repairs etc, and establish disaster management system for livestock. The department will provide health cover to livestock by controlling parasitic diseases through treatment to enhance vaccine response. It will provide health care to Desi chicken by giving Vaccination and deworming of 1 lakh Desi birds per year for 4 years.

One Mobile input route will be established by the Dairy Development Department to provide additional health cover and timely insemination services to the members of the Societies.

Tamil Nadu Veterinary and Animal Sciences University (TANUVAS)will establish a mobile disease investigation cum training unit at the Veterinary University Training and Research centre, Nagercoil.

ii) Budget : **Rs. 297.944 lakhs**

iii) Background / Problem Focus

Over 80 percent of cattle population in Kanyakumari district are high yielding crossbred cattle. Infertility and mastitis are the major problems among cattle in the district. This might be due to delayed or untimely insemination and inadequate treatment. Animals in some remote places do not get timely attention. There is no Animal disease intelligence unit in the district. Most of the veterinary institutions in the district require infrastructure facilities like fencing, bore wells, repair works etc.

As and when the state experienced various calamities viz., flood, drought, tsunami, etc, the government, through the State Department of Animal Husbandry and Veterinary Services undertook relief measures by providing fodder, compensation for livestock lost and disease control measures by vaccinating the susceptible livestock. Adequate attention is not given to eradicate parasitic diseases which inhibit vaccine response. Poultry mortality among desi birds is mainly due to Ranikhet disease. Worm infestation causes drop in egg production.

iv) Project Rationale

Kanyakumari district is blessed with a sizable population of high yielding crossbred cattle. Infertility and mastitis are the major problems among crossbred cattle in the district. Untimely or delayed insemination is one of the reasons for infertility. Because of peoples involvement in other activities, adequate and timely veterinary aid is not given to the animals. Infertility and mastitis are major causes for reduction in milk production.

Eventhough veterinary dispensaries and sub centres are located in rural and semi urban areas there are still villages which are beyond the reach of veterinary services. Moreover, in some areas, the geographical terrain makes it difficult for the farmers to reach the nearest institution. The landless agricultural laborers and small farmers who own the cattle are unable to take their livestock to the nearest veterinary institution as they are pre-occupied in agricultural work. Further, the agricultural labourers have to forego half a day work in bringing their livestock to the veterinary institution /sub centres for treatment or artificial insemination.

In order to avoid such suffering and loss to the farmers and to provide veterinary services and breeding support in time at the doorsteps of the farmers, Mobile Veterinary Clinics are proposed in 2 taluks of the district.

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.

At present 20 ADIUs are functioning in the State. Out of the 20 ADIUs, 11 ADIUs are covering single district and 9 ADIUs are covering 2-3 districts. The ADIU, Tirunelveli is covering Kanyakumari district. This results in delay in reaching to the places of outbreaks in times of emergencies and hence there is a need to start new ADIU in the district.

Most of the veterinary institutions in the district require infrastructure facilities like fencing, bore wells, water trough, repair works etc.

Apart from death of livestock and the injuries they sustain, any disaster leads to problems in terms of extrication of animals that are caught in calamities, transporting the livestock to safer places, disposal of dead bodies of animals, hospitalization and care of survived animals etc.

The other indirect effects due to animal suffering from disaster include

1. Owners management inability
2. Scarcity of feed
3. Spread of disease due to change in environment
4. Stress / shock

This project of Disaster management scheme is proposed to strengthen the Animal husbandry department to act immediately and provide the necessary requirements in case of emergency due to natural calamities.

Various parasitic diseases in animals reduce vaccine response .It is necessary to control parasitic diseases through effective treatment to enhance vaccine response.

In effective maintenance of cold chain for vaccine storage is also one of the reasons for vaccination failure.

To facilitate disease investigation and to conduct off campus training programmes , a mobile disease investigation cum training unit is proposed at the Veterinary University Training and Research Centre, Nagercoil.

As the poultry mortality is occurred mainly due to Ranikhet disease, regular vaccination of desi poultry is required. Deworming of desi poultry is required to improve egg yield.

v) Project Strategy

Mobile Veterinary Unit

1. Mobile Veterinary Unit will be established in 2 taluks in the district, each will be under the control of Veterinary Assistant surgeon.

2. The mobile veterinary unit will cover even the remote villages in the taluk regularly and facilitate door step insemination, vaccination, deworming and treatment.

3. Each unit will consist of one Veterinary Assistant Surgeon, and 1 driver. The staff for the Mobile Veterinary Clinic will be sourced from the available staff in the department.

4. One Veterinary Assistant Surgeon will be in charge of the vehicle. The vehicle will cover the remote and inaccessible villages on a scheduled programme of operation and render Veterinary Services.

5. The unit will be provided with one vehicle at a cost of Rs.4.75 lakh.

6. Medicines will be sourced from the Veterinary institutions available in the block itself and thus no additional funds are required to each unit to carryout treatment, deworming, vaccination etc.

7. Necessary equipments like mouth gags, scalpels scissors, suture needles, forceps, AI guns, etc apart from LN2 containers sheath will be provided to each unit.

8. Diesel worth Rs.43,200/- will be provided per year (90 litres/unit/year) to each unit for running the vehicle.

9. The unit will prepare a scheduled tour programme on 6 days a week basis mentioning the villages that are being covered on each day about which the farmers will be intimated well in advance.

10. The units will go around the area of operation as per the programme and carryout the activities providing breeding support and veterinary health care.

ADIU

a. Assisting Field Staff in Disease Diagnosis

- Testing of specimens like dung samples, blood smears, skin scrapings, swabs for ABST etc. received from field staff and also collected randomly during their tour.
- Targets are assigned for each kind of specimens as they have to collect specimens during their visit to villages, farms, milk societies, slaughter houses etc.

b. Monitoring of Disease Outbreaks and Helping Field Staff in Containment of Outbreak

- Attending Disease outbreaks immediately on receipt of information, doing Postmortem on dead animals, collection of specimens from ailing / dead animals, examination / testing of specimens at their lab / sending specimens to CRL and confirmation of cause of outbreak.
- Tracing source of outbreak and steps to prevent further spread
- Keeping buffer stock of vaccines and supplying during outbreaks
- Forecast of disease outbreaks based on past occurrences.
- Preparation of endemic charts for various diseases prevalent in that area.

c . Monitoring Livestock Health in the District

- Examination of dung samples collected from sheep & goat flocks and calves during tour and assessing the worm burden of the flocks, mapping for verminous load, advising field staff on deworming.
- Visiting slaughter houses and collecting samples to rule out the possibilities of Zoonotic diseases like hydatid cysts, tuberculosis etc.
- Periodical visits to Government & Private farms for monitoring the health of the livestock by random testing of dung samples, blood smears and serum samples for endoparasites, blood parasites and brucellosis respectively.
- Periodical visits to milk co-op societies and testing milk samples for mastitis and brucellosis.
- Evaluation of frozen semen samples in AI Centres for motility, count , abnormality etc.
- Attending infertility cases in KPT or special camps, finding the cause of infertility and advising field staff in treatment.

d. Surveillance of Bird Flu

Collection of serum samples from poultry around the Bird sanctuaries-20 samples each month. Visit to bird sanctuaries every week, monitoring the migratory birds and send weekly reports.

Now, with an increase in Crossbred population, the diseases are also likely to increase. This is because crossbred animals are more susceptible to diseases compared to native animals. Moreover emerging diseases like blue tongue and PPR in sheep, bird flu in poultry have all created an additional close look on strengthening the disease surveillance and monitoring system in the state.

Infrastructure facilities in Veterinary Institutions

1. Construction of fence
2. Digging of bore wells
3. Construction of water trough
4. Maintenance and other repair works etc.

Disaster Management

Based on the past experience, a strategy for effective preparedness towards management of livestock during disaster, need to be implemented.

1. Training

The Veterinarians have to be exposed to the mechanisms of various natural calamities and prepared to meet the contingencies due to the effects of calamities. On the basis of the disaster experienced one has to improve or modify the preparedness. The objectives should be to train the personnel in-charge with contingencies that arise in the wake of calamities. Hence all the Veterinarians in the district need to be trained.

It is proposed to train all the 31 Veterinary Assistant Surgeons who will be the field work force at times of emergencies on various aspects of disaster mitigation at reputed training institutes. The training will include preparedness for calamities, arranging of logistics, Relief and rescue operations etc as a part of training module. A provision of Rs. 3000/- per veterinarian is provided which will include cost of training, study materials etc. The cost for training of Veterinarians works out to Rs.0.93 lakh.

2. Networking and Communication Facilities

Reliable communication is fundamental to identify immediate source of help and where help will be needed most. Telephone and Internet connectivity are the minimum requirement for effective communication during calamities. Hence the

office of the Assistant Director (A.H.) in the district must be well connected for seeking and providing information. Emphasis should be on wireless connectivity. The local government authorities may be requested to train and equip at least one youth per block in HAM radio operation.

All the Assistant Directors have been provided with mobile phones. All the 31 Veterinary Dispensaries will be provided with mobile phones for quick communication. The cost for providing one mobile phone instrument works out to Rs. 2000/- and the cost of connectivity works out to Rs.225/- per connection. This work will be undertaken during the first year itself.

3. Provision of Feed and Fodder

During calamities, there is every chance that livestock are deprived of feed and fodder. In order to tackle the shortage of feed and fodder, it is necessary to arrange availability of feed and fodder. The provision of feed will be of use during severe flood and drought. It is already proposed to establish fodder banks in the Government farms and hence funds are not required under this component.

4. Protection of Livestock Against Diseases

The most serious problem arising in the wake of floods and cyclones is the outbreak of diseases among animals. It is important to prevent spread of diseases especially that of FMD, HS and BQ. Hence vaccination should be taken up to protect the animals against these diseases. One of the natural calamities is an epidemic. To overcome this there should be enough stock of vaccines and facilities for rapid communication, mobilization of vaccines and personnel. One of the means for making available and mobilization of vaccine is by having a communication network and delegation of powers to use office vehicles to transport vaccine at short notice. Hence it is proposed to keep a stock of 20% of the vaccine requirement in the districts . In the state, FMD vaccine and PPR vaccine are purchased from outside sources. . The cost of FMD vaccine is roughly Rs.8.00 per dose. FMD vaccine is purchased only for the cross bred population of 96,067 animals. The population that is to be protected is 20% of the total population (ie) 19,214 and the cost of purchase of vaccine works out to Rs. 1.537 lakh per year. The population of Goats that are prone for PPR disease is

1,00,698 and the population to be covered by PPR vaccine is 20,140 and the cost of vaccine is Rs.0.201 lakh per year@ Re.1 per dose.

5. Providing Animal Shelters for Livestock

In times of floods the affected people are moved to safe places a part of relief measures whereas their livestock are left to the mercy of elements. This results in losses to the farmers as their livelihood is dependent on the livestock. There is loss of production, sometimes deaths of livestock since they are orphaned. Hence it is proposed to construct and provide animal shelters in such districts that are frequently affected by floods. The plan for construction of shelters will also include provision for water storage.

It is proposed to provide shelter for Livestock @ Rs.300 per sq.ft for 500 animals per district, since the district experience floods in times of heavy monsoon and flooding. The shelters will be constructed in selected Veterinary Institutions in the districts so that land required for construction will be available and monitoring the animals is easy. Further, the animals will be under constant supervision. The floor space requirement for one animal will be 70 sq. ft. per animal. It is proposed to construct cattle sheds to accommodate about 100 animals in each institution. Five such shelters will be constructed in each district. The type design will be provided by the Animal Husbandry department and the works will be executed by the PWD.

Cost of construction of shelter to accommodate 100 animals in one Veterinary institution @ Rs.300/- per sq.ft works out to Rs.21.00 lakh.

The cost for construction of 5 shelters to accommodate 500 animals in one district works out to Rs.105.00 lakh.

Plan for Logistic

The local Veterinarian shall be made member of the disaster management setup by the local government and may be provided with the information as to the logistic arrangements that are in place for evacuation of animals, to transport potable water, feed and fodder in emergency situation. Preventive evacuation of the livestock should

be included in any plan for the block. The veterinarian shall keep the farmers informed with regard to exigency plans for the transport of animals during calamities.

Control of Parasitic Diseases

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 total cost of the project will be Rs.8.21 Lakhs per year. The total cost will be Rs. 32.84 Lakhs for 4 years. The project will be implemented by the Department of Animal Husbandry.

Mobile Input Unit

Establishing one mobile input unit to cover 50 DCS by the Department of Dairy Development.

Mobile Diseases Investigation cum Training Unit

Establishing Mobile Diseases investigation cum Training unit at the Veterinary University Training and Research centre, Nagercoil for disease investigation work and conducting off campus training programmes.

Health Care for Desi poultry

To provide health care to desi poultry, vaccination and deworming will be done to 1 lakh birds per year for 4 years.

vi) Project Goals

1. To facilitate door step insemination, vaccination, deworming and treatment even in remote places to improve animal health and production in the district.
2. To provide facilities for disease investigation and surveillance.
3. To provide health care for livestock and poultry.
4. Caring of animals during natural calamities and effective disaster management.

vii) Project components

- Mobile Veterinary unit will be established 2 taluks in Kanyakumari district by the Department of Animal husbandry to facilitate door step insemination, vaccination, deworming and treatment.
- Establishment of Animal disease intelligence unit
- Strengthening of infrastructure facilities in 24 veterinary institutions in Kanyakumari district with basic facilities like fencing, bore wells, water trough, repairs etc.
- Disaster management system for livestock.
- Control of parasitic diseases through treatment to enhance vaccine response.
- Establishment of one mobile input unit by the Dairy Development Department.
- Establishment of mobile disease investigation cum training unit at the Veterinary
- University Training and Research Centre, Nagercoil.
- Health coverage for Desi poultry.

viii) Project cost and financing

in lakhs

S. No	Scheme component	Unit Cost	No of Units / year	2008-09	2009-10	2010-11	2011-12	Total units	Total cost
1	**Mobile Veterinary unit in 2 taluks.**								
	Equipment	0.30	2	0.60	-	-	-	2	0.60
	LN2 container (big)	0.30	2	0.60	-	-	-	2	0.60
	LN2 container (small)	0.05	2	0.10	-	-	-	2	0.10
	Bolero Jeep	4.75	2	9.50	-	-	-	2	9.50
	Diesel	0.432	2	0.864	-	-	-	2	0.864
	Total	**5.832**	**2**	**11.664**	**-**	**-**	**-**	**2**	**11.664**
2	**Establishment of ADIU**								
	Equipment	9.0		9.0					9.0
	Furniture	0.5		0.5					0.5
	Chemical& glasswares	1.0		1.0					1.0
	Office equipments	1.0		1.0					1.0
	Vehicle fitted with equipment								
	Fuel, oil, maintenance & stationeries	12.0		12.0					12.0
	Total	1.0		1.0					1.0
		24.5		**24.5**					**24.5**
3	Strengthening of infrastructure facilities in 24 veterinary institutions with basic facilities like fencing, provision of bore-wells, water troughs and minor repair works @ Rs.5.00 Lakhs/unit (DAH)	5.0	24	120.0	-	-	-	24	**120.0**

Project cost and financing contd…

in lakhs

S. No	Scheme component	Unit Cost	No of Units / year	2008-09	2009-10	2010-11	2011-12	Total units	Total cost
4	**Disaster management**								
	1. Training for VAS	0.03	31	0.93				31	0.93
	2. Mobile phone at veterinary institutions	0.02	31	0.62				31	0.62
	3. Mobile phone connectivity charges	0.009	31	0.279				31	0.279
	4. Cost of vaccine	7.0	5	7.00					7.0
	5. Animal shelter	21.0		105.0					105.0
	Total			**113.83**					**113.83**
5	Control of parasitic diseases through treatment to enhance vaccine response. 4 times /yr. for 4 years (29687 calves, 1143 sheep and 100698 goats).	Rs 1/- per sheep & goat Rs 3/- for calf		1.95	2.5	2.5	2.5		**9.45**
6	**Establishment of mobile input unit**								
	1. Salary for Veterinarian, one attendant & taxi hire charges	3.60			-	-	-	1	3.60
	2. Vet. equipment	0.66							0.66
	3. Registers, monitoring, administrative charges	0.24		0.24					0.24
	Total	**4.50**		**4.50**					**4.50**

Project cost and financing contd…

in lakhs

S. No	Scheme component	Unit Cost	No of Units / year	2008-09	2009-10	2010-11	2011-12	Total units	Total cost
8	**Mobile disease investigation cum training unit (TANUVAS)**								
	1. Van								
	2. Microscope	7.50	1	7.50				1	7.50
	3. Centrifuge	0.25	1	0.25				1	0.25
	4. Refrigerator	0.10	1	0.10				1	0.10
	5. Digital camera	0.15	1	0.15				1	0.15
	6. LCD projector with Laptop	0.25	1	0.25				1	0.25
	computer	1.35	1	1.35				1	1.35
	7. P.A system								
	8. A.V. aids	0.20	1	0.20				1	0.20
	Total	0.20	1	0.20				1	0.20
		10.0		**10.0**					**10.00**
9	Health care for desi birds. (vaccination and deworming), 1 lakh birds, /yr. Rs.1/year/bird, for 4 years	0.00001	1 lakh	1.0	1.0	1.0	1.0	4 lakh	**4.00**

ix) Implementation Chart of the Project

S.No	Action Plan	2008-09	2009-10	2010-11	2011-12
1	Establishment of Mobile Veterinary Unit in 2 taluks	●			
2	Establishment of ADIU	●			
3	Strengthening of infrastructure facilities in veterinary institutions	●			
4	Disaster management	●			
5	Control of parasitic diseases through treatment to enhance vaccine response	●	●	●	●
6	Establishment of mobile input unit	●			
7	Establishment of Mobile disease investigation cum training unit	●			
8	Health care for desi birds (vaccination and deworming)	●	●	●	●

x) Reporting

Monthly progress report will be submitted to the concerned higher authorities.

4. Processing facilities

i) Abstract

To improve processing facilities, the Dairy Development Department will Supply potrable Milking machines to 20 dairy farmers per year for 4 years to favour clean milk production and reduce labour cost. The Dairy Development Department will establish one Bulk milk cooler, one Walk-in cooler, 2 manufacturing facilities for milk khoa , 2 manufacturing facilities for Panneer and 3 manufacturing facilities for ice cream . Milk weighing machines will be supplied to 11 Milk producers co operative societies during the period of 4 years. Seven P.C based automatic milk collection station will be established in the district in 4 years. Energy management system in milk union will be established for solar power.

ii) Budget : **Rs.105.46 lakhs**

iii) Background/Problem Focus:

At present, in the majority of the dairy farms milking is done manually, which results in higher labour cost. Bulk milk cooler and walk-in cooler facilities to maintain the quality of milk are not available at present. No manufacturing facilities for milk khoa, panneer and ice cream. Milk weighing machines to measure the quantity of milk are not available in majority of Milk producers co operative societies. Labour problem in milk collection centres. High electricity tariff in processing units.

iv) Project Rationale

In the majority of the dairy farms milking is done manually, which results in high labour cost. Supply of milking machines to dairy farmers will favour clean milk production and reduce labour cost. To preserve the keeping quality of milk, bulk milk cooler and walk in coolers are required .Manufacturing facilities for milk khoa, panneer and ice cream are required to promote value added milk products. To measure daily milk procurement, advanced milk weighing machines are required in Milk producers co- operative societies. P.C.based automatic milk collection stations will reduce labour problem. To solve electricity problem and reduce electricity bill , solar energy management system is required.

v) Project Strategy

- Distribution of portable milking machine to 20 dairy farmers per year for 4 years.
- Establishment of one Bulk milk cooler.
- Establishment of one Walk –in cooler
- Establishment of 1 manufacturing unit of milk khoa per year for the first 2 years. (Totally 2 units).
- Establishment of 1 manufacturing unit of Panneer per year for the first 2 years.(Totally 2 units)
- Establishment of 1 manufacturing unit of Ice cream per year for the first 3 years.(Totally 3 units).
- Supply of Milk weighing machine to 3 MPCS per year for the first 3 years and to 2 MPCS during the final year of the project. (Totally 11 machines)
- Establishment of 2 P.C based automatic milk collection stations per year for the first 3 years and 1 station during the fourth year of the project. (Totally 7 stations).
- Establishment of Energy management system in milk union for solar power during the second year of the project.

vi) Project Goals

- To reduce labour cost for profitable dairy farming.
- To facilitate clean milk production.
- To increase milk production.
- To preserve keeping quality of milk.
- To promote value added milk products.
- To solve electricity problem and reduce electricity bill.

vii) Project Components

- Supply of portable Milking machines to 20 dairy farmers per year by Dairy Development Department to favour clean milk production and reduce labour cost.

- Establishment of one Bulk milk cooler by Dairy Development Department.
- Establishment of one Walk – in cooler in Dairy Development Department
- Establishment of manufacturing facilities for milk khoa by Dairy Development Department.
- Establishment of manufacturing facilities for Panneer by Dairy Development Department.
- Establishment of manufacturing facilities for ice cream by Dairy Development Department.
- Supply of Milk weighing machines to Milk producers co operative societies.
- Establishment of P.C based automatic milk collection stations by Dairy Development Department.
- Establishment of Energy management system in milk union for solar power.

viii) Project cost and financing

(in lakhs)

S. No	Scheme component	Unit Cost	No of Units / year	2008-09	2009-10	2010-11	2011-12	Total units	Total cost
1	Supply of portable milking machines to farmers	0.18	20	3.60	3.60	3.60	3.60	80	14.40
2	Establishment of Bulk milk cooler	30.0	1	30.0	-	-	-	1	30.00
3	Establishment of Walk-in cooler	30.0	1	30.0	-	-	-	1	30.00
4	Establishment of manufacturing facilities for milk khoa	0.77	1	0.77	0.77	-	-	2	1.54
5	Establishment of manufacturing facilities for Panneer	1.02	1	1.02	1.02	-	-	2	2.04
6	Establishment of manufacturing facilities for ice cream	1.12	1	1.12	1.12	1.12	-	3	3.36
7	Supply of Milk weighing machines to MPCS	0.17		0.51	0.51	0.51	0.34	11	1.87
8	Establishment of P.C based automatic milk collection stations	1.75		3.50	3.50	3.50	1.75	7	12.25
9	Establishment of Energy management system in milk union for solar power.	10.0		-	10.00	-	-	1	10.00

ix) Implementing Chart of the Project

S.No	Action Plan	2008-09	2009-10	2010-11	2011-12
1	Supply of portable milking machines to farmers	●	●	●	●
2	Establishment of Bulk milk cooler	●			
3	Establishment of walk in cooler	●			
4	Establishment of manufacturing facilities for milk khoa	●	●		
5	Establishment of manufacturing facilities for Panneer	●	●		
6	Establishment of manufacturing facilities for ice cream	●	●	●	
7	Supply of Milk weighing machines to MPCS	●	●	●	●
8	Establishment of P.C based automatic milk collection stations	●	●	●	●
9	Establishment of Energy management system in milk union for solar power.		●		

x) Reporting

Monthly progress report will be submitted to the concerned higher authorities.

5. Extension Facilities (Training)

i)Abstract

Strengthening of TANUVAS centre (the Veterinary University Training and Research centre, Nagercoil) with facilities for transfer of technology through training programmes.

The Veterinary University Training and Research Centre, Nagercoil will conduct training programmes on modern technologies in milch cattle rearing 25 farmers per block per year in all the 9 blocks in the district for 4 years. Scientific goat rearing training will be conducted by this centre to 25 SHG women per block per year in all the 9 blocks for 4 years and backyard poultry rearing training will be conducted for 100 SHG women per block per year for all the 9 blocks for 4 years .

The Dairy Development Department will give Skill development training for 11 technical staff of its department per year and conduct 4 Orientation training / workshop per year for milk producers at society level . Dairy Development Department will under take Farmers study tour every year of the project.

ii)Budget : Rs.49.90 lakhs

iii)Background / Problem focus

Kanyakumari district has a suitable climatic condition for rearing milch cattle. Farmers are lacking scientific knowledge on modern technologies in profitable milch animal rearing, intensive system of goat rearing and poultry rearing.

iv) Project Rationale

In order to educate the farmers on modern scientific way of rearing livestock and poultry, this project is proposed to impart training programmes to farmers and SHG women. The technical staff of Dairy Development Department require skill development training to do their duties effectively. Farmers study tour is proposed to provide opportunities to farmers to visit various dairy industries.

v) Project Strategy

- Strengthening of TANUVAS centre (the Veterinary University Training and Research centre, Nagercoil) with facilities for transfer of technology through training programmes.

- Off campus training programmes on milch animal rearing will be conducted at block level by TANUVAS centre to the beneficiaries of heifer calf rearing scheme , of Department of Animal husbandry. 25 farmers per batch. One training in each block per year for 9 blocks. 9 trainings per year. Totally 36 trainings in 4 years.

- Off campus training programmes will be conducted at block level by TANUVAS centre to SHG women on scientific goat rearing. 25 women per batch. One training in each block per year for 9 blocks. 9 trainings per year. Totally 36 trainings in 4 years.

- Off campus training programmes will be conducted at block level by TANUVAS centre to SHG women beneficiaries on modern method of backyard poultry rearing. 100 beneficiaries per block per year. 50 women per training batch. Two trainings in each block per year for 9 blocks. 18 trainings per year. Totally 72 trainings in 4 years.

- Skill development training for technical staff of Department of Dairy Development. Training for 11 staff in a year. Totally 44 staff in 4 years.

- 4 Orientation training / workshop per year for milk producers at society level by Dairy Development Department . Totally 16 programmes in 4 years.

- Farmers study tour to different model dairy farms and institutions by Dairy Development Department. 40 farmers per year for the first 3 years and 30 farmers for the fourth year. Totally 150 farmers in 4 years.

vi) Project Goals

- Capacity building in the areas of livestock farming, goat rearing and backyard poultry rearing.

- Enlightening the technical staff and dairy farmers on latest developments in the dairy industry through training programmes and study tours.

vii) Project components

a) Strengthening of TANUVAS centre (the Veterinary University Training and Research centre, Nagercoil) with facilities auch as Van, LCD projector with Laptop computer, P.A system, Digital camera, Generator, Charts and displays for transfer of technology through training programmes.

b) Conducting off campus training programmes by TANUVAS centre on Milch cattle rearing at block level for the beneficiaries selected in each block by the Department of Animal husbandry. *(25 beneficiaries in each block / year; 25 × 9 blocks = 225 beneficiaries / year. 225 × 4 years = 900 beneficiaries in 4 years.*)

c). Conducting off campus training programmes by TANUVAS centre on scientific goat rearing at block level to SHG women. (*25 beneficiaries in each block / year; 25 × 9 blocks = 225 beneficiaries / year. 225 × 4 years = 900 beneficiaries in 4 years.*)

d). Conducting off campus training programmes by TANUVAS centre on modern method of backyard poultry rearing at block level to SHG women beneficiaries. (2 trainings/block/yr x 9 blocks = 18 trainings/yr. x 4yrs =72 trainings. 50 women per each training.)

e). Skill development training for technical staff of Department of Dairy Development. *11 technical staff per year x 4 yrs = 44 staff.*

f). Orientation training / workshop for milk producers at society level by Department of Dairy Development. *(4 programmes per year x 4 yrs = 16 programmes).*

g). Farmers study tour to different model dairy farms and institutions(DDD). *(40 farmers per year for the first 3 years and 30 farmers for the fourth year.).*

viii) Project cost and financing

(in lakhs)

S. No	Scheme Component	Unit cost	No of Units /year	2008-09	2009-10	2010-11	2011-12	Total units	Total cost
1	Strengthening of TANUVAS centre with facilities for transfer of technology - Training								
	1. Van	7.50	1	7.50				1	7.50
	2. LCD projector with laptop computer	1.35	1	1.35	-	-	-	1	1.35
	3. P.A. system	0.25	1	0.25	-	-	-	1	0.25
	4. Digital video camera	0.25	1	0.25	-	-	-	1	0.25
	5. Generator	0.50	1	0.50	-	-	-	1	0.50
	6. Charts & displays	0.15	1	0.15	-	-	-	1	0.15
	Total	**10.00**		**10.00**	-	-	-		**10.00**
2	Training programmes on modern technologies in Milch cattle rearing, 2 days, 25 farmers per batch, Rs.500/head (40% institutional charges), 9 batches/yr (TANUVAS)	0.125	9	1.125	1.125	1.125	1.125	36	4.50
3	Training programmes on scientific goat rearing, 2 days, 25 SHg women per batch, Rs.500/head (40% institutional charges), 9 batches/yr (TANUVAS)	0.125	9	1.125	1.125	1.125	1.125	36	4.50
4	Training programmes on backyard poultry rearing to women SHGs, 2 days, 50 members/ batch, Rs. 500/head, (40% institutional charges), 18 batches/yr. 72 batches in 4 yrs (TANUVAS)	0.250	18	4.50	4.50	4.50	4.50	72	18.00
5	Skill development training for technical staff of DDD @ Rs.5000/- per staff, 44 persons for 4 years 11 staff per year	0.05	11	0.55	0.55	0.55	0.55	44	2.20
6	Orientation training / workshop for milk producers at society level Rs.20,000 per programme, 4 programmes/year, for 4 years	0.20	4	0.80	0.80	0.80	0.80	16	3.20
7	Farmers study tour (DDD) 40 farmers/yr for the first 3 yrs and 30 farmers in the 4th year. Totally 150 farmers.	0.05	1	2.00	2.00	2.00	1.50	150	7.50

ix) Implementation Chart of the Project

S.No	Action Plan	2008-09	2009-10	2010-11	2011-12
1	Strengthening of TANUVAS centre with facilities for transfer of technology - Training	●			
2	Training programmes on modern technologies in Milch cattle rearing , 2 days, 25 SHG women per batch, 9 batches/yr . by TANUVAS	●	●	●	●
3	Training programmes on scientific goat rearing, 2 days, 25 SHG women per batch, 9 batches/yr .(TANUVAS)	●	●	●	●
4	Training programmes on backyard poultry rearing to women SHGs, 2 days, 50 members/ batch, 18 batches/yr. 72 batches in 4 yrs(TANUVAS)	●	●	●	●
5	Skill development training for technical staff of DDD	●	●	●	●
6	Orientation training / workshop for milk producers at society level (DDD)	●	●	●	●
7	Farmers study tour (DDD)	●	●	●	●

x) Reporting

Monthly progress report will be submitted to the concerned higher authorities. The details of Project Proposal along with budget requirement are furnished in Table 6.10.

6.10 Project Proposal for Animal Husbandry Sector - 2008-2012

(Rs. in lakhs)

Sl. No.	Name of the Progrmme	Unit cost Rs. In lakh	2008-09		2009-10		2010-11		2011-12		Total	
			Units	Cost in lakhs	Units	Cost in lakhs	Units	Cost in lakhs	Units	Cost in lakhs	Units	Cost in lakhs
1	**CATTLE & BUFFALO**											
I	**FEED AND FODDER DEVELOPMENT**											
1	Augmentation of fodder production through SHGs/women entrepreneurs, Rs. 0.235 Lakh/acre, 10 acres / Block /year for 4 years, 90 acres /year, 360 acres / 4 years (D.A.H)	0.235	90	21.15	90	21.15	90	21.15	90	21.25	360	84.60
2	Fodder development activities (in IDF villages & farmers field (DDD)	0.235	20	4.70	20	4.70	20	4.70	20	4.70	80	18.80
3	Chaff cutters for elite farmers (small type) @Rs.20,000 as 100% Grant (DDD)	0.20	20	4.00	20	4.00	20	4.00	20	4.00	80	16.00
4	Subsidy for concentrate feed for heifer calf rearing scheme @ 100kg / unit. 25 units/ block/yr. 900 units in 4 yrs. (DAH)	0.01	225	2.25	225	2.25	225	2.25	225	2.25	900	9.00
5	Supply of mineral mixture to dairy cows @ Rs.600/cow/year, 1 kg / cow / month @ Rs.50/kg,12 kg/year, 3000 cows/year, 12,000 cows/4years (DAH)	0.006	3000	18.00	3000	18.00	3000	18.00	3000	18.00	12000	72.00
6	Supply of mineral mixture to the milch animals at subsidised cost (50%) @ 18 Kg/ year (DDD)	0.005	375	1.875	375	1.875	375	1.875	375	1.875	1500	7.50

6.10 contd…

(Rs. in lakhs)

Sl. No.	Name of the Progrmme	Unit cost Rs. In lakh	2008-09		2009-10		2010-11		2011-12		Total	
			Units	Cost in lakhs	Units	Cost in lakhs	Units	Cost in lakhs	Units	Cost in lakhs	Units	Cost in lakhs
7	Supply of By-pass protein feed to the milch animals (360Kgs/ year/animal @ 50% subsidised cost of Rs.9/- per kg.) (DDD)	0.033	200	6.60	200	6.60	200	6.60	200	6.60	800	26.40
II	**GENETIC UPGRADATION**											
1	Subsidy for Heifer calf rearing.1 calf per farmer. 25 units/block/year. Totally 900 units in 4 yrs. (DAH)	0.07	225	15.75	225	15.75	225	15.75	225	15.75	900	63.00
2	Identification and traceability of breedable bovines @ Rs.20/animal, for 56,100 animals (DAH)	0.0002	56100	11.22	0	0.00	0	0.00	0	0.00	56100	11.22
III	**Improvement of Livestock Health**											
1	Establishment of mobile veterinary clinics in each taluk @ Rs.5.832 Lakhs/unit, for 2 units (DAH)	5.832	2	11.664	0	0.00	0	0.00	0	0.00	2	11.664
2	Establishment of Animal Disease Intelligence Unit (DAH)	24.5	1	24.5	0	0.00	0	0.00	0	0.00	1	24.50
3	Institutional Development- Strengthening of veterinary institutions with basic facilities like fencing, bore-wells, water troughs, repairs etc. @ Rs.5.0 Lakh /Institution, for 24 unit (DAH)	5	24	120	0	0.00	0	0.00	0	0.00	24	120.00
4	Disaster management (5 shelters to accommodate 100 animals each, Training & mobile phones for 31 VAS & Vaccines. (DAH)			108.37		1.819		1.819		1.819		113.83

6.10 Contd…

(Rs. in lakhs)

Sl. No.	Name of the Progrmme	Unit cost Rs. In lakh	2008-09		2009-10		2010-11		2011-12		Total	
			units	Cost in lakhs	units	Cost in lakhs	units	Cost in lakhs	units	Cost in lakhs	units	Cost in lakhs
5	Control of parasitic diseases through treatment to enhance vaccine response (DAH)			1.95		2.50		2.50		2.50		9.45
6	Mobile input unit (one per 50 DCS) (DDD)	4.50	1	4.50	0	0.00	0	0.00	0	0.00	1	4.50
7	Walk-in Coolers (DDD)	30.00	1	30.00	0	0.00	0	0.00	0	0.00	1	30.00
8	Strengthening of TANUVAS Centre at Nagercoil with a mobile disease investigation cum training unit @ Rs.10.00 Lakhs/unit, one unit, (TANUVAS)	10	1	10	0	0.00	0	0.00	0	0.00	1	10.00
IV	**PROCESSING FACILITIES**											
1	Portable Milking machines for farmers (DDD)	0.18	20	3.60	20	3.60	20	3.60	20	3.60	80	14.40
2	Bulk milk cooler (DDD)	30.00	1	30.00	0	0.00	0	0.00	0	0.00	1	30.00
3	Manufacturing facilities for milk khoa (DDD)	0.77	1	0.77	1	0.77	0	0.00	0	0.00	2	1.54
4	Manufacturing facilities for Panneer (DDD)	1.02	1	1.02	1	1.02	0	0.00	0	0.00	2	2.04
5	Manufacturing facilities for Ice cream(DDD)	1.12	1	1.12	1	1.12	1	1.12	0	0.00	3	3.36
6	Milk weighing machine for milk producers co-op. societies (DDD)	0.17	3	0.51	3	0.51	3	0.51	2	0.34	11	1.87
7	P.C.based automatic milk collection stations to IDF villages milk producers cooperative societies (DDD)	1.75	2	3.50	2	3.50	2	3.50	1	1.75	7	12.25
8	Energy management system (DDD)	10.00		0.00	1	10.00					1	10.00

6.10 Contd…

(Rs. in lakhs)

Sl. No.	Name of the Progrmme	Unit cost Rs. In lakh	2008-09		2009-10		2010-11		2011-12		Total	
			units	Cost in lakhs	units	Cost in lakhs	units	Cost in lakhs	units	Cost in lakhs	units	Cost in lakhs
V	**EXTENSION FACILITIES**											
1	Strengthening of TANUVAS Centre, Nagercoil at Parakkai with facilities for Transfer of Technology – Training @ Rs10.00 Lakhs (TANUVAS)	10.00	1	10.00	0	0.00	0	0.00	0	0.00	1	10.00
2	Training programmes on modern technologies in Milch cattle rearing, 2 days, 25 farmers per batch, Rs.500/head, 36 batches (TANUVAS)	0.125	9	1.125	9	1.125	9	1.125	9	1.125	36	4.50
3	Skill development for Technical staff (DDD)	0.05	11	0.55	11	0.55	11	0.55	11	0.55	44	2.20
4	Orientation training / workshop for milk producers at society level (DDD)	0.20	4	0.80	4	0.8	4	0.8	4	0.8	16	3.20
14	Farmers study tour @ Rs.5000/- per farmer (DDD)	0.05	40	2.00	40	2.00	40	2.00	30	1.5	150	7.50
2	**SHEEP & GOAT**											
I	**FEED AND FODDER DEVELOPMENT**											
1	Subsidy for concentrate feed for intensive system of Goat (20+1)rearing scheme @ 200kg / unit. 1 unit / block/yr. 36 units in 4 yr. (DAH)	0.02	9	0.18	9	0.18	9	0.18	9	0.18	36	0.72
II	**GENETIC UPGRADATION**											
1	Subsidy to SHG women for intensive system of Goat (20+1) rearing. 1 unit / block/yr. 36 units in 4 yrs.Rs.2000/goat. Rs.42000/unit. (DAH)	0.42	9	3.78	9	3.78	9	3.78	9	3.78	36	15.12
2	Subsidy for 5+1 Boer goat unit to SHG. Rs.15000 / buck & Rs.10000 / doe. DAH)	0.65	1	0.65	0	0.00	0	0.00	0	0.00	1	0.65

6.10 Contd…

(Rs. in lakhs)

Sl. No.	Name of the Progrmme	Unit cost Rs. In lakh	2008-09		2009-10		2010-11		2011-12		Total	
			units	Cost in lakhs	units	Cost in lakhs	units	Cost in lakhs	units	Cost in lakhs	units	Cost in lakhs
3	Subsidy for 5+1 Sirohi goat unit to SHG. Rs.5000 / buck & Rs.4000 / doe. (DAH)	0.25	1	0.25	0	0.00	0	0.00	0	0.00	1	0.25
III	**EXTENSION FACILITIES**											
1	Training programmes on scientific goat rearing to women SHGs, 2 days, 25 members/ batch, Rs. 500/head, 36 batches (TANUVAS)	0.125	9	1.125	9	1.125	9	1.125	9	1.125	36	4.50
3	**POULTRY**											
I	**GENETIC UPGRADATION**											
1	Supply of Nandanam B2 chicken (9+1)backyard units to SHG women, @ Rs. 500/unit, 100 units/block/year, 3600 units for 4 years (DAH)	0.005	900	4.5	900	4.50	900	4.50	900	4.50	3600	18.00
II	**IMPROVEMENT OF HEALTH**											
1	Health care for desi birds (vaccination and deworming), 1 lakh birds, Rs.1/year/bird, for 4 years (DAH)	0.00001	100000	1.00	100000	1.00	100000	1.00	100000	1.00	400000	4.00
III	**EXTENSION FACILITIES**											
1	Training programmes on backyard poultry rearing to women SHGs, 2 days, 50 members/ batch, Rs. 500/head, 72 batches (TANUVAS)	0.25	18	4.5	18	4.50	18	4.50	18	4.50	72	18.00
4	**OTHERS (PIG)**											
I	**GENETIC UPGRADATION**											
1	Supply of piggery units (3+1 unit) to farmers @ Rs.0.76 Lakhs/unit, 2 units/ block/year, 18 units/year, 72 units in 4 years (DAH)	0.76	18	13.68	18	13.68	18	13.68	18	13.68	72	54.72
	TOTAL			**481.189**		**132.404**		**120.614**		**117.074**		**851.281**

6.3.1 Fisheries Sector

6.3.1.1 Repair and Renovation of FFDA Fish Farm at Chittar Dam-II.

i) Abstract

There are 242 tanks under the control of Kanyakumari district fish farmers development agency with water spread area of 807.74 ha. For stocking this area 40 lakhs fingerlings are required. A fish farm under the control of FFDA is functioning at Chittar Dam-II with a rearing area of 3111.76 ha.

ii) Budget : Rs. 40.68 lakhs

iii) Background / Problem Focus

Out of 25 ponds, 23 are under repair. If the repair works are carried out, the FFDA can produce 7.5 lakhs fingerlings. The seeds can be supplied to FFDA fish farmers bringing revenue to the FFDA and ultimately fish production will increase manifold.

iv) Project Rationale

Differently meet the demand of needs by the farms in this district. To

v) Project Strategy

The repair and renovation work of the nursery and rearing ponds will be done.

vi) Project Goals

To increase the seed production by utilizing the infrastructure facility created in the FFDA fish farm at Chittar Dam.

To produce quality fish seeds for fish production

vii) Project components

Nursery pond

viii) Project cost and financing

Cost of renovation /unit stone	:	0.015 lakhs (@ Rs.1500/m2- cost for, pitching and plastering
Area to be renovated	:	2712 m2
Project cost RS.1500 X 2712 M2	:	Rs.40.68 lakhs

ix) Implementation chart of the project

Sl. No.	Particulars	2008 – 09			
		I Qtr	II Qtr	III Qtr	IV Qtr
1	Undertake repair and renovation	√	√	√	√

x) Reporting

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

6.3.1.2. Creation of Additional Nursery Space at FFDA Farm at Chittar Dam II

i) Abstract

There are 242 tanks under the control of FFDA covering an area of 807.74 Ha. The seed requirement for the FFDA tanks is 40 lakhs. The seed production after the repair is expected to be 7.5 lakhs. To bridge the gap, creation of additional nursery space at FFDA fish farm is inevitable. In this project 20 nursery ponds, covering an area of 1277 sq.m. is constructed,3 lakhs fingerlings can be produced.

ii) Budget : Rs. 38.31 lakhs

iii) Background / Problem Focus

There is sufficient area available for creation of additional nursery space.

iv) Project Rationale

To attain self sufficiency in fish seed production to meet out the demand.

v) Project Strategy

To create additional nursery space of 1277 m2.

vi) Project Goals

To crate additional nursery space for fish seed production.

vii) Project Components

Plan of action : Preparation of plan and estimate; Tender floating; Finalization of tender; Completion of repair work; Stocking fish seeds.

viii) Project Cost and Financing

Unit cost (@ Rs. 3000/m2 - cost for excavation, stone pitching and plastering)

Project Cost (Rs.3000X1277 m2 Rs. 38.31 lakhs).

S. No	Particulars	2008-09	2009-10	2010-11	2011-12
1.	Preliminary official procedures for floating tenders and execution of work		√		

ix) Implementation Chart of the Project

The Department of Fisheries will be implemented the project.

x) Reporting

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

6.3.1.3. Diversification of Fishing Methods – Supply of Tuna Long Liner and Gill Netter Fishing Vessel:

i) Abstract

Artisanal deep sea fishermen at Kanyakumari, are engaged in deep sea tuna fishing for the export of sashimi tuna. The skirt of those fishermen need to be transferred to other fishermen along Tamilnadu coast with suitable modification in the vessel like automatic long line system, winch onboard cleaning and storing facilities.

ii) Budget : Rs. 137.50 lakhs

iii) Background / Problem Focus

Fishery Survey of India has conducted experimental long line fishing to explore the extend of magnitude of tuna resources in Indian seas. The share of tuna in the long line catch from Arabian sea has been reported to be 45.6% which give a positive sign for the extensive long line operations in the off shore regions of Arabian sea. Commercial tuna long lining in Tamilnadu waters is suggested that a multipurpose fishing vessel would be more suitable and profitable due to restricted fishing season for yellow fin tuna operations. Indian flat-round-bent hooks has been found to be as effective as Norwegian round-bent hooks of size 0/4. The results of long line survey operation with semi-automated systems by FSI and Central Institute of Fisheries Nautical Engineering and Training vessels along lower East coast of India have revealed the presence of good shark resources. Efforts have been taken by the CIFNET to locate tuna fishing grounds and propagating tuna fishing methods to fishermen through training.

iv) Project Rationale

Tuna fishery is yet to gain popularity for catch using long line fitted in the vessel. Equipping the fishing vessel with suitable long line could help catching tuna with prime quality for export. With onboard preservation & Pole & line catching tuna fishery can be enhanced.

v) Project Strategy

- Tamil Nadu has only few tuna fishing vessels
- There is no standard size specification for long line
- No adequate facility to cater tuna of prime quality
- Fish caught through trawl net does not keep quality
- Fishermen do not have adequate knowledge on tuna capture by pole & line
- At present non availability of specific live feed to serve as bait for tuna capture
- Tuna caught through long line undergo struggle & completely undergo exhaustion – (Glycogen) flesh will not be firm & will not meet export requirement
- Long line method is the best and helps in the instant killing
- Body size of tuna (width of tuna is more than 1 foot) is large & immediate chilling to the center bone is must to retain the export quality i.e. color and without any deterioration

- Any temperature abuse result in histamine poisoning (above + 4^0 C) since the tuna meat is consumed fresh as such without cooking and this quality meat is graded as "Sashumi" which fetches 10 –12 USD / Kg therefore onboard preservation is a must to meet export standard
- Live bait is necessary for aggregating the tuna to use pole and line
- Tuna catch requires specially built tuna fishing vessels

vi) Project Goals

1. To procure specially built tuna vessels with onboard processing & rapid chilling.
2. To train fishermen on tuna catching using lone line
3. To train Q.C. personnel on quick processing, rapid chilling & packing (below + 4^0 C).

vii) Project Components

- Creation of winch facility in the boat
- Purchase of long line
- Selection and stocking of suitable live food to serve as bait to tuna
- Onboard chilling facility

viii) Project Cost and Financing

Unit cost 27.50 lakhs

Sl.No.	Particulars	Amount (Rs.In lakhs)
1.	Tuna liner	15.00
2.	Winch	2.50
3.	Long line	3.75
4.	Onboard refrigeration	2.00
5.	Trawl nets and gill nets	2.75
6	Training to fishermen in long line operation	1.50
	Total	**27.50**

27.50 x 5 =137.50 lakhs

ix) Implementation Chart of the Project (2008-12)

Particulars	I Qtrs	II Qtrs	III Qtrs	IV Qtrs
Winch	√	√		
Long line	√	√		
Onboard refrigeration	√	√		
Trawl nets and gill nets	√	√	√	√
Training to fishermen in long line operation	√	√	√	√

x) Reporting

The efficiency of lone line and the quality of fish caught using long line will be assessed by SFD &TANUVAS periodically

6.3.1.4 Training on Advanced Fish Culture Technologies and Hygienic Handling of Fishes

i) Abstract

Advanced fish culture techniques will help the fish farmer to maximise profit in unit area. Training on hygienic handling of fish will help in preserving the quality and reduce loss due to spoilage and technical guidance on value added fish production also help in improvement of revenue to the fisherfolk.

ii) Budget : Rs. 4.00 lakhs

iii) Background / Problem Focus

This project is proposed to impart Training on hygienic handling of fish will help in preserving the quality and reduce loss due to spoilage and technical guidance on value added fish production

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

1. To conduct 40 training programmes on freshwater fish culture
2. To conduct follow up studies.

vii) Project Components

1. Composite fish culture
2. Ornamental fish culture
3. Integrated fish farming
4. Cat fish culture
5. Economies and Marketing

viii) Project Cost and Financing

S.No.	Particulars	App. Budget
1.	DA/TA for participants	4000
2.	Extension materials	4000
3.	Refreshments	2000
Total		**10000**
Total number of participants 40 x Rs.10000		**4 lakhs**

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

6.3.1.5 Fish Transport Facility Insulated Vehicle

i) Abstract

Fishes landed in far off places can be transported to Inland cities and state head quarters in a safe way.

ii) Budget: Rs. 7.50 lakhs

iii) Background / Problem Focus

Fishes are landed through out the year in Kanyakumariand towards north direction of Chennai. This has to be pooled to cater the requirement of people in the interior place**.**

iv) Project Rationale

It is necessary to supply a good quality fish without any quality deterioration.

v) Project Strategy

Purchase of insulated vehicle will help in transporting fish from coastal region to Interior places.

vi) Project Goals

To Provide good quality fish to consumers.

vii) Project Components

Purchase of van, Equipments insulated box, , Regular transportation of fishes.

viii) Project Cost and Financing

Sl. No	Particulars	Cost
1.	Purchase of van	4.00
2.	Equipments with insulated box	2.00
3.	Regular transportation of fishes	1.50
	Total	**7.50**

ix) Implementation Chart of the Project

The project will be implemented in Kanyakumari

Sl.No.	Particulars	I Qtr	IIQtr	IIIQtr	IVQtr
1.	Purchase of van	√			
2.	Equipments insulated box		√		
3	Regular transportation of fishes			√	√

x) Reporting

The units will be established and maintained by Dept. of Fisheries & TNFDC.

6.3.1.6 Provision of Mopeds with Ice Box for fish marketing

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 progressing fish hygienically.

iv) Project Rationale

Fishermen and vendors will be provided with ice box and mopeds could help make available of the fish produce in time with quality retention.

v) Project Strategy

Making available mopeds and ice box at affordable price to meet the fishermen needs.

vi) Project Goals

To promote and sale of fish of high quality with hygiene

vii) Project Components

Supply of 50 units of mopeds with ice box at 50% subsidy

viii) Project cost and financing

Cost of unit	:	0.15 Lakhs
Cost of the moped	:	0.25
Ice box	:	0.05
Total cost	:	0.3
Subsidy	:	0.15(@ 50 **%)**
No of units	:	50 units
Total cost 50 x .15	:	7.5 lakhs

ix) Implementation Chart of the Project

Sl. No.	Particulars	I Qtr	II Qtr	III Qtr	IV Qtr
1.	Supply of Moped with ice box	√	√	√	√

x) Reporting

Progress of the project will be reported periodically.

6.3.1.7 Construction of Landing Centre in Pechiparai and Chittar Dam – II

i) Abstract

The Fishery right of 4 reservoirs viz. Pecheparai, Perunchani, Chittar Dam-I and Chittar Dam –II are vested with Fisheries Department. There is no infrastructure facility at Pechiparai and Chittar Dam II to handle / sell the fishes landed by Department Units and Share units. This poses a problem in the marketing. To handle the landed fishes hygienically and to keep them afresh, we require two landing centres one at Pecheparai and another at Chittar Dam-II.

ii) Budget : Rs. 30.00 lakhs

iii) Project Rationale

To increase the sale of freshwater fishes caught from seasonal and irrigational tank in order to increase the sale of fishes.

iv) Project Strategy

To increase the sale of fresh water fishes through the landing centre and encourage the fish farmers to utilize this landing centre for getting higher income for fishes.

v) Project Goals

To create fish landing centre in Theni district for increasing the sale of freshwater fishes.

vi) Project Components

Fish landing with all facilities (Auction hall, cold storage facilities, ice plant etc.,)

vii) Project Cost and Financing

Project cost : Rs. 30.00 lakhs (2 numbers)
Unit cost : 15 lakhs

Sl.No	Particulars	Cost
1	Auction hall	7.50
2	cold storage	2.00
3	Electronic balance, ice crusher etc	0.50
4	Mini Ice plant	5.00
	Total	15.00

viii) Implementation Chart of the Project

S. No	Particulars	2008-09	2009-10	2010-11	2011-12
1.	Preliminary official procedures for floating tenders	√		√	
2.	Construction of auction hall and cold storage	√		√	

ix) Reporting

Quarterly progress will be reported to the monitoring agency by the implementing agency. In addition to this the Annaual progress can be reviewed with regard to construction of fish landing centre.

6.3.1.8 Development of Artificial Fish Habitats

i) Abstract

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.

ii)Budget : Rs. 225.00 lakhs

iii)Background / Problem Focus

In view of depleting fish stock and diversified biodiversity, FAD has to be strengthened. Fish species are at the verge of stock depletion has to be governed through FADs. Tamilnadu with an extended coastal length attracts immediate attention to revive the stock by special means like FADs. FADs with community involvement especially in the coastal region would help implementing the programme in a successful way.

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

Unit cost Rs.15.00 lakhs

Sl. No.	Components	Rs in lakhs
1.	An FAD of 3 metre diameter and width made up of concrete or FRP materials	10.00
2.	Anchorage	2.00
3.	Floor mast	2.00
4.	Training fisher folk	1.00
	Total	**15.00**

Total units : 15

Total budget 15x15= : Rs.225 lakhs

ix) Project Implementation Chart

Sl. No.	Particulars	I Qtr	II Qtr	III Qtr	IV Qtr
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 the same to the authorities through fisher folk with community involvement.

6.3.1.9 Assessment of Productivity for Enhancing Fish Production in Petchiparai Reservoir

i) Abstract

Petchiparai Reservoir is a small reservoir with an average water spread area of 1575 ha (FRL) . Generally the fish yield from medium reservoirs is estimated to be around 12 kg/ha/yr. In order to increase the fish yield from this level to about 100 kg/ha/yr, the proper management of water quality aspects through scientific management of reservoirs is possible and hence this project is proposed to enhance fish production from this Petchiparai Reservoir of Kanyakumari District.

ii) Budget : Rs. 15.00 lakhs

iii) Background

Petchiparai Reservoir is having the water spread area of 1575 ha. In order to increase the fish yield from this reservoir, a proper management of water quality aspects for better fish production through proper seed stocking density with suitable seed size based on the primary productivity potential of this reservoir can be done.

\iv) Project Rationale

For enhancing inland fish production, reservoirs, particularly small sized ones can be utilized for the maximization of fish production. The productivity of any aquatic systems is mainly depends upon the primary productivity status of the water bodies. Hence, in order to enhance fish yield, primary productivity assessment as well as assessment of other water quality parameters such as depth, light penetration, dissolved oxygen, total hardness, total alkalinity, total dissolved solids, electrical conductivity, nutrients, chlorophyll-a , and plankton biomass is essential . Based on this we can decide the suitable seed stocking density with suitable fish seed size and thus the fish production can be enhanced.

v) Project Strategy

To increase the fish yield from this level to the maximum of 100 kg/ha/yr through scientific management practices.

vi) Project Goals

1. To assess the productivity status of Petchiparai reservoir
2. To study the role and production of plankton and their species composition as a means of suitable food source to the target species.
3. To assess the nutrient status and other relevant water quality parameters of the Petchiparai reservoir for proper enhancement of primary productivity.
4. To evolve a suitable stocking density of fish seed for the enhancement of fish yield based on primary productivity potential of the reservoir and also to arrive at the suitable stocking size of the seeds for better survival and fish yield.

vii) Project Components

- Primary productivity will be assessed in Pechiparai reservoir in the different selected locations at least once in a fortnight by following light and dark bottle method for a period of one year.
- The Water samples will be collected from different locations and analysed for its various physico-chemical parameters such as depth, light penetration, water temperature, dissolved oxygen, pH, total hardness, total alkalinity, total dissolved solids, electrical conductivity, nutrient levels and ammonia by following the standard procedures.
- The hydrobiological characteristics such as the content of chlorophyll-a, plankton species composition and biomass will be studied by following standard methods.
- Stocking density of fish seed will be calculated based on productivity.
- Present status of fish survival and growth will be estimated by adopting suitable methodologies.
- Fish yield potential will be estimated based on primary productivity data.

viii) Project Cost and Funding

S.No	Particulars	Amount (Rs.)
I.	Data collection charges	5,30,000
II.	**Recurring**	
	Chemicals, glasswares. etc.	50,000
	a. Seed cost (approx.)	1,00,000
	b. Plankton net	30,000
	c. Plastic bottles	10,000
	d. Sample analyis for heavy metals	50,000
	e. Coracle hiring charge	75,000
	f. Fish sampling netting materials	40,000
	g. Travel including vehicle hiring to reach reservoir site	50,000
	h. Stationeries, report preparation	20,000
	i. Contingencies	30,000
	j. Fishermen Coolie charges (2 nos.)	50,000
III.	**Non- recurring** a. Field Water Quality Anaysis kit – 1no	3,50,000
	b. Ice box for sample transport-2 nos.	40,000
	c. Deep freezer	75,000
IV.	Institutional Charges @15 % of the recurring budget	---
	Total	**15,00,000**

ix) Implementation Chart

Sl.No	Particulars	I Qtr	II Qtr	III Qtr	IV Qtr
1.	Purchase of equipments	√			
2.	Recruitment of SRFs and Field Assistants	√			
3.	Water quality studies	√	√	√	√
4.	Fish stocking		√	√	√
5.	Fish growth assessment		√	√	√

X) Reporting

The progress of the project will be assessed once in six months from the start of the project and the same will be reported to the authorities concerned.

6.3.1.10 Breeding of Endemic Ornamental Fishes

i) Abstract

Ninety five per cent of our ornamental fish export is based on wild collection. Majority of the indigenous ornamental fish trade in India is from the North Eastern states and the rest is from Southern states which are the hot spots of fish bio diversity in India. This capture based export is not sustainable and it is a matter of concern for the industry. In order to sustain the growth it is absolutely necessary to shift the focus from capture to culture based development. Moreover most of the fish species grown for their ornamental importance can be bred in India successfully. Organised trade in ornamental fish depends on assured and adequate supply of demand, which is possible only by mass breeding

ii) Budget : Rs. 18.00 lakhs

iii) Background / Problem Focus

Ornamental fish keeping is one of the most popular hobbies in the world today. The growing interest in aquarium fishes has resulted in steady increase in aquarium fish trade globally. The trade with a turnover of US $ 5 Billion and an Annual growth rate of 8 percent offers a lot of scope for development. The top exporting country is Singapore followed by Honkong, Malaysia, Thailand, Philippines, Srilanka, Taiwan, Indonesia and India. The largest importer of Ornamental fish is the USA followed by Europe and Japan. The emerging markets are China and South Africa. Over US $ 500 million worth of ornamental fish are imported into the USA each year.

iv) Project Rationale

Among the various aquaculture practices, ornamental fish culture is gaining momentum at present. There is much scope for self employment opportunities in this trade. Tamilnadu has sufficient potential for the development of ornamental fish culture in terms of land, water and labour resources, If the ornamental fish breeding is taken up by farmers, rural youth, women self help groups considerable quantities of ornamental fishes could be produced. This in turn could contribute considerably to GDP growth of our nation besides alleviating poverty.

v) Project Strategy

1) Breeding of live bearing ornamental fishes such as molly, guppy, plat and swordtail fish and egg laying ornamental fishes like gold fish, koi carp, fighter, gourami and oscar fish.

2) Production of healthy young ones

3) Development of good quality broodstock

4) Selling of ornamental fishes

vi) Project Goals

1) To breed ornamental fishes and selling to the public

2) To increase the family income and to improve the socio economic status of the farmers, women self help groups and to create employment through aquariculture by quality broodstock supply.

vii) Project Components

- Work Shed
- Cement tanks
- Glass tanks
- Heater
- Filter
- Other aquarium accessories

viii) Project Cost and Financing : Rs. 18.00 lakhs

S.No.	Particulars	Rupees
1	Construction of hatchery shed 200 m2 x 1200	2,40,000
2	Construction of cement tanks 60000 lts	75,000
3	Air blower	20,000
4	generator	100,000
5	filter	200,000
6	breeders	50,000
7	Bore well, pump, pipe lines	500,000
8	Lab instruments(glass wares and chemical)	100,000
9	Feed, fertilizer, manure	50,000
10	Miscellaneous	4,65,000
	Total	**18,00,000**

ix) Implementation of the Project

Sl. No.	Particulars	2008-09	2009-10	2010-11	2011-12
1.	Floating of tenders		√		
2.	Establishment of hatchery		√		

x) Reporting

The progress of the work will be intimated once in 3 months to the reporting authority.

6.3.1.11 Training Fish Farmers

i)Abstract

To conduct training programmes on freshwater fish culture technologies for the adoption. The training programmes will also include various demonstrations on fish culture activities. Follow up study will be conducted. To improve the socio economic conditions of farmers the training programme is to be conducted

ii) Budget : Rs. 5.00 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 60% 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 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
- Economies and Marketing

viii) Project Cost and Financing

Total cost : 1.00 lakhs
Number of trainees : 500
Unit cost : Rs.0.010

S.No.	Particulars	App. Budget
1.	Providing Stipend to the trainees	Rs. 500
2.	Extension materials	Rs. 350
3.	Miscellaneous	Rs. 150
	Total	**Rs. 1000**
500 x 1000		**Rs. 5.00 lakhs**

ix) Implementation of Client of the Project

Sl. No.	Particulars	2008-12			
		I Qtr	II Qtr	III Qtr	IV Qtr
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

6.3.1.12 Ornamental fish park

i)Abstract

Ninety five per cent of our ornamental fish export is based on wild collection. Majority of the indigenous ornamental fish trade in India is from the North Eastern states and the rest is from Southern states which are the hot spots of fish bio diversity in India. This capture based export is not sustainable and it is a matter of concern for the industry. In order to sustain the growth it is absolutely necessary to shift the focus from capture to culture based development. The proposed Aqua park is aimed at developing Fresh Water Ornamental Fish Production and Export.

ii)Budget : Rs. 25.00 lakhs

Ornamental fishes are called “living jewels” due to their beautiful colouration and peaceful nature. In recent years, much interest has been shown by the home hobbyists and public aquaria to keep ornamental fishes. Keeping ornamental fish as a hobby gives limitless pleasure to the young and also to the old. Aquarium fish relax our mind when we feel tired or depressed due to problems or difficulties. A routine watching of aquarium fishes is known to avoid blood pressure besides extending the longevity of human beings. Children could acquire new knowledge and skills. It develops a sense of attachment with nature and responsibility towards the welfare of other living beings.

In order to create awareness among public about ornamental fishes and as a means of recreation establishment of Ornamental Park is essential.

iii)Project Rationale

Among the various aquaculture practices, ornamental fish culture is gaining momentum at present. There is much scope for self employment opportunities in this trade. Tamilnadu has sufficient potential for the development of ornamental fish culture in terms of land, water and labour resources, If the ornamental fish breeding is taken up by farmers, rural youth, women self help groups considerable quantities of ornamental fishes could be produced. This in turn could contribute considerably to GDP growth of our nation besides alleviating poverty.

iv) Project Strategy

This facility would definitely attract the public, a nominal entry fee may also be fixed for the visitors.

v) Project Goals

i) To set up ornamental fish park for public

ii) In order to create awareness among public about ornamental fishes and as a means of recreation

vi) Project Components

- Work Shed
- Glass tanks
- Aquarium fishes
- Heater
- Filter
- Other aquarium accessories

vii) Project Cost and Financing

Sl.No.	Particulars	Cost (Rs. in Lakhs)
1	Construction of hatchery	10.00
2	Glass house	5.00
3	Cement nursery	5.00
4	Aquarium fish breeder	1.00
5	Heater	0.50
6	Filter	0.50
7	Other aquarium accessories	3.00
	Total	**25.00**

viii) Implementation Chart of the Project (2009-10)

Sl.No	Particulars	I Qtr	II Qtr	III Qtr	IV Qtr
1.	Construction of fish tanks	√			
2.	Conditioning of breeders		√		
3.	Breeding of fishes			√	√

ix) Reporting

The progress of the work will be assessed by the expert scientists of FCRI and State Fisheries Department and intimated once in 3 months to the reporting authority. The details of project proposal along with budget requirement are provided in Table 6.11.

Table 6.11 Project Proposal for Fisheries Sector – 2008 – 09 to 2011 – 12

(Rs.in lakhs)

Sl. No.	Components	Implementing Agency	Unit cost Rs.in lakh)	Total units	2008-09		2009-10		2010-11		2011-12		Total cost (Rs.in lakh)
					Units	Cost	Units	Cost	Units	Cost	Units	Cost	
1	a. Repair and renovation of nurseries in FFDA farm at chittar -2 dam.	Fisheries Department	0.015	2712	2712	40.68							40.68
2	Creation of additional nursery space at FFDA fish farm at chittar - 2 dam,	Fisheries Department	0.03	1277			1277	38.31					38.31
3	Diversification of fishing methods supply of tuna long liner and gill netted fishing vessel	Fisheries Department	27.5	5	1	27.5	2.00	55.00	1	27.50	1	27.50	137.50
4	Fish transport facility Insulated vehicle	TNFDC	7.5	1	1	7.5							7.50
5	Provision of Moped with ice box for fish marketing 50%	TAFCOFED	0.15	50	10	1.5	10	1.50	20	3.00	10	1.50	7.50
6	Construction of landing centre at Pechiparai and chittar dam II.	Fisheries Department	15	2	1	15			1	15.00			30.00
7	Development of Artificial fish habitats	TAFCOFED	15	15	5	75	5	75.00			5	75.00	225.00
	Fisheries - Total		**65.195**	**4062**	**2730**	**167.18**	**1294**	**169.81**	**22**	**45.5**	**16**	**104**	**486.49**
1	Training programme on advanced technologies on fish culture and hygienic handling of fishes	TANUVAS	0.1	40	10	1.00	10	1.00	10	1.00	10	1.00	4.00
2	Assessment of productivity for enhancing fish production in Petchiparai reservoir	TANUVAS	15	1	1	15.00							15.00

Table 6.11 contd…

(Rs.in lakhs)

Sl. No.	Components	Implementing Agency	Unit cost Rs.in lakh)	Total units	2008-09		2009-10		2010-11		2011-12		Total cost (Rs.in lakh)
					Units	cost	Units	cost	Units	cost	Units	cost	
3	Breeding of endemic ornamental fishes	TANUVAS	18	1			1	18.00					18.00
4	Training fish farmers	TANUVAS	0.01	500	100	1.00	100	1.00	200	2.00	100	1.00	5.00
5	Ornamental fish park	TANUVAS	25	1			1	25.00					25.00
	TANUVAS - Total		**58.11**	**543**	**111**	**17**	**112**	**45**	**210**	**3**	**110**	**2**	**67.00**
	Grand Total		**123.305**	**4605**	**2841**	**184.18**	**1406**	**214.81**	**232**	**48.5**	**126**	**106**	**553.49**

6.4 Agricultural Engineering

6.4.1 Intervention-Soil and Moisture Conservation

The total Geographyical area of Kanyakumari District comes under Western Ghats hills. In the hilly area the Horticultural crops like cloves, pepper, arecanut, cashew, mango, tamarind and rubber are cultivated in large scale .Utilisation of natural resources and conservation of soil and moisture will improve production and productivity. Hence soil and moisture conservation works under Western Ghat Development Programme had been implemented in this District since 1990-91. The entire district comes under Western Ghats. The total number of micro watersheds delineated in this District is 466 out of which 238 micro watersheds comes under reserve forest area and the balance 228 micro watersheds are being treated. For the past two decades only 77 micro watersheds have been treated under Western Ghat Development and the balance 143 micro watersheds will be treated in another three decades. Hence to accelerate the development process the backward and the low rainfall area in Thovalai and Agesteeswaram union are selected for intervention under National Agricultural Development programme.

i) Budget

The pattern of subsidy for soil conservation works are 100% and the requirement for this project is as in below :

ii) Back Ground/Problem Focus

1. Adequate rainfall and slope causes severe damages to the Agricultural lands.
2. Widening of gullies reduces the area under cultivation.
3. Removal of top soil reduces soil fertility.
4. Wastage of rain water.
5. Land slides in rainy season.

iii) Project Rationale

1. The fertile top soil will be retained to some extent.
2. Gully control measures will control the runoff and the gullies are protected from further widening.
3. Ground water potential will be improved.
4. Ecological degradation will be minimized.

5. More area can be brought under cultivation.
6. The storage water in the Check dams will be used for domestic and cattles.
7. The socio-economic status of the farming community will be improved.

iv) Project Strategy

The project is programmed in two panchayat unions namely Thovalai and Agasteeswaram of this district for four years from 2008-09.The proposed works are executed through user group leaders nominated by watershed farmers association. The farmers contribution of 10% from private land holders 5% from SC/ST farmers and 5% from community lands will be collected from the beneficiary farmers and deposited in the nationalised banks. The interest accrued will be used for the maintenance works.

v) Project Goals

1. To protect top soil.
2. To improve ground water potential
3. To reduce siltation in the nearby waterbodies.
4. To avoid land slides during rainy season.
5. To improve production and productivity.
6. Sustained use of land and water resources.
7. To improve the.Socio-economic status of the farming community.

v) The Budget

The details of interventions along with the budget are furnished in Table 6.12

Table 6.12. Action Plan and Budget for Intervention-Soil and Moisture Conservation

(Rs. in Lakhs)

S.No	Components	Unit		2008-09		2009-10		2010-2011		2011-2012		Total	
			Subsidy per unit	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost
	4.1. Intervention -Soil and Moisture Conservation												
	I.Area Treatment												
1	Staggered Contour Trenching	Ha	0.035	13.000	0.455	13.000	0.455	19.000	0.665	20.000	0.700	65.000	2.275
2	Contour Rubble Bund	Ha	0.110	26.000	2.860	26.000	2.860	39.000	4.290	39.000	4.290	130.000	14.300
	II.Run off Control Measures												
1	First Order Gullies	No	0.035	49.000	1.715	49.000	1.715	73.000	2.555	74.000	2.590	245.000	8.575
2	Second Order Gullies	No	0.110	30.000	3.300	30.000	3.300	45.000	4.950	45.000	4.950	150.000	16.500
3	Third Order Gullies	No	0.275	15.000	4.125	15.000	4.125	22.000	6.050	23.000	6.325	75.000	20.625
	III.Stabilizing Structures												
1	Land Stabilizer	No	0.360	20.000	7.200	20.000	7.200	30.000	10.800	30.000	10.800	100.000	36.000
2	Stream Stabilizer	No	0.360	21.000	7.560	21.000	7.560	28.000	10.080	32.000	11.520	105.000	37.800
	IV. Water Harvesting Structure												
1	Medium Check Dam	No	0.550	4.000	2.200	4.000	2.200	6.000	3.300	6.000	3.300	20.000	11.000
2	Major Check Dam	No	1.000	2.000	2.000	2.000	2.000	2.000	2.000	4.000	4.000	10.000	10.000
	Soil Moisture Conservation **Total**				**31.415**		**31.415**		**44.690**		**48.475**		**155.995**

6.4.2 Introduction of newly developed and conventional agricultural machinery

i)Back ground/ problem focus

This district receives rainfall during both Southwest and north East monsoon period. So the agricultural operations are carried out almost throughout the year except during summer .Hence there is a shortage of agricultural labour for agricultural operation. So to carry out the timely agricultural operation quickly, agricultural mechanization is very essential. However due to fragmented land holdings by the farmers agricultural machineries suitable for this district alone is now proposed.

ii) Rationale

1. To overcome shortage of agricultural labours
2. For timely agricultural operation
3. Reduction of cost of cultivation
4. Reduction in wastage thereby increase in production.
5. More area is brought under cultivation thereby increase in production.

iii) Project Strategy

It is proposed to implement this programme for four years from 2008-09 .The action plan for four years, subsidy pattern, unit cost etc are enclosed.

iv) Project Goals

1. More area to be brought under cultivation.
2. Increase in production and thereby increase in agricultural growth rate.
3. Improving socio -economic condition of the farming community will be improved.

v) Project Components

1. Introduction of newly developed Agricultural Machineries

   a) Minicombined harvester
   b) Paddy transplanter
   c) Gender friendly equipments

2. Popularisation of agricultural mechanization through conventional machinery /equipments

a) Rotovator

b) Cultivator

c) Disc plough

vi) Budget

The details of interventions along with the budget are furnished in Table 6.13

Table 6.13. Action Plan and Budget for Farm Mechanization

(Rs. in Lakhs)

S. No	Components	Unit	2008-09			2009-10		2010-2011		2011-2012		Total	
			Subsidy per unit	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost
	4.2. Introduction of Newly Developed Agrl .Machinery / Implements												
1	Mini combined Harvester TNAU model		1.250							1.000	1.250	1.000	1.250
2	Multi crop Thresher(High Capacity)		1.050										
3	Power weeder with attachment (all models)		0.500										
4	Power Thrasher		0.500										
5	Paddy Transplanter		0.700					1.000	0.700	1.000	0.700	2.000	1.400
24	Maize combine harvester		8.000										
25	Gender friendly equipments - Tree climber		0.060	40.000	2.400	40.00	2.400	60.00	3.600	60.00	3.600	200.00	12.000
	TOTAL				**2.400**		**2.400**		**4.300**		**5.550**		**14.650**
	4.3 Popularisation of Agricultural Mechanisation through Conventional Machinery / equipments												
1	Power Tiller		0.290			1.000	0.225	1.000	0.225			2.000	0.450
2	Rotavator		0.225			1.000	0.040	1.000	0.040	1.000	0.040	6.000	0.240
3	Cultivator		0.040			1.000	0.040	1.000	0.040	1.000	0.040		
4	Off -set Disc Harrow		0.118			1.000	0.088	1.000	0.088	1.000	0.088	6.000	0.525
5	Disc plough		0.088			1.000	0.088	1.000	0.088	1.000	0.088		
	Total						**0.480**		**0.480**		**0.255**		**1.215**

6.5 Agriculture Marketing

6.5.1 Strengthening Agricultural marketing in Kanyakumari District

Back Ground / Problem Focus

Agriculture from its production focus has shifted to market led production. Market led production is the new strategy which ensures production with thrust on market. With this view, the present project is planned so as to bring a sustainable change from the present scenario.

i) Project Goals

- To attain maximum net returns per unit quantities sold by the farmers
- Minimising price risk
- To provide market intelligence service to farmers.
- Expose farmers to places of success in marketing
- Information Communication Technology enabled Techniques in strengthening marketing of Agricultural and allied Commodities.
- Training farmers in commodity group formation and strengthening of existing groups.
- Reducing post harvest loss by innovating farmers through trainings and exposure visits.

ii) Project Strategy

- Strengthening of farmers shandies and establishing Agri marts in places where inflow is low.
- Establishing Electronic balance, storage facilities to minimise loss
- Providing market price surveillance.
- Providing market intelligence information through electronic media.
- Provide information for producing and marketing during high price seasons.
- Planting or sowing and storing or selling based on market intelligence.
- Following good marketing practices like grading, proper packing etc.

- Maximise direct sales to large scale buyers by public private partnership ventures (Contract farming)
- Market led Production
- Increasing sale through Regulated Market and using market finance and ware housing facilities available.
- Identifying export Promotion opportunities and producing and marketing accordingly
- Identifying possibilities of value addition.

iii) Project Components

- Increasing farmers access to market opportunities by strengthening existing marketing facilities like Uzhavar Sandhais and Regulated Markets as well as establishing new institution like Agri marts and Producer – led local market.
- Provide farmers with information regarding choice of crop based on market intelligence reports received from State Agricultural Universities and accordingly provide them crops / commodity which is marketable as well as suitable for cultivation in the district.
- Training farmers in grading, packing and storage, Utilising latest technologies to meet the high competitive market.(using attractive carton boxes etc)
- Organising buyers – Sellers meet with public departmental participation once in a quarter of the year.
- Imparting need based trainings based on bench mark surveys.
- Visiting high priced markets to understand the requirements (Example: sajel market in Bangalore)

1. Current Status of Agribusiness

Agriculture, as a primary sector provides livelihood to 56per cent of the population and contributes around 13per cent of the State GDP. In value terms between 65 and 75per 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 tonne / 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, 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 7 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, 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.

2. 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 4 per cent which was seen as achievable if growth of 6 to 8 per cent could be achieved in horticulture. These growth rates have not been attempted 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

3. 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 State, producers end up making net losses at the same time when 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 livelihoods. 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.

4. 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 through effective producer organizations to be 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 be able 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 contacts 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 the service providers' agencies 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 proven 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.

5. 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:

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

iv. 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.

v. 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.

vi. 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.

6. 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.

7. 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 physical infrastructure.

8. 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 added 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

9. Project Components

1. Establishment/ organization of commodity groups for marketing in the state with financial assistance from NADP
2. Facilitation of Contract Farming between farmers and bulk buyers in the state with financial assistance from NADP
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 centre at each district/ block level for capacity building and dissemination of marketing information.
7. Strengthening of selected village shandies with financial assistance from NADP
8. Capacity building of farmer's skill
9. Price surveillance
10. Regulated Market uzhavar Shandies Publicity
11. Market Infrastructure

10. Project Components Description

10.1 Establishment/ organization of commodity groups for marketing in the state with financial assistance from NADP

i) Project Rationale

According to Government sources, the inefficient marketing system leads to an avoidable waste of around Rs 50,127 crore. 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 is the project goal.

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
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.The details are presented in Table 6.14

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)

10.2 Facilitation of Contract Farming between farmers and bulk buyers in the state with financial assistance from NADP

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 no 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 the last 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 learnt 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 of contract farming between the traders and producer by organising buyers and sellers meet in the block levels

iii) Project Components

1. Organising meeting with farmers, large scale buying firms, crop insurance companies and banks.
2. Identification of willing / co operating Farmers/ commodity clusters
3. Organising the willing farmers in to groups
4. Arranging the Groups to have contract/agreement with select large scale buyers, banks and crop insurance firms.
5. 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. The Details are presented in Table 6.14

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)

10. 3. 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 with 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

The details are presented in Table 6.14.

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).

10.4. 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 40 buyers sellers meet in Kanyakumari district over the period of four years. This will require resources of Rs.9.20 lakhs for the period of four years. The details are presented in Table 6.14.

10.5 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 4 per cent 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 4per cent 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 being implemented 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 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.7.82 lakhs for the period of four years. The details are presented in Table 6.14.

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)

10.6. 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 Kanyakumari district over the period of four years. This will require resources of Rs. 2.50 lakhs for the period of four years. The Details are presented in Table 6.14

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)

10.7. Strengthening of selected village shandies with financial assistance from NADP

i) Project Rationale

Considering the importance of Rural Primary Markets, there is an urgent need to develop these rural periodic markets in a phased manner with necessary infrastructural amenities to have a strong base of the marketing channel. The task of developing more than 21,000 Rural Periodic Markets is a gigantic one. Therefore, only selected markets will be developed initially and the rest could be developed in phases. The selection of markets is based on economic considerations rather than financial viability in view of their socio-economic importance and equity. Considering the existing constraints in the markets, the modernization should provide for transparent auction system for price discovery of the agricultural produce, bulk weighing arrangement, bulk handling, proper parking, waste disposal, and storage facility. The details of infrastructure needed for an ideal wholesale market are given below:

1. Grading Facilities
2. Price Display Mechanism
3. Electronic Weighing Machine

ii) Project Strategy

Strengthening of selected village shandies through establishing Grading Facilities, Standardization Facilities, Price Display Mechanism and Electronic Weighing Machines

iii) Project Components

1. Establishing Grading Facilities
2. Establishing Standardization Facilities
3. Purchasing and Establishing Price Display Mechanism and Electronic Weighing Machines.

iv) Project cost and Financing

In this project it is proposed to strengthen Village Shandies in Kanyakumari district over the period of four years. This will require resources of Rs. 1.62 lakhs for the period of four years. The Details are presented in Table 6.25.

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)

10.8. 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. 139.46 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 demystify 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 demystify 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 demystify 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

The Details are presented in Table 6.14.

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)

10.9. Strengthening of selected Market Infrastructure (Equipments)

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 would reflect the need for improvement in the market infrastructure in coming years.

Estimates of Marketed Surpluses of Various Commodities

Commodity	Marketed surplus ratio (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
Food grains	
Oilseeds	79.6
Sugarcane	92.9
Fruits and Vegetables**	88.2
Cotton	100.0
Fish	100.0
Milk	60.0

Estimates of Marketed Surpluses of Various Commodities contd…

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. Agricultural 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

The Details are presented in Table 6.14.

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)

10.10. 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 Kanyakumari district over the period of four years. This will require resources of Rs. 0.95 lakhs for the period of four years. The details are presented in Table 6.25.

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)

10.11. Strengthening of Regulated Market and *Uzhavar Shandies* Publicity

i) Rationale

Arrivals to market yards of regulated markets are only about 15 per cent 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. 4.48 lakhs over the period of four years. The details are presented in Table 6.14.

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.349.05 lakhs for this district for the next four years.

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 to be able to adapt better 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 6.14. Action Plan and Budget for Strengthening Agricultural marketing

(Rs. in lakhs)

S.No	Components	2008-09		2009-10		2010-2011		2011-2012		Total	
		Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost
	III. Marketing										
I	Commodity group formation										
	Coconut	1	0.20	1	0.22	1	0.24	1	0.26	4	0.92
II	Market Intelligence dissemination										
	Touch Screen	0	0.00	0		6	0.72	0		6	0.72
	Display board	0	0.00	0		0	0.00	2	0.26	2	0.26
	Purchase of marketing materials	1	0.10	1	0.11	1	0.12	1	0.13	4	0.46
III	CF Others			0		0		0			
IV	Trainings on										
	Warehousing and Storage	10	1.00	10	1.10	10	1.20	10	1.30	40	4.60
	Grading	10	1.00	10	1.10	10	1.20	10	1.30	40	4.60
	Market Intelligence	10	1.00	10	1.10	10	1.20	10	1.30	40	4.60
	Post Harvest	10	1.00	10	1.10	10	1.20	10	1.30	40	4.60
	Commodity Markets	10	1.00	10	1.10	10	1.20	10	1.30	40	4.60
	Export promotion										
	Minimizing PH losses										
	Value addition										
	Exposure visit to markets										
	Within State	1	0.20	1	0.22	1	0.24	1	0.26	4	0.92
	Outside state	2	1.50	2	1.65	2	1.80	2	1.95	8	6.90
	Visit to National Markets	2	3.00	2	3.30	2	3.63	2	3.99	8	13.92
	Arrangement of buyer seller meetings	10	2.00	10	2.20	10	2.40	10	2.60	40	9.20
	Streng. Of market extension centre	1	2.50							1	2.50
	Streng. Of village shandies										
	Market price surveillance	12	1.20	12	1.32	12	1.44	4	0.52	40	4.48
	Publicity - regulated market	1	5.00	1	5.50	1	6.00	1	6.50	4	23.00
	Market infrastructure activities										
	Total	**81**	**20.70**	**80**	**20.02**	**86**	**22.59**	**74**	**22.97**		**86.28**

6.7 Forestry

6.7. 1 Solar and Live fencing to protect crops from wild animal menace

i) Rationale

Kanyakumari Wildlife Sanctuary being a part of western ghats is rich in biodiversity. Many of its animals have been driven to the verge of extinction due to hunting, poaching and habitat loss in the past. Elephant, Bison, Sambar, Wildboar, Porcupine, Wild dog, Mouse deer, Sloth bear, Toddy cat, Pangolin and Python are common. After the declaration of the Kanyakumari division as Wildlife Sanctuary in 2002 the animal population has increased. Wildboar, Porcupine and Sambar damage the crops raised in the adjoining patta lands close to the Reserved Forest areas, in certain cases wild animals like Bear, Wildboar, Monkeys and Tiger attack the human beings as well as cattle. As a result the farmers suffer a lot and there is unrest among the minds of the agrarian community. To mitigate the sufferings faced by the common public, compensation is paid. To control the man animal conflict, solar fencing is more effective.

Repeated incidents have been reported in the patta lands of Thovalai and Agastheeswaram Taluks. Hence it is proposed to provide Solar fencing and live fencing along the boundary of Asambu R.F., Thadagai R.F., Poigai R.F., Velimalai R.F., Therkkumalai R.F., Mahendragiri R.F. and Reserve lands of Marutliuvalmalai and Kottakarai as detailed below: -

1.	Asambu R.F.	-	10 K.M	-	Solar fencing
2.	Thadagai R.F.	-	8 K.M	-	Solar fencing
3.	Poigai R.F.	-	14 K.M	-	Solar fencing
4.	Velimalai R.F.	-	10 K.M	-	Solar Fencing
5.	Therkkumalai R.F.	-	10 K.M	-	Solar fencing
6.	Maruthuvalmalai R.F	-	4 K.M	-	Solar fencing
7.	Mahendragiri R.F.	-	4 K.M	-	Solar fencing
8.	Kottakarai R.F.	-	20 K.M	-	Life Fencing
	Total	-	**80 KM.**		

ii) Project Components

1 Erecting Solar fence

2 Annual maintenance

3 Erection of Live Fencing

4 Annual maintenance

iii) Budget

The recommended interventions along with the budget are furnished in Table 6.15

Table 6.15. Action Plan and Budget for Forestry

(Rs. in Lakhs)

Sl. No.	Component	Unit cost	2008 - 09		2009 - 10		2010 - 11		2011 - 12		Total	
			Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost
	Solar Fencing											
1	Errecting Solar fence	1.60 per km	15	24.00	15	26.40	15	29.04	15	31.94	60	111.38
2	Annual maintenance	0.10 per km			15	1.5	30	3.3	45	5.46	90	10.26
	Total											
	Live Fencing											
1	Errection	0.154per km	5	0.77	5	0.84	5	0.92	5	1.02	20	3.55
2	Annual maintenance	0.031per km			5	0.31	5	0.34	5	0.37	15	1.02
	Total			**24.77**		**29.05**		**33.60**		**38.79**		**126.21**

6.8 Public Works Department

6.8.1 Strengthening and Improvement Of Kodayar Basin

The Kodayar river basin is located between latitudes 8°05' N to 8°35' N and longitudes 77°05' E to 77°35' E. This basin lies at the Southern most tip of Indian Peninsula. It is a basin having an area of 1533 Sq.Km with a hilly area of 607 Sq.Km. It is surrounded by Thambaraparani and Nambiyar Basins in the North, Nambiyar Basin in the East and Neyyar Basin of Kerala in the West.

The basin has been divided into six Sub basins namely

1. Pechiparai
2. Perunchani
3. Chittar
4. Kuzhithuraiyar
5. Valliyar
6. Pazhayar

Irrigation Channels

The main irrigation Channels of Kodayar System are listed below.

1. KLBC canal
2. Thovalai channel
3. Ananthanar Channel
4. P.P.Channel
5. Pattanamkal
6. Pazhayar River
7. N.P.Channel
8. Radhapuram channel
9. Thirparappu canal
10. Aruvikarai Canal

Present Condition of the Irrigation System

1. This system is a good old system existing for more than thousand years.

2. Heavy accumulation of silt due to hilly region and contour nature of canal system.
3. The deteriorated condition of the conveyor system resulting in heavy seepage, leakage, especially in the left out portions of WRCP phase I.
4. Lack of adequate control of regulating structures like anicut etc.
5. Deteriorated canal with low efficiency and their inspection roads.
6. Rehabilitations of system and non system tanks.
7. Lack of awareness among the farmers for effective utilization of water.
8. Lack of modern communication system for effective water regulation.

i) Project Rationale

In order to bridge the gap and to overcome the constraints mentioned above the following action plans are proposed in this project.

1. Improving the overall efficiency of the conveyor systems.
2. Rehabilitation of system and non system tanks.
3. Conjunctive use of surface and ground water in all sources by giving awareness among farmers.
4. Providing micro irrigation wherever possible in consultation with line departments.
5. Introducing horticultural crops requiring less water consumption.
6. Introducing modern techniques in crop cultivation like SRI. Vermi compost, Coir pith etc., by giving awareness among farmers using demo plots.
7. Providing check dams, gully plugging etc., so as to increase the ground water recharge and reduction in siltation.
8. Providing check dams, gully traps etc,
9. Providing modern communication system for effective water regulation.
10. Organizing publicity seminar etc among the farmers of the Basin

ii) Project Strategy

The following channels and the system tanks are proposed to be rehabilitated under NADP.

Ananthanar Channel

This channel starts at Surulode and runs to a length of 24 k.m. There are nine branches to this channel. The total ayacut of this channel is 4452 Ha.

Thovalai channel

This channel starts at Chellanthurithi and runs to a length of 48/400 Km. This channel branches into two, namely M.M.Channel and Nilapparai channel. The Radhapuram Channel starts at Nilapparai head works and runs to a length of 28.800K.M. The Total ayacut of Thovalai channel is 5208.00Ha. and that of Radhapuram channel is 6683.00Ha.

N.P.Channel : This channel off takes from Chattuputhur anicut and runs to a length of 38/400 K.M. The total ayacut of this channel is 3640.00Ha.

P.P.channel: P.P.Channel runs to a length of 128.77 Km. And 819 tanks are benefited. The total ayacut benefited is 8275 Ha.

Budget

The recommended interventions along with the budget are furnished in Table 6.16

Table 6.16. Action Plan and Budget for Strengthening and Improvement of Kodayar Basin (PWD)

(Rs. in Lakhs)

Sl. No	Component	Unit Km / No	Unit Cost	2008-09		2009-2010		2010-2011		2011-2012		Total Cost
				No. of units	Cost	No. of units	Cost	No. of units	Cost	No. of units	Cost	
1	Rehabilitation and Improvements to Ananthanar main channel and its branches	84	28.39	21	596.19	21	596.19	21	596.19	21	596.19	2384.76
2	Rehabilitation and Improvements to Pazhayar, Anicuts, Channels and Tanks	100	25	25	625.00	25	625.00	25	625.00	25	625.00	2500.00
3	Rehabilitation and Improvements to Nanchil Nadu Puthanar Channel and its branches	36	83.3	9	749.70	9	749.70	9	749.70	9	749.70	2998.80
4	Rehabilitation and Renovation of Padmanabapuram Puthanar channel and its branches	128	7.29	32	233.28	32	233.28	32	233.28	32	233.28	933.12
5	Rehabilitation and Renovation of Thiruvithancode main channel and its branches	64	22.18	16	354.88	16	354.88	16	354.88	16	354.88	1419.52
6	Rehabilitation and Improvements to tanks under P.P.channel	43	10	13	130.00	13	130.00	13	130.00	13	130.00	520.00
	Total				**2689.05**		**2689.05**		**2689.05**		**2689.05**	**10756.20**

CHAPTER – V

ALLIED SECTORS

Introduction

Activities allied to agriculture viz. horticulture, animal husbandry, fisheries, forestry and logging have the potential for providing significant employment opportunities to rural and urban population. Allied activities provide supplementary occupation to the people besides contributing to Gross State Domestic Product. The dependence on the agricultural sector for supporting livelihood is well known while the allied sectors offer scope for absorbing surplus labour from the agricultural sector. The allied sector has the potential for putting the State's rural economy on a higher growth trajectory.

5.1 Horticulture

I. Schemes Implemented during 2007 – 2008 in Horticulture Department

5.1.1 Integrated Horticulture Development Scheme

Under this scheme, fruits plants were distributed to the farmers at 50 per cent subsidy cost to a maximum of one hectare per beneficiary and Vegetable seeds were distributed to the farmers at 50 per cent subsidy cost to a maximum of 0.50.0 ha per beneficiary. During the year 2006 - 2007, an allotment of Rs.4.212 lakhs were received and Rs.4.161 Lakhs were spent and covered an area of 186 ha. The details are furnished in Table 5.1.

Table 5.1 Integrated Horticulture Development Scheme - 2007 – 2008

(Physical units in numbers, Financial units in Rs. Lakhs)

Sl. No	Details	Target		Achievement							
				General		SC		ST		Total	
		Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
I	**Fruits Plants**										
a	Mango	65		50		14		1		**65**	
b	Aonla	11		7		3		-		**10**	
c	Sapota	7	3.443	5	2.250	2	1.093	-	0.049	**7**	**3.392**
d	Guava	4		4		-		-		**4**	
e	Others	21		19		2		-		**21**	
	Total	**108**	**3.443**	**85**	**2.250**	**21**	**1.093**	**1**	**0.049**	**107**	**3.392**
II	**Vegetable Seeds**										
a	Bhendi	16		9		6		1		**16**	
b	Murungai	60	0.537	60	0.428	-	0.104	-	0.005	**60**	**0.537**
c	Gourds	-		-		-		-		-	
	Total	**76**	**0.537**	**69**	**0.428**	**6**	**0.104**	**1**	**0.005**	**76**	**0.537**
III	**Other Items**	-	0.232	3	0.023	-	-	-	-	**3**	**0.232**
	Grand Total	**184**	**4.212**	**157**	**2.701**	**27**	**1.197**	**2**	**0.054**	**186**	**4.161**
	Receipts		2.106		1.455		0.598		0.027		2.080

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

5.1.2. Western Ghat Development Programme

Under Western Ghat Development Programme, during the year 2007 - 2008, 50 farmers were selected from the selected watershed areas and given training about horticulture techniques at Research Station inside and outside the state. The allotment for the programme was Rs.1.25 Lakhs. For repairing, plastering and flooring of Pond in Field No. 9C in State Horticultural Farm, Kanyakumari an amount of Rs.5.00 Lakhs was sanctioned and the work is in progress.

5.1.3. National Horticulture Mission

(i) Model Nursery (Public Sector four Hectares)

The State Horticulture Farm located in Kanyakumari is catering the needs of the farming community. It serves as the source for large scale production of planting materials, providing training facilities and act as a model demonstration centre for the farmers of the locality. The training in propagation and farm activities for the unemployed farm youth will create employment opportunities. For effective functioning of the State Horticulture Farm with latest infrastructure facilities, an amount of Rs.18.00 Lakhs was sanctioned during the year 2005 - 2006. Under the component, Model Nursery (Public Sector 4 Ha) and the following works had been completed for the productivity of four lakhs plants per year. The details are given in Table 5.2

Table 5.2. Details of work completed in Model Nursery

Sl. No	Details of Work
1	Construction of Sub-surface tank
2	Installation of Drip & 5 HP Motor
3	Pot Mixture Yard
4	Irrigation Development works
5	Shadenet House (1000m2)
6	Repairing & replacement of shade net roofing in the existing green house
7	Nursery Protection wall
8	Purchase of Power Tiller with Trailer
9	Purchase of Inputs like Poly Bags, FYM etc
10	Production of Mango, Nelli, Root Stock
11	Procurement of mother plants (2500 Nos) and Planting of mother plants

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

(ii) Small Nursery (one Hectare) Public Sector

Rs.3.00 Lakhs had been sanctioned during the year 2005 - 2006 to State Horticulture Farm, Pechipparai, under the component Small Nursery (one hectare) and one Shadenet House and one Micro Irrigation unit was completed.

II. Establishment of New Gardens

(i) Fruits (Perennial) - Mango and Anola

Under this component, during the year 2007 - 2008, **27** ha of Mango and **25** ha of Aonla Crop area had been increased in Kanyakumari district and funds allotted were Rs.5.85 Lakhs.

(ii) Fruits (Non-Perennial) Banana

Under this component, during the year 2007 - 2008, **675** Ha of Banana crop area had been increased and inputs worth of Rs.50.625 Lakhs were distributed to the selected beneficiaries.

(iii) Plantation Crops including Coastal Horticulture

Under this component, during the year 2007 - 2008, **50** Ha of Cocoa crop area had been increased and the amount allotted was Rs.2.813 Lakhs.

(iv) Promotion of INM / IPM

Under this component, Rs.6.00 Lakhs worth of Micronutrients were distributed to the banana growers of Kanyakumari District for **600** Ha during the year 2007 - 2008.

(v) Adoption of Organic Farming

Under this component, to encourage the farmers growing fruits crops, vegetables, spices, aromatic plants etc inputs worth of Rs.28.80 Lakhs were distributed for an area of 288 Ha.

(vi) Vermicompost Units

Under this component, for establishing 62 Vermicompost units in Kanyakumari district, administrative sanction had been given by District Mission Committee and the work is going on. The allotment for this component during 2007 - 2008 was Rs.18.60 Lakhs.

(vii) Pollination Support through Bee Keeping

In order to maximize the agricultural production by giving pollination support through bee keeping, superior quality bee colonies with bee hives were supplied to the farmers / bee keepers at subsidized rate. **4400** Bee Colonies worth of Rs.35.20 lakhs were procured and distribution is going on.

5.1.4. Micro Irrigation

Under Micro Irrigation Scheme, 50 per cent subsidy was given to the farmers for laying out drip irrigation systems in horticultural crops. But due to lesser area in vegetable cultivation in Kanyakumari district and vegetable crop is growing mostly as second crop in rice fallow lands and the average land holding size was also below 0.20.0 ha, the drip irrigation scheme couldn't be implemented in vegetable crops.

II. Horticulture Department -Schemes Implemented during 2008 - 2009

5.1.5. Integrated Horticulture Development Scheme

Under Integrated Horticulture Development Scheme, it is proposed to distributed fruits, spice plants and vegetable seeds to farmers at 50 per cent subsidized cost, worth of Rs.9.00 Lakhs to cover an area of 231 ha. The details are furnished in Table 5.3.

Table 5.3. Integrated Horticulture Development Programme 2008 – 2009

(Physical units: ha Financial units: Rs. In lakhs)

Sl. No	Details	General		SC		ST		Total	
		Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
I	**Fruits**								
a	Mango	50	1.000	-	-	-	-	50	1.0000
b	Sapota	5	0.240	3	0.2475	-	-	8	0.4875
c	Anola	10	0.825	2	0.0960	-	-	12	0.9210
	Total	**65**	**2.065**	**5**	**0.3435**	**-**	**-**	**70**	**2.4085**
II	**Spices**								
a	Pepper	20	0.330	-	-	2	0.033	22	0.363
b	Clove	10	0.165	-	-	1	0.012	11	0.177
c	Nutmeg	5	0.48125	-	-	-	-	5	0.48125
	Total	**35**	**0.97625**	**-**	**-**	**3**	**0.045**	**38**	**1.02125**
III	**Vegetables**								
a	Bhendi	87	3.8	21	0.906	5	0.048	113	4.7535
b	Brinjal	8	0.668	2	0.158	-	-	10	0.826
	Total	**95**	**4.468**	**23**	**1.0640**	**5**	**0.048**	**123**	**5.5795**
	Grant Total	**195**	**7.5093**	**28**	**1.408**	**8**	**0.09**	**231**	**9.0093**

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

5.1.6 Western Ghat Development Programme

Under Western Ghat Development Programme, it is proposed to conduct a tour and training programme for the selected farmers and visit the Research Stations and progressive farmers field inside and outside the state. The allotment proposed for 50 farmers is Rs.1.25 Lakhs.

It is proposed to construct a permanent exhibition cum seminar hall unit with visual aid materials at State Horticultural Farm, Kanyakumari and cover pot mixture preparation yard, concrete roofing of the existing farm office and watchman quarters at State Horticultural Farm, Pechipparai. The proposed amount for this work is Rs.23.00 Lakhs as could be seen in Table 5.4.

Table 5.4 Western Ghat Development Programme Action Plan

Sl. No	Details of Scheme / Work	Physical (Nos)	Financial (Rs.in Lakhs)	Remarks
1	Construction of a Permanent Exhibition cum seminar hall with Visual Aid materials at State Horticultural Farm, Kanyakumari	1	20.00	The State Horticultural Farm, Kanyakumari was establishment in 1922 and this is one of the main centre for providing practical knowledge on modern technology for orchard management and propagation techniques. Students, Researchers and farmers from all over India are regularly visiting this farm. Hence it is proposed to construct a permanent structure under this scheme.
2	Cover pot mixture preparation yard (15m x 6m) at State Horticultural Farm, Pechipparai.	1	1.00	-
3	Concrete roofing of the existing farm office and watchman quarters at State Horticultural Farm, Pechipparai.	1	2.00	-
4	Training Cum Tour Programme (Inside and Outside the State)	50	1.25	-
5	Establishment of Horticulture Communication Centre	-	-	
	Total	**-**	**24.25**	-

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

5.1.7. National Horticulture Mission

During the year 2008 - 2009, it is proposed to implement the National Horticulture Mission Scheme for an amount of Rs.247,2775 Lakhs. The details of components are given below in Table 5.5.

Table 5.5. Details of Components of National Horticulture Mission

S. No	Details	Unit	Target	
			Physical	Financial (Rs. Lakhs)
I	**Plantation Infrastructure and Development - Production of Planting Materials**			
	Model Nursery (Public Sector 4 Ha)	Nos	1	18.000
II	**Establishment of New Garden**			
a	**Fruits - Perennial**			
i	Mango I Year	Ha	30	3.375
ii	Aonla I Year	Ha	20	2.250
iii	Mango II Year	Ha	27	1.215
iv	Aonla II Year	Ha	25	1.125
b	**Fruits - (Non Perennial)**			
i	Banana I Year	Ha	600	45.000
c	**Flowers**			
i	Cut Flowers	Ha	10	3.500
ii	Bulbous	Ha	140	63.000
iii	Loose Flowers	Ha	50	6.000
d	**Plantation Crops including Coastal Horticulture**			
i	Cashew I Year	Ha	20	1.125
ii	Cocoa I Year	Ha	50	2.8125
iii	Cocoa II Year	Ha	50	1.125
III	**Protected Cultivation**			
i	Mulching (Banana)	Ha	200	7.000
ii	Shadenet	Ha	10	7.000
IV	**Rejuvenation / replacement of senile plantation**			
i	Pepper	Ha	25	3.750
V	**Creation of Water Resources**	Unit	2	20.000
VI	**Organic farming**			
	1) Adoption of Organic farming	Ha	100	10.000
	2) Vermicompost units	Nos	50	15.000
VII	**Pollination support through beekeeping**			
	a) Distribution of Colonies with hives	Nos	4500	36.000
	Total			**247.2775**

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

5.1.8. Constraint Analysis

a) Extent of yield gap: Yield gap was less (25 per cent) in tapioca and 15 per cent in banana and the relevant information are furnished in Table 5.6.

Table 5.6. Extent of Yield Gap Among Crops in Kanyakumari District

Crop	Yield gap (kg/ha)	Reason
Tapioca	5000 (25%)	• No sett selection and treatment • Population inadequate • Excess moisture • Unavailability of high yielding variety
Banana	5000 (15%)	• Imbalanced nutrition • No Micronutrient application • Pseudo stem borer /wilt damage • Crop damage due to wind

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

5.1.9. Technological gap

The crop-wise details of technologies mostly and least adopted are furnished in Table 5.7.

Table 5.7. Technological Gap Among Crops in Kanyakumari District

Crop	Technologies mostly adopted	Technologies least adopted
Tapioca	• Variety	• Sett selection and treatment • Manuring
Banana	• Variety • Spacing • Manuring	• Pest management • Micronutrient application

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

5.2 Animal Husbandry

I. Baseline information of Livestock / poultry sector of the district:

a) Population - 2004 :

Species	Population in Numbers
Cross bred cattle	96067
Indigenous cattle	5645
Buffaloes	6077
Sheep	1143
Goat	100698
Pigs	1266
Horses	2
Donkey	13
Rabbits	2103
Poultry	463824

b) Livestock Population Growth Rates - 1997-2004

(Annual Compound Growth rate in Percent)

1.	Cattle	:	3.00
2.	Buffaloes	:	-11.61
3.	Sheep	:	-4.25
4.	Goat	:	9.52
5.	Poultry	:	-5.23
6.	Draught Bovines	:	-12.666
7.	Female Cross-bred	:	3.680
8.	Female Indigenous	:	-26.423
9.	She-buffaloes		-12.591

c) Population Change from - 1997-2004 (in Percent)

1.	Cattle	:	23.01
2.	Buffaloes	:	-57.85
3.	Sheep	:	-26.21
4.	Goat	:	89.03
5.	Poultry	:	-31.36
6.	Draught Bovines	:	-61.25
7.	Female Cross-bred	:	28.78
8.	Female Indigenous	:	-88.33
9.	She-buffaloes		-61.02

d) Production: (Average production from 2004 to 2007)

1.	Cow milk (in 000 Tonnes)	:	92.58
2.	Buffalo milk (in 000 Tonnes)	:	3.06
3.	Improved egg (in Lakh numbers)	:	26.98
4.	Desi egg (in Lakh numbers)	:	123.09
5.	Poultry meat (in Tonnes)	:	510.50
6.	Mutton (in Tonnes)	:	1.97
7.	Chevon (in Tonnes)	:	201.72

e) Production Growth Rates - 1998 to 2007

(Annual Compound Growth Rate in percent)

1.	Cow milk	:	-0.18
2.	Buffalo milk	:	-3.13
3.	Total milk	:	-1.82
4.	Desi egg	:	-8.64
5.	Improved egg	:	-3.68
6.	Total egg	:	-1.94
7.	Total meat	:	4.96

f) Productivity (per animal / bird)

Analysis of the trend in Productivity - 1998-2007

(Annual Compounded Growth rate in Percent)

Indigenous Cow	Cross-bred Cow	Buffalo	Desi Egg	Improved Egg
1.79	-0.45	-1.66	21.05	18.71

g) Feed and fodder availability - 2004

million ton per year

Fodder	Demand	Supply	Deficit	Surplus	Deficit %	Surplus %
Green	0.8085	0.0873	0.7212	-	89.2	-
Dry	0.333	0.381	-	0.048	-	14.3

h) Number of Breedable Bovine Population - 2004

Cattle	:	74,796
Buffalo	:	5,487
Total Breedable Bovine Population	:	80,283

i) Number of AI done (AI Coverage) - 2007

Year	DAH	DDD	TOTAL
2006-2007	75,436	5,924	81,360
2007-2008	76,426	5,212	81,638

II) Strength,Weakness,Opportunities and Challenges

1) Cattle & Buffalo

i) Strength

Superior germplasm with very high exotic blood levels, increasing trend in the cross-bred dairy population, huge domestic demand for fluid milk and milk products, high rain fall and suitable climatic conditions, disease free zone.

ii) Weakness

Scarcity of grazing land, scarcity of green fodder, high cost of concentrate feed, low marketing price of milk, delayed and untimely insemination, infertility in cross bred cows, mastitis in high yielding crossbred cows, high land cost.

iii) Opportunities

Promoting fodder cultivation in private lands, subsidiary supply of mineral mixture to crossbred cows , subsidiary supply of cattle feed, increasing marketing price of milk, identifying infertility problems, timely insemination at farmers door step, imparting scientific knowledge.

iv) Challenges

Diminishing grazing land , deficit of green fodder, Increasing cost of dairy feed ingredients, shortage of labour due to higher labour cost, mastitis and infertility problems in high yielding cross bred cows. Disaster management.

2) Small Ruminants - Sheep and Goat

i) Strength

Suitable climatic condition, heavy demand for chevon and high marketing price, disease free zone.

ii) Weakness:

Scarcity of grazing land, scarcity of green fodder, high land cost, labour shortage

iii) Opportunities :

Promoting intensive system of goat rearing with high yielding varieties, Subsidiary supply of goat units to selected farmers at block level , promoting fodder cultivation, Imparting scientific knowledge on goat rearing.

iv) Challenges

Improving chevon production in Kanyakumari district by promoting intensive system of goat rearing, promoting fodder cultivation to meet the fodder requirements of goats, adequate health coverage.

3) Poultry

i) Strength

Suitable climatic condition, easy local marketing facilities for broilers and coloured eggs, less investment for back yard poultry rearing.

ii) Weakness

High feed cost, high land cost. Poultry mortality due to poor health coverage.

iii) Opportunities

Supply of subsidized backyard poultry units to SHG women, Health coverage for desi birds

iv) Challenges

Seasonal marketing ,Unhygienic slaughter and spread of rumours

III. On going Government Development Schemes for Livestock & Poultry :

Department of Animal Husbandry:

a) ASCAD – FMDCP
b) KPT (Kaalnadai pathukappu thittam)

Aavin :

a) I.D.D.P (Intensive Dairy Development Programme)

b) TEAP (Tsunami Emergency Assistant Project)

c) Part-II scheme to provide infrastructural facilities to the societies

IV. Intervention required Areas

a) Fodder cultivation

b) Door step insemination to facilitate timely insemination

c) Vaccination coverage

d) Subsidy for purchase of livestock, poultry and feed

e) Training on modern method of scientific farming

f) Animal disease intelligence unit

g) Promoting value added products

h) Disaster management system

i) Infrastructure facilities in Veterinary institutions

Fisheries Sector

I. Baseline Information

Marine

- Coastal length - 72 Km
- Number of coastal villages - 44.
- Marine fishermen population - 1.86 lakhs.
- Active marine fishermen - 45,000
- Marine co-operative societies - 42 (Fishermen), 37 (Fisherwomen)
- Fishing fleet (registered)
  - a) Mechanized boat - 1360
  - b) Vallam - 4500
  - c) Catamaran - 7000
- Marine fish production - 37,750 tonnes

Inland

Seed Production

Government sector

- a) Number of fish farms owned by govt. - 3
- b) Area of rearing space available - 5352.21 sq.m
- c) Total seed production possible - 12.84 lakhs

Private sector:

- Number of fish farms owned by private - 2
- Area of rearing space available - 18,500 sq.m
- Total seed production possible - 33 lakhs
- Number of inland fishermen villages - 86
- Inland fishermen population - 19,254
- Active inland fishermen - 3661
- Inland fishermen co-operative societies - 15
- Inland fisherwomen co-operative societies - 11
- Water resources :
  - a) Number of reservoirs - 4 Nos.
  - b) Area of reservoirs - 3136 ha
  - c) Number of ponds and tanks - 2668 Nos
  - d) Area of ponds and tanks - 3848 ha
- Inland fish production - 3580 tonnes

Strength

- Marine fish production - 37,750 tonnes
- Active marine fishermen - 45,000
- Marine co-operative societies - 42 (Fishermen)
- Fishing fleet (registered) - 37 (Fisherwomen)
- Number of fish farms owned by govt. - 3
- Area of rearing space available - 5352.21 sq.m
- Total seed production possible - 12.84 lakhs

Private sector

- Number of fish farms owned by private - 2
- Area of rearing space available - 18,500 sq.m
- Total seed production possible - 33 lakhs
- Number of inland fishermen villages - 86
- Inland fishermen population - 19,254
- Active inland fishermen - 3661
- Inland fishermen co-operative societies - 15
- Inland fisherwomen co-operative societies - 11

Weakness

- Fishing is confined to inshore waters only. Require more concentration in offshore water by diversification of fishing methods.
- Lack of hygienic handling in fish marketing.
- No self sufficiency in fish seed production.
- Insufficient area for fish seed production.

Opportunities

- Vast areas of reservoirs are more suitable for cage culture of carps, and catfishes, which may lead to high production and income.
- Tank based fish farming can be promoted with alternate species like *Pangasius* sp., freshwater prawn, and loaches.
- Establishment of seed supply center and large-scale seed production
- Trade promotion is possible for various fisheries products.
- Long coastline and area adjacent to the coast suitable for coastal aquaculture.
- Establishment of a well furnished marine aquarium to attract the national and foreign tourists

Challenges

- ❖ More urbanization and inclination towards urban living limiting the scope for rural aquaculture activities.
- ❖ Failure of monsoon
- ❖ Ponds infested with weeds and silt
- ❖ Lack of required fish and prawn seeds

II. On going Government Development Schemes

Schemes pertaining to marine fisheries development

1. Supply of Out Board Motors / In Board Engines and Nets
2. National Fishermen and fisherwomen savings – cum relief scheme
3. Group Accident Insurance scheme
4. Free housing scheme
5. Reimbursement of Control excise duty on High Speed Diesel oil
6. Link Roads and street Lights – Infrastructure developing
7. Sodium vapour lamps to fish landing centres
8. Construction of Fish landing centres
9. Guide lights in marine fishing villages
10. Cyclone shelters
11. Community halls and tube wells disbursement of Tsunami Relief to damaged crafts
12. Assistance to states for developing expert infrastructure & allied activities (ASIDE) – schemes.
13. The Department of Fisheries have proposed construction of fishing harbours at Chinnamuttam, Colachal, Thengapattinam under Tsunami Emergency Reconstruction Project and Muttam and Rajakkamangalathurai under Build, Own, Operate and Transfer (BOOT) system.

Schemes pertaining to Inland fisheries development

1. Fishermen Group Accidental Insurance – (Central scheme)
2. Fishermen savings – cum Relief scheme
3. Anna Marumalarichi Thittam – All Villages
4. IAMWARM –
5. Fisheries Development Minior programme – popularization of scampi culture
6. Interior inland fish culture & marketing schemes.

III. Intervention Required Areas

Marine Fisheries

- Diversification of fishing methods using gill net and long liner.
- Supply of insulated vans and container for hygienic handling and marketing to reduce the spoilage of fish.
- Artificial fish habitat.
- Training to fishermen to develop capacity building.

Inland

- Repair, renovation and provision of additional rearing space.
- Two wheeler with ice box to fisherman co-operative members.

The details of schemes implemented in Fisheries Department are furnished in Table 5.8.

Table 5.8. Schemes Implemented In Fisheries Department

Name of the Scheme	2007-2008		2008-2009	
	Physical (members)	Financial (Rs.)	Physical	Financial
National Marine Fishermen Savings cum Relief Scheme 2007-2008	28532 (Numbers)	3,36,45,600	Government order is awaited to enroll members for the year 2008-2009.	-
TamilNadu State Government Fisherwomen Savings cum Relief Scheme 2007-2008	12413 (Numbers)	1,46,99,250	Government order is awaited to enroll members for the year 2008-2009.	-
Motorisation of Country Crafts	97 (Numbers)	1,94,00,000	-	-

Source: Records of the Department of Fisheries, Kanyakumari

5.4 Agricultural Engineering

5.4.1. Schemes implemented by Department of Agricultural Engineering

1. Kodayar, Chittar, Pattanamkal Irrigation Management Scheme
2. Rotational Irrigation works
3. Subsidy to Irrigation committee
4. Soil Conservation
5. Construction of stone wall
6. Western Ghat Development Scheme
7. Drip Irrigation Scheme

The details of schemes implemented in Agricultural Engineering Department are furnished in Table 5.9.

Table 5.9. Schemes Implemented In Agricultural Engineering Department

(Amount in lakhs)

Name of works/components	Year 2005-06		Year 2006-07		Year 2007-08	
	Physical	Financial (in Lakhs)	Physical	Financial	Physical	Financial
WESTERNGHAT DEVELOPMENT PROGRAMME						
1.Contour rubber bund	90.86.5 Ha	8.22656	108.20.0 Ha	10.779	66.00.0 Ha	6.57194
2.Staggered Contour Trenching	30.00.0 Ha	0.72570	-	-	-	-
3.Drainage line treatment works in upper reaches	141 Nos	4.17869	261 Nos	7.826	184 Nos	5.49994
4.Drainage line treatment works in middle reaches	54 Nos	5.30876	97 Nos	9.695	89 Nos	8.82163
5.DLT works in Lower reaches with gabion structure	20 Nos	4.72591	39 Nos	9.483	41 Nos	10.20135
6.Water Harvesting Structure	10 Nos	5.93800	-	-	-	-
7.Retaining wall	51 Nos	16.38894	79 Nos	26.051	76 Nos	24.46952
8.Land slide treatment works	10 Nos	6.04064	-	-	-	-
9.Major checkdam	-	-	1 Nos	0.95	3 Nos	3.00
10.Minor checkdam	-	-	7 Nos	3.494	6 Nos	2.97562
Total		**51.53320**		**68.278**		**61.54000**
RAIN WATER HARVESTING AND RUNOFF MANAGEMENT PROGRAMME						
1.Major Checkdam	25 Nos	23.4819	30 Nos	5.64	10 Nos	10.00
2.Medium Checkdam	28 Nos	12.8120	20 Nos	9.8	7 Nos	3.50
3.Minor Checkdam	41 Nos	7.3800	21 Nos	20.97	8 Nos	2.00
Total	**94 Nos**	**43.6739**	**71 Nos**	**36.41**	**25 Nos**	**15.50**
AGRICULTURAL MECHANISATION PROGRAMME						
1.Power Tillers	11 Nos	3.146	7 Nos	1.843	13 Nos	3.48
2.Demonstrations	2 Nos	0.050	5 Nos	0.125	10 Nos	0.25
3.Training	-	-	6 Nos	1.47	3 Nos	0.75
REPLACEMENT OF OLD PUMPSETS						
1.Below 5 HP	6 Nos	0.149	1 No.	0.025	3 Nos	
2. 5 & Above 5 HP	28 Nos	1.25	7 Nos	0.3064	4 Nos	0.259
3.Renewal of electrical accessories	32 Nos	0.48	8 Nos	0.105	7 Nos	0.095
Total	**34 Nos**	**1.879**	**8 Nos**	**0.436**	**7 Nos**	0.354

Source: Records of the Executive Engineer (AED), Kanyakumari

5.5: Agricultural Marketing

5.5.1 Marketing facilities for Agricultural Produce (including uzhavar sandhai)

a) Markets

Regulated Market

1. Ethamozhi
2. Vadssery
3. Kaliakkavilai
4. Monday Market
5. Thoduvatti
6. Kulasekaram

Uzhavar Sandhai

1. Vadasery
2. Mylaudy

Wholesale Markets

1. APPTA Market, Nagercoil
2. Vadasery Kanagamoolam Market
3. Monday Market
4. Karungal
5. Thoduvatti

b) Storage go-downs available including cold storage

i) Regulated market

- Ethamozhi
- Vadssery
- Kaliakkavilai
- Monday Market
- Thoduvatti
- Kulasekaram

ii) **Produce arrival 2005-06 (tonnes)**

1. Coconut : 3095
2. Tamarind : 286
3. Tapioca : 69
4. Paddy :1066
5. Rubber : 421
6. Rubber seed: 95
7. Cashew : 58

5.5.2 Recommended Marketing Interventions

- Establishment/ organization of commodity groups for marketing
- 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 with in 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.
- Strengthening of selected village shandies
- Capacity building of farmer's skill
- Strengthening of selected Market Infrastructure
- Establishment of Price surveillance mechanism
- Strengthening of Regulated Market uzhavar Shandies Publicity

5.6: Sericulture Development

The details of sericulture production are furnished in Table. 5.10

Table 5.10 Sericulture Production - 2006-07

S. No	Name of the Block	2006-07			
		Mulbery stock (acre)	Egg distribution	Pupa harvest (kg).	Silk production (kg)
1	Thovalai	2.45	*1176*	629.7	64.1
2	Agastheeswaram	8.90	*2121*	1122.0	117.3
3	Rajakamangalam	3.65	*849*	514.7	52.2
4	Kurunthencode	4.30	2011	110.8	119.0
5	Thackalay	0.85	370	229.5	25.2
6	Thiruvattar	0.50	329	193.5	20.1
7	Melpuram	1.75	1350	640.1	65.4
8	Killiyoor	2.00	481	492.0	46.9
9	Munchirai	0.60	277	179.8	19.4
	Total	25.00	8964	5112.1	529.6

Mulbery stock in the district was 25 acres during 2006-07. There were 8964 egg distribution units and pupa harvested was 5112 kgs, which led to total silk production of 529.6 kg in the district during the same period. Kurunthencode and Agastheeswaram are the major silk producing blocks.

5.7 Forestry

The schemes implemented in Forestry Department are furnished in Table 5.11.

Table 5.11 Schemes Implemented In Forestry Department

(Amount in Rs)

Scheme	2007-08		2008-09 (to be implemented)	
	Physical	Financial	Physical	Financial
Solar Fencing				
Part II Scheme	20 km	3200000		
12th Finanance commission	5 km	800000		
Wildlife support	6 km	960000	35km	5600000
PCCF Chennai				
Live fencing	nil	nil	nil	Nil

Source: Records of the Department of Forestry, Kanyakumari

5.8. Agricultural Credit

Of the total annual credit plan for the State, 3.82 per cent was allocated to the Kanyakumari district. Within this amount, farm sector, non-farm sector and other priority sectors have got 4.94, 1.12 and 3.75 per cent respectively. In the district annual credit plan, Kanyakumari district allocated a maximum share to the farm sector (74.29 per cent) as against as a 57.35 per cent for the State. Non-farm sectors were allocated with 6.91 per cent as compared to the State average of 23.53 per cent. The details are furnished in Table 5.12

Table 5.12 Revised Annual Credit Plan - 2006-07

(Rs. in crores)

S.No.	Allocation for	Kanyakumari district	Tamil Nadu state	% share of KK Dt.
1	Farm sector	760.68 (74.29)	15388.16 (57.35)	4.94
2	Non Farm Sector	70.76 (6.91)	6314.54 (23.53)	1.12
3	Other Priority Sectors	192.56 (18.80)	5128.63 (19.11)	3.75
4	Total	1024.00 (100.00)	26831.33 (100.00)	3.82

Source : 103rd State level Bankers' Committee Meeting Tami Nadu 2005, Lead Bank department, Indian Overseas Bank.

The credit-deposit ratio of the district (78.90 per cent) was lower than the state (109 per cent). It can be interpreted as a good sign of performance of the banks in this district because per capita deposits were more than the per capita credit. Population served per bank office in the district was lower than the State average, which also showed a good sign of banking development in the district as compared to the State as a whole, which could be seen in Table 5.13.

Table 5.13 Banking Development - By Select Indicators - 2005-06

S.No.	Indicators	Kanyakumari District	Tamil Nadu state
1	Population served per bank office	12602	12741
2	Per Capita Deposit	14188	21530
3	Per Capita Credit	11199	23478
4	Credit -Deposit Ratio (%)	78.9	109.0

Source: 103rd State Level Bankers' Committee Meeting -Tami Nadu 2005, Lead Bank Department, Indian Overseas Bank.

5.9 Constraints Analysis

Some of the weaknesses with agriculture in Kanyakumari district are non-adoption of recommended technologies, labour scarcity during major activity, Frequent incidence of RTD and stem borer during Rabi season, soil acidity, no micronutrient application, unavailability of high yielding variety and Pseudo stem borer /wilt damage. Heavy rains during harvest of Kharif season affect the harvest and post harvest activities. Crop damage due to wind, especially for banana crop and very low acreage under pastures and grazing lands are other important constraints.

5.10 Interventions Recommended for the District

To control the pest management in important crops the following technologies are recommended: seed treatment, massive rat control campaign, village publicity & training. To tackle with the labour scarcity, machinery and equipment for agricultural operations will be supplied. For effective transfer of technology, the following activities will be undertaken. Strengthening of District Information Centre, providing laptop, printer, LCD, Copier etc., formation of FIG , interstate exposure visit , District level exhibition/ Kissan mela, publicity & propaganda, printing of literature, display boards, conduct of press tour, technology transfer through TV, Radio & other mass media and Farmers Training through FTC. In Banana, schemes relates to **s**upport system for Banana, Corm Injector, and Banana Bunch Cover. Other schemes include, use of plastic crates for handling fruits and vegetable, popularizing Mango harvester and horticulture air drier for spices. Besides crop specific schemes, other schemes, are proposed with the objective of increasing productivity, getting higher prices and being competitive in the market. Theses include steps to improve marketing infrastructure, soil and water conservation and agricultural mechanization.

CHAPTER - IV

DEVELOPMENT OF AGRICULTURE

4.1 Introduction

Kanyakumari district had 47 per cent of the total geographical area as net sown area. The district has got good forest cover, accounting for 32 per cent of the geographical area and receives good rainfall from both southwest and northeast monsoons. Paddy, banana and tapioca are the important annual crops and coconut and rubber are the important perennial crops. The share of paddy, banana, coconut and rubber in the gross cropped area in 2006-07 was found to be 23, 6.49, 26 and 21 per cent respectively. Agriculture in the district is constrained by labour scarcity, crop damage due to wind, especially for banana and low adoption of recommended technologies and frequent incidence of pests and diseases. Pastures and grazing lands are very low and it is decreasing in the district. Fodder availability is a major problem in the development of dairy sector in the district. The district had a coastal line of 72 km and 2,668 tanks with water spread area of 3,848 ha and have good potential for both development of inland and marine fisheries.

4.2: Land Use

In Kanyakumari district, more than half of its total geographical area is under the cultivation of crops. During 2006-07, the net sown area was 80,218 (47.98 per cent) hectares and the gross cropped area was 92,413 hectares and formed 55.35 per cent to the total geographical area. Area under barren and uncultivable lands and land put to non-agricultural uses accounted for 2.40 and 16.85 per cent respectively. Due to population pressure, the per cent of area under these categories are increasing. Permenant pastures and grazing lands were very less in the district accounting for only 0.001 per cent of the geographical area. During recent years, current fallows and other fallow lands are decreasing as more fallow lands were brought under cultivation. However, increasing area under barren and uncultivable lands and land put to non-agricultural uses did not

affect the net sown area and gross cropped area in the district. At the same time, it is important to note that area sown more than once is slowly declining during recent years. Kanyakumari district is blessed with good forest cover, which accounted for nearly 33 per cent of its total geographical area. The details of land use pattern are furnished in Table 4.1.

Table. 4.1. Land Use Pattern in Kanyakumari District

(in hectares)

S. No.	Classification	2004-05	2005-06	2006-07
1	Forest	54,155 (32.39)	54,155 (32.39)	54,155 (32.39)
2	Barren and Uncultivable land uses	3,335 (1.99)	3,149 (1.88)	4,006 (2.40)
3	Land put to non-agricultural uses	26,337 (15.75)	26,890 (16.08)	28,177 (16.85)
4	Cultivable waste	-	-	-
5	Permanent pastures and other grazing land	2 (0.001)	133 (0.08)	103 (0.06)
6	Land under miscellaneous tree crops and groves not included in net area sown	550 (0.33)	581 (0.35)	541 (0.32)
7	Current Fallows	2,457 (1.47)	1,433 (0.86)	-
8	Other fallow lands	1,828 (1.09)	1,536 (0.92)	-
9	Net Area Sown	78,536 (46.97)	79,323 (47.44)	80,218 (47.98)
10	Area sown more than once	13,877 (8.30)	12,484 (7.47)	12,335 (7.38)
11	Gross Area Sown	92,413 (55.27)	91,807 (54.91)	92,553 (55.35)
12	Total Geographical Area	1,67,200 (100.00)	1,67,200 (100.00)	1,67,200 (100.00)

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

4.3 Water Resources and Management

District is endowed with five rivers and six dams constructed across them. The rivers are Thamiraparani, Pazhayar, Valliar, Ponniavaikal and Paralizar. The major river in the district is Thambaraparani locally known as Kuzhithuraiar. This river has got two major distributaries namely Kodayar and Paralayar. There are many distributaries for Kodayar river of which Chittar I and Chittar II are major ones. The origin of Tambaraparani river is Western Ghats and the river confluences with Arabian sea near Thengapattanam. The dams in the district are Pandiyan Dam, Puthen Dam, Pechipparai Dam, Perunchani Dam, Chittar Dam – I and Chittar Dam – II.The details of the capacity of the dams in Kanyakumari district are furnished in Table 4.2.

Table 4.2. Capacity of Dams in Kanyakumari district

Sl.No	Name of Dam	Full level capacity (feet)	Full Storage (Mcft)
1	Pechiparai	48	4450
2	Perunchani	77	2890
3	Chittar I	18	393
4	Chittar II	18	600
5	Poigai	42	95

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

4.4 Major Crops and Varieties in the District

Several high yielding varieties of major crops are grown in the district. In the case of rice ASD16, ADT37, Ponmani and TPS3 are the popular high yielding varieties. ADT5, T9 and Vamban 3 are the popular HYVs of black gram. East coast tall and T x D hybrid are the major coconut HYVs. In tapioca, Srijaya and Srivisakam are the HYVs widely grown in the district. Robusta, G9, Nendran, Red Banana and Rasthali are the popular banana HYVs grown in the district.

Though there are several HYVs for cultivation, local varieties are also preferred by the farmers in the district. Kattisamba is the popular local rice variety and Kanyakumari green is the popular local variety of coconut. Noorumuttan and Kariyilaipoian are the local varieties of tapioca where as Nendran, Poovan, Rastali, Matti and Karpooravalli are the popular local varieties of banana.

4.5: Input Management

Urea utilization was high in case of paddy and banana. Utilization of DAP was high in the case of paddy and rubber. Factumphos utilization was high in paddy, coconut and banana. Super Phosphate usage was very high in the case of paddy. Rock phosphate application was found in rubber. Potash utilization was very high in banana and high in paddy. Complex 17:17:17 was consumed at a higher rate by rubber plantations followed by paddy and banana in that order. The details are shown in Table 4.3.

Table. 4.3 Current Input Use Level for Major Crops

(in tonnes)

S. No	Crop	Urea	DAP	Factomphos	Super	Rock phosphate	Potash	Complex 17:17:17
1	Paddy	5048	606	682	2934	-	1534	812
2	Banana	2244	258	567	06	-	4057	663
3	Tapioca	50	-	115	140	-	315	-
4	Coconut	239	-	650	-	-	763	-
5	Rubber	450	540	-	-	120	120	1485
6	Others	250				120	120	

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

4.6 Farm Mechanisation / Farm Equipments

The recent census (2005-06) on farm implements and machinery showed that there were 11,538 ploughs, 270 pumps with oil engine, 1578 pumps with electric motor and 27 private tractors in the district and details are furnished in Table 4.4.

Table 4.4 Available Implements and Machinery in Kanyakumari District

(in numbers)

Sl. No	Item	Quantity
1	Plough	11538
2	Pump With Oil engine With Electric motor	 270 1578
3	Tractor Private	27

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

4.7 On-going Special Projects / Programmes in the district

4.7.1. Implementation of Development schemes

The following schemes are implemented by the Department of Agriculture in this district

1. Seed mini kit
2. Integrated cereal development program
3. ISO POM (Pulses)
4. Pulses development scheme
5. Coconut development Scheme
6. TANWABE and
7. Farmers Interest Group

4.7.2. Schemes Implemented [During 2006-07]

A sum of Rs. 45.27 lakhs was spent towards implementation various components through state schemes and Rs. 29.20 lakhs through centrally sponsored schemes. Out of the total state scheme expenditure, Rs. 33.94 lakhs was incurred towards the procurement and distribution of paddy and millet seeds alone. A sum of Rs. 15.39 was spent towards the control of Eriophid mite and integrated farming in coconut holding for productivity improvement by the Coconut Development Board. For cereals development programme, Rs. 5.40 lakhs was spent and Rs. 3.98 lakhs, Rs. 3.42 lakhs, Rs. one lakh were incurred towards the implementation of ISOPOM, TANWABE and seed village respectively. The schemes implemented in the district are furnished in Table 4.5 and Table 4.6

Table. 4.5. Schemes Implemented in Agriculture Department

S. No	Name of the Scheme	Physical Activities	Physical		
			Unit	Target	Finance (Rs)
	A. State Schemes				
1	Procurement and Distribution of Paddy and Millet Seeds	Paddy seeds Procurement	Tonnes	200.000	22.61900
		Millets seeds Procurement	Tonnes	--	11.33700
		Paddy seeds Distribution	Tonnes	200.0	--
2	Procurement and Distribution of Pulses Seeds	Procurement	Tonnes	4.400	2.02000
		Distribution	Tonnes.	4.400	0.37300
		Processing Unit	Tonnes	250	1.00500
3	Procurement and Distribution of Green Manure Seeds(Distribution @25% subsidy)	Procurement	Tonnes	--	--
		Distribution	Tonnes	2	--
4	Crop and Plant Protection	No physical target		--	0.61200
5	Production and Distribution of Micronutrients	Procurement	MT.	--	--
		Distribution	MT.	25	--
6	Pesticides Testing Laboratories	Samples Analysed	Nos.	390	--

Table. 4.5. contd…

S. No	Name of the Scheme	Physical Activities	Physical		
			Unit	Target	Finance (Rs)
7	Production and Distribution of Biofertilisers	Distribution of Biofertilisers	MT.	127200	--
8	Integrated Coconut Development	Procurement of Tall nuts	L.Nos.	40000	6.57700
		Procurement of TxD nuts.	L.Nos.	20000	--
		Distribution of Tall Seedlings	L.Nos.	30000	--
		Distribution of TxD seedlings	L.Nos.	15000	--
		Procurement of DxT nuts	L.Nos.	3000	--
		Distribution of DxT seedlings	L.Nos.	500	--
9	Crop Yield Competition	State level Competition	Nos.	10	0.28000
		District Level Competition	Nos.	20	--
10	Blue Green Algae	Procurement	MT.	--	--
		Distribution	MT.	5.000	
11	Bio Conversion of Farm waste using pleurotus	Distribution of Minikits	Nos.	187	
12	Vermicomposting	Demonstrations	Nos.	2	0.02400
		Advertisement	Nos.	2	0.00300
		Farmers Training	Nos.	2	0.05000
13	Biological Control of pests	Control of pests in Groundnut using NPV	Ha.	--	--
		Control of Rhinoceros Beetle in Coconut	Nos.	7400	--
14	Farmers Training Centre	Training	Nos.	32	0.37000
	Total		--	--	**45.27000**

Table. 4.5. contd…

S. No	Name of the Scheme	Physical Activities	Physical		
			Unit	Target	Finance (Rs)
B.	**CENTRALLY SPONSORED SCHEMES**				
I. Integrated Scheme for Oilseeds Pulses Oilpalm and Maize (ISOPOM)(75:25)					
1	Pulses	Breeder seed procurement	MT.	0.030	0.01500
		Foundation seed production	MT.	3.52	0.01760
		Certified Seed Production	MT.	4.40	0.22000
		Certified Seed distribution	MT.	4.400	0.35200
		Distribution of Bio-pesticide	Ha.	4	0.01000
		Gypsum Distribution	Ha.	--	--
		Distribution of Bio - fertiliser	Ha.	118	0.05900
		Distribution of Pipes (50%subsidy)	Nos.	1	0.15000
		Sprinkler Set(50%Subsidy)	Nos.	--	--
		NPV Distribution	Ha.	2	0.00500
		PPC Distribution	Ha.	--	--
		Block Demonstration.	Nos.	9	0.18000
		IPM Demonstration	Nos.	1	0.12315
		PP Equipment distribution	Nos.	10	0.08000
		DAP spraying	Ha.	71	0.07100
		Micro-Nutrient sprayering	Ha.	174	0.12180
		Farmers Training	No.	3	0.45000
		Provision of Computer purchase	Nos.	--	2.00000
		POL	Rs.	--	0.13000
		TOTAL		**--**	**3.98455**

Table. 4.5. contd…

S. No	Name of the Scheme	Physical Activities	Physical		
			Unit	Target	Finance (Rs)
II. Macro Management Mode Schemes (90:10)					
1	Cereal Development Programme	Distribution of Paddy Certified Seeds	MT.	150	3.0000
		Distribution of Millet seeds	MT.	--	--
		SRI Demonstration	Nos.	5	1.00000
		Distribution of MN Mixture	Ha.	--	--
		IPM Demonstration	Ha.	5	0.85000
		Farmers training	Nos.	5	0.25000
		POL		--	0.30000
		72 Training Excess Allotment		--	--
	TOTAL			**--**	**5.40000**
III.	**COCONUT DEVELOPMENT BOARD**				
1	Control of Eriophid Mite	Number of trees treated	L.Nos	--	--
2	Integrated Farming in Coconut Holding for Productivity improvement	Maintenance of disease affected palms	Nos.	1500	3.75000
		Demonstration Plots 1st Spell	Ha.	10	1.75000
		2nd Spell	Ha.	40	7.00000
		Organic Manure Pits	Nos.	1	0.20000
		19.01 M&E	No.	--	2.50000
		Training	Nos.	--	0.19400
		TOTAL		--	**15.39400**
IV.	**SEED VILLAGE**	Distribution of Seeds	MT.	10	0.70000
		Training	Nos.	2	0.30000
	TOTAL			**--**	**1.00000**

Table. 4.5. contd…

S. No	Name of the Scheme	Physical Activities	Physical		
			Unit	**Target**	**Finance (Rs)**
V.	**TANWABE**	Promotion of Micro-enterprise Activity	Nos.	5	0.50000
	Farmers Interest Group	Group Formation	Nos.	--	--
		Office Automation	Nos.	25	
		Training to FIG	Nos.	25	
		Issue of Cards	Nos.	25	2.92500
		District Level Meeting	Nos.	1	
		Documentation/ Contingency	Nos.	25	
	TOTAL			--	**3.42500**
B.Grand Total (Centrally Sponsored Scheme) (I+II+III+IV+V)				--	**29.20355**

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

Table 4.6 Schemes Implemented - Agriculture Department - Abstract

Progress upto 15th March 2008

S. No	Name of the Scheme	Financial in L.Rs.		
		R.E for 2007-08	Achmt. Upto 15.03.2008	% of Achmt.
	A. State Schemes			
	Plan Schemes	45.27000	28.64200	63
	Part II Schemes	--	--	
	Total	**45.26800**	**28.64200**	**63**
	B. Centrally Sponsored Schemes			
	1.Integrated Scheme for Oilseeds, Pulses, Oilpalm and Maize (ISOPOM) (75:25)	3.98450	1.09300	28
	2. Technology Mission Mode Scheme (75:25)	--	--	--
	3. Macro Management Mode Schemes (90:10)	5.40000	4.60000	85
	4. Coconut Development Board Schemes (50:50)	15.39400	12.52500	81
	5. Centrally Sponsored Schemes (100%)	--	--	--
	6. Seed village	1.00000	0.99960	100
	7. Human Resource Development	--	--	--
	8. TANWABE	0.50000	0.20000	40
	9. FIG	2.92500	2.71000	93
	9. Crop Diversification	--	--	--
	TOTAL	**29.20350**	**22.12760**	**76**
	Agriculture - Total (A+B)	**74.47350**	**50.76960**	**68**

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

4.8: Constraint Analysis

a) Extent of Yield Gap: Yield gap was found high in coconut (upto 55 per cent) followed by rice and pulses (50 per cent each). Yield gap was less (25 per cent) in tapioca and only 15 per cent in banana and the relevant information are furnished in Table 4.7.

Table 4.7. Extent of Yield Gap Among Crops in Kanyakumari district

Crop	Yield gap (kg/ha)	Reason
Rice	2000 (50%)	• Heavy rains during harvest of Kharif • Non adoption of recommended technologies • Labour scarcity during major acitvity • Poor credit facilities affecting timely and adequate input usage • Frequent incidence of RTD and stem borer during Rabi • Soil acidity
Pulses	200 (50%)	• Summer rains affecting rice fallow pulses • Mostly grown as intercrop / rice fallow • Cattle grazing (social problem)
Coconut	50000 (55%)	• No Micronutrient application • Inadequate manuring • Eriophyid mite, red palm weevil incidence • Closer spacing

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

4.9 Technological Gap

The crop-wise details of technologies mostly and least adopted are furnished in Table 4.8.

Table 4.8. Technological Gap Among Crops in Kanyakumari District

Crop	Technologies mostly adopted	Technologies least adopted
Rice	• High yielding varieties • Plant protection • Quality seed	• Seed treatment • Plant population maintenance • Balanced fertilizer application • Water management
Pulses	• High yielding variety	• Seed treatment • Foliar nutrition • Plant protection
Coconut	• Quality seedling • Intercropping • Husk mulching	• Root feeding of Micronutrition • Plant protection • Manuring • Spacing

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

4.10 Recommended Interventions for the District

Key areas and priorities for the development of agriculture and allied sector in the district are given below.

1. High yielding and high quality varieties for more income
2. Improving Soil health and crop nutrition
3. Mechanization
4. Plant Protection intensification
5. Integrated Farming System
6. Human Resource Development
7. Transfer of Technology

The interventions needed to implement the strategies are furnished in Table 4.9

Table. 4.9. Interventions Needed to Implement the Strategies

1.	High yielding and high quality varieties for more income	Identifying varieties for multiplication seed production, certification, and distribution
2	Improving Soil health and crop nutrition	Soil health card Green manure seed production, distribution vermicompost production unit, soil ameliorant, and micronutrient supply
3	Mechanization	Rice transplanter, Leveller, Coconut climber, and cono-weeder
4	Plant protection	Chemicals and equipment
5	Integrated Farming System	Poultry, goats, vermicompost unit,
6	Human Resource Development	Training and exposure visit
7	Transfer of Technology	Audio visual aids, production and screening technology videos

4.11: Interventions Recommenced for the District

In rice, the schemes for increasing productivity include schemes for the supply of quality seeds, distribution of green manure seeds and soil health card, assistance to start vermi compost production unit and supply of dolomite and bio-fertiliser. To control the pest management in important crops the following technologies are recommended: seed treatment, massive rat control campaign, village publicity & training. To tackle the labour scarcity, machinery and equipment for agricultural operations will be supplied. For effective transfer of technology, the following activities will be undertaken. strengthening of district Information Centre, providing laptop, printer, LCD, Copier etc., formation of FIG , interstate exposure visit , District level exhibition/ Kissan mela, publicity & propaganda, printing of literature, display boards, conduct of press tour, Technology transfer through TV, Radio & other mass media and Farmers Training through FTC. In Coconut, assistance will be given to the maintenance of existing coconut gardens to improve production and productivity, distribution of micro-nutrient mixture, assistance to

start coir pith composting unit and distribution of green manure seeds will be undertaken. For pest control, Pheromone trap for Red Palm Weevil will be popularized. Other schemes for coconut development include distribution of Coconut climbers (Kerala type), training to FIG/ Farmers in value addition of coconut products and exposure visit to other States. In pulses, importance is for supply of quality seeds, integrated nutrient management and training in latest crop production technologies.

Annexure - I
Budget Abstract for Agriculture and Allied Departments

Grand Abstract

(Rs. in lakhs)

Particulars	2008-09	2009-10	2010-11	2011-12	Total
Agriculture	291.610	201.860	201.860	201.860	897.190
Horticulture	617.275	629.775	612.275	624.775	2484.100
Animal husbandry	481.189	132.404	120.614	117.074	851.281
Fishery	184.180	214.810	48.500	106.000	553.490
Engineering	33.815	34.295	49.470	54.280	171.860
Marketing	20.700	20.020	22.590	22.970	86.280
Forestry	24.770	29.050	33.600	38.790	126.210
PWD	2689.050	2689.050	2689.050	2689.050	10756.200
Grand Total	**4342.589**	**3951.264**	**3777.959**	**3854.799**	**15926.61**

I. Agriculture Department

S. No	Components	Unit	Subsidy per unit	2008-09		2009-10		2010-2011		2011-2012		Total	
				Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost
	I. Agriculture												
	1.1 Rice												
	1.1.1. Seed												
1	One time grant to TANWABE / FIG to take certified seed production and distribution @ Rs. 50000/- per group	No.	0.500	1.000	0.500	1.000	0.500	1.000	0.500	1.000	0.500	4.000	2.000
2	Incentive for seed production to Self Help Groups @ Rs. 3/- kg- TABWABE Groups/FIG	Tonnes	0.030	30.000	0.900	30.000	0.900	30.000	0.900	30.000	0.900	120.000	3.600
3	Seed distribution subsidy for the seeds produced by Self Help Groups @ Rs. 5 /kg. TANWABE/ FIG	Tonnes	0.050	30.000	1.500	30.000	1.500	30.000	1.500	60.000	1.500	150.000	6.000
4	Supply of Quality Certified Seeds at nominal cost to enhance the SRR @Rs. 5 /- per kg. (Public & private seeds) or 50% whichever is less	Tonnes	0.050	200.000	10.000	200.000	10.000	200.000	10.000	200.000	10.000	800.000	40.000
5	Seed Minikit of new HYV @ Rs. 100/- minikit	Nos.	0.001	50.000	0.050	50.000	0.050	50.000	0.050	50.000	0.050	200.000	0.200
	TOTAL				**12.950**		**12.950**		**12.950**		**12.950**		**51.800**

S. No	Components	Unit	Subsidy per unit	2008-09		2009-10		2010-2011		2011-2012		Total	
				Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost
	1.1.2 Integrated Nutrient Management												
1	Distribution of Green Manure seeds at 90% subsidy of Rs. 20/ kg.	Tonnes	0.200	20.000	4.000	20.000	4.000	20.000	4.000	20.000	4.000	80.00	16.000
2	Distribution of Soil Health Card @ Rs. 25/- per card (Soil + water testing) and Preparation and lamination of soil tested	Nos.	0.000	9000	2.250	9000	2.250	9000	2.250	9000	2.250	36000	9.000
3	Assistance to start vermicompost production unit @ Rs. 10000 per unit (Self Help Group women farmers)	Nos.	0.300	9.000	2.700	9.000	2.700	9.000	2.700	9.000	2.700	36.000	10.800
4	Dolomite 500 kg/ ha @ Rs. 1000/-Ha.	L.Ha.	1000.000	0.005	5.000	0.005	5.000	0.005	5.000	0.005	5.000	0.020	20.000
5	Bio-fertiliser @ 50% subsidy @ Rs. 3/-per No.	L. No.	3.000	0.500	1.500	0.500	1.500	0.500	1.500	0.500	1.500	2.000	6.000
	Total				**15.450**		**15.450**		**15.450**		**15.450**		**61.800**
	1.1.3. Integrated Pest Management												
1	Farmers Field School @ 25000/ No.	Nos.	0.250	18.000	4.500	18.000	4.500	18.000	4.500	18.000	4.500	72.000	18.000
2	Seed Treatment Rs. 65/Ha. Or 50% of subsidy whichever is less	L.Ha.	20.000	0.005	0.100	0.005	0.100	0.005	0.100	0.005	0.100	0.020	0.400
3	Massive Rat control campaign in village @ Rs. 5000 /- Village	Nos.	0.050	20.000	1.000	20.000	1.000	20.000	1.000	20.000	1.000	80.000	4.000

S. No	Components	Unit	Subsidy per unit	2008-09		2009-10		2010-2011		2011-2012		Total	
				Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost
4	Publicity & Training @ Rs. 50000/- per district	Nos.	0.500	1.000	0.500	1.000	0.500	1.000	0.500	1.000	0.500	4.000	2.000
	Total				**6.100**		**6.100**		**6.100**		**6.100**		24.400
	1.1.4. Machineries and Equipments												
1	Promotion of SRI Distribution of Marker, Rotary, Conoweeder and other items @ Rs. 4000 / Ha.	L.Ha	4000.0	0.005	20.000	0.010	40.000	0.010	40.000	0.010	40.000	0.035	140.000
2	Transplanter to TANWABE / FIG / farmers @ Rs. 100000 /- each or 75% subsidy	No.	1.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	20.000	20.000
3	Tractor with accessories(35 HP) Rs. 1.5000 each or 50% subsidy	No.	1.500	5.000	7.500	5.000	7.500	5.000	7.500	5.000	7.500	20.000	30.000
4	Harvester 50% subsidy at Rs.300000/-	No.	3.000	2.000	6.000	2.000	6.000	2.000	6.000	2.000	6.000	8.000	24.000
5	Spade, Crowbar, Iron Pan @ Rs. 75/- subsidy or Rs. 400/-	No.	0.004	500.000	2.000	500.000	2.000	500.000	2.000	500.000	2.000	2000.000	8.000
6	Hand operated Sprayer 75% subsidy or Rs. 1000/- whichever is higher	No.	0.010	100.000	1.000	100.000	1.000	100.000	1.000	100.000	1.000	400.000	4.000

S. No	Components	Unit	Subsidy per unit	2008-09		2009-10		2010-2011		2011-2012		Total	
				Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost
7	Tarpaulin @ Rs. 2000/- Nos. or 75% subsidy whichever is higher	No.	0.020	100.000	2.000	100.000	2.000	100.000	2.000	100.000	2.000	400.000	8.000
	Total				**43.500**		**63.500**		**63.500**		**63.500**		**234.000**
	1.1.5. Technologies												
1	Demonstration on SRI / Hybrid Rice @ 1 demonstration / 10 Ha. @ closer of 10 Ha. Rs. 40000/- Demonstration	No.	0.040	90.000	3.600	90.000	3.600	90.000	3.600	90.000	3.600	360.000	14.400
2	Village campaigns - Kharif / Rabi @ Rs. 1000/-per campaign	No.	0.010	81.000	0.810	81.000	0.810	81.000	0.810	81.000	0.810	324.000	3.240
3	Production of short film on New technologies each Rs. 2.5 lakhs	No.	2.500	1.000	2.500	1.000	2.500	1.000	2.500	1.000	2.500	4.000	10.000
4	Paddy model farm	No.	0.100	9.000	0.900	9.000	0.900	9.000	0.900	9.000	0.900	36.000	3.600
	Total				**7.810**		**7.810**		**7.810**		**7.810**		**31.240**
	1.1.6. Establishment of Seed Testing Lab				**6.000**								**6.000**
	Total				**6.000**								**6.000**

S. No	Components	Unit	Subsidy per unit	2008-09		2009-10		2010-2011		2011-2012		Total	
				Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost
	1.1.7. Extension Activities												0.000
1	Strengthening of District Information Centre, providing Laptop, Printer, LCD, Copier etc.	No.	3.000	1.000	3.000							1.000	3.000
2	Formation of FIG @ Rs. 12500/- group for training and Office automation, 20 card, District Meeting etc. @ Rs. 12500/-	No.	0.125	20.000	1.250	20.000	1.250	10.000	1.250	10.000	1.250	60.000	5.000
3	Exposure visit interstate for 10 days @ 30 farmers/Tour, Rs. 600/- day/farmer Rs. 1.8 lakh each	No.	1.800	3.000	5.400	3.000	5.400	3.000	5.400	3.000	5.400	12.000	21.600
4	Exposure visit interstate @ 50 farmers/Tour, 5 days @ Rs. 300/day/farmer (Rs. 0.75 lakhs each)	Nos.	0.750	3.000	2.250	2.000	1.500	2.000	1.500	2.000	1.500	9.000	6.750
5	District level exhibition/ Kissan mela @ Rs. 2.0 lakh/District	Nos.	2.000	1.000	2.000	1.000	2.000	1.000	2.000	1.000	2.000	4.000	8.000

S. No	Components	Unit	Subsidy per unit	2008-09		2009-10		2010-2011		2011-2012		Total	
				Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost
6	Publicity & Propaganda, Printing of lit, Display boards, conduct of press tour, Technology transfer through TV, Radio & other mass media @ Rs. 2.00 lakh for district and Rs. 1.0 lakh per 9 blocks	Nos.	1.100	10.000	11.000	10.000	11.000	10.000	11.000	10.000	11.000	40.000	44.000
7	Vedio Conferencing facilities to District HQ @ Rs. 10.0 lakh in blocks and District HQ	Nos.	10.000	10.000	100.000							10.000	100.000
8	Farmers Training through FTC @ 40 training (2 days) year @ 50 farmers/training Rs. 20000/- training	Nos.	0.200	40.000	8.000	40.000	8.000	40.000	8.000	40.000	8.000	160.000	32.000

S. No	Components	Unit	Subsidy per unit	2008-09		2009-10		2010-2011		2011-2012		Total	
				Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost
9	Exposure visit to Technical Officers (5) and farmers (20) to other States for 10 days	Nos.	2.500	1.000	2.500	1.000	2.500	1.000	2.500	1.000	2.500	4.000	10.000
10	Exposure visit to Technical Officers and farmers to other Countries for 15 days Lumpsum provision	Nos.		0.000	35.000	0.000	35.000	0.000	35.000	0.000	35.000		140.000
11	Publicity / POL - Hiring of vehicles @ Rs. 100000/- per district	No.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	4.000	4.000
	Total				**171.400**		**67.650**		**67.650**		**67.650**		**374.350**
	Rice Total				**263.210**		**173.460**		**173.460**		**173.460**		**783.590**

S. No	Components	Unit	2008-09			2009-10		2010-2011		2011-2012		Total	
			Subsidy per unit	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost
	1.2 Coconut												
	1.2.1. MAINTENANCE												
1	Maintenance of existing coconut gardens to improve production and productivity Rs. 17500/- per Ha.	L.Ha.	0.175	0.0005	8.750	0.0005	8.750	0.0005	8.750	0.0005	8.750	0.002	35.000
	Total				**8.750**		**8.750**		**8.750**		**8.750**		35.000
	1.2.2. INM												
1	Distribution of micro-nutrient mixture @ Rs. 30/-kg. or 75% subsidy which ever is higher	MT	0.300	25.000	7.500	25.000	7.500	25.000	7.500	25.000	7.500	100.000	30.000
2	Assistance to start coirpith composting unit @ 30000/- per unit (SHG/farmers)	Nos.	0.300	9.000	2.700	9.000	2.700	9.000	2.700	9.000	2.700	36.000	10.800
3	Distribution of Green Manure seeds at 90% subsidy of Rs. 20/ kg.	MT	0.200	5.000	1.000	5.000	1.000	5.000	1.000	5.000	1.000	20.000	4.000
	Total				**11.200**		**11.200**		**11.200**		**11.200**		**44.800**
	1.2.3. IPM												
1	Pheromone trap for Red Palm Weevil @ 75% subsidy or Rs. 300 whichever is higher	Nos.	0.003	300.000	0.900	300.000	0.900	300.000	0.900	300.000	0.900	1200.000	3.600
	Total				**0.900**		**0.900**		**0.900**		**0.900**		**3.600**
	1.2.4. Machineries												
1	Distribution of Coconut climbers (kerala type) @ 75% subsidy or Rs. 2000/- whichever is higher	Nos.	0.020	50.000	1.000	50.000	1.000	50.000	1.000	50.000	1.000	200.000	4.000
	Total				**1.000**		**1.000**		**1.000**		**1.000**		**4.000**

S.No	Components	Unit	Subsidy per unit	2008-09		2009-10		2010-2011		2011-2012		Total	
				Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost
	1.2.5. Value Addition												0.000
1	Training to FIG/ Farmers in value addition of coconut products 30 farmers 2 days training Rs.15000/training	Nos.	0.150	1.000	0.150	1.000	0.150	1.000	0.150	1.000	0.150	4.000	0.600
2	Exposure visit inter state (value addition/ production units) @ 30 farmers/Tour, 5 days @ Rs. 600/day/farmer (Rs. 0.90 lakhs each)	Nos.	0.900	1.000	0.900	1.000	0.900	1.000	0.900	1.000	0.900	4.000	3.600
	Total				**1.050**		**1.050**		**1.050**		**1.050**		**4.200**
	Coconut Total				**22.900**		**22.900**		**22.900**		**22.900**		**91.600**

S. No	Components	Unit	2008-09			2009-10		2010-2011		2011-2012		Total	
			Subsidy per unit	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost
	1.3 Pulses												
	1.3.1. Seed												
1	Seed production subsidy @ Rs. 10/kg	MT	0.100	4.000	0.400	4.000	0.400	4.000	0.400	4.000	0.400	16.000	1.600
2	Seed Treatment (Pseudomonas)	Kg	0.002	300.000	0.450	300.000	0.450	300.000	0.450	300.000	0.450	1200.000	1.800
	Total				**0.850**		**0.850**		**0.850**		**0.850**		3.400
	1.3.2. INM												0.000
1	Distribution of Bio-fertiliser @ 50% susbsidy Rs. 3/No.	L.No	3.000	0.050	0.150	0.050	0.150	0.050	0.150	0.050	0.150	0.200	0.600
2	Foliar Nutrient application subsidy @ 50% cost limited to Rs. 200/Ha.	Ha.	0.002	1500.000	3.000	1500.000	3.000	1500.000	3.000	1500.000	3.000	6000.000	12.000
3	Distribution of micro-nutrient mixture @ 35/kg.	MT	0.350	3.000	1.050	3.000	1.050	3.000	1.050	3.000	1.050	12.000	4.200
	Total				**4.200**		**4.200**		**4.200**		**4.200**		**16.800**
1.3.3	**Training**												0.000
	Farmers Training 50 farmers for 2 days/ Rs. 15000/- Training	No.	0.150	3.000	0.450	3.000	0.450	3.000	0.450	3.000	0.450	12.000	1.800
	Total				**0.450**		**0.450**		**0.450**		**0.450**		1.800
	Pulses Total				**5.500**		**5.500**		**5.500**		**5.500**		**22.000**

	2008-09	2009-10	2010-2011	2011-2012	Total
Rice Total	**263.210**	**173.460**	**173.460**	**173.460**	**783.590**
Coconut Total	**22.900**	**22.900**	**22.900**	**22.900**	**91.600**
Pulses Total	**5.500**	**5.500**	**5.500**	**5.500**	**22.000**
Agriculture - Total	**291.610**	**201.860**	**201.860**	**201.860**	**897.190**

2. Horticulture Department

S. No	Components	Unit	Subsidy per unit	2008-09		2009-10		2010-2011		2011-2012		Total	
				Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost
	II. Horticulture												
	2.1 Banana												
1	Support system for Banana	(Ha)	1.125	500.000	562.500	500.000	562.500	500.000	562.500	500.000	562.500	2000.000	2250.000
2	Corm Injecter	No.	0.002	250.000	0.375	250.000	0.375	250.000	0.375	250.000	0.375	1000.000	1.500
3	Banana Bunch Cover	L No.	5.00	0.500	2.500	0.500	2.500	0.500	2.500	0.500	2.500	2.000	10.000
	Banana Total				**565.375**		**565.375**		**565.375**		**565.375**		**2261.500**
	2.2 Post harvest handling of fruits, vegetables and spices												
1	Use of Plastic crates for Handling to Fruits and Vegetable	No.	0.001	1000.000	1.250	1000.000	1.250	1000.000	1.250	1000.000	1.250	4000.000	5.000
2	Mango Harvester	No.	0.003	100.000	0.250	100.000	0.250	100.000	0.250	100.000	0.250	400.000	1.000
3	Horticulture Air Drier for Spices	No.	1.000	5.000	5.000	5.000	5.000				0.000	10.000	10.000
	Post Harvest Handling Total			**1105.000**	**6.500**	**1105.000**	**6.500**	**1100.000**	**1.500**	**1100.000**	**1.500**	**4410.000**	**16.000**
	2.3 Human Resource Development												
1	District Level Farmers workshop and training on Pineapple and Banana cultivation		0.004	100.000	0.400	100.000	0.400	100.000	0.400	100.000	0.400	400.000	1.600

S. No	Components	Unit	Subsidy per unit	2008-09		2009-10		2010-2011		2011-2012		Total	
				Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost
2	Inter State Exposure Visit (5 days) @ Rs.5000 / Farmers / 5 days		0.050	50.000	2.500	50.000	2.500	50.000	2.500	50.000	2.500	200.000	10.000
	hrd total			**150.000**	**2.900**	**150.000**	**2.900**	**150.000**	**2.900**	**150.000**	**2.900**	**600.000**	**11.600**
	2.4 Strengthening the farm infrastructure / farm implements												
1	Project for Bore Well with Casing Pipe		0.750	20.000	15.000	20.000	15.000	20.000	15.000	20.000	15.000	80.000	60.000
2	Farm waste shredder / vegetable waste shredder		0.200	5.000	1.000	5.000	1.000	5.000	1.000	5.000	1.000	20.000	4.000
3	Enterprising Farmers Association		12.500		0.000	1.000	12.500		0.000	1.000	12.500	2.000	25.000
4	Package for plant protection		0.015	100.000	1.500	100.000	1.500	100.000	1.500	100.000	1.500	400.000	6.000
	Farm Mech. Total				**17.500**		**30.000**		**17.500**		**30.000**		**95.000**
	2.5 Ten hectares mega demonstration plot												
1	Tapioca 10 Ha Mago Demonstration plot	No.	25.000	1.000	25.000	1.000	25.000	1.000	25.000	1.000	25.000	4.000	100.000
	Mega Demo Total			**1.000**	**25.000**	**1.000**	**25.000**	**1.000**	**25.000**	**1.000**	**25.000**	**4.000**	**100.000**
	Horticulture - Total				**617.275**		**629.775**		**612.275**		**624.775**		**2484.100**

3. Agricultural Engineering

S.No	Components	Unit	Subsidy per unit	2008-09		2009-10		2010-2011		2011-2012		Total	
				Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost
	IV. Engineering												
	4.1.Intervention-Soil And Moisture Conservation												
	I.Area Treatment												
1	Staggered Contour Trenching	Ha	0.035	13.000	0.455	13.000	0.455	19.000	0.665	20.000	0.700	65.000	2.275
2	Contour Rubble Bund	Ha	0.110	26.000	2.860	26.000	2.860	39.000	4.290	39.000	4.290	130.000	14.300
	II.Run off Control Measures												
1	First Order Gullies	No	0.035	49.000	1.715	49.000	1.715	73.000	2.555	74.000	2.590	245.000	8.575
2	Second Order Gullies	No	0.110	30.000	3.300	30.000	3.300	45.000	4.950	45.000	4.950	150.000	16.500
3	Third Order Gullies	No	0.275	15.000	4.125	15.000	4.125	22.000	6.050	23.000	6.325	75.000	20.625
	III.Stabilizing Structures												
1	Land Stabilizer	No	0.360	20.000	7.200	20.000	7.200	30.000	10.800	30.000	10.800	100.000	36.000
2	Stream Stabilizer	No	0.360	21.000	7.560	21.000	7.560	28.000	10.080	32.000	11.520	105.000	37.800
	IV.Water Harvesting Structure												
1	Medium Check Dam	No	0.550	4.000	2.200	4.000	2.200	6.000	3.300	6.000	3.300	20.000	11.000
2	Major Check Dam	No	1.000	2.000	2.000	2.000	2.000	2.000	2.000	4.000	4.000	10.000	10.000
	Soil Moisture Conservation **Total**				**31.415**		**31.415**		**44.690**		**48.475**		**155.995**
	4.2. Introduction of Newly Developed Agrl .Machinery / Implements												
1	Mini combined Harvester TNAU model		1.250							1.000	1.250	1.000	1.250

S.No	Components	Unit	Subsidy per unit	2008-09		2009-10		2010-2011		2011-2012		Total	
				Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost
2	Multi crop Thresher(High Capacity)		1.050										
3	Power weeder with attachment (all models)		0.500										
4	Power Thrasher		0.500										
5	Paddy Transplanter		0.700					1.000	0.700	1.000	0.700	2.000	1.400
24	Maize combine harvester		8.000										
25	Gender friendly equipments - Tree climber		0.060	40.000	2.400	40.000	2.400	60.000	3.600	60.000	3.600	200.000	12.000
	Total				**2.400**		**2.400**		**4.300**		**5.550**		**14.650**
	4.3 Popularisation of Agricultural Mechanisation through Conventional Machinery / equipments												
1	Power Tiller		0.290			1.000	0.225	1.000	0.225			2.000	0.450
2	Rotavator		0.225			1.000	0.040	1.000	0.040	1.000	0.040	6.000	0.240
3	Cultivator		0.040			1.000	0.040	1.000	0.040	1.000	0.040		
4	Off -set Disc Harrow		0.118			1.000	0.088	1.000	0.088	1.000	0.088	6.000	0.525
5	Disc plough		0.088			1.000	0.088	1.000	0.088	1.000	0.088		
	Total						**0.480**		**0.480**		**0.255**		**1.215**
	Engineering - Total				**33.815**		**34.295**		**49.470**		**54.280**		**171.87**

4. Agricultural Marketing Department

S. No	Components	Unit	Subsidy per unit	2008-09		2009-10		2010-2011		2011-2012		Total	
				Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost
	III. Marketing												
	Commodity group formation												
	Coconut			1	0.20	1	0.22	1	0.24	1	0.26	4	0.92
	Market Intelligence dissemination												
	Touch Screen			0	0.00	0		6	0.72	0		6	0.72
	Display board			0	0.00	0		0	0.00	2	0.26	2	0.26
	Purchase of marketing materials			1	0.10	1	0.11	1	0.12	1	0.13	4	0.46
	Facilitation of contract farming												
	CF Others					0		0		0			
	Trainings on												
	Warehousing and Storage			10	1.00	10	1.10	10	1.20	10	1.30	40	4.60
	Grading			10	1.00	10	1.10	10	1.20	10	1.30	40	4.60
	Market Intelligence			10	1.00	10	1.10	10	1.20	10	1.30	40	4.60
	Post Harvest			10	1.00	10	1.10	10	1.20	10	1.30	40	4.60
	Commodity Markets			10	1.00	10	1.10	10	1.20	10	1.30	40	4.60
	Export promotion												
	Minimizing PH losses												
	Value addition												
	Exposure visit to markets												
	Within State			1	0.20	1	0.22	1	0.24	1	0.26	4	0.92
	Outside state			2	1.50	2	1.65	2	1.80	2	1.95	8	6.90

S.No	Components	Unit	Subsidy per unit	2008-09		2009-10		2010-2011		2011-2012		Total	
				Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost	Units	Total cost
	Visit to National Markets			2	3.00	2	3.30	2	3.63	2	3.99	8	13.92
	Arrangement of buyer seller meetings			10	2.00	10	2.20	10	2.40	10	2.60	40	9.20
	Streng. Of market extension centre			1	2.50							1	2.50
	Streng. Of village shandies												
	Market price surveillance			12	1.20	12	1.32	12	1.44	4	0.52	40	4.48
	Publicity - regulated market			1	5.00	1	5.50	1	6.00	1	6.50	4	23.00
	Market infrastructure activities												
	Total			**81**	**20.70**	**80**	**20.02**	**86**	**22.59**	**74**	**22.97**		**86.28**

5. Forestry

Sl. No.	Component	unit cost	2008 - 09		2009 - 10		2010 - 11		2011 - 12		Total	
			Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost
	Solar Fencing											
1	Erecting Solar fence	1.60 per km	15	24.00	15	26.40	15	29.04	15	31.94	60	111.38
2	Annual maintenance	0.10 per km			15	1.5	30	3.3	45	5.46	90	10.26
	Total											
	Live Fencing											
1	Errection	0.154per km	5	0.77	5	0.84	5	0.92	5	1.02	20	3.55
2	Annual maintenance	0.031per km			5	0.31	5	0.34	5	0.37	15	1.02
	Total			**24.77**		**29.05**		**33.60**		**38.79**		**126.21**

6. Public Works Department

Sl. No	Component	Unit Km / No	Unit Cost	2008-09		2009-2010		2010-2011		2011-2012		Total Cost
				No.of units	Cost	No.of units	Cost	No. of units	Cost	No.of units	Cost	
1	Rehabilitation and Improvements to Ananthanar main channel and its branches	84	28.39	21	596.19	21	596.19	21	596.19	21	596.19	2384.76
2	Rehabilitation and Improvements to Pazhayar, Anicuts, Channels and Tanks	100	25	25	625.00	25	625.00	25	625.00	25	625.00	2500.00
3	Rehabilitation and Improvements to Nanchil Nadu Puthanar Channel and its branches	36	83.3	9	749.70	9	749.70	9	749.70	9	749.70	2998.80
4	Rehabilitation and Renovation of Padmanabapuram Puthanar channel and its branches	128	7.29	32	233.28	32	233.28	32	233.28	32	233.28	933.12
5	Rehabilitation and Renovation of Thiruvithancode main channel and its branches	64	22.18	16	354.88	16	354.88	16	354.88	16	354.88	1419.52
6	Rehabilitation and Improvements to tanks under P.P.channel	43	10	13	130.00	13	130.00	13	130.00	13	130.00	520.00
	Total				**2689.05**		**2689.05**		**2689.05**		**2689.05**	**10756.20**

Annexure 2. The Consultative Process for District Agricultural Plan

அனுப்புநர்

திருமதி B. ஜோதி நிர்மலா, இ.ஆ.ப.
மாவட்ட ஆட்சியர்
கன்னியாகுமரி மாவட்டம், (இருப்பு) நாகர்கோவில்

பெறுநர்

1. வேளாண்மை சார்ந்த துறைத் தலைவர்கள்
2. வேளாண்மை மற்றும் கால்நடைப் பல்கலைக்கழ ஆராய்ச்சி நிலைய தலைவர்கள்
3. மாவட்ட பஞ்சாயத்து தலைவர்
4. பஞ்சாயத்து தலைவர்கள்
5. உழவர் மன்ற பிரதிநிதிகள்

தேசிய வேளாண்மை திட்டம் - கன்னியாகுமரி மாவட்டம்- நாள் 6.5.2008

பொருள் - தேசிய வேளாண்மை வளர்ச்சித் திட்டம் - கன்னியாகுமரி மாவட்டக் கூட்டம் - கலந்துகொள்ள கேட்டல்

பார்வை – வேளாண்மைப் பல்கலைக் கழக இயக்குநரின கடிதம் NADP/ TNAU/ CARDS/ DAP/ District meeting/ 2008 நாள் 28.4.08

தேசிய வேளாண்மை திட்டத்தில், ஒவ்வொரு மாவட்டத்திலுள்ள அனைத்து வேளாண்மை சார்ந்த துறைகள் ஒன்றுசேர்ந்து 2008-12 வருடத்தில் மேற்கொள்ள வேண்டிய வளர்ச்சித் திட்டங்களை விவாதிக்கவும் முடிவு செய்யவும் கேட்டுக்கொள்ளப் பட்டுள்ளது.

இதன்படி, கன்னியாகுமரி மாவட்ட வேளாண்மைத் திட்டம் பற்றிய கூட்டம் ஆட்சித்தலைவரின் தலைமையின் கீழ் நாஞ்சில் மன்றத்தில் 12. 5. 2008 திங்கள் கிழமை அன்று மாலை 6 மணிக்கு நடத்தப்படும். இந்த கூட்டத்தில் அனைத்து துறைகளும் தயாரித்த திட்ட முன்மொழிவு, கோவை வேளாண் பல்கலைக்கழக விஞ்ஞானிகளால் எடுத்துரைக்கப் பட்டு விவாதிக்கப் படும்.

எனவே, கன்னியாகுமரி மாவட்டத்தின் வேளாண்மை சார்ந்த அனைத்து துறைகளின் தலைவர்கள் இத்திட்டம் பற்றிய விவரங்களுடன் கலந்து கொள்ள கேட்டுக்கொள்ளப் படுகிறார்கள். வேளாண்மை மற்றும் கால்நடைப் பல்கலைக்கழக ஆராய்ச்சி நிலைய தலைவர்களும், பஞ்சாயத்து தலைவர்களும், விவசாய சங்க பிரதிநிதிகளும் இக்கூட்டத்தில் கலந்து கொள்ளவேண்டுமென்று கேட்டுக்கொள்கிறேன்.

ஒம் / B. ஜோதி நிர்மலா
மாவட்ட ஆட்சித்தலைவர்

// ஆணைப்படி //

மாவட்ட ஆடசியரின் நேர்முக உதவியாளர் (விவ)

அனுப்புநர்

திருமதி B. ஜோதி நிர்மலா, இ.ஆ.ப.
மாவட்ட ஆட்சியர்
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பெறுநர்

1. வேளாண்மை சார்ந்த துறைத் தலைவர்கள்
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தேசிய வேளாண்மை திட்டம் - கன்னியாகுமரி மாவட்டம்- நாள் 13.5.2008

பொருள் - தேசிய வேளாண்மை வளர்ச்சித் திட்டம் - கன்னியாகுமரி மாவட்டக் கூட்டம் - கலந்துகொள்ள கேட்டல்

பார்வை – இல்லமுலமக கடிதம் எண் தேசிய வேளாண்மை திட்டம் - கன்னியாகுமரி மாவட்டம்- நாள் 6.5.2008

கன்னியாகுமரி மாவட்ட வேளாண்மைத் திட்டம் பற்றிய முதல் கலந்தாய்வு மாவட்ட ஆட்சித்தலைவரின் தலைமையில் கீழ் 12. 5. 2008 அன்று நடத்தப்பட்டது. இந்த கூட்டத்தில் எடுத்த முடிவின்படி, வேளாண்மை மற்றும் வேளாண் சார்ந்த துறைகள் தயாரித்த திட்ட முன்வடிவின் முழு விவரமும் தமிழாக்கம் செய்யப்பட்டு அனுப்பப்படுகிறது.

இந்த திட்டம் பற்றிய இரண்டாம் கலந்துரையாடல் 20 05.08 செவ்வாய் அன்று மாலை 3.45 மணிக்கு மாவட்ட ஆட்சியர் தலைமையில் நாஞ்சில் மன்றத்தில் நடைபெற உள்ளது.

எனவே, திட்டங்களை தயாரித்த கன்னியாகுமரி மாவட்ட அளவைத்து துறைகளின் தலைவர்கள் இத்திட்டம் பற்றிய முழு விவரங்களுடன் கலந்து கொள்ள கேட்டுக்கொள்ளப்படுகிறார்கள். வேளாண்மை மற்றும் கால்நடைப் பல்கலைக்கழக ஆராய்ச்சி நிலைய தலைவர்களும், ஊராட்சி ஒன்றி பெருந்தலைவர்களும், பஞ்சாயத்து தலைவர்களும், விவசாய சங்க பிரதிநிதிகளும் இந்த கலந்தாய்வில் பங்கு கொள்ளவேண்டுமென்று கேட்டுக்கொள்கிறேன்.

ஒப் / B. ஜோதி நிர்மலா
மாவட்ட ஆட்சித்தலைவர்

// ஆணைப்படி //

மாவட்ட ஆட்சியரின் நேர்முக உதவியாளர் (வேளாண்மை)

NADP Sensitization Workshop and Discussion on District Agriculture Plan - Kanyakumari District on 12.05. 2008

District Collector addresses the Sensitization Workshop

TNAU Scientist presents the District Agriculture Plan

Farmers Representatives and Panchayat Presidents participation