NATIONAL AGRICULTURAL DEVELOPMENT PROGRAMME (NADP)

DISTRICT AGRICULTURE PLAN

CUDDALORE DISTRICT

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

2008

NATIONAL AGRICULTURE DEVELOPMENT PROJECT
DISTRICT AGRICULTURE PLAN

PROJECT TEAM

Overall Coordination	**:**	**Dr. K. Palanisami, Director, CARDS and Nodal Officer (NADP)**
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Tamil Nadu Agricultural University

Prof. C.RAMASAMY
Vice-Chancellor

COIMBATORE-641 003
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FOREWORD

Date.....

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

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

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

(C. RAM AS AMY)

Coimbatore
June 30, 2008

Dr. K. Palanisami
Director, CARDS

Tamil Nadu Agricultural University
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PREFACE

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

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

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

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

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

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

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

Date: 30.06.2008

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

EXECUTIVE SUMMARY

Taking into cognizance, the resolution adopted by the NDC for attaining a minimum of four percent growth in agriculture during XI plan period and the consquent launching of National agricultural development Programme (NADP/RKVY) under Special Additional Central Assistance scheme, the development of District Agricutlural plan (DAP) has been taken up for Cuddalore district. The thrust areas considered are raising the productivity levels of major field and horticultural crops, crop diversification, farm mechanisation, water and soil conservation, rehablitation of water bodies, improving the livestock and fisheries production, farming systems development and the like activities.

The district planning unit, consisting of the Heads of Agricultural research stations/Krishi Vigyan Kendra, one scientist from that campus, coordinating staff from the CARDS, TNAU, CBE and the officials of the line departments in the district, has been formed under the chairmanship of the District Collector. The sensitization workshop was conducted to the TNAU staff of KVK and officials of the line departments of the District. Several meetings were also conducted under the chairmanship of Agricultural Production Commissioner and Secretary to Government of Tamil Nadu.

The development projects were prepared and presented by the respective line departments in the meeting held under the chairmanship of the District Collector and finalized. The consolidated draft District Agricultural Plan has been prepared by the CARDS, TNAU, Coimbatore.

Complete resource mapping of the district has been attempted in Chapter - II by compiling and reviewing the secondary data, so as to have an understanding of the resource potentials of the district and to define the vision and strategies. Through SWOT

anslysis the Strengths, Weaknesses, Opportunities and Threats of the district from the development prespective were identified and the district resource potentials were well-knitted into the development arena of the district.

The development issues were spelt out, the on-going programmes /schemes / projects have been outlined, the constraints, yield and technological gaps were discussed and finally the interventions have been recommded for the development of agriculture in chapter IV and allied sectors in the Chapter V.

Chapter - VI has been completely devoted for the district plan proper. In the perspective of agriculture development, the interventions were mainly focussed on productivity increase of paddy, millets, cotton, oilseeds, and pulses through the application of latest agricultural technologies. Wherever possible, thrust was given on area expansion and crop diversification through introduction of new and remunerative crops and farming systems approach.

The precision farming, increasing the productivity levels of fruits and vegetables, promoting export-oriented horticultural crops like mango, grapes, cashew etc., through the application of high-tech methods were the nature of interventions attempted to boost horticulture production in the district.

Feeding, breeding and health management and marketing of milk and milk products were the thrust areas tapped for the development of livestock activities in the district. The development of infrastructure and institutions and toning up of the milk collection and marketing operations were the interventions planned for dairy development in Cuddalore district. Special attention was bestowed for fodder production, calf and heifer rearing and hygenic milk production. The development of small ruminants was also given due consideration in the planning process.

In the context of labour and water scarcities, specific thrust was given for the widespread adoption of labour saving agricultural machinery and water conserveation measures. Thus, the interventions planned actually aimed at intensive farm mechanisation and popularisation of water harvesting/conservation technologies among the farmers.

Since the district has a coastal length of about 57.5 kms and a large number of inland water bodies, the interventions planned for fisheries development aimed at improving and tapping these water bodies through infrastructure development and provision of fish catching accessories on scientific lines. Nursery raising, mechanising the boating devices, construction of launching pads were also the interventions planned for fishery development in Cuddalore district.

Marketing of farm products is essential for agricultural development. Therefore, interventions planned for marketing and agri-business development in Cuddalore district were oriented towards the development of regulated markets and uzhavar shandies, in addition to capacity building to the stake holders, organisational innovations and information technology support.

For irrigation systems development, all the three major water basins viz., Coleroon river basin, Vellar river basin, South Pennar river basin were given due recognition, in addition to systems and non-system tanks. Desilting of tanks and water ways, renovation of dilapidated water structures and devices, strengthening the tank and canal bunds, modernisation of approach roads to water bodies and water ways were the major interventions planned for improving the irrigation systems in Cuddalore district.

For the above interventions planned for the development of both agriculture and allied sectors in Cuddalore district, the projects were formulated sector-wise and the financial implications have been budgeted, as detailed below.

Budget Summary of XIth Plan under NADP in Cuddalore District

(Rs. in lakhs)

Sl. No	Sector Name	2008-09	2009-10	2010-11	2011-12	Total
1	Agriculture	2111.29	1843.17	1840.42	1827.42	7622.30
2	Horticulture	863.38	1172.92	1540.65	2130.27	5707.22
3	Animal Husbandry	570.67	147.54	144.47	140.47	1003.15
4	Fisheries	174.11	93.63	108.63	162.75	539.12
5	Agricultural Engineering	1126.83	1255.25	1194.53	1535.51	5112.12
6	Agricultural Marketing	75.55	449.69	378.85	359.68	1263.77
7	Public Works Department	1453.50	1674.00	2940.00	2137.00	8204.50
Total		**6375.33**	**6636.20**	**8147.55**	**8293.10**	**29452.18**

In sum, an overall budget outlay of Rs.29452.18 lakhs is required for implementing the various projects proposed under both agriculture and allied sectors during XIth plan under NADP in Cuddalore district.

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 11th 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.

Sensitization Workshop

A series of Sensitization Workshops 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's Meeting held on 24.05.2008 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 Collector's Meeting was incorporated before finalization of the District Agriculture Plan. The Strategic Research Extension Plan and Agriculture Technology Management Agency reports were also reviewed and relevant details have been incorporated in the draft report.

CHAPTER – II

GENERAL DESCRIPTION OF THE DISTRICT

2.1 Introduction

The history of the systematic administration of the Land Revenue of erstwhile South Arcot District begins with the acquisition from the Nawab in 1801, when the Nawab made over the Carnatic to the Company, Captain Graham, who was appointed to take charge of the District lying between Palar and Portonovo rivers and became the first Collector of South Arcot. The then district consisted of the 21 taluks of Arcot, Vellore, Thiruvathur, Polur, Arani (The Jagir of that name) Wandiwash, Chetpet, Thiruvannamalai, Gingee, Tindivanam, Valudavur, Villupuram, Anniyur, Tirukoilur, Thiruvennainallur, Tiruvadi, Elavanasur, Kallakurichi, Vridhachalam, Tittagudi and Bhuvanagiri but excluded the form of Fort St. David and the territory of Pondicherry, both of which had been separately acquired and were separately administered. In April 1805, the then taluk of Mannarkudi (which was included in what is now known as Chidambaram) was added from Tiruchirapalli to this huge charge. In 1808, However Arcot, Vellore, Thiruvathur, Polur, and Arani Jagir were transferred to North Arcot and Wandiwash to Chengelput while the Fort St. David and Pondicherry villages (which at different time had been under both, the Collector and the commercial resident at Cuddalore) were incorporated with the District.

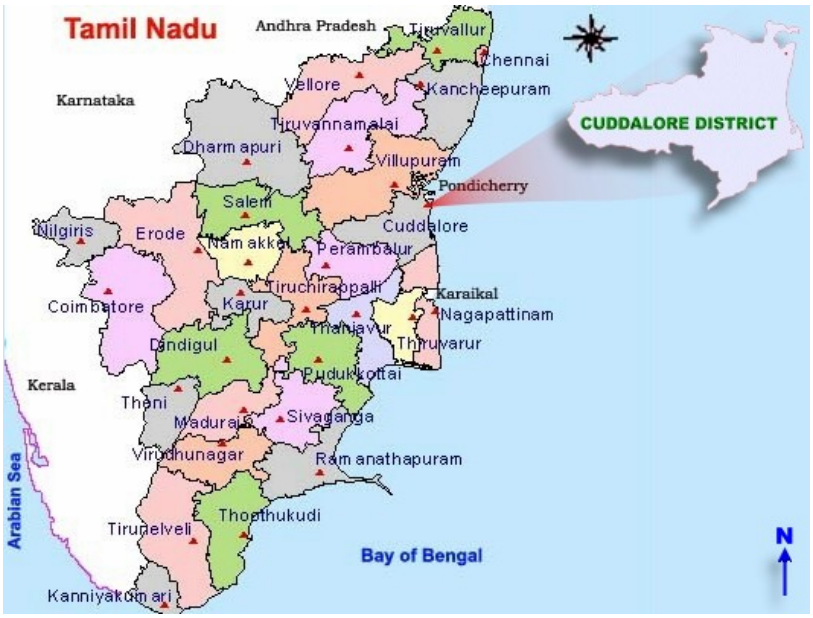


Fig 1. Map Showing the Location of Cuddalore District

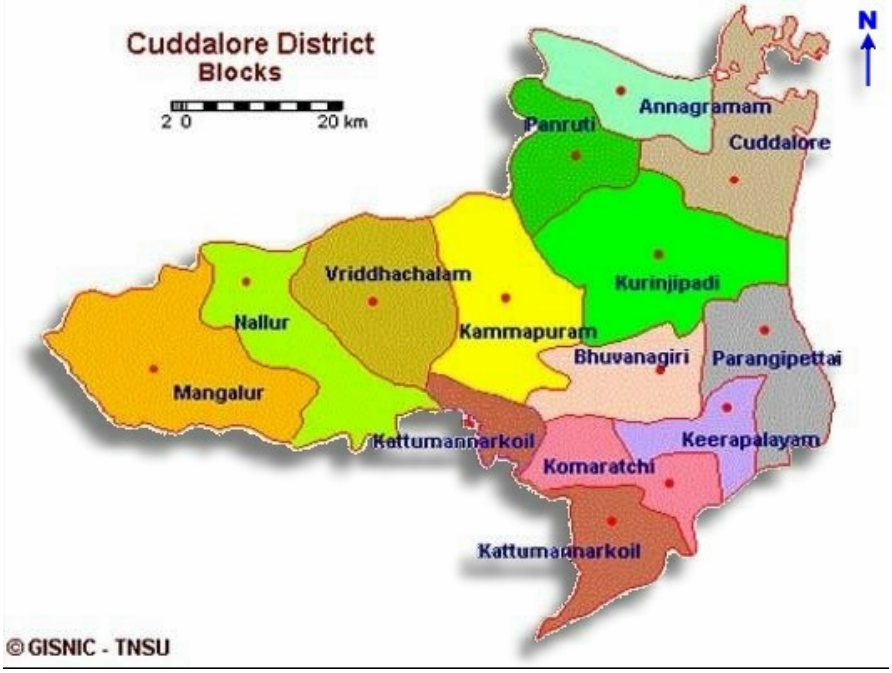


Fig 2. Map Showing the Blocks of Cuddalore District

In 1816, Pondicherry was finally restored to the French and erstwhile South Arcot assumed practically its position**.** Cuddalore**,** was District Headquarters for South Arcot District for more than a century. This has been mentioned everywhere in the history. The present Cuddalore District has been formed on 30.9.1993, by bifurcating the South Arcot district into two *viz*., Cuddalore and Villupuram.

2.2 District at a Glance

2.2.1 Geographical Location

The district lies in the North Latitude between 15^{o} 5'/11^{o} 11' and 12^{o} 35'and East Longitude between 78 ^{o} 38' and 80^{o}.Cuddalore District is predominatory agricultural district with coastal line stretching from Pondy Union Territory in the North to the mouth of the River Coleroon in the South. The total geographical district is 4283 sq.km with coastal line of 68 kms. The boundaries of the district are:

East	:	Bay of Bengal
West	:	Villupuram District
North	:	Union Territory of Pondicherry
South	:	Coleoom River

2.2.2 Administrative Divisions

The Cuddalore district is divided in three revenue divisions, six taluks, 13 blocks, 681 village panchayats 896 revenue villages. The names of taluks and blocks are listed in Table 2.1.

Table 2.1 Names of Revenue Divisions, Taluks in Cuddalore District

Sl. No	Name of Taluk
1	Cuddalore
2	Panruti
3	Kattumannarkoil
4	Vridhachalam
5	Thittakudi
6	Chidambaram Taluk

Names of Revenue Divisions, Blocks in Cuddalore District

Sl. No	Name of Block
1	Cuddalore
2	Panruti
3	Annagramam
4	Kurinjipadi
5	Parangipettai
6	Keerapalayam
7	Bhuvanagiri
8	Kumaratchi
9	Kattumannarkoil
10	Kammapuram
11	Vridhachalam
12	Mangalore
13	Nallur

2.2.3 Demography

The details on the male, female and total population as per 2001 Census are presented below in Table 2.2.

Table 2.2 Population of Cuddalore District

(Number)

Sl.No	Block	Male	Female	Total
1	Cuddalore	170666	188966	359632
2	Annagramam	86757	86041	172798
3	Panruti	164010	158574	322584
4	Kurinjipadi	102419	100094	202513
5	Parangipettai	61332	62173	123505
6	Keerapalayam	82506	82601	165107
7	Bhuvanagiri	53355	52467	105822
8	Kumaratchi	64222	64142	128364
9	Kattumannarkoil	64807	63444	128251
10	Kammapuram	72132	69696	141828
11	Vriddachalam	86946	84613	171559
12	Mangalur	72579	74079	146658
13	Nallur	67819	67076	134895
	Total	**1149550**	**1153966**	**2303516**

Source: Records of the office of the Assistant Directorate of Statistics

Total population of the district is 230.35 lakhs and the male and female population respectively is 114.96 and 115.49. Above three lakhs population is found in the blocks of Cuddalore and Panrutti. The population in Kurupalayam, Annanagaram, Virudachalam and Kurinjippadi ranges from 1.65 to 2.50 lakhs in all other blocks population is less than 1.4 lakhs. The literacy percentage in the district as a whole works out to 63.91 per cent . It is 36.98 per cent among males and 26.92 per cent among females as could be seen in Table 2.3, below.

Table 2.3 List of Male Female Literate Persons in Cuddalore District

Sl. No	Block	Literate Persons				Total	
		Male	Percentage	Female	Percentage	No.	Percentage
1	Cuddalore	125609	14.74	99118	15.98	224727	15.26
2	Annagramam	58217	6.83	45730	7.37	103947	7.06
3	Panruti	121189	14.22	87886	14.17	209075	14.20
4	Kurinjipadi	69141	8.12	47345	7.63	116486	7.91
5	Parangipettai	43935	5.16	34445	5.55	78380	5.32
6	Keerapalayam	59896	7.03	49582	7.99	109478	7.44
7	Bhuvanagiri	38569	4.53	27760	4.48	66329	4.51
8	Kumaratchi	48649	5.71	39201	6.32	87850	5.97
9	Kattumannarkoil	47728	5.60	35864	5.78	83592	5.68
10	Kammapuram	83176	9.76	50850	8.20	134026	9.10
11	Vriddachalam	60465	7.10	43432	7.00	103897	7.06
12	Mangalur	50733	5.95	30585	4.93	81318	5.52
13	Nallur	44680	5.24	28438	4.59	73118	4.97
	Total	**851987**	**100**	**620236**	**100**	**1472223**	**100**

Source:Asst director of Statistics, Cuddalore

2.2.4 Occupational Distribution

The details on the occupational distribution in the district are furnished below, in Table 2.3.

Table 2.4. Occupational Distribution in Cuddalore District

(Number)

Sl. No	Block	Cultivators	Agricultural laborers	Industrial labours	Marginal workers
1	Cuddalore	10316	37862	5212	124849
2	Annagramam	12389	37146	1641	14646
3	Panruti	53579	17073	1968	25316
4	Kurinjipadi	19418	16400	1826	17459
5	Parangipettai	5365	11828	770	16703
6	Keerapalayam	8911	19412	1778	17388
7	Bhuvanagiri	6411	14897	1552	12535
8	Kumaratchi	9557	18138	991	14798
9	Kattumannarkoil	16275	17633	1381	21662
10	Kammapuram	14028	18802	864	18987
11	Vriddachalam	21787	21971	275	4107
12	Mangalur	27564	23633	845	15221
13	Nallur	21163	20064	1190	18972
	Total	**226763**	**274859**	**20293**	**322643**

Source:Asst Director of Statistics, Cuddalore

There are 2.27 lakhs cultivators, 2.75 lakhs agricultural workers, 0.20 lakh industrial labourers and 3.23 lakhs of marginal workers in the district. Thus the marginal and agricultural labourers are in large numbers in this district.

2.2.4 Soils and Topography

The total red soil comprises 367791 Ha, Sandy clay loam 128573, Clay loam 115565 ha, sandy loam 91679 and sandy soil 31974 in Cuddalore District. The name of the soil series, area under the particular soil series is given in the following Table 2.5.

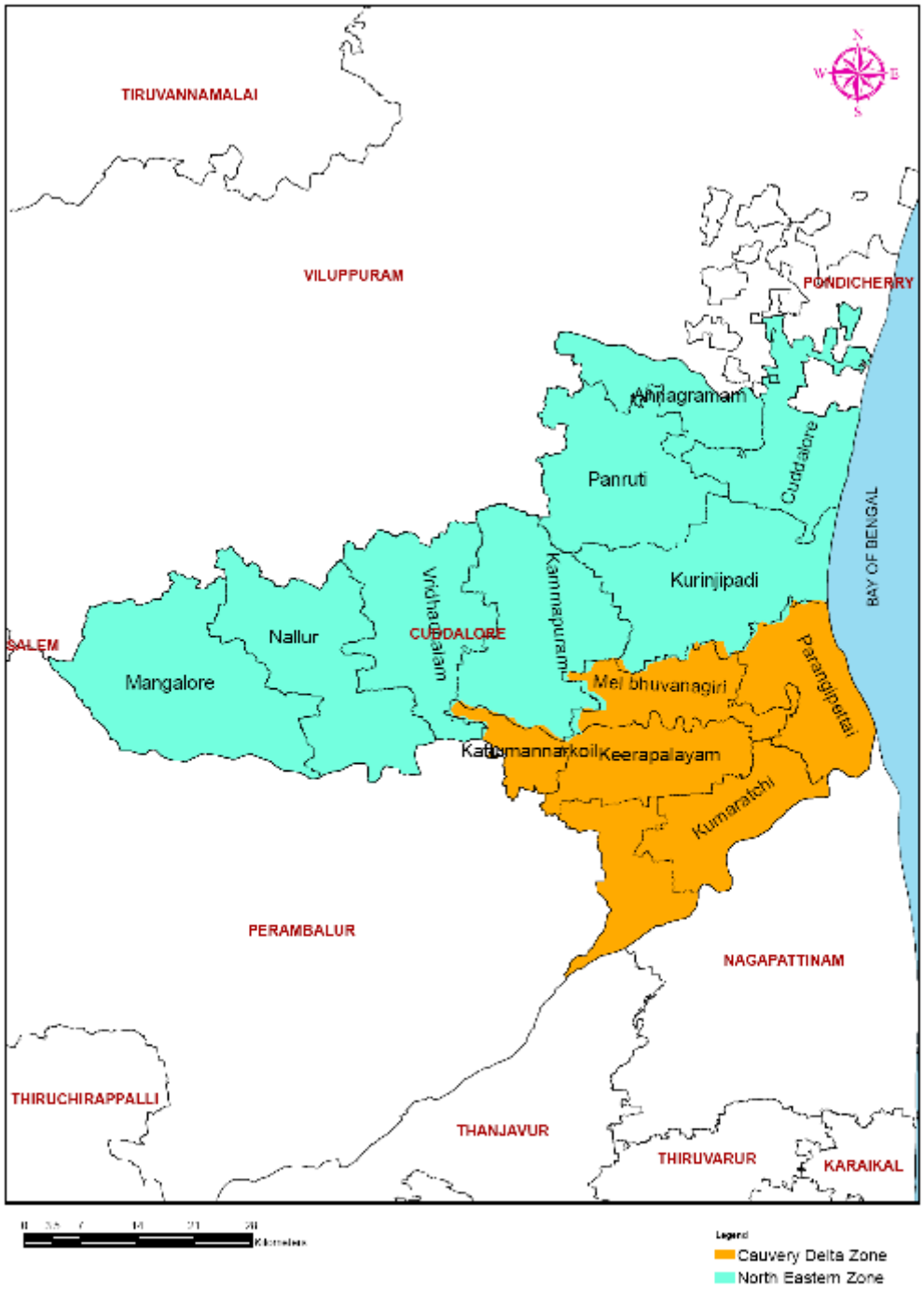
Table 2.5 Major Soil Types and Area Under Each Soil Types in Cuddalore District

Sl. No.	Block	Major Soil Types /Ha				Total
		Sandy loam	Sandy	Clay loam	Sandy clay loam	
1	Cuddalore	14221	416	2569	8441	**25647**
2	Panruti	15573	204	1863	12653	**30293**
3	Annagramam	2639	114	9582	4645	**16980**
4	Kurinjipadi	3756	547	17623	17896	**39822**
5	Parangipettai	12373	456	2456	7613	**22898**
6	Keerapalayam	1756	45	12356	9584	**23741**
7	Bhuvanagiri	4569	215	8569	6784	**20137**
8	Kumaratchi	1256	31	9862	10126	**21275**
9	Kattumannarkoil	10493	463	5642	8456	**25054**
10	Kammapuram	8150	235	10586	12536	**31507**
11	Vridhachalam	10268	1236	9869	9056	**30429**
12	Mangalore	3569	15656	14698	10827	**44750**
13	Nallur	3056	12356	9890	9956	**35258**
	Total	**91679**	**31974**	**115565**	**128573**	**367791**

Cuddalore Soils and Area in Hectare

Soil Description	Area (ha)
Deep, fine, mixed, Alfisols	59855.43
Very deep, fine, montmorillonitic, Vertisols	54649.03
Deep, fine, mixed, Inceptisols	45989.02
Deep, fine loamy, mixed, Inceptisols	37420.55
Moderately shallow, fine loamy, mixed, Inceptisols	28400.74
Deep, fine, montmorillonitic, Vertisols	24702.52
Shallow, clayey, mixed, Inceptisols	12937.03
Very deep, coarse loamy, mixed, Inceptisols	11862.93
Moderately deep, fine, mixed, Alfisols	10243.66
Very shallow, loamy, mixed, Entisols	5011.31
Very deep, fine loamy, mixed, Inceptisols	3747.74
Deep, fine silty, mixed, Inceptisols	2875.46
Moderately shallow, loamy skeletal, mixed, Entisols	1990.67
Shallow, loamy, mixed, Inceptisols	1939.06
Deep, contrasting particle size, mixed, Inceptisols	1860.99
Shallow, clayey, mixed, Alfisols	1799.81
Deep, coarse loamy, mixed, Entisols	1785.56
Very deep, coarse loamy, mixed, Entisols	1392.92
Moderately shallow, fine loamy, mixed, Alfisols	1222.16
Very deep, very fine, montmorillonitic, Inceptisols	1219.71
Moderately deep, fine loamy, mixed, Inceptisols	933.99
Very deep, coarse loamy, mixed, Alfisols	754.02
Very deep, fine loamy, mixed, Entisols	692.87
Moderately deep, fine, mixed, Inceptisols	692.32
Very deep, fine loamy, mixed, Alfisols	679.72
Very deep, fine, mixed, Entisols	672.26
Very deep, fine silty, mixed, Entisols	483.24
Moderately deep, fine loamy, mixed, Alfisols	357.35
Deep, fine loamy, mixed, Alfisols	334.03
Deep, sandy, mixed, Entisols	327.65
Very deep, fine, kaolinitic, Alfisols	300.07
Very deep, sandy, mixed, Entisols	219.05
Moderately deep, coarse loamy, mixed, Entisols	167.69
Shallow, clayey skeletal, mixed, Alfisols	115.40
Deep, coarse loamy, mixed, Inceptisols	45.15
Moderately shallow, fine, mixed, Inceptisols	0.17

AGROCLIMATIC ZONES OF CUDDALORE DISTRICT



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North Eastern Zone

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

North Western Zone

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

Western Zone

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

Cauvery Delta Zone

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

Southern Zone

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

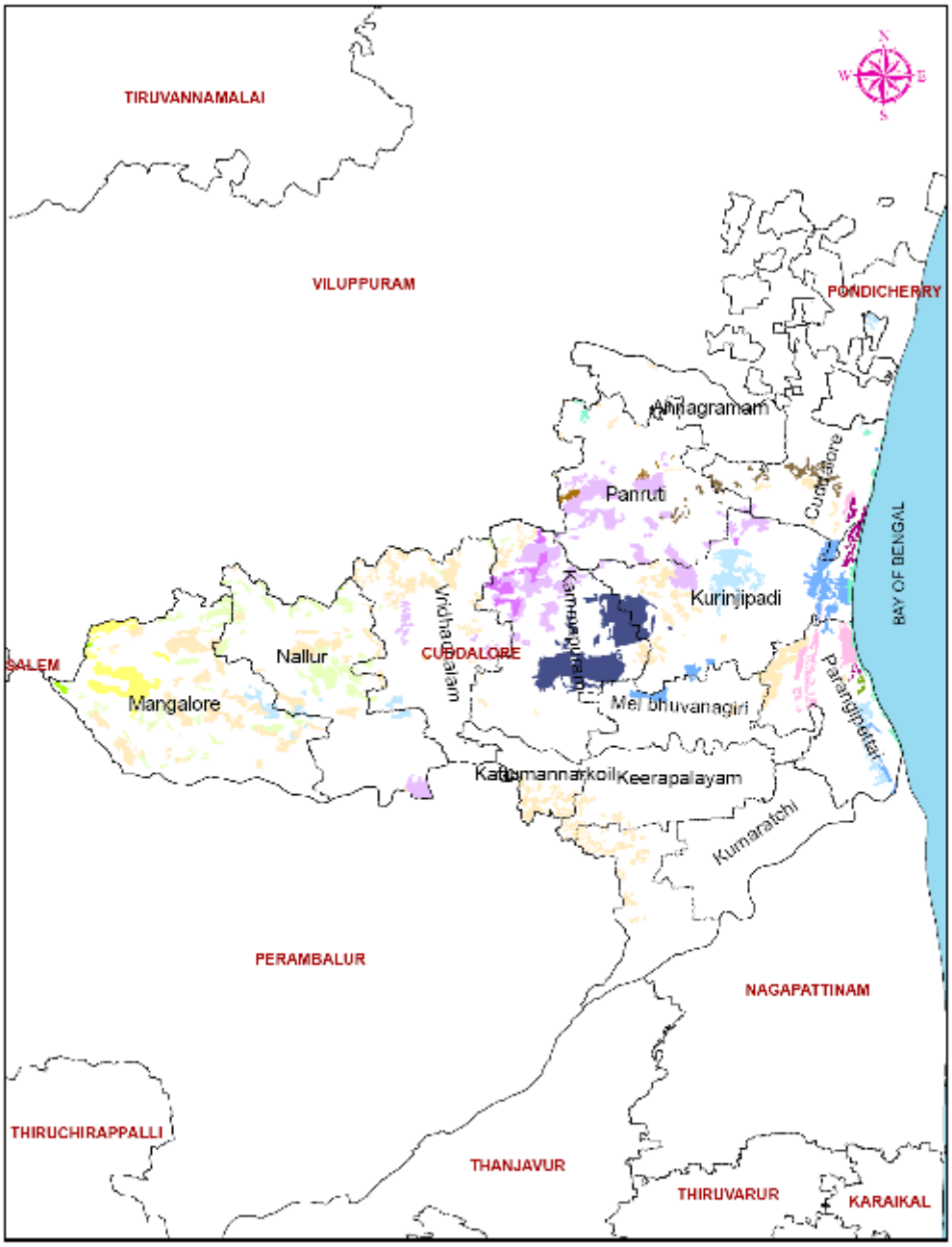
High Rainfall Zone

Kanayakumari district.

High Altitude and Hilly Zone

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

LAND DEGRADATION MAP OF CUDDALORE DISTRICT



Explanation of Different Land Degradation Categories

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

Water Erosion

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

1. ***Sheet erosion***

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

2. Rills

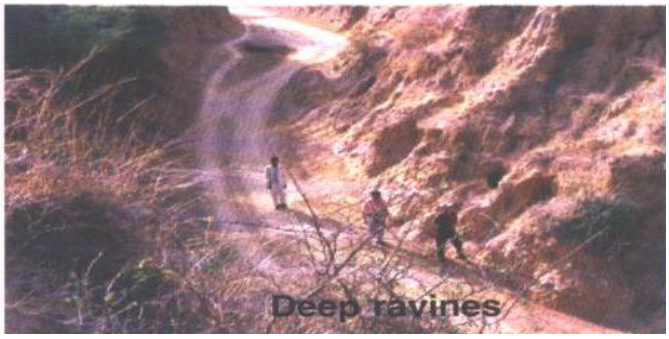
When the surface runoff goes in the form a concentric flow, a tiny water channels are formed in the field. These are small rivulets of such a size that they can be worked over with farm machinery. Rills are generally associated with the cultivated lands and are visible in the ploughed soil after first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

3. Gullies

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

4. Ravines

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



Wind Erosion

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

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

5. Sheet Erosion

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

6. Stabilized Dunes / Partially stabilized Dunes

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

Stabilized sandune

Partially stabilized sanddune

7. Un-stabilized dunes

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

Water logging

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

8. Surface Ponding

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

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

9. Sub-surface Water logging

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

10. Salinization / Alkalization

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

Salinity

Sodic

11. Acidification

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

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

Glacial

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

12. Frost Heaving

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

13. Snow covered areas

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

Degradation due to Anthropogenic factors

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

14. Industrial effluent affected areas

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

15. Mining and dump areas

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

16. Brick kiln areas

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

Others

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

17. Mass movement/ Mass wastage

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

18. Barren rocky / stony areas

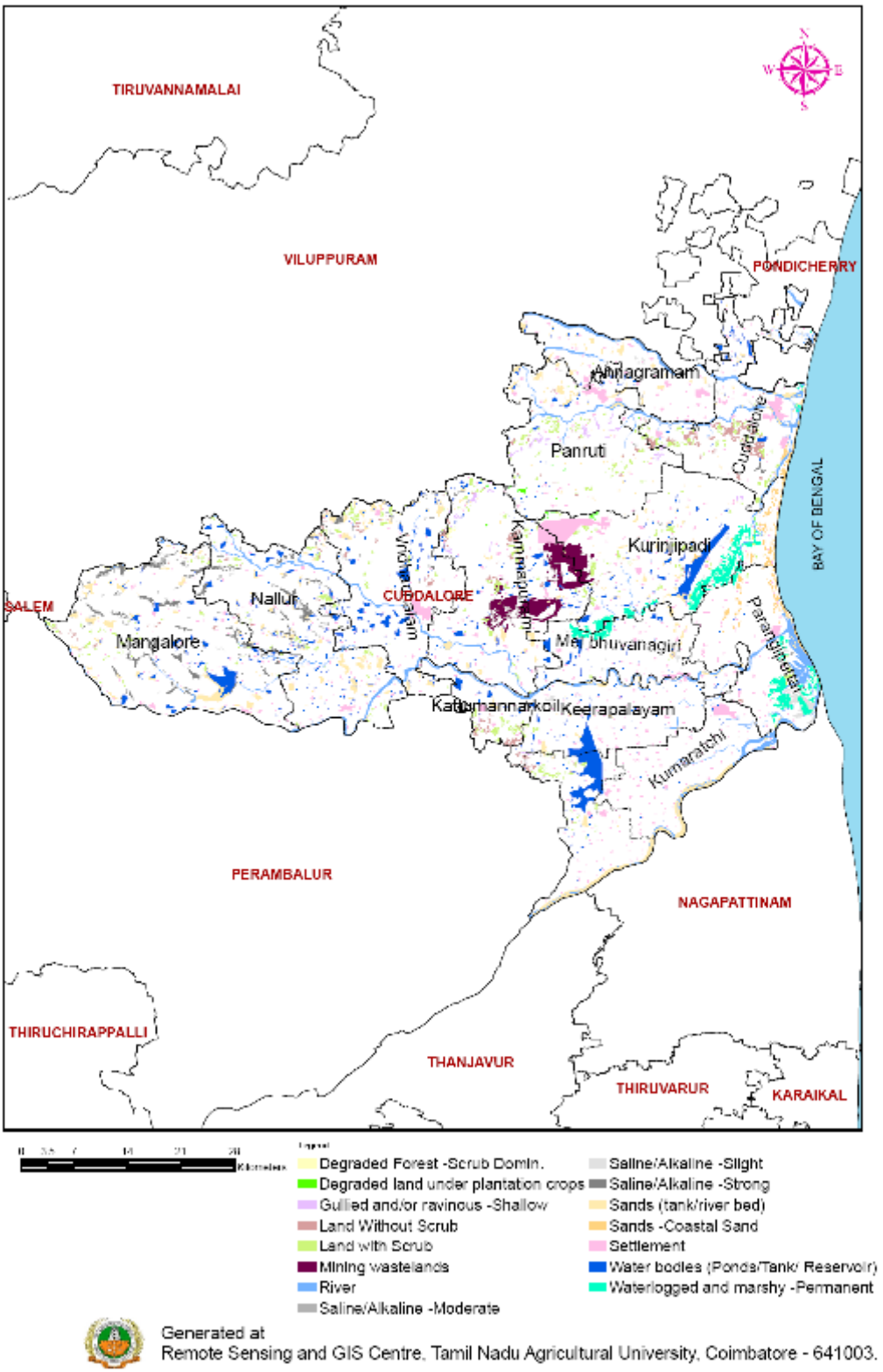
Barren / rocky / stony areas are the rock exposures of varying lithology often barren and devoid of soil and vegetal cover. They occur in hill forests as openings or as isolated exposures on plateau and plains. These can be easily delineated from other type of degraded land because of their severe nature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

19. Miscellaneous

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

Sea Ingress areas

WASTELAND MAP OF CUDDALORE DISTRICT



Generated at
Remote Sensing and GIS Centre, Tamil Nadu Agricultural University, Coimbatore - 641003.

Wasteland Classification

Culturable Wastelands

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

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

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

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

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

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

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

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

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

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

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

Unculturable Wastelands

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

i. Barren rocky / stony wastes / sheet rock area.

ii. Steep sloping area - Land with very steep slopes (greater than 35 degrees); Prone to erosion and mass wasting (Landslides).

2.2.5 Climate and Rainfall

Regarding Rainfall the district receives total rainfall 1448 mm. It includes both the south west and North East (423mm, 1025 mm). The last five-year season-wise rainfall is as follows.

Table 2.6 Season-wise Rainfall in Cuddalore District

Sl. No	Year	South West (mm)	North East (mm)	Total (mm)
1	2003	200.8	570.1	770.9
2	2004	434.0	779.2	1213.2
3	2005	437.6	779.2	1216.8
4	2006	340.3	1346.1	1686.4
5	2007	423.6	1024.9	1448.5

2.2.6 Land Use Pattern and Land Holdings

The land use pattern of the Cuddalore district for the last three years is given in the Table 2.7.

Table 2.7. Land Use Pattern of Cuddalore District

Sl. No.	Nature of use	2004 – 05		2005 - 06		2006 – 07	
		Area (ha)	Percen-tage	Area (ha)	Percen-tage	Area (ha)	Percen-tage
1	Forest lands	1415	0.38	1415	0.38	1415	0.38
2	Barren and Uncultivable waste	14647	3.98	14647	3.98	14647	3.98
3	Land put to Non-Agricultural uses	54545	14.83	55875	15.19	56185	15.28
4	Cultivable Waste	6655	1.81	6072	1.65	5570	1.51
5	Permanent and& grazing land	707	0.19	608	0.17	526	0.14

Table 2.7. contd…

Sl. No.	Nature of use	2004 – 05		2005 - 06		2006 – 07	
		Area (ha)	Percen-tage	Area (ha)	Percen-tage	Area (ha)	Percen-tage
6	Land under misc. tree crops and groves not included in not included in net Area sown	17899	4.87	19716	5.36	20815	5.66
7	Current follows	42242	11.49	35588	9.68	31783	8.64
8	Other fallow lands	14323	3.89	13969	3.80	13265	3.61
9	Net area sown	215348	58.55	219891	59.79	223575	60.79
	Total	**367781**	100	**367781**	**100**	**367781**	**100**

The net sown area was in increasing trend from 2004 to 2007.

The land holdings have been classified into marginal, small and large categories and the details are given in Table 2.8, below.

Table 2.8 Land Holding Pattern of the Farmers

Sl. No	Size class of holdings in Hectares	Number	Percentage	Area (Ha)	Percentage
1	Below 1.00	226927	77.46	101106.46	38.88
2	1.01 – 2.00	40382	13.78	53970.24	20.75
3	2.01 and above	25642	8.76	104967.71	40.37
	Total	**292951**	**100.00**	**260044.41**	**100.00**

It could be noted from the table above that, while 77.46 per centage of farmers are marginal, they operate only about 39 per cent of the area. On the other hand, the small farmers accounting for 13.78 per cent operate 20.75 per cent of the area. However, 8.76 per cent of the farmers operate 40.37 per cent of the area. Thus, the small farmers and marginal farmers are in large numbers and this merit consideration in the planning process.

2.2.7 Cropping Pattern

The major crops cultivated in Cuddalore district are Paddy, Sugarcane, Maize, Blackgram, Greengram and Groundnut. The area under crops (rainfed and irrigated) and season as follows. The area, production and productivity of major crops are furnished in the following table 2.8, table 2.9 and table 2.10.

Table 2.9 Cropping Pattern in Cuddalore District (2006 – 2007)

Sl.No	Name of the crop	Area (ha) (Rainfed / Dry)	Area (ha) (Irrigated/Source)	Season
1	Paddy	667	113529	Kuruvai/Samba
2	Maize	1400	56	Kharif/Rabi
3	Bajra	1097	229	Kharif/Rabi
4	Ragi	20	106	Kharif/Rabi
5	Greengram	1302	24	Kharif/Rabi
6	Blackgram	21944	412	Kharif/Rabi
7	Chillies	0	53	Kharif
8	Turmeric	0	105	-
9	Onion	0	110	Kharif
10	Banana	3000	1256	-
11	Sugarcane	0	39234	-
12	Sesame	2470	426	Kharif/Rabi
13	Groundnut	10048	12541	Kharif/Rabi
14	Coconut	700	2056	-
15	Cotton	831	425	Kharif
16	Flowers	0	759	-
17	Others	44582	10681	-
	Total	**88061**	**182002**	-

The details on the production of major crops of cuddalore district are furnished below in Table 2.9, below.

Table 2.10 Crop-wise Production Details (2006 – 2007)

Sl.No	Name of the crop	Production (mt) (Rainfed / Dry)	Production (mt) (Irrigated)	Season
1	Paddy	3468.4	590351	Kuruvai/Samba
2	Maize	2800	112	Kharif/Rabi
3	Bajra	1645.5	343.5	Kharif/Rabi
4	Ragi	25	132.5	Kharif/Rabi
5	Greengram	2343.6	43.2	Kharif/Rabi
6	Blackgram	39499.2	741.6	Kharif/Rabi
7	Chillies	0	31.8	Kharif
8	Turmeric	0	315	-
9	Onion	0	880	Kharif
10	Banana	450000	188400	-
11	Sugarcane	0	3923400	-
12	Sesame	7410	1278	Kharif/Rabi
13	Groundnut	25120	31352.5	Kharif/Rabi
14	Coconut	490	1439.2	-
15	Cotton	664.8	340	Kharif

The details on the productivity of major crops of cuddalore district are furnished below, in Table 2.10.

Table 2.11 Crop-wise Productivity in Cuddalore District (2006 – 2007)

(Kg/ ha)

Sl.No	Name of the crop	Yield (Rainfed / Dry)	Yield (Irrigated)	Season	Maximum achieved
1	Paddy	-	3272	Samba	5252
2	Maize	1950	2450	Kharif	3219
3	Sorghum	320	450	Kharif	626
4	Bajra	1097	1650	Kharif	1766
5	Ragi	1750	2220	Kharif	2409
6	Groundnut	2250	2650	Kharif/Rabi	3158
7	Sesame	320	550	Kharif/Rabi	675
8	Sunflower	1340	1650	Kharif	2126
9	Sugarcane	-	120 mt	-	240 mt
10	Blackgram	480	650	Kharif/Rabi	867
11	Greengram	301	450	Kharif/Rabi	548
12	Redgram	645	-	Kharif	850
13	Cowpea	440	-	Kharif	755
14	Cotton	450	650	Kharif/Rabi	1108

2.2.8 Rivers , Irrigation and Ground Water

Cuddalore district is endowed with the following five river basins

1. Cauvery- coleroon rever basin
2. Vellar river basin
3. Manimuthar river basin
4. Pennaiyar rever basin and
5. Gadilam river basin

The present conditions of the above river basins are highlighted in this section.

2.2.8.1 Cauvery- Coleroon River Basin

Heavy rain and consequent discharges of surplus water from the dams in cauvery basin of Karnataka state result in overflooding of the basin particularly in the southwest monsoon season. Similarly the local heavy rain during North East Monsoon also causes heavy flooding, in most years.

The river Coleroon is the drainage carrier of Cauvery, branching out near upper anicut. Normally the entire flood water of Cauvery surplusing from Mettur dam is being diverted to Upper Aniuct and coleroon direct and also through Grand anicut to Coleroon.The total length of river Coleroon is 160 miles starting from Upper anicut and passing through the districts of Trichy, Perambalur, Ariyalur, Thanjavur, Cuddalore and Nagapattinam falling finally into the Bay of Bengal.

Lower Anicut is the only anicut situated at mile 67/3 across Coleroon river. The Cuddalore and Nagapattinam Districts are directly benefited to an extent of 1,31,799 acres. The Left Bank of Coleroon from mile 67/3 to 100/2 is under the control of Coleroon Basin Division, Chidambaram, which is in Cuddalore District. This anicut gets flood discharges from Upper anicut, Grand anicut and its own catchment areas. In October, 2005, the Mettur dam received heavy surplus water from Karnataka and about 2,90,482 cusecs was surplused into Coleroon river on 26-10-2005. Due to the above heavy discharge realized in the river Coleroon, the Left Bank in many places were overwashed and hence damaged.

The lower anicut across the coleroon river in normal course of the year, stagnates a normal flow of water in the river and a part is diverted to Cuddalore district through north Rajan cannal and Vadavar. The Rajan cannal traverses parallel to the coleroon river to a logoon of 25 km from lower anicut to the low level than the bed of coleroon river, irrigating major areas of Kattumannar koil and Chidambaram taluks. The Vadavar river traverses from lower anicut 10 miles north-ward and ends in the southern tip of Veeranam tank at Lalpet of Kattumanar koil taluk, feeding the whole Veeranam tank. From the northern tip of the Veeranam tank, the water is let in to the Sethaiyathope anicut across Vellar river and the water flows north-ward feeding the Perumal Eri irrigating parts of Chidambaram and Cuddalore taluks.

The tanks for Irrigation in the Coleroon Basin in Cuddalore district are very ancient and constructed in Chola and Pallava periods. The System tanks get supply from the anicuts and their own catchment areas during rainy season. The Channels do not get continuous supply because the monsoon runoff in the area is meager with a shorter duration of rain. Sometimes, on the formation of depression in Bay of Bengal, heavy to very heavy rains are received but flows as flood, as the rain water could not be stored and utilised fully for getting the maximum advantage and most of the channels and tanks remain silted up. The livelihood of the people in this basin depends on agriculture only.

The names, locations and ayacut areas of anicuts, tanks and command areas under the Coleroon basin are presented below, in Table 2.11

Table 2.12 Names of Anicuts / Tanks and ayacut Areas Under Cauvery – Coleroon River Basin

Sl.No.	Name of anicut / Tanks	Ayacut in Ha.
A	**Anicut**	
1.	Lower Anicut	43360
2.	Sethiathope anicut	16465
	Total	**59825**
B	**Tanks**	
1.	System tanks (15 Nos.)	29200
2	Non-System Tanks (3 Nos.)	273.27

2.2.8.2 Vellar River Basin

The Vellar river basin is one of the 17 river basins of Tamil Nadu and the basin lies in the Northern part of Tamil Nadu in South India, between the latitudes 11°13' N-12°00' N and Longitudes 78°13' E-79°47' E and in between Pennaiyar, Paravanar and Cauvery river basin. The total area of the basin is **7520.87 Sq. km.** The total length of the river is about 150 kms. The Vellar river originates in the Chitheri hills of Dharmapuri District in the name of Anaimaduvu river and Thumbar river Singipuram Aru originates at Jallattu reserve forest area at 8 kms east of Salem taluk in Salem District. The river Vellar drains into Bay of Bengal near Parangipettai in Chidambaram taluk of Cuddalore District.

The river Vellar is having six tributaries viz., Anaimaduvu, Swethanadhi, Kallar, Chinnar, Manimukthanadhi and Gomukhi. A portion of Dharmapuri, Salem, Namakkal, Perambalur, Trichy, Villupuram and Cuddalore districts are covered in Vellar river basin. Manimukthanadhi, which is the major tributary, originates from Kalrayan hills in Villupuram district, traverses about 111km and joins Vellar near Srimushnam in Chidambaram taluk of Cuddalore District. Singipuram Aru and Swethanadhi originate from Kolli hills, Kallar river originates from Pachaimalai hills, Chinnar draining Vannadu and Kombainadu, Manimuktha and Gomukhi rivers draining from Eastern slopes of Kalrayan hills. Thus, the Vellar basin is having the following river systems.

1. Vasista Nadhi
2. Swetha Nadhi
3. Chinnar River
4. Anaivari Odai
5. Manimuktha Nadhi
6. Gomukhi Nadhi and
7. Periya Odai

Among the above, the following five reservoirs are located in this basin.

Table 2.13 Reservoirs Located in Vellar River Basin

Sl. No	Name of the reservoir	Gross capacity in Mcum	Ayacut area in ha
1.	Anaimaduvu Reservoir	7.56	2119.00
2.	Kariyakoil Reservoir	5.38	1457.00
3.	Gomukhi Reservoir	15.86	2023.00
4.	Manimukthanadhi Reservoir	20.62	1720.00
5.	Willingdon Reservoir	73.40	11198.00
	Total	**123.07**	**18517.00**

Among the River systems indicated above, the following six major Anicuts are located.

Table 2.14 The Anicuts located in Vellar Basin

S. No.	Name of Anaicut	Ayacut in ha
1.	Pakkambadi	1103.00
2.	Tholudhur	636.06
3.	Pelandurai	5394.50
4.	Sethiathope	19466.00
5.	Memathur	2570.90
6.	Virudhachalam	3809.79
	Total	**32980.25**

The details of reservoirs, anicuts, tanks and command areas in Vellar basin are furnished in Table 2.14.

Table 2.15 Command Areas of Reservoirs and Anicuts in Vellar Basin

Sl. No.	Description	Number	Command Area (ha)
1	Reservoirs	5	18386.00
2	Anicuts	6	32980.25
3	Anicuts in Tributaries / No. of System Tanks	215 / 71	21516.00
4	Non System Tanks	386	6972.00
Total			**79854.25**

The most of the tanks and Irrigation sources have not been taken up for improvements in the past 15 years and only a few were taken up for improvements, subject to the availability of funds under the DAP. The following activities have been proposed .

1. Standardization of bund with adequate width and side slopes.
2. Desilting of tank beds and the standardization of bunds.
3. Dilapidated sluices are to be reconstructed.
4. Weir leakages are to be arrested by constructing a skin wall in the upstream or reconstruction.
5. Drops in the channels have to be reconstructed.
6. Spouts in the channels are proposed to be reconstructed.
7. Approach earthen roads leading to anicuts, reservoirs are to be black top pod with two courses of WBM.
8. Jeep able track in canal banks, in selected places.
9. Repairs to sluices and weirs.
10. Providing controlled shuttering arrangements to sluices.

Veeranam Tank

Veeranam tank, under Lower Coleroon anaicut system is the major tank with an ayacut of 44856 hectares. The length of its bund is 16.00 k.m. The fore-shore bund length

is 30.60 k.m. The original capacity of this tank was about 1400 Mcft. It has got 34 sluices, the sill level of thelowest is (+) 27.69. The sill level of the highest sluice is (+) 40.00. Besides supplying irrigation water, it serves as a source for the drinking water to Chennai Metropolitan water supply scheme also.

Wellington Reservoir

Wellington Reservoir is located in Keelacheruvai village of Thittagudi taluk. The reservoir capacity is 29'.71" with an ayacut area of 24059 acres. This reservoir is constructed during 1913-1923.

Sources of Irrigation in Cuddalore District

The major sources of irrigation in this district are well irrigation (open and tube well), tank irrigation and canal irrigation. Out of the entire source, major percentage net area irrigated area covered well irrigation and it occupies 56.26 percentage.

Table. 2.16 Sources of Irrigation in Cuddalore District (Area: Hec.)

Sources	Net area (ha)	Percen-tage	Total (ha)	Percen-tage
Canals	53,863	37.81	59,094	33.93
Tanks	6,741	4.73	6,936	3.98
Tube wells	74,443	52.26	99,671	57.22
Open wells	6,546	4.60	7,616	4.37
Other sources	856	0.60	856	0.50
Total	**1,42,449**	**100.00**	**1,74,173**	**100.00**

Table 2.17 Name of Channels Under Cauvery Delta Area – (Chidambaram and Kattumannar Koil)

S.No.	Name of the Channel	Ayacut area (ha)
1.	Vadavur	4740
2.	North Rajan	10934
3.	Khan Sahib & Kavarapattu	4997
4.	Veernam Tank	19776
5.	Vellar Rajan Vaikkal	8761
6.	Wallajah Eri	4557
7.	Perumal Eri	2601

Non. Cauvery Delta Area (Cuddalore, Panruti, Vridhachalam & Tittagudi Taluks)

Name of the Reservoir/Tank	:	Wellington
Ayacut Area(Ha)	:	9623
Location of Reservoir	:	Tittagudi

Other Sources of Irrigation

1. Tube Wells	:	77223
2. PWD / Minor Irrigation Tank	:	6525
3. Other Sources	:	857

2.2.8 Livestock

More then hundred veterinary institutions are present in this district. The population of livestock, poultry and breedable animals is furnished below in Tables 2.17, 2.18 and 2.19.

There are about 39 Veterinary Dispensaries, 5 Veterinary Hospitals, 89 clinic Sub Centres in the district to tack care of the health of the livestock population in this district.

Table 2.18 List of Veterinary Institution

Sl. No	Veterinary Institution	Nos.
1	Veterinary Hospitals	5
2	Veterinary Dispensaries	39
3	Clinical Centres	1
4	Sub Centres	89
	Total	134

The Livestock and Poultry Population existing in the district is presented in the Table 2.18

Table 2.19 Livestock and Poultry Population (2004)

Sl.No	Livestock and Poultry	No.
1	Cattle	3,43,131
2	Buffaloes	38,407
3	Sheep	57,607
4	Goat	2,51,160
5	Poultry	3,33,043

The number of animals and their breedable percentage is furnished in the following table 2.19

Table 2.20 Percentage of Breedable Population of Animals

Sl.No.	Particular	No. of Animal	Percentage
1	Cattle	186596	17.22
2	Buffalos	187404	17.30
3	Sheep	157608	14.55
4	Goat	551600	50.92

2.2.9 Fisheries

Cuddalore District is one of the most potential districts, not only for marine, but also for land and brackish water resources. The district has a coast line of 68 kms. There are 8104 ha of inland water resources as detailed below.

1. Major irrigation and long seasonal tanks - 5986 ha
2. FFDA tanks - 312 ha
3. Derelict water - 1000 ha
4. Aquaculture farms - 806 ha

The inland fisheries resources contribute 149 T and there are 11,735 Inland fishermen.

An Overview of Fisheries Activities

1 45 marine fishermen villages are located in the district

2 Cuddalore District is having a coastal length of 57.5 kilometers.

3 The total marine fishermen population is 47,000 and active fishermen are around 23,840.

4 The total members in the marine fishermen cooperative societies are 15,133 and members of fisherwomen cooperative societies 13,094.

5 The fishing fleet of Cuddalore District includes 606 mechanized boats, 1010 motorized country craft and 5580 traditional crafts.

6 There are three fish landing centres for mechanized boats in Cuddalore, Parangipettai and Mudasalodai.

7 Inland Fishermen Cooperatives Societies – 28

8 Total inland Cooperative Society fishermen – 2600

9 Total inland Cooperative Society fisherwomen – 400

10 In the inland sector 15 fish rearing centres owned by private sector

11 There is one shrimp hatchery (P. monodon) which is not functioning at present.

12 164 Nos. of shrimp aqua farms with 366.41 ha. water spread area.

13 Lot of scope for developing inland fish farming and brackishwater shrimp farming.

14 In the inland landings, major carps such as Catla, Rohu, Mrigal, Common Carp, Silver carp and fresh water prawns are available.

Table 2.21 Basic Details of Fisheries Sector

Length of Coastal line (KM)	69
No. of Coastal Block	57.5
No. of Coastal Block	3
No. of Coastal centers (Landing	3
Marine Fish Production (MT)	18000
Inland Fish Production (MT)	5823
No. of Fisherman engaged (Land/marine) :	13769

Major Mines

Lignite, Crude Oil and Natural Gas and Lime Shell are the major mineral mines present in this district.

Table 2.22 Major Mines Present in Cuddalore District and it Extent

Sl.No	Minerals	Name of the lesses	Taluks Covered	Extent
1	Lignite	Neyveli lignite corporations ltd.,	Chidambaram, Panruti,Vridhachalam, Cuddalore	259 Sq Km
2	Crude Oil and Natural Gas	Tvl Oil and Natural Gas Corporation ltd	Chidambaram, Bhuvanagiri	1.Sq.Km
3	Lime Shell	Lakshmi kumar Chidambaram	Chidambaram,Keelathirukazhipalai	8/2 4.61.5

2.4 Industry

Cuddalore district consists of various industries and industrial parks. The details on the major industries, chemical companies and various industrial parks are furnished in the Tables 2.22, 2.23 and 2.24 ,below.

Table 2.23. List of Industries Present in Cuddalore District

Sl. No	List of Industries	Numbers
1	No. of Working Factories	228
2	No. of Trade Unions	57
3	Large Scale Industries	35
4	Small Scale Industries	617
5	Cottage Industries	200
6	Medium Scale Industries	114

There are about 228 Working Factories, 57 Trade Unions, 35 Large Scale Industries, 617 Small Scale Industries and 200 cottage Industries in the district . The names eleven important industries are listed in Table 2.23,below

Table 2.24. Names of the Important Industries in the District

Sl. No.	List of Important Industries
1	Neyveli Lignite Corporation , Neyveli
2	MRK Sugar Mill, Sethiathope
3	EID Parry (I) Ltd, Nellikuppam
4	Ambiga Sugar Mills, Pennadam
5	TANFAC, Cuddalore O.T
6	Vanavil , Cuddalore O.T
7	National Cotton Mills, Chidambaram
8	SPIC Pharma Chemicals , Cuddalore O.T
9	Asian Paints(I) Limited, Cuddalore O.T
10	Tagros Chemicals (I) LTD., Cuddalore O.T
11	Clariant Chemicals LTD., Cuddalore O.T

Regarding Industrial park, Cuddalore district has three major parks at various locations indicated in the following table.

Table 2.25. Names of the Industrial Park

Sl. No	List of Industrial Park
1	SIPCOT , Cuddalore O.T
2	SIDCO, Semmandalam, Cuddalore a) Cuddalore b) Vridhahalam c) Vadalur
3	Neyveli Lignite Corporation, Neyveli

2.5 Transport and Communication

a. Transport

The Transport and communication particulars of Cuddalore district such as Roads railways and sea port are given below, in Table 2.25.

Table 2.26 Names of Transport and Sea Port in Cuddalore District

Particulars	Length (Kms)
I. Roadways	
National Highways	183.738
State Highways	1671.024
Corporation & Municipalties Roads	436.93
Panchayat Union & Panchayat Roads	4283.93
Town Panchayat & Township Roads	791.634
II. Railway	
Broad Guage	107
Meter Guage	81
No. of Railway Stations	27
Name of Sea Port	1

b. Communication

a) Post & Telegraph (in numbers)

1. Post offices doing postal business Alone : 488
2. Post offices doing Post and Telegraph business : 25

b) Telephones (in numbers)

1. No. of Telephones in use : 1,60,366
2. No. of Public call offices : 9413
3. No. of Telephone exchanges : 163

2.6 Electricity

a. Generation of Electricity (in M.U)

1.Thermal : 16242.43
2. Power purchased : 383.69 MU

c. Consumption of Electricity (in M.U)

1. Agriculture	:	630 M.U Per Annum
2. Industry	:	28.52 M.U Per Annum
3. Commercial	:	44.16 M.U Per Annum
4. Domestic & Water works	:	230.16 M.U Per Annum
5. Public lighting	:	39.35 M.U Per Annum
6. Miscellaneous	:	577.154 M.U Per Annum

c. Rural Electrification

1. No. of Pumpsets energized	:	1308
2. No. of Villages electrified	:	896
3. No. of Hamlets electrified	:	2660

2.7 Marketing

The following Marketing facilities for agricultural. Produce present in the Cuddaore district viz., Regulated Markets, Co-op marketing societies, Uzhavar Sandhai, Contract farming (crops / area covered), and Wholesale markets.The market committee is located in Cuddalore OT.

2.8 Education and Research Institutions

Educational Institutions

In Cuddalore Revenue District 1164 Elementary Schools, 259 Middle Schools, 184 Government and Government Aided High Schools and Higher Secondary Schools are functioning .Besides, 23 Matric Schools and 41 Matriculation Higher Secondary Schools are also functioning. Hence, in total 1692 Schools are functioning in Cuddalore District. As regards Cuddalore Revenue District one Chief Educational 0fficer is working in Cuddalore Taluk and District Head Quarters, and two District Education 0fficers have been working in respect of Cuddalore and Vridhachalam Division.

As regards elementary education, one District Education officer is working at Cuddalore. For the district as well as Panchayat Unions, 13 Assistant Elementary Educational officers and 13 Additional Assistant Elementary Educational 0fficers are working in the district.

As regards Collegiate education in the district, the following are the institutions available in the district.

1) No. of University	:	1
2) Arts and Science Colleges	:	8
3) Medicine – Allopathy	:	1
4) Engineering Colleges	:	4
5) Agricultural Colleges	:	1
6) Colleges for Special Education	:	2 (Music)
7) Teacher Training College	:	9

Research Institutions

The agricultural research station in Cuddalore District are Sugarcane Research Station, Cuddalore Regional Research Station, Vridhachalam and Vegetable Research Station, Palur are involved in carrying out research works focusing on sugar cane, groundnut and vegetables.

Sugarcane Research Station, Cuddalore

This is one of the Pioneer institutes involved in carrying out research works on sugarcane crop in Tamil Nadu. This institute was started initially at Palur during 1955 and subsequently shifted to Cuddalore during 1957. Nearly 12 early season varieties, 5 middle season varieties and 4 late season sugarcane varieties were released from this research institute so far. Co.C.671 is the variety released during 1975, which ruled in various parts of the state for more than 15 years. Here Co denotes Coimbatore and CoC denotes Cuddalore. Other varieties released in this institute are CoC 771, CoC 772, CoC 8001, CoC85061,CoC 86062, CoC 90063, Co 8021, CoC 91061, CoC 92061, Co 86249, CoC 98061, Co 6304, CoC 774, CoC 775, Co 8362, CoC 99061, CoC 771, CoC 778,

Regional Research Station, Vridhachalam

This is the oldest Cashew Research Station in India, working under the control of Tamil Nadu Agricultural University, Coimbatore. Research work for evolving suitable Cashew variety was commenced in this institute from 1963. So for four Cashew varieties were released from this institute. They are VRI.I, VRI.2, VRI.3 and VRI.4. The variety VRI.2 is the variety found to be highly adaptable not only in Tamil Nadu, but also all over India and it is recognized as a national variety.

Vegetable Research Station, Palur

Vegetable Research Station, Palur is located 17 Kms West of Cuddalore and 10 Kms East of Panruti. Total area of the research station is 55 Acres. This station is engaged in research activities from 1905 onwards. A mainly research activity on vegetable production technology is under-taken in this station. Brinjal variety PLR.1. Jack variety PLR.I and Chilli variety PLR.1 were released from this station so for.

2.3 Development Vision and Strategy

The vision and strategy from the development perspective have been outlined below.

Vision

The agricultural development vision for Cuddalore district has been defined as follows.

To improve the level of living of the rural families by increasing the farm productivity and hence production atleast with 4 per cent growth, through the application of science-based agricultural technologies.

Strategy

To fulfill the vision, the overall strategy is to generate additional employment and hence income among the rural households through:

(i) The application of latest crop production technologies to improve the productivity of crops and livestock.

(ii) The crop diversification by introducing new and more remunerative crops.

(iii) Encouraging scientific farming systems approach and

(iv) Development of agro-based industries.

CHAPTER - III

SWOT ANALYSIS

3.1 Introduction

SWOT Analysis is a strategic planning tool employed to evaluate the **S**trengths, **W**eaknesses, **O**pportunities, and **T**hreats involved in a project or in a business venture. It involves specifying the objective of the business venture or project and identifying the internal and external factors that are favorable and unfavorable to achieving that objective. The Strength, Weakness, Opportunity and Treat of Cuddalore districts are

3.2 SWOT Analysis of the District

Strengths

1. Cashew processing industry
2. Coastal line of 69 kilometers
3. Cauvery ayacut- water assurance at least for one season through cannal in south eastern parts of the district.
4. Agro-based industries and industrial estates
5. Sugar mills
6. Naively Lignite Corporation and electricity supply
7. Well functioning regulated markets
8. Sizable paddy area and production
9. Sizable groundnut area and production
10. High literacy percentage of 62
11. Big Irrigation tanks and well-knitted irrigation systems
12. Large number of small ponds and tanks
13. Well-knitted road and rail transport and easy reach to state capital viz., Chennai.
14. Presence of industrial estate
15. Presence of Annamalai University and agricultural college.
16. Presence of full-fledged development departments.

Weaknesses

1. Uneven rainfall and heavier in coastal areas compared to interior areas.
2. Fragmented land holdings.
3. Rivers are seasonal.
4. Greater dependence on ground water resulting in depletion of groundwater potential (Well irrigation was very high in this District).
5. Three main blocks are coming under over exploited region with reference to groundwater potential
6. Heavy dependence on Agriculture.
7. Lack of motivation and entrepreneurship among rural folk
8. No organized fishing harbour and marketing centre for fish even though the district has a coastal line of 30 Kms.
9. Nearness to Pondichery, which is offering a lot of concessions for setting up medium and large scale industries in its territory

Opportunities

1. Scope for strengthening cashew cultivation and processing industry
2. Scope for enlarging the area under bamboo cultivation and thereby promoting paper industries.
3. Establish fishing harbor and a marketing centre for fish.
4. Plan to set up fresh water prawn hatcheries in the nearby districts , offering scope for fresh water prawn culture.
5. Ample scope for setting up of biogas plants on account of existence of sugar mills and large cattle population.
6. Scope for increasing the productivity of paddy and pulses in the wetland Cauvery ayacut areas
7. Scope for easy crop diversification in the Cauvery ayacut areas
8. Scope for development of Horticulture, Floriculture, Sericulture, Poultry farming, and dairy farming.

9. Scope for development of Handicrafts.
10. Scope for setting up the modern rice mills, oil mills, etc.
11. Scope for setting ups radiological and pathological laboratories in rural areas.
12. Scope for the formation of SHGs on accountmof presence of more poor, downtrodden and SC/ST population and large number of money lenders.

Threats

1. Conversion of Agricultural land for residential and industrial purposes.
2. Irrigation water problem due to sea water intrusion in the coastal areas and reduction in are under cultivation particularly in the first crop paddy
3. Rain and rain water flooding and damage of crops during north east monsoon in most of the years.
4. Un- usual heavy rains during the winter season and damage of pulse crops etc., once in 3 to 4 years.

3.3 Animal Husbandry Sector

Strengths

Dairy Sector

- Highly fertile soil and water potential area
- Availability of abundant sugarcane tops
- Lands can be used for both dairy and fodder development

Weaknesses

- Green fodder scarcity
- Procurement price for milk from farmer is very less
- Problems in disease control

Sheap and Goat

Strengths

- Increased availability of grazing land
- More demand when compared to other meat
- Diversified population – Consumer’s preference

Weaknesses

- Unscientific rearing
- Non availability of parent stock
- Insufficient grazing period during rainy season

3.4 Fisheries Sector

Strengths

- ❖ Scope for developing inland fish farming (164ha)and brackishwater shrimp farming (366.41ha)
- ❖ Three fish landing centers for mechanized boats in Cuddalore, Parangipettai & Mudasalodai
- ❖ Inland Fishermen Cooperative Societies – 28; fishermen – 2600 & fisherwomen – 400

Weaknesses

- ❖ Lack of proper infrastructure such as deep sea fishing vessels, berthing facilities, handling and processing facilities, storage and marketing facilities are the constraints for exploitation of deep sea fishery resources in the district.
- ❖ Lack of proper infrastructure facilities for seed rearing, fish landing and marketing
- ❖ Rain fed ponds are not yet fully utilized for short term fish culture
- ❖ Increasing fish seed demand for about 60 million seeds
- ❖ Defunct fish seed farm at Lalpet
- ❖ Insufficient fishing crafts and gears for fishery exploitation with particular reference to Veeranam lake

Opportunities

- ❖ Tuna catches can be increase through craft modification, organized training to marine fishermen through MPEDA.
- ❖ The artificial reef in Thalankuda, 3 km away from Cuddalore coast seem to prove better, in increasing the fish production. T**he are**a in between can be made use of for mariculture activities.
- ❖ Pitchavaram backwaters with 1300 acre area may be brought under crab culture, through pens without any degradation to mangrove forest.
- ❖ Crab fattening can be organized systematically.
- ❖ Sea ranching of desirable species of fishes is likely to enhance the stock.

- ISRO in collaboration with coast guard has given a stress alarm facility for 2 boats at a cost of Rs .50000, this facility may be extended to other villages and boats at subsidized rates, so that sea venturing will be not risky as of now.
- The prawn farming in declining trend may be reversed by providing quality seed and feed at subsidized price. The electricity problem needs to be addressed vehemently so that the farmers are getting electricity at domestic consumption rates.
- Provision of stunted fingerlings by having seed banks can help augment fish production
- Farmers of this district need exposure at Andhra Pradesh where in farmers are practicing various need-based strategies for increasing fish production. This enlightenment would greatly enhance the productivity.
- Fish stall to fisherman cooperatives at few more places can help to help better price for the producers.
- Lalpet tanks and seed production unit if revived would greatly contribute in meeting the seed demand of this district.
- Intensive fish rearing tanks may be leased out to Women SHG

Threats

- After tsunami more boat input resulting in less unit catch, even sustainability is questioned which warrants study.
- In prawn farming stunted growth of prawns has been reported especially after tsunami. One possible reason could be migratory shift in mother stock or destruction of a potential stock producing large sized prawns. This warrants further study.
- Loose shell problem is also on the increasing trend.
- Prawn fishery is in the decline stage due to price fall.
- Due to frequent bar mouth closing 200 fishermen exclusively operating based on this backwater based fishery are highly affected

3.3 Accommodating SWOT

The complete resource mapping of the district, the vision statement and the results of the SWOT analysis cultivate in the emergence of the following development issues.

(i) There exists every possibility of increasing farm productivity and hence farm production, with the application of latest production technologies.

(ii) There exists potentials for increasing the area under irrigation by modernizing the irrigation by tanks available in the district.

(iii) The growth of the sugar industry in the district can be further stepped up.

(iv) The livestock development can be further accelerated by the technological revolutions.

(v) High industry's infrastructure requiring further strengthening.

(vi) Rice processing industry and oil mills require further development support.

3.4 Sectoral /Regional Growth Drivers

In Cuddalore district, the following are considered as the important growth drivers of the regions.

1. The well-knit Cauvery-Coleroon river irrigation system tanks like Veeranam tank, Valajah tank, Perumal tank etc., act as the prime movers of agricultural development especially in South-Eastern parts of the district. Similarly, the Vellar basin and South Pennar basin, Vidun dam drive the agriculture growth in the West and South and North western parts of the district.
2. The Neyveli Lignite Corporation (LLC) is an important growth driver as it generates and supplies electric power within the easy reach of the farmers at large in addition to providing irrigation water by hulling out the mine water of substantial volume.
3. The Nellikuppam E & D Parry Sugar mill in the middle northern part of the district, the Pennadam Sugar mill in the South western part of the district, the MR Krishnamoorthy Sugar mill in Sethiathope in South eastern part of the district forms as the growth drivers of the concerned regions in the district.
4. The Industrial estate located in the outskirts of Cuddalore town (OT), also act as the important growth drivers by producing pesticides etc.

Composite Index of Agricultural Development of Cuddalore 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 this value 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 these 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 Cuddalore district is taken from various government publications like Season and Crops Report and Economic Appraisal of Tamil Nadu for the 4 periods 1990-91, 1995-96, 2000-01, and 2005-06. In all, 25 indicators of agricultural development as given in Table 3.1 were used for estimating the composite index of development for the district. The 25 indicators were grouped into six different 'components': i) Crop-Area-Variables (10) ii) Irrigation (7) iii) Livestock (3) iv) Fisheries (1) v) Fertilizer (3) and vi) Cultivators and Labourers (2).

The analysis showed that Cuddalore district which was classified as 'highly developed' in agricultural development during 90-91 and 95-96 and became 'developed' in agriculture during 2000-01 and 2005-06. In terms of overall agricultural development its rank among the 29 districts of Tamil Nadu varied from 4 to 8 during the 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 the following Table 3.2. The table shows that all the components and its performance in the period of study are good. For example, crop variables and its ranks varies between 3 and 12 in all the four periods. Similarly cultivators and laboures variables also it occupied ranks between 1st and 14th ranks.

Table 3.1. Selected Indicators of Agricultural Development for Cuddalore District

Component	Indicators	No. of Indicators
	Cropping Intensity	
	Per cent of Gross Cropped Area to Total geographical area	
	Per cent Share of foodgrains to Gross Cropped Area	
	Per cent Share of foodcrops to Gross Cropped Area	
	Per cent Share of non foodcrops to Gross Cropped Area	
	Per cent Share of cultivable waste to total geographical area	
	Per cent Area under High Yielding Variety-PADDY	
	Per cent Area under High Yielding Variety-CHOLAM	
	Per cent Area under High Yielding Variety-CUMBU	
	Per cent Area under High Yielding Variety-RAGI	
	Irrigation Intensity	
	Per cent of Gross Irrigated Area to Gross Cropped Area	
	Per cent of Net Irrigated Area to net area sown	
	Per cent Area under Canal Irrigation to Gross Irrigated Area	
	Per cent Area under Tank Irrigation to Gross Irrigated Area	
	Per cent Area under Well Irrigation to Gross Irrigated Area	
	Per cent Area under other sources Irrigation to Gross Irrigated Area	
	Milk production (lakh tons)	
	Egg production (lakhs)	

Component	Indicators	No. of Indicators
Fisheries	Inland + Marine fish production in tons	1
	Consumption of Nitrogen per hectare of Gross Cropped Area (tonnes)	
	Consumption of Phosphorus per hectare of Gross Cropped Area (tonnes)	
	Consumption of Potassium per hectare of Gross Cropped Area (tonnes)	
	Per cent of Cultivators to total population	
	Per cent of Agri.labourers to total workers	
	TOTAL	**25**

Table 3.2. Rank of Cuddalore 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	Irriga-tion	Live-stock	Fish-eries	Ferti-lizer	Culti-vators Lab-ourers	Over-all
1990-91	12	10	3	-	-	4	4
1995-96	4	9	16	7	12	1	5
2000-01	5	13	12	6	14	8	8
2005-06	3	9	11	9	13	14	8

CHAPTER - IV
DEVELOPMENT OF AGRICULTURE SECTOR

4.1. Introduction

In Cuddalore District, agriculture continues to be the dominant sector in the economic development sustaining 80 per cent of population. Agricultural sector plays a key role in fulfilling the food requirement, meeting the raw material requirements of agro based industries and providing employment opportunities to rural population. About 75 per cent of the total geographical area of this district is under cultivation and 60 per cent of total cropped area is under irrigated condition and the balance of 40 per cent under rainfed condition. The average rainfall of the district is 1315 mm. The south eastern part of this district is coming under cauvery ayacut, irrigated by the lower anaicut- Vadavur Veranam – Perumal tank irrigation system. Vellar-river basin and Pennaiyar river basin also exist in this district. "In this chapter the issues for development, the on-going schemes/programmes, constraints, and the nature of interventions are outlined below.

4.2. Development Issues Identified

Based on the resource mapping and vision defined in Chapter II and the results of SWOT analyses in Chapter III, the following major issues for development in Cuddalore district, have been identified.

(i) Yield levels and hence production of all major crops *viz*., Paddy, Pulses, Groundnut, Sugarcane, Cotton, Gingelly etc., grown in the district are to be improved further.

(ii) Livestock development thrust must be on dairy development, government farming, commercial poultry farming and health, breeding and feeding management.

(iii) Piggery farming development for the benefit of families having piggery units traditionally.

(iv) Fishery development to strengthen both marine and inland fishing through the development of infrastructure, mechanization and marketing services.

(v) Development of agro-based processing industries (based on paddy, pulses, sugarcane, guava, groundnut, gingelly etc.)

4.3 Ongoing Schemes in Agriculture

Currently the following technology oriented schemes / programmes are in operation in district

1. ISOPOM – Oilseeds
2. Pulses
3. Oil palm
4. ICDP Cotton
5. Macro mode schemes
6. Innovative schemes
7. TANWABE
8. Centrally sponcers scheme with 50 per cent subsidy
9. Seed village Programme

The details of each scheme / programme with subsidy pattern are presented below, in Table 4.1.

Table 4.1. List of Ongoing Schemes and the Pattern of Subsidy

Sl. No.	Scheme	Unit	Pattern of Subsidy
1	ISOPOM – Oilseeds		
	Purchase of Breeder seed	Qtls	Rs.4500/Qtl.
	F seed production	Qtls	Rs.1000/Qtl.
	C seed production	Qtls	Rs.1000/Qtl.
	C seed distribution	Qtls	Rs.1200/Qtl.
	Distribution of Minikits	Nos.	
	Infrastructure Dev. For irrigation facilities	Nos.	
	Pipe for carrying water from sources to field	Nos.	Rs.15,000/Unit

Table 4.1. contd…

Sl. No.	Scheme	Unit	Pattern of Subsidy
	Block demonstration in Groundnut	Nos.	Rs. 8000 / Demonstration
	IPM demonstration	No.	Rs.22680/No.
	Distribution of gypsum	Ha.	Rs.500/Ha.
	Distribution of biofertiliser	Ha.	Rs.100/Ha.
	Distribution of bio pesticides	Ha.	Rs.250/Ha.
	Distribution of PP equipments	Nos.	Rs.800/No.
	Distribution of weedicide	Ha.	Rs.500/No.
	Farmers Training	Batch	Rs.15000/Batch
	Officers Training	Batch	Rs.16000/Batch
	Publicity	Ls.	
	Staff and Other contingencies	Ls.	
	Rainfed farming	LS	
	Contract farming	Ha.	
	Village Campaign	Nos.	
	Audio Visual aids for Village campaign		
	CBD – Groundnut		Rs.4000/No.
	CBD – Gingelly		Rs.2500/No.
	CBD – Sunflower		Rs.1000/No
	Combined Nutrient spray in G.nut		Rs.200/Ha.
	Study Report on AEZ on HPS Groundnut and Gingelly		
2	PULSES		
	Breeder seed Purchase	Qtls	Rs.5000/Qtl.
	Foundation seed production subsidy	Qtls	Rs.1000/Qtl.
	Cetified seed production subsidy	Qtls	Rs.1000/Qtl.
	Certified seed distribution subsidy	Qtls	Rs.1200/Qtl.

Table 4.1. contd…

Sl. No.	Scheme	Unit	Pattern of Subsidy
	Compact Block Demonstraction	Nos.	Rs.2000/No.
	IPM Demonstration	Nos.	Rs.17000/No.
	Distribution of Gypsum	Ha.	Rs.500/Ha.
	Distribution of Biofertilisers and Bio Agents	Ha.	Rs.100/Ha.
	Distribution of Biopesticide	Ha.	Rs.250/Ha.
	Distribution of PP Chemicals	Ha.	
	Distribution of Weedicides	Ha.	
	Distribution of PP equipments	Nos.	Rs.800/No.
	Distribution of sprinkler sets	No/set	
	Pipe for carrying water from souces to field	Nos	Rs.15000/No.
	Farmers Training	Batch	Rs.15000/Batch
	Officers Training	Batch	
	Staff contingencies		
	Village Preseason campaign	Nos.	
	Farmers Interest Group and Stake holders forum	Nos	
	Contract farming	LS	
	Contingency	LS	
	Audio visual aid		
	DAP spray	Ha.	Rs.500/Ha.
	M.N.Spray	Ha.	Rs.100/Ha.
3	OILPALM		
	Assistance for Planting Materials		
	I instalment	Ha.	
	II Instalment 4200 / Ha.	Ha.	Rs.4200/Ha.

Table 4.1. contd…

Sl. No.	Scheme	Unit	Pattern of Subsidy
	Area expansion 7000/ha.	Ha.	Rs.7000/Ha.
	Cultivation Maintenance Subsidy		
	II Year	Ha.	Rs.2440/Ha.
	III Year	Ha.	
	IV Year	Ha.	
	Drip Irrigation		
	Other farmers	Nos.	Rs.9000/No.
	SF/MF/SC/ST	Nos.	Rs.9000/No.
	Training		
	Farmers Training	Nos	Rs.4000/No.
	Officers Training	Nos	Rs.20000/Batch
	Innovative component		
	Precision farming		
	Contract farming 1 per dist	Nos.	
	Evaluation of new entrepreneurs		
	New Components		
	Oil Palm Wire mesh @ Rs.2860/-	Nos.	
	Harvesing tool	Nos.	
	Block Demonstration	Nos.	Rs.17000/No.
4	Technology Mode Mission - ICDP – cotton		
	Supply of Breeder seed	Qtls	
	Certified seed Distribution	Qtls	Rs.20/Kg.

Table 4.1. contd…

Sl. No.	Scheme	Unit	Pattern of Subsidy
	Seed Delinting Plant	Nos.	
	Farmers Field School	Nos.	Rs.17000/No.
5	Macro Management Mode Schemes		
	Cereal Development (2401-00-102-UA & 2401-00-789-UA)		
	Distribution of Certified seeds	MT	Rs.2000/MT
	Distbn. Of certified Coarse Cereals seeds	MT	
	Crop Prodn. Demn. In SRI pattern Cluster (10 Ha.)	Nos.	Rs.20000/Cluster
	Hybrid Millet crop Demn.	Nos.	
	IPM demonstration	Nos	Rs.17000/No.
	Training of Farmers	Nos.	Rs.5000/Training.
6	INNOVATIVE SCHEMES		
i)	Farmers Interest Group		
	Group Formation	Nos.	Rs.12000/Group
7	TANWABE		
a)	Training and assistance to training (15 No/group) Rs.1000/group	No.	Rs.1000/Group
b)	Setting of EDP skill Units Rs.3500/group	No.	Rs.3500/Group
c)	Documentation & Contingencies Rs.7820/- per district per year		Rs.7820/Dist.
	Promotion of Micro Enterprises @ 10000 per group	Nos.	Rs.10000/Group
8	Centrally Sponsored Scheme With 100 per cent Assistance		

Table 4.1. contd…

Sl. No.	Scheme	Unit	Pattern of Subsidy
1	Integrated farming in Coconut holding for productivity improvement		
a)	Maintenance of disease affected palms	Nos.	Rs.250/Tree
b)	Demonstration Plots	Ha.	
	New	Ha.	Rs.17500/Ha.
	Maintenance	Ha.	Rs.17500/Ha.
c)	Organic Manure pits	Units	Rs.20000/Unit
9. SEED VILLAGE PROGRAMME			
	Paddy	MT	Rs.8000/MT
	Pulses	MT	Rs.20000/MT
	Oilseeds	MT	Rs.10000/MT
	Training	Nos.	Rs.15000/No.

4.4 Constraints Analysis

The major constraints in accelerating agricultural development in the district are :

(i) There exists a fairly wide gap between yields at the farm level and the experimental as well as research stations in almost all major crops grown in this district that need to be bridged or atleast narrowed down.

(ii) Adoption gap is very wide in rice-fallow pulses as these crops are least cared by the farmers.

(iii) Lack of infrastructure like community thrashing floors spoils the quality and quantity of various produce harvested. Non-availability of covering materials like tarpaulin etc., particularly among small and marginal farmers also spoils the produce especially during rainy seasons.

(iv) An ineffective storage structure among farmers also spoils the stored produce particularly by rats and storage pests.

(v) Inadequate agricultural extension infrastructure.

(vi) State seed farms located in the district also lack many infrastructure facilities.

(vii) Fodder shortage hampers milk production.

(viii) Inadequate veterinary hospitals, dispensaries, sub-centres etc., limit the availability of veterinary srvices to the farming community.

(ix) Lack of adequate number of AI centres, pedigree bulls etc., also to a certain degree constrain the upgradation of non-descript breeds through cross-breeding.

4.5 Interventions Recommended

Following are the major interventions recommended for the development of agriculture in Cuddalore district during XIth plan, under NADP.

(i) Integrated development of major food crops *viz*., paddy, maize, groundnut, gingelly and sunflower.

(ii) Activities related to enhancement of soil health.

(iii) Establishment of Agri-clinics-cum-mini soil testing labs.

(iv) Integrated pest management.

(v) Strengthening and promotion of extension activities.

(vi) Support to State seed farms.

CHAPTER - V
DEVELOPMENT OF ALLIED SECTORS

Keeping in view the development vision, the potentials and results of the SWOT analysis are outlined below.

In this chapter, the development issues are high lighted and on-going schemes/programmes are listed. Constraints spelt out and the lines of development of interventions concerning the allied agricultural sectors are discussed. All these allied sectors, supplement the farm income to a great degree. The development of horticulture sector is discussed finally.

5.1. Horticulture Sector

5.1.1 Introduction

In Cuddalore district, the fruit trees like jack, guava, sapota, banana, mango etc., are grown extremely well. The "Panruti Pala (Jack)" is the state and country famous fruit. Cashew, the dollar earning crop is also grown in red soils in the areas around Panruti, Vadalur, Neyveli and Virudachalam on large scale. The Cashew Research Station is located in Virudachalam. Vegetables like brinjal, bhendi, lab-lab, onion, tomato, cole vegetables etc. and also grown in this district. The Vegetable Research Station is located at Palur. The local varieties of water-melon with very good taste are also cultivated in this district.

5.1.2 Major Development Issues

The major issues of concern for horticulture development are the following.

1 The yield levels of all horticultural crops are comparatively lower and hence the scientific methods of cultivation are to be popularized among farmers.
2 The investment cost is high, the waiting time for economic bearing is also more, and hence the farmers need financial support in starting the orchards.

3 The average yield of cashew tree is low and it can be improved through scientific cultivation and hence needs support. Since this is exportable product, it needs special attention.

4 The State capital *viz*., Chennai is within the reach of 4 to 5 hours drive, the nearness to Neyveli township, Cuddalore and Pondicherry are the facts that indicate the availability of ready market for horticulture products grown in the district.

5.1.3 On-going Schemes

The ongoing schemes / programmes in the district are the following

1. Integrated Horticulture Development Scheme
2. National Horticulture Mission for the year 2008–2009
3. National Bamboo Mission 2008-09
4. Centrally Sponsored Scheme

Each scheme / programme details are presented below

1. Integrated Horticulture Development Scheme

Table 5.1. Integrated Horticulture Development Scheme – Supply of Planting Materials and Inputs

(Rs. in lakhs)

Sl. No.	Crop	Physical	Financial
		Target (in Ha.)	Target
1	Fruits	65	1.87
2	Vegetables	626	7.437
3	Flowers	3	0.568
4	Others	20	0.465
	Grand Total	**714**	**10.34**

Table 5.2. National Horticulture Mission for the Year 2008 – 2009

Target Details - Cuddalore District

Sl. No	Interventions	Unit	Unit cost	Total Cost
I.	**Establishment of New Garden**			
1	**Fruits (perennial)**			
	1. Aonla @ Rs.11,250/Ha	Ha	15	1.687
	2. Mango @ Rs.11,250/Ha	Ha	85	9.563
	Sub Total		**100**	**11.250**
2	**Non-Perennial**			
	1. Banana @ Rs.7,500/Ha	Ha	600	45.000
	IInd year Maintenance – Banana @ Rs.3000/-	Ha.	200	6.000
3	**Flower @ Rs.12,000/Ha**	Ha	50	6.000
4	**Medicinal Plants Rs.11,250/Ha**	Ha	10	1.125
5	**Spices**			
	1. Chillies @ Rs.11,250/Ha	Ha	240	27.000
6	**Plantation Crops including Costal**			
	1. Cashew @ Rs.5,625/Ha	Ha	1000	56.250
	Area Expansion Programme Total	**Ha**	**2200**	**152.625**
	IInd year Maintenance – Cashew	Ha	1200	27.000
	IIIrd Year Maintenance - Cashew	Ha	600	20.250

Table 5.2. contd…

Sl. No	Interventions	Unit	Unit cost	Total Cost
III	**Creation of Water Source**	Nos.	10	100.000
IV	**Promotion of INM/ IPM**			
	1. Banana @ Rs.1,000/Ha.	Ha	500	5.000
	2. Cashew @ Rs.1,000/Ha.	Ha	600	6.000
	3. Chillies @ Rs.1,000/Ha.	Ha	100	1.000
	Sub Total		**1200**	**12.000**
V	**Adoption of Organic Farming**			
	1. Banana @ Rs.10,000/Ha.	Ha	400	40.000
	2. Chillies @ Rs.10,000/Ha.	Ha	100	10.000
	Sub Total		**500**	**50.000**
VI	Vermi compost Unit @ Rs.30,000/Unit	Nos.	15	4.500
VII	Pollination Support – Cashew @ Cashew @ Rs.800/-	Nos.	50	0.400
VIII	Technology dissemination	Nos.	1	500.000
	Grand Total Ha.		**8000**	

Table 5.3. National Bamboo Mission 2008-09

Sl. No.	Name of the component	Target 2008 - 2009	
		Physical in ha.	Cost in lakhs of Rs.
1	Plantation on Non forest Area	100	8.000
2	Improvement of existing stock	25	2.000
3	Training to Farmers (Nos)	350	5.320
4	Training to Farmers Out side the state (Nos)	20	0.500
5	Pest and Disease Management	100	0.200
6	Micro Irrigation	5	1.000
	Total	**600**	**17.020**

Table 5.4. Centrally Sponsored Scheme - Micro Irrigation 2008 - 2009

Sl. No.	Component	Physical in ha.	Cost in lakhs of Rs.
	Drip Irrigation		
I	**Department of Horticulture**		
A	**Horticulture Crops**		
(a)	Vegetables	400	115.200
(b)	Spices (Chillies)	50	14.400
(c)	Flowers	25	6.870
	Sub Total	**475**	**136.470**
B.	**Non Horticulture Crops(Sugarcane)**		
II	**Dept. of Agriculture**		
	Coconut	70	7.000
	Sugarcane	2000	550.000
	Sub Total	**2070**	**557.000**
III	**Agrl. Engg. Tree kinds**	767.58	124.580
IV	**Co-Operative Sugarcane, Sethiyathoppu**	800	220.000
	Grand Total	**2112.58**	**488.05**

5.1.4 Constraints

The development constraints identified are the following.

(i) Yield gaps exist in almost all horticultural crops, as compared to the experimental and research stations yield levels.
(ii) Knowledge-level on scientific cultivation of horticultural crops is low.
(iii) The high investment involved and long waiting time in raising orchards.
(iv) Lack of marketing infrastructure.

5.1.5 Major Interventions

The major development interventions recommended in horticultural sector are the following.

a. Adoption of modern scientific technologies.
b. To increase area production and productivity of Horticulture Crops.
c. To promote capacity building and human resource development through bottom to top level.
d. To extend marketing infrastructure support.

5.2. Animal Husbandry Sector

5.2.1 Preamble

The fertile soil and good water potential provide ample scope for the livestock rearing in the district. There are 3.43 lakhs of cattle, 0.57 lakhs of goat and 0.38 lakhs sheep. The poultry population is 3.34 and pig population is 2.5 lakhs. The livestock rearing provides ample employment and income generating activities to small farmers, marginal farmers and agricultural labourers.

5.2.2 Development Issues

The major development issues identified are:

1. The green fodder shortage is the major concern of livestock development.
2. The available grazing lands need quality improvement.
3. Genetic upgradation of large number of non-descript cattle population.
4. Unscientific milk production.
5. Lack of scientific knowledge on calf and heifer rearing.

5.2.3. On-going Schemes/Programmes

In Cuddalore district there are one Deputy Director of Animal Husbandry (Cattle Breeding and Fodder Development) and three Assistant Directors of Animal Husbandry at Chidhambaram, Vridhachalam and Cuddalore (Animal Disease Intelligence Unit). The details on the ongoing schemes / projects / programmes under the administrative control of the Regional Joint of Animal Husbandry and the kind of Veterinary Services provided are briefly described below.

I) Cattle Breeding and Fodder Development Programme

A unit headed by the Deputy Director of Animal Husbandry, Cattle Breeding and Fodder Development has been established for improving milk production potential of indigenous cattle and buffalo by strengthening artificial insemination centres at Cuddalore as well as Villupuram Districts for supplying Frozen Semen Straws and Liquid Nitrogen. Its main objectives are;

1. This unit caters the needs of 332 institutions, supplying Frozen Semen Superior germ plasm straws and Liquid Nitrogen to both Cuddalore and Villupuram, Districts.
2. Unit also supplies fodder seeds/slips/seedlings to farmers at free of cost to encourage fodder development and production.
3. Extension education to farmers on hygienic milk production and fodder development.

II) Clinical Centre and Veterinary Hospitals

In this District there is one Clinical Centre and five Veterinary Hospitals to provide health cover to livestock. They are equipped to provide specialised service in medical, surgical and gynecological cases. They concentrate very much on infertility problems in the field.

III) Veterinary Dispensaries and Sub-Centres

In this district there are 30 Veterinary dispensaries 7 under the control of Vridhachalam division and 23 under the control of Chidhambaram division for catering the needs of health problems of Livestock and Poultry and day-to-day artificial inseminations for cattle development. Under the control of these Veterinary Dispensaries, 98 veterinary sub-centres are at remote villages of the district having day-to-day first-aid veterinary services, large scale of deworming of all livestock and vaccination programmes and artificial insemination works.

IV) Animal Disease Intelligence Unit

The Animal Disease Intelligence Unit is functioning in the district under the control of Assistant Director of Animal Husbandry, Cuddalore. The Unit attends to the various out-breaks reports and guide field Veterinarians to take necessary control measures of livestock disease. The unit also forecasts various livestock disease to take necessary preventive measures in advance and collect specimen for diagnosis in the various events of the Department and campaign for declaring the diagnostic results for necessary treatment.

V) Training Programme

As such, there is no scheme for giving training for Self-help groups or to the needy people in villages in the Animal Husbandry Development programmes as on date. But on request from the Collector/ Project officer, Block Development Officers and any other public sector organisations, the following training programmes may be given by a team of officers in the following departmental activities:-

1. Cattle rearing and Husbandry for milk production
2. Sheep rearing and Husbandry
3. Goat rearing and Husbandry
4. Poultry rearing for egg production
5. Poultry rearing for broiler purpose
6. Duck rearing and husbandry
7. Japanese' quill rearing and husbandry
8. Pig rearing and Husbandry

Livestock Protection Scheme (Kalnadai Pathukappu Thittam)

Under this scheme one camp at each Panchayat Union area is conducted per month for providing veterinary services in the remote villages, which cannot have veterinary services from veterinary institutions directly. In 2003-04, 169 Kalnadai Pathukappu Thittam camps were conducted and provided treatment etc., as follows:-

Cases treated : medical	11229
Surgical	1826
Gynecology	4392
Artificial inseminations done	3194
Pregnancy verification	12078
Castrations	822
Infertility cases: repeaters	2695
Infantile gentaila	2497
Others	513
Clinical examinations:	4845
Vaccinations done for	
Black quarter	5662
Haemorrhagic septicaemia	21107
Foot and mouth	32508
Anthrax	2339
Total	**61616**
Sheep and goat	
Foot and mouth	2824
Anthrax	499
Deworming done for	
Cattle and buffalo	19498
Sheep	21338
Goat	46251
Poultry	5051
Others	428
Total	**92566**

By all the above items of works in the camps 1,88,541 of livestock have been benefited caps and by spending Rs.9,24,910/-. Thus veterinary services have been rendered to the farmers protecting Rs.19 crores worth of livestock of this District.

5.2.4 Constraints

The following are the major constraints in livestock development in this district.

i) Large number of non descript breeds and very low productivity of animals

ii) Sizable calf mortality due to lack of scientific knowledge among farmers.

iii) Incidence of mastitis among cross - bred cows due to lack of animal hygiene

iv) Negative growth of buffalos population

5.2.5 Interventions

The major interventions recommended for the livestock development in the district are

1. Green fodder development
2. Preparation of value added milk products
3. Improvement of livestock health
4. Establishment of rendering plant
5. Capacity building

5.3 Fishery Sector

5.3.1 Introduction

Cuddalore District is one of the most potential districts, not only for marine, but also for land and brackish water resources. The district has coast line of 68 kms. There are 8104 ha of inland water resources as detailed below.

1. Major Irrigation and Long seasonal tanks	:	5986 ha
2. FFDA tanks	:	312 ha
3. Derelict water	:	1000 ha
4. Aquaculture farms	:	806 ha

The inland fisheries resources contribute 149 MTs. In Cuddalore District, there are 11,735 inland fishermen. There are potential for increasing both marine and inland fisheries production in the district.

5.3.2 On -going Government Development Schemes

Schemes pertaining to Inland fisheries development

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

5.3.3 Constraints

The following are the major constraints faced by the fishery sector in the Cuddalore district.

- Lack of berthing and landing facilities in major marine fishing villages.
- Lack of proper infrastructure such as deep sea fishing vessels, berthing facilities, handling and processing facilities, storage and marketing facilities are the constraints for exploitation of deep sea fishery resources in the district.
- Lack of proper infrastructure facilities for seed rearing, fish landing and marketing fish culture in natural small water system is being practiced by stock and harvest system and not by scientific culture method.
- Rainfed ponds can be utilized for short term fish culture
- Increasing fish seed demand is about 60 million seeds
- To repair and renovate the defunct fish seed farm at Lalpet
- Insufficient fishing crafts and gears for fisher exploitation with particular reference to Veeranam lake.
- To impart training to more human resource, to obtain maximum sustainable yield from culture and capture fisheries.

5.3.4 Interventions

The major interventions recommended for the development of fisheries sectors are the following

- Modernization of mechanized fishing vessels and FRP boats to diversify fishing efforts to offshore to exploit the deep sea resources such as Tuna and cuttle fish by providing financial assistance.
- Sea ranching and deployment of artificial fish habitats to improve the fishery resources.
- Establishment of infrastructure to post harvest facilities such as cold storage, processing, marketing in major fish landing centres.
- Provision of communication system interfacing with computer at shore to exploit the offshore resources, and also to safe guard the fishermen getting missed while venturing into sea.
- Modernization of existing fish market.
- Infrastructure development to attain self sufficiency in seed production through private and Government.
- Expansion of fish culture in hitherto unutilized water bodies.
- Infrastructure development to modernize the existing marketing facilities in key areas.
- Infrastructure development for developing capacity building.
- Supply of advanced fishing crafts and gears to increase fishing efficiency of inland fisher folk.
- Establishment of ornamental fish units for income generation

5.4 Agricultural Marketing Sector

5.4.1 Introduction

Marketing is an important activity that yields the price and hence the income to the farmer. Marketing also influences the decision making process of the farmer regarding nature of crop and varieties to be raised, the enterprise mix he wants have etc. Similarly, the input market also influences the net profit of the farmer. Thus, the agribusiness sector that includes marketing also, in the recent years, matters much to the farmers. Therefore, the development of both product and input marketing have been considered under DAP under NADP.

5.4.2 Development Issues

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

Current Status of Agribusiness

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 Sandhai, post-harvest management, cold storage facilities for perishables, food processing and establishment of export zones and terminal markets have been taken up. To reduce the post-harvest 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 producer, encourage food processing sector and export to earn foreign exchange by increasing the food processing from the present level of1 percent to 10 percent of the total production, increasing value addition from 7 percent to 30 percent . Under this policy, all types of assistance provided to other industries, will also be extended to agro-based industries, agricultural machineries and industries manufacturing micro-irrigation equipments.

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 agri-food system) and service providers from the public, private and non-governmental organizations (NGO) sectors.

Farmers fail to link among themselves through effective producer organizations able to undertake joint decisions in production and marketing. Farmers have weak linkages with enterprises and often fail to link effectively to markets because of limited access to relevant market intelligence and inadequate market infrastructure. Farmers are also poorly linked to research and extension providers 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 contracts and vertical integration arrangements and are distant from consumers because of the absence of organized retail chains. Linkages with service providers are characterized by a lack of confidence particularly in the case of research and extension organizations. The absence of proper certification, quality assurance systems and inadequate infrastructure continues to limit the integration of production with international markets.

Service providers, most 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 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 the 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.

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.

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 the 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 located at district level are functioning in Tamil Nadu state. Further, at district level there are 277 Regulated Markets, 15 Check Posts, 108 Rural Godowns and 108 grading centres, functioning under the Market Committees in the state. The development issues discussed so for have been summarized below

	Commodity group formation Major Crops*
1	50 Groups each groups 25 Farmers
2	Market Intelligence dissemination in 100 places
3	Purchase of market Intelligence materials One time purchase annual fee for website, various magazines
4	Facilitation of contract farming 20 groups @ 25 farmers per group
5	Exposure visit to markets@ 25000/ 50 farmers/ group
6	Arrangement of buyer seller meetings at 3 different places
7	Streng. of market extension centre 6 different market places
8	Market price surveillance 5 times
9	Publicity - regulated market- Hoarding Rs.25000 x 10 times = Rs.2.5 lakhs, F.M. Radio Rs.1000 x 4 times = Rs.0.04 lakhs, Poster Rs.1000 x 45 nos = Rs. 0.45 lakhs, Folder Rs.1000 x 11 times = Rs. 0.11 lakhs, Wall paintings Rs.2000x 20 = Rs.0.40 lakhs, Village Cultural Programmes Rs.50000 x 3 times = Rs.1.50 lakhs
10	Trainings on Market Intelligence 3 Groups (25 farmers / Group) Commodity Markets 25 farmers / Group Post Harvest 25 farmers / Group Value Addition 25 farmers / Group
11	Export promotion 25 farmers/ group
12	Market infrastructure activities (cold chamber)

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.

5.4.3 Interventions Recommended

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 with in the state and out side 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

5.5 Agricultural Engineering Sector

Agricultural Engineering plays a key role in managing the available land and water resources on scientific line. The land shaping and leveling, soil and moisture conservation and farm mechanization are the major activities.

5.5.1 Development Issues

Keeping the development vision and the results of the SWOT analysis the development issues identified are the focusing

1 The land shaping and leveling activities are wide-spread and requires further strengthening.
2 Water conservation activities may be made more popular among farmers.
3 Farm mechanization is yet to make a headway in this district

5.5.2 On - going Schemes

Land shaping and leveling, water harvesting and conservation, tapping ground water for irrigation and farm mechanization and major activities are attended to under agricultural engineering development. The various developmental activities that are already ongoing in Cuddalore district are outlined below.

The various schemes implemented by the Agricultural Engineering Department are as follows:-

1. **Land Development Schemes**

The Agricultural Engineering Department maintains a fleet of Bulldozers and Tractors with matched implements under custom hiring scheme and hire them to farmers for land levelling and carry out mechanised cultivation operations, to continuously demonstrate to farmers the advantage of using Agricultural implements and machinery.

2. Minor Irrigation Schemes

The Agricultural Engineering Department hires out Power drilling rigs, Hand boring sets, Air Compressors, Geo Physical survey equipment and other required machinery / equipment to farmers and public in conformity with the Hiring rules for sinking Tubewells; Filter Point Tubewells; Boring inside wells and deepening of wells for Ground water Development. The related details are presented in Table 5.5,below.

Table 5.5 Minor Irrigation Scheme- Hire-charges Details

(in Rupees)

Sl. No.	Activities	Fleet Stren	Hire charges per	Bore well dia	Hire charges for	
					Agri purpose	Non-Agri purpose
1	**Minor Irrigation Scheme**					
a	Hand boring set	25	Metre	6"	30	60
				8"	40	80
				10"	50	100
b	Rotary Drill	7	Metre	6"	120	180
				8"	130	195
				10"	140	210
				12"	150	225
				14"	160	240
c	Mini Drill	2	Metre	6"	60	120
				8"	70	140
				10"	80	160
d	Electrical logger	1	Wells		1000	2000
e	AC receptivity meter	1	Site		500	1000
2	**Land Development Scheme**					
a	Bulldozers	3	Hours		670	670
b	Tractors	7	Hours		265	265
c	Combined Harvester	1	Hours		780	

3. Rainwater Harvesting and Runoff Management Under Soil Conservation Scheme

The objective of this programme is to harness rainwater through Rain Water Harvesting Stuctures. The components of the program are Percolation ponds, Check dams, Ooranies, Village ponds, Sunken ponds, Farm ponds, Rejuvenation of failed/unused/abandoned wells and Injector wells. Injector wells have been proposed on an experimental basis to facilitate ground water recharge at suitable locations.All these works should be implemented only through the existing Village/Watershed Development Association/User Group. An amount of Rs. 68.284 lakhs has been spent for the year 2007-08 for watershed development works.

I. Individual Based Works

Name of the works	Unit Cost Upto / No	Beneficiary's Contribution
Construction of Farm Pond	Rs.40,000	
Rejuvenation of wells	Rs.26,000	

II. Community Based Works

Name of the works	Unit Cost Upto/No	Beneficiary's Contribution for maintenance	
Percolation ponds	Rs.3,00,000		
Construction of Minor Check Dam	Rs.20,000		
Construction of Medium check dam	Rs.50,000		
Construction of Major Check dam	Rs.1,00,000		
Injector wells	Rs.2,00,000		
New Village Tanks / Ooranies	Rs.1,50,000		
Recharge wells	Rs.25,000		

4. Micro Irrigation Scheme (Drip and Sprinkler Irrigation Systems)

The Centrally sponsored scheme on Micro Irrigation is aimed at increasing the area under efficient methods of Irrigation namely drip and Sprinklers, in Horticultural and Agricultural crops with the objective of enhancing productivity, quality and profitability of the targeted crops. The implementation of Drip Irrigation System for Horticultural Crops by Agricultural Engineering Department, under the Centrally Sponsored from the year 1991-92, has made an impact by thrust given by the Government of India and the State through their subsidy schemes and awareness created on the features. Agricultural Engineering Department is implementing the sprinkler irrigation system from the year 2000-01.From the year 2005-06 Tamil Nadu Horticulture Development Agency (TANHODA),On behalf of the Government of Tamil Nadu, is the nodal agency in implementing Centrally sponsored scheme on Micro Irrigation the sprinkler irrigation system from the year 2000-01.In Cuddalore District this scheme is implemented by Agricultural Engineering Department for all the tree crops like Mango, Guava, Cashew, Amla, Sapota.

5. Agricultural Mechanisation Programme

Agricultural machineries like Tractors, Power Tillers and implements like Rotavator, Disc Plough, Cultivators, Power Thrashers are issued to farmers at subsidised rate. For the year 2007-08 an amount of Rs. 72.63 lakhs has been released as subsidy for this programme.

6. Replacement of Agricultural Old Pumpsets

To improve the efficiency of pumpsets, old farm pumpsets are replaced with new farm pumpsets at subsidized rate so as to improve the energy efficiency. An amount of Rs.21.585 lakhs has been released as subsidy for 2007-08(Table 5.6)

Table 5.6. Subsidies Given by Agricultural Engineering Department

(in Rs.)

Sl. No	Details	Subsidy percentage	Maximum subsidy amount	
1	**Replacement of old pumpsets**		**General**	**SC/ST**
	a) 5 HP and above	25%	5000/ No	6000/No
	b) Below 5 HP	25%	2500/ No	3500/No
	c) Accessories	50%	1500/No	1500/No
2	**Agricultural Mechanisation Programme (subsidy Rates for SF/MF)**			
	Agricultural machineries			
	a) Tractor below 35 HP	25%	30000/No	
	b) Power Tiller	25%	30000/No	
	Agricultural Implements			
	a) Rotavator	25%	20000/No	
	b) Cultivator	25%	10000/No	
	c) Cage wheel	25%	2000/No	
	d) Paddy transplanter	25%	25000/No	
	e) Disc Plough	25%	10000/No	
	f) Power weeder	25%	20000/No	
	g) Power Thrasher	25%	10000/No	

Table 5.7. Minor Irrigation Scheme- Hire-charges Details

(in Rs.)

Sl. No	Activities	No.			Hire charges for	
					Agri purpose	Non-Agri purpose
1	**Minor Irrigation Scheme**					
a	Hand boring set	25	Metre	6"	30	60
				8"	40	80
				10"	50	100
b	Rotary Drill	7	Metre	6"	120	180
				8"	130	195
				10"	140	210
				12"	150	225
				14"	160	240
c	Mini Drill	2	Metre	6"	60	120
				8"	70	140
				10"	80	160
d	Electrical logger	1	Wells		1000	2000
e	AC receptivity meter	1	site		500	1000
2	**Land Development Scheme**					
a	Bulldozers	3	Hours		670	670
b	Tractors	7	Hours		265	265
c	Combined Harvester	1	Hours		780	

7. Demonstration of Agricultural Implements

Demonstrations are conducted at village level to create awareness among the farmers about the Improved Agricultural implements available for the farm operation. The implements demonstrated are a) Rotavator, b) Quickfit cage wheel, c) Self-propelled paddy transplanter,d) Power weeder, e) Zero till seed drill and f) Post hole digger village level demonstrations has been conducted to an amount of Rs. 1.25 lakhs for the year 2007-08

8. Training on Agricultural Implements

Training to farmers to operate the advanced agricultural machineries and implements are being conducted at Revenue Division Level. The following trainings are conducted.

a) Operation , Maintenance and Management of Power Tiller
b) Selection, operation maintenance and management of Agrl. machinery for dry land agriculture
c) Selection, operation repair and installation of irrigation pumps and water management through sprinkler and drip irrigations.

For the year 2007-08 Rs. 0.75 lakhs has been spent for this training.

9. Command Area Development Programme

Command Area Development Programme is being implemented in the Cauvery command. from 1.07.07 onwards three separate sub-divisions with head quarters at Cuddalore, Chidambaram & Kattumanarkoil are functioning to implement the above works. The following works are being carried out

1)	On Farm Development works	1538.315 Ha	Rs. 66.00 lakhs
2)	Rotational Water supply	3092.495 Ha	Rs. 9.00 lakhs
3)	Development of Field drains	5205.35 Ha	Rs. 152.95 lakhs

5.5.3 Constraints

The issues that constraints the agricultural development activities in the district are the following.

- Heavy investment requirements constrain the farm mechanization, land improvements and water conservation measures in this district.
- Small and marginal farmers mechanize their farm operations through custom hiring and the hire charges are rather exorbitant.
- Large numbers of farms are yet to take up water harvesting and conservation activities.

- Capacity building on operating the farm machines and water conservation devices and their maintenance.
- Lack of repairing facilities at easy reach and reasonable costs.

5.5.4 Interventions Recommended

As regards development of Agricultural Engineering in Cuddalore district, the following interventions are recommended under XI Plan under NADP.

- Introduction of newly developed agricultural machineries and implements.
- Popularising the water harvesting techniques.
- Promoting the concept of mechanised villages.
- Control of sea water intrusion.
- Strengthening the ongoing activities.

5.6 Irrigation (Public Works Department) Sector

The Cauvery-Coleroon basin, Vellar basin and Pennaiyar basin are the major irrigation basins of this district. Most of the irrigation structures in these basins require rehabilitation works.

5.6.1 Development Issues

- Most of the irrigation structures are in dilapidated conditions.
- Silting of tanks, feeder channels and distribution channels.
- Groundwater development.
- Intrusions of sea water in the water ways backwards and making the irrigation water unfit for cultivation in the inland are areas along the sea coast.
- Flood control measures.

Heavy rains in a few days and frequent flooding in most years damages the river and cannal bunds, irrigation structures as well as crop plants. The following are the normal damages observed.

- Slipping and erosion of soils in the sides of channels and rivers
- Accumulation of silt due to cross bunding by the ayacutdars to irrigate high level fields.
- Encroachments on both sides of the Channels.
- Non-availability of controlled shuttering arrangements to the sluices.
- Dilapidated conditions of Irrigation structures.
- Lesser carrying capacity of Channels below the tanks
- Absence of scientific water management techniques and wastage of water.
- Absence of diversification of crops
- Leakages through weirs and waste of water.

The width of the bunds are reduced as gullies and breaches are formed on both sides of the bund during the rains. The tank bed and supply Channel to these tanks are also silted up during the rains by slipping of earth on the slopes and falling into the bed. Most of the weir and sluices are in dilapidated condition which are constructed in brick work with lime mortar in those olden periods. Many sluices require reconstruction and some of the weirs are also to be renovated to avoid wastage of water. The field channels from the irrigation sluices are also in the same condition. The approach roads leading to Anicut are very badly damaged during the rains.

The common deficiencies identified during the walk through survey in the present system are :

- Slipping and erosion of soils in the sides of channels and tanks.
- Accumulation of silt due to cross bunding by the ayacutdars to irrigate high level fields.
- Encroachments in both sides of channels and tanks.
- Non-availability of controlled shuttering arrangements in the sluices, leading to difficulties in water regulations.
- Dilapidated conditions of irrigation structures. (Brick work structure was constructed before 60 years)

- Lesser supply in channels of the tanks.
- Absence of scientific water management techniques and wastage of water.
- Absence of diversification of crops.
- Leakages through weirs and waste of water.

5.6.2 On-going Schemes/Programmes

Due to paucity of funds, limited maintenance activities relating to irrigation systems are attended to.

5.6.3 Constraints

The major constraints of irrigation development are the paucity of funds, encroachments, silting due to frequent flooding and dilapidated water structures.

5.6.4 Interventions Recommended

- Desilting of tanks and water ways.
- Standardization of bunds of tanks and canals.
- Repairing of sluices, weans, anicuts etc.
- Rehabilitation of approach roads.
- Renovation of shuttering arrangements.

5.7. Agricultural Credit

5.7.1. Credit Disbursement

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

I. Policy Innovations of Government of India:

1. Agricultural Debt Waiver (For Small Farmers / Marginal Farmers) and Debt Relief (for other Farmers) Scheme covering direct Agricultural Credit.
2. Short Term Crop Loans continued to be disbursed at seven per cent with interest subvention.
3. National Agricultural Insurance Scheme (NAIS) to continue in the present form for Kharif and Rabi 2008-09.
4. Adoption of concept of Total Financial Inclusion (TFI) and meeting the entire credit requirement of Self-Help-Groups.
5. Implementation of Rain-fed Area Development Programme with an allocation of Rs.348 crores with priority to areas not benefited by Watershed Development Schemes.
6. Central Banks and Rural Regional Banks (RRBs) to add 250 accounts every year in Rural and Semi-urban branches.

II. Policy initiatives of Reserve Bank of India:

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

III. Policy and Development Initiatives of NABARD:

1. NABARD to play an active and supportive role in the implementation of 'Rural Business Hub' Scheme of Ministry of Panchayat Raj envisaging Public-Private-Panchayat Partnership to develop holistic and integrated partnership between decentralized rural production units and larger corporate entities.

2. A new find "Farmers' Technology Transfer Fund" created to support programmes, workshops / seminars on technology transfer, marketing of agriculture produce and imparting training on new technologies / agriculture practices
3. NABARD in collaboration with Department of Posts, Government of India, to set up showcases in 100 post offices across the country to showcase the products of SHGs and rural artisans.
4. Krishak Saathi Scheme introduced to provide refinance to banks to provide loans to farmers to free themselves from the clutches of money lenders.
5. RIDF loan at 90 per cent of the project cost allowed for roads and social sector projects in Hill States; also, higher mobilsation advance at 30 per cent of total RIDF loans allowed for these states.

IV. Policy Initiatives of Government of Tamil Nadu:

1. Rs.1150 crores allocated in 2008-09 for compensating co-op. banks for waiver of crop loans.
2. It is proposed to disburse new crop loans to the tune of Rs.1,500 crores during 2008-09.
3. The rate of interest on crop loan reduced from five per cent to four per cent for prompt repayments in 2008-09.
4. Rs.40 crores to provide 50 per cent Insurance Premium for 25 lakhs farmers towards crop insurance.
5. SRI cultivation of paddy to be extended to all districts at an estimated cost of Rs.64 crores.
6. 25 per cent subsidy to farmers for purchasing farm machinery under NADP.
7. Afforestation Progrmme in 51,500 hectares at a cost of Rs.113 crores. 1,000 check dams and 300 percolation ponds to be constructed throughout the State. Rupees three crores provided for forest roads. Rs.10 crores allocated for planting one crore saplings in private lands.

8. Tamil Nadu Co-operative Milk Producers Federation to provide 10,000 crossbred milch animals to Women Self Help Groups in 200 villages covering 5000 women. This scheme will be implemented at a cost of Rs.22 crores for a period of two years.
9. IAMWARD Project extended to another 16 sub-basins.
10. Construction of 48,500 checkdams and perculation tanks in 232 over exploited blocks for conserving ground water at a cost of Rs.550 crores.
11. State Government to open 4 SEZs in Tirunelveli, Tiruvannamalai, Erode and Vellore Districts.
12. A sum of Rs.504 crores is allocated under "Anaithu Grama Anna Marumalarchi Scheme" for undertaking basic infrastructure related works in 2521 village panchayats.
13. Rs.50 crores provided in 2008-09 for 1625 community developmental works under 'Namakku Naame Thittam'.

Activity wise credit disbursement and projection under agricultural and allied sectors in Cuddalore district is furnished in Table 5.8.

Table 5.8. Activity Wise Credit Disbursement and Projections under Agricultural and Allied Sectors in Cuddalore District

(Rs. lakh)

Sectors	2008-09	2009-10	2010-11	2011-12
Crop loan	68950.92	72398.47	76018.39	79819.31
Term loan				
Micro Irrigation	2589.41	2718.88	2854.83	2997.57
Land Development	1064.00	1117.20	1173.06	1231.71
Farm Mechanization	3522.22	3698.33	3883.25	4077.41
Plantation & Horticulture	1070.41	1123.93	1180.13	1239.13
Forestry & Waste land Development	273.99	287.69	302.07	317.18
Dairy Development	1354.83	1422.57	1493.70	1568.39
Poultry	332.75	349.39	366.86	385.20
Sheep/Goat/ Piggery	241.00	253.05	265.70	278.99
Fisheries	860.00	903.00	948.15	995.56
Storage Godown & Market yards	159.83	167.82	176.21	185.02
Bio-gas	0.00	0.00	0.00	0.00
Others	304.09	319.29	335.26	352.02
Sub total - Term loan	11772.53	12361.16	12979.22	13628.17
Total Agriculture Credit (1+2)	80723.45	84759.63	88997.61	93447.48
Non Farm sector	5317.09	5582.95	5862.09	6155.20
Other Priority Sector	25677.61	26961.49	28309.57	29725.04
Grand Total	111718.15	117304.06	123169.27	129327.72

From the table it could be seen the projected flow of credit disbursement for agriculture and allied sectors during 2009-10, 2010-11 2011-2012 would be respectively Rs.117304.06, Rs.123169.27 and Rs.129327.72 lakhs. The total flow of agriculture credit in terms of crop loan and term loan in 2011-12 would be Rs.93447.48 lakhs. The flow of credit for non farm sector and other priorty sectors in 2011-12 would be Rs. 6155.20 and Rs.29725.04 lakhs respectively.

CHAPTER - VI

DISTRICT PLAN

6.1 Introduction

In this chapter, the sector-wise project formulation has been attempted. The activities planned for and the budgets outlays earmarked, are detailed below. The agriculture sector is taken up first.

6.2 Agriculture Sector

6.2.1 Introduction

In agriculture sector six interventions /projects have been specifically planned for during XI Plan period under NADP. The details of each project activities and the associated budget requirements are presented and briefly discussed, here- under.

Project - I

i) Project Title : Integrated Development of Major Food Crops

Integrated development of food crops is to increase the yield in various food crops like paddy, pulses, millets, oilseeds, etc. The integrated development is achieved through seed distribution in subsidized rate, integrated nutrient management, integrated pest management, promotion of SRI technologies in Rice, precision farming, farmers trainings, etc. This project culminates in:

1 Reducing the yield gap between the current productivity and the target productivity,
2 Familiarizing the technologies on various crops,
3 Launching the intervention on time,
4 Increasing the crop yield by reducing the unnecessary expenditure and
5 Improving the quality of the produce, by minimizing the use of the hazardous chemicals.

ii) Project Goals

The integrated crop development activities aims at:

i) Popularizing the hybrid varieties and hybrid seeds and its performance among the farmers.

ii) Creating awareness among the farmers on the yield gap and to take initiatives to reduce the yield gap.

iii) Making aware of the technologies and the outcome by implementing the technologies through field demonstrations.

iv) Increasing the yield of the major crops ultimately to increase the production and productivity of the nation.

v) Improving the grain quality by applying organic manures and other natural products, etc.

vi) Making aware of the recent technologies through wide publicity, etc.

iii) Project Strategy

The integrated crop development can be achieved through the following strategies.

1. Distribution of Hybrid varieties and Hybrid seeds on various crops in subsidized rate.
2. Laying out demonstrations and experimental plots to test the efficiency of the crop varieties and technologies.
3. By implementations of integrated nutrient management which includes distribution of green manure seeds, soil health cards, assistance to start vermicompost, distribution of M.N.Mixture, gypsum, etc.
4. Explanation of the technologies, its performance through Village campaigns.
5. Distribution of Tarpaulins, Bio -fertilizers, construction of threshing floor, etc.

iv) Project Components

The major components of the interventions are as follows

a) Procurement and distribution of Hybrid variety and Hybrids of all crops.
b) Integrated nutrient management including distribution of green manure seeds, distribution of soil health cards, assistance to start vermin compost production unit, distribution of micro nutrient, gypsum, etc.
c) Familiarising the technologies like System of Rice Intensification (SRI) through demonstration / Hybrid rice demonstrations, village campaigns, production of film on the new technologies, etc.
d) Innovative interventions like Tarpaulin distribution, Bio-fertilizer distribution, construction of Thrashing floor, etc.
e) Distribution of Pipes to carry the water from source to field.
f) Conducting farmers field schools.
g) Construction of Rural godowns and marketing centre.
h) Distribution of seed minikits.

v) Project Cost and Financing

The major components proposed along with details of financial support are given below in Table 6.1.

Table 6.1. The Components and Subsidy Pattern

Sl. No.	Components	Unit	Subsidy Pattern
1	Hybrid Variety Seed distribution	Tonnes	50 per cent subsidy or Rs.5/Kg.
2	Hybrid Seed distribution	Tonnes	75 per cent or Rs.100/Kg.
3	Gren Manure seed distribution	Tonnes	75 per cent or Rs.15 / Kg.
4	Soil Health Card distribution	No.	Rs.100 / Card
5	Micro Nutrient Mixture distribution	Ha	50 per cent subsidy or Rs.500/Ha.

Table 6.1. contd…

Sl. No.	Components	Unit	Subsidy Pattern
6	Gypsum distribution	Ha.	50 per cent subsidy or Rs.500/Ha.
7	SRI demonstration	Ha.	Rs.7500/Ha.
8	Tarpaulin	No.	Rs.5000/No.
9	Thrashing Floor	No	Rs.2 lakhs.
10	Pipes carrying water from source to field	No.	50 per cent subsidy or Rs.15000/-
11	Farmers field school	No.	Rs.22680/No

vi) Project Costs

The budget outlays of Rs.4,799.14 lakhs for Rice, Rs.25.56 lakhs for Millets, Rs.150 lakhs for Maize and Rs.2244 lakhs for Oilseeds are required for four years of XI Plan period as detailed in Table 6.6.

vii) Project Implementation

All the above interventions will be implemented by the State Department of Agriculture through Block level Agricultural Extension Centre, by utilizing the services of all the staff available in the concerned block. The budget provisions are furnished in Table 6.6.

Project - II

i) Project Title : Activities Related to Enhancement of Soil Health

Soil is a natural body consisting of organic and mineral constituents at various levels and it differs in morphological, physical, chemical, biological properties. Soil health is determined by soil testing. The objectives are:-

1 To know the physical, chemical and biological properties of soil
2 To evaluate the land for the sustainability of crops.
3 To recommend fertilizer based on the soil test value.
4 Recommendation of fertilizer schedule based on the location specific and soil based.
5 To advocate the ultimate measures for the problem soil such as salinity, acidity, alkalinity, etc.
6 Issue of soil health cards to individual farmer based on the crops to be raised.
7 Enhancement of Soil health by strengthening of soil testing laboratories and establishing new laboratories and mini soil testing laboratories.

Site specific nutrient management is an approach for rationalising the fertilizer inputs and others. This could be achieved by enhancement of the following.

1. Micro Nutrient demonstration in the farmers' field.
2. Strengthening of soil testing lab by purchasing of
   i. Atomic adsorption spectra photometer.
   ii. Mechanical shaker.
   iii. Metler balance
   iv. Generators
   v. Xerox machine
   vi. Public address system with LCD computer with accessories.

ii) Project Goals

Efficient use of fertilizer is the key to the management of soil fertility. The proposition of added fertilizer actually used by plant is a measure of fertilizer / nutrient use efficacy. It depends on characteristics of soil, crop and fertilizer management techniques.

Soil Characteristics

1 Nutrient status of soil.
2 Forms of nutrients in soil
3 Soil organic matter.
4 Soil moisture.
5 Physical conditions of the soil.

Balanced use of fertilizer nutrients depends upon the crop and soil. When the added fertilizer contains nutrient in lesser (or) higher amount than that required by the crop, the imbalance thus caused results in poor crop growth. The application of P along with N increases the N use efficiency. Some times even with N P applications decrease in yield because of K become a limiting factor. Soil test based fertilizer recommendations ensure balanced use of fertilizer and increase yield and profit.

iii) Project Strategy

Nutrient Management by soil testing was achieved by soil testing and mobile soil testing laboratories.

The fertility problem cannot be solved merely by supply of plant nutrients but their efficient management could be through soil health. Issuing soil health cards to individual farmers based on the soil testing will lead to the positive and good results.

Presently the laboratories have not been fully equipped with recent technological machineries. For that, strengthening will be needed for soil health through purchase of new equipments needed for the laboratories.

iv) Project Component

1. Micro Nutrient demonstrations in the farm holdings.
2. Strengthening of soil testing laboratories achieved by providing the following

a. Atomic adsorption photometer for micro nutrient analysis.
b. Mechanical shaker.
c. Metler balance
d. Xerox machine
e. Generators.
f. Public address system with LCD computer with accessories.

Table 6.2. Soil Health- Component-wise Project Cost and Subsidy Pattern

Sl. No.	Project Component	Unit	Cost / Subsidy pattern
1	Micro Nutrient demonstration	10 Ha./Unit	Rs.35000
2	Strengthening of Soil Testing Lab.		
	Purchase of New Atomic absorption spectrophotometer for Micronutrient analysis.	15	Rs.1.5 lakh / No.
	* Mettler balance	5	Rs.2.5 lakhs / No.
	* Generators	1	Rs.1.0 lakh / No.
	* Xerox Machine	1	Rs.75000/No.
	* Public Address with LCD computer with Accessories	2	Rs.2.0 lakhs / No.

v) Project Cost

The total cost of the project, as could be noted from Table 6.6 is Rs.88.75 lakhs for all the four years of the XI Plan under NADP.

vi) Project Implementation

It is implemented through 19 soil testing laboratories and 21 mobile soil testing laboratories in the State.

Project - III

i) Project Title : Establishment of Agri Clinics-Cum-Mini Soil Testing Labs

The main reason for low productivity of major crops is lack of awareness on the latest technologies and lack of suitable advisory service. Adoption of suitable crop production techniques and soil test based fertilizer recommendation will pave the way for enhancing crop productivity.

Establishment of Agri-Clinics cum mini Soil Testing Laboratories will ensure better co-ordination between farming community and Agri-Professional for efficient input management, certified seeds, latest technologies, diagnosis and rectification of nutrient disorder in crops, marketing of produce etc., which will increase the productivity of crops.

Job opportunities will be provided for Agricultural Graduates for setting up the Agri – Clinics cum Mini Soil testing Laboratories by providing Bank loans with back ended subsidy of 50 percent.

The low productivity of the major crops is mainly due to decline in soil health, improper water management, poor adoption of technology etc. Deterioration of soil health is primarily due to decline in soil fertility and soil organic matter.

Micro nutrient removal due to intensive agriculture and adoption of high yielding varieties is higher which necessitates regular application of micro nutrients so as to compensate the depletion from the soil reserve. The extent of micro nutrient deficiency in recent years has increased considerably. So, there is an urgent need to test soil fertility at all farm holdings so as to ensure good soil health and sustainable crop production.

Private firms engaged in selling inputs play a vital role in Agriculture. Farmers traditionally approach these firms for agricultural inputs like seeds, fertilizers, pesticides etc., and the related technologies. These private firms without having the requisite technology try to sell whatever the inputs they have. Ultimately the interests of the farmers get affected.

Nearly 70 percent of the farmers lack awareness on the best farming practices. So, there is an urgent need to strengthen the advisory services both Government and Private at block levels for effective dissemination of all technologies.

The Agri-Clinics cum Mini Soil Testing Laboratories can provide paid consultancy services for enhancement of crop production and income of the farmers. The

centres will advise farmers on crop selection, soil fertility assessment and enhancement, new production technologies, post harvest technologies, interest based weather forecast, market trends credit access etc.

Regular soil testing done at least once in ever 3 years is the best way to ensure soil health and soil productivity. Establishing one Mini Soil Testing Laboratory at each block or atleast 5 such labs in the district will provide best access for the farmers to test their soil/holdings.

ii) Project Goals

1. Advising the farmers on precision farming, use of quality inputs, custom hiring of machineries and facilitation of marketing of agricultural produce.
2. Soil and Crop specific fertilizer recommendation to the farmers.
3. Reclamation of problem soil of farmers.
4. Management of poor quality irrigation water.
5. Facilitation of the farmers for mid-term nutrient correction and plant protection measures.

iii) Project Strategy

Unemployed graduates in Agriculture / Horticulture/Forestry / Agrl. Engineering will be considered for setting up the Agri-Clinic cum Mini Soil testing Laboratories. Their knowledge can be utilized in a proper way by counseling which will benefit both the graduates and the farming community. The selected candidates can be supported to set up the Agri-clinic Mini Soil Testing Laboratories at a cost of Rs.6.0 lakhs per unit through bank loan tie up with 50$ back ended subsidy of 3.0 lakhs.

Initially, 5 numbers of Agri-clinics cum Mini Soil testing Labs will be set up in the District.

These laboratories will have the analytical capacity of 6000 samples per lab per year. The mini Soil Testing Laboratories will function under the supervision of the District Soil Testing Laboratories.

The Tamil Nadu Agricultural University will impart training on the establishment of Mini Soil Testing Laboratories, analytical techniques and the use and supply of software on soil health and visual diagnostic kit and the technical guidance to the entrepreneurs.

iv) Project Components

The main components of the project are

(i) Agri-Clinics and

(ii) Mini Soil testing Laboratories.

The technical details of the components of the project are

a) Purpose : To offer advisory service and act as knowledge center.

b) Objective: Advisory service on crop production and marketing, balanced fertilisation through soil test based recommendation and reclamation of problem soils.

c) Outputs : Enhanced crop productivity through effective technology transfer.

d) Performance Targets

i) Number of advisory services offered on best management practices, Agricultural inputs, market information etc.
ii) Assistance provided for preparing project proposals for bank loans/credit access.
iii) Number of field visits and on spot problems solved.
iv) Mid-term corrections for the nutrient deficiency disorders using visual diagnostic kit software.
v) Number of soil, irrigation water samples tested and recommendation given.

e) Activities : Agri-Clinic Centres

Advisory Service.

- Crop Selection.
- Agricultural Inputs.
- Best farming practices.
- Value addition options.
- Project proposed for bank loan.
- Marketing of farm produce.
- Crop Insurance, Credit access.

Diagnosis of nutrient disorders and remediation through

- Visual diagnostic kit.
- Rapid tissue testing.

Mini Soil Testing Labs

- Soil testing for pH, EC and soil nutrient.
- Quality testing of Irrigation water.
- Issue of Soil Health Cards.
- Soil Crop based recommendation for integrated nutrient management.
- Advisory on management of poor quality water.

f) Inputs : Infrastructure facilities including:

- Furnished own/rental building with a spacing of about 500 sq.ft.
- Laboratory equipments.
- Soil and water storage cabinet, work table etc.
- Computer and accessories with internet connectivity.
- Rapid Tissue test kit, dissection microscope etc.
- Soil health and visual diagnostic software.

v) Project Cost

The budget estimate for this project works out to Rs.6.00 lakhs as could be seen from Table 6.3 below.

Table 6.3. Detailed Budget Estimate for Agri-Clinic cum Mini Soil Testing Laboratory

Sl. No.	Components	Budget in Rs.
1.	Requirement of Equipments	320000
2.	Components and accessories	100000
3.	Requirement of Glass ware and apparatus	70000
4.	Requirement of Lab chemicals	80000
5.	Stationery and Miscellaneous expenses	30000
	Total	**600000/-**

vi) Project Implementation

a) Department of Agriculture

- Selection of unemployed Agricultural Graduated.
- Approval of the bank loan, tie-up with Commercial loan.
- Monitoring of the establishments of the center.
- Release of back ended subsidy.
- Periodical visits and monitoring.

b) Tamil Nadu Agricultural University

- Guidelines with specifications for the setting up of Agri-Clinics and Mini Soil Testing Laboratories.
- Training on analytical techniques and interpretation of the results.
- Issue of guidelines for monitoring.

vii) Project Implementation Chart

1) Selection of Entrepreneurs.
2) Approval of bank loan tie-up.
3) Training on analytical techniques.
4) Establishment of Agri-Clinic cum Mini Soil Testing Laboratories.
5) Commencement of the Activity.
6) Monitoring and Evaluation.

Project - IV

i) Project Title : Integrated Pest Management

Integrated Pest Management plays major role in the crop productivity. Due to Judicial application of pesticide and fungicide create Natural imbalance and economic loss to the farmers. Integrated Pest Management includes all crop management in different growth stages. Now a days Farmers Field School are conducted to 30 Farmers at Crop stages (Sowing to Harvest). Low cost technology like Bird trap, Light trap and Yellow sticky trap will control the Pest without disturbing natural equilibrium. Integrated Pest Management practice like collection of Larva, Pupa, summer ploughing, light trap, Pheromone trap, Yellow sticky trap and trap crop. Rat menace is also a major problem. Massive rat campaigns are arranged to control the rats through N.G.O. and Panchayat level. Biological control of Pest like NPV Lures and *Trichoderma viridi* may be encouraged.

Farmers utilize the Pesticides based on recommendations by Private dealers mostly. Private dealers have commercial motive. They want to promote sales of Synthetic Pyrethroides. By using of Synthetic Pyrethroides the pest develops resistance and due to that farmers are facing loss. Low cost technology like Bird Perch Light trap, Pheromone trap and Crop-trap are very effective for controlling pests without disturbing natural equilibrium. Farmers are not able to identify pest and defender ratio.

1. Judicial applications of pesticides create natural imbalance and climate changes.
2. Economic loss to farmers
3. Farmers are not able to identify the problem and depend on Private dealers
4. Labour shortage

ii) Project Goal

To increase the productivity the following concept may be adopted in IPM.

1. Grow healthy crop
2. Weekly monitoring of Pests
3. Conserve natural enemies.

Integrated Pest Management means crop management at Crop growth stage. Low cost technology in IPM are summer ploughing, bird Perches, Light trap, Pheromone trap, Sticky trap and trap crop are propagated through method demonstration at farmers holdings by Agricultural Department extension functionaries.

iii) Project Strategy

1. Low cost technology like Summer-ploughing, Bird Perches, Phereomone trap, Light trap and trap crop are published in Newspaper.
2. IPM Demonstrations are arranged in Farmers holding
3. Farmers Field Schools are arranged for IPM Practice in all growth stages
4. Massive Rat Campaign arranged at Village level.+

iv) Project Component

1. Farmers Field School
2. IPM Demonstration 500/ha.
3. Massive Rat Control – Rs.5000
4. Publicity and Training 50000/District

v) Project Cost and Financing

The budget estimate for this project works out to Rs.20.92 lakhs as could be seen from Table 6.4 below.

Table 6.4 Project Costs for Integrated Pest Management

(Rs. in lakhs)

Interventions	2008-09		2009-10		2010-11		2011-12	
	Unit	Total cost	Unit	Total Cost	Unit	Total Cost	Unit	Total Cost
Farmers Field School	26	4.42	26	4.42	26	4.42	26	4.42
IPM 500/Ha.	2000	1.0	2	1.0	2	1.0	2	1.0
Massive rat control Rs.5000	300	15.0	300	15.0	300	15.0	300	15.0
Publicity and Training Rs.50000/-	1	0.5	1	0.5	1	0.5	1	0.5
Total		**20.92**		**20.92**		**20.92**		**20.92**

vi) Project Implementation

1. Farmers Field School

Farmers Field School are arranged in villages cultivating more area under food crops, 30 Progressive farmers are selected from concerned village and adjacent villages. Farmers Field schools are conducted on a specific day in a week for 10 to 14 weeks according to the crop duration. In the FFS the participating farmers are clubbed into five groups and assigned with the natural enemies and the harmful pest names.

2. IPM Demonstration

IPM demonstrations are conducted by using the Pheromone traps, Yellow sticky rap and Light trap, spraying with natural bio pesticides, etc.

3. Massive Rat Control Campaign In Villages

Pre baiting and Post baiting are arranged in villages with the help of Self Help Groups and N.G.O.

Digging of furrows are arranged in village level.

4. Publicity and Training

1. IPM practice like collection of larva, setting of light, Pheromone trap and identification of pests and may be traced to School children studying 10th standard.
2. Pests and Defender card may be produced.
3. Farmers training may be given for two days
4. Leaflets, Posters may be printed and distributed to the farmers.

Project - V

i) Project Title: Strengthening and Promotion of Extension

Promotion of Extension activities is necessary to improve the transfer of technologies from land to land at a greater velocity. At present the technologies are spread by direct contact with farmers, AIR and Newspapers. Unemployed Agriculture Graduates may be involved in sharing the technologies and improve the contacts with the farming community. The day to day problems of the farmers may be solved by VIDEO Conferencing with Scientists of Tamil Nadu Agrl. University and other Agrl. Universities. The Extension Officials and farmers may be given adequate training and Exposure visit to important institutions.

The intervention includes establishment of Agri Clinic and Agri Business by unemployed Agrl. Graduates with a budget outlay of 30 lakhs. Exposure visit to inter state Universities for 30 farmers with a budget outlay of 30.6 lakhs. District level Exhibition or Kissan Mela may be conducted with a budget outlay of 16 lakhs. Publicity with a budget outlay of 3 lakhs. Providing exposure visit to Technical Officials on the budget outlay of 5.0 lakhs. To solve the various problems of farmers then and there Video Conferencing facilities may be provided with a budget outlay of Rs.15 lakhs. Farmers training may be given with budget outlay of Rs.32 lakhs.

ii) Background/Problem Focus

Various technologies and improved farm practices are being involved by the Scientists. It is the major work of the Extension Functionaries to carry the message to the farmers. To increase the percentage of adoption of Technologies various measures like Exposure visit to removed institutions, Training to farmers, Mass Media support, etc. The day to-day information regarding technologies and price of the agricultural commodities assessed by the farmers through information centers.

iii) Project Goal

To build up the gap between the Lab to Land certain measures have to be taken up. The unemployed Agrl. graduates may be involved in spreading the technologies by promoting Agri Clinics. By providing adequate knowledge to the farmers, the productivity will be increased. The Livelihood of the farming community will be increased.

iv) Project Strategy

Establishment of Agri Clinic and Agri business any unemployed agri graduates.

1. Exposure visit to interstate Universities for 30 farmers, for 10 days.
2. Exposure visit to interstate universities for 30 farmers for 5 days.
3. District level exhibitions / Kissan mela
4. Publicity Propaganda, Publicity of lit, Display Boards.
5. Videos Conferencing facilities to District Level.
6. Farmers training through Farmers Training Centre.
7. Exposure visit to Technical Officer to other State
8. Exposure visit to Technical Officer to other Countries.

v) Project Component

1. Agri clinic and Agri Business
2. Exposure visit to farmers
3. District level exhibition/ kissan mela
4. Video Conferencing facilities
5. Farmers training by FTC
6. Exposure visit to Technical Officers.

vi) Project Cost

1. Establishment of Agri clinic and Agri business by unemployed Agriculture Graduates with 25 percent subsidy @ Rs.2.5 lakhs each, 10 Units with a budget outlay of Rs.30 lakhs.

2. Exposure visit to interstate for 360 farmers for 10 days with a budget outlay of Rs.21.6 lakhs @ Rs.1.8 lakh/..
3. Exposure visit to interstate Universities for 360 farmers for 5 days with a budget outlay of Rs.9 lakhs @ Rs.0.75 lakh/ Farmer
4. Convening 8 Nos. of District level Exhibition / Kisan mela @ Rs.2 lakhs/No.
5. Publicity, Propaganda by Printing of literatures, Display works conduct of Press tour, Technology transfer through AIR, TV and Other Mass media with a budget outlay of Rs.16 lakhs.
6. Establishment of One Video Conferencing Unit at District Level with a budget outlay of Rs.10 lakhs.
7. Farmers Training through Farmers Training Centre with a budget outlay of Rs.32.0 lakhs.
8. Exposure visit to Technical officers to other States for 50 officers with a budget outlay of Rs.15 lakhs.

The budget estimates year-wise as well as for the whole period of XI Plan are given in Table 6.6. The total budget outlay required for this project is Rs.141.60 lakhs.

vii) Project Implementation

The Project is implemented by the Agricultural Department of State Government.

Project - VI

i) Project Title : Support to State Seed Farm

To improve the State Seed Farm by 1) Land levelling, Bund forming, Irrigation facilities, Proper cropping pattern, like suitable variety in suitable season and crop rotation.

- To minimize water by working pipe line in the State Seed Farm.
- To use Fertigation in the State Seed Farm

In State Seed Farm we produce seed material like Breeder to Foundation Seed-I and Foundation-II and Certified seeds for better viable and good germination. Seed material should be stored in proper manner. So, to provide Modern godown with good ventilation and to protect seed from rat damage. The Seed bags should stored in the wooden dunnage. The focus would be on :

1 The State Seed Farm should be a model farm
2 To produce good quality seed
3 The farmers utilize the State Seed Farm and learning latest cultivable method to improve the productivity
4 The crops raised in the State Seed Farm shall be a model to surrounding the farmers
5 In State Seed Farm, use of latest mechanism like Paddy Planter, Weeder, Harvester, these operation method will give benefits to the farm and minimize the seed loss.
6 For better seed production, bag closure, Bradma machine is more essential to each farm should need Two bag closure and Two Bradma Machine. This will help quick tagging of seed.

The rationale of this intervention is

1 Quality Seed
2 Introduction of new technology
3 Farm mechanization
4 Increase water use efficiencies
5 Introduction of High Yielding Variety
6 Introduction of High Breed Variety
7 Increasing the Productivity
8 Site for Technology Demonstration

The intervention would focus on

- Uncultivated land in the State Seed Farm
- Un-fertilized land, To improve the Soil Fertility to use Organic materials, Green leaves, Green manure crop.
- The Farm depending only canal water.
- To increase bore-well
- To minimum storage facilities

ii) Project Goals

The goals of the intervention are

- To improve land leveling and soil health
- To improve irrigation facility in latest method
- To renovate and upgradation of existing seed storage godown
- To adopt new Mechanism
- To adopt quick tagging method

iii) Project Strategy

- Land development and land leveling
- Irrigation should be through PVC Pipeline
- New Storage Godown
- For better Seed Storage Renovation and up gradation of Existing seed storage godown
- To increase productivity to utilize mechanism, which will reduce cost of cultivation

iv) Project Component

- Land Levelling
- Soil Conservation
- Soil Health
- Irrigation through PVC Pipe
- New Storage Godown
- Paddy mechanized transplanter
- Moisture meter, Bag Closer
- Bradma Machine for Seed Tagging

Table 6.5. Support to State Seed Farm Project Cost and Financing

Sl. No.	Component	Unit	Pattern of Assistance
1	Land Development and levelling	Ha.	Rs.2500/Ha.
2	Irrigation through PVC Pipe line	Mtr.	Rs.80/Mtr.
3	New Storage godown	Sq.ft.	Rs.500/Sq.ft.
4	Renovation and upgradation of existing seed storage godown	Sq.ft.	Rs.250/Sq.ft.
5	Paddy mechanised transplanter	Nos.	Rs.2.25 lakhs.
6	Bag closure	Nos.	Rs.10000/No.
7	Bradma machine for seed tagging	No.	Rs.50000/No.

v) Budget Cost

The budget estimate for this project works out to Rs.24.52 lakhs as could be seen from Table 6.6 below.

vi) Implementation Chart of the Project

1. The State seed farms are implemented by the Departmental staff like concern Farm Manager.
2. To increase the productivity, proper cropping pattern is going to adopted in the State Seed Farms Kuruvai – Samba – Pulses (Rice Fallow)
3. The Farm Manager utilise new technology, new mechanism and the available staff in the farm(State Seed Farm)

Table 6.6. Budget for Four Years - Agriculture Department

(Rs. in lakhs)

Sl. No.	Activities	2008-09	2009-10	2010-11	2011-12	Total cost
		Total Cost	Total Cost	Total Cost	Total Cost	
1	Integrated Development of Major Food Crops					
	a) Paddy	1203.16	1198.16	1205.91	1191.91	4799.14
	b) Millets	6.39	6.39	6.39	6.39	25.56
	c) Maize	37.50	37.50	37.50	37.50	150.00
	d)Pulses	20.00	-	-	-	20.00
	e) Groundnut (Irrigated)	604.98	524.98	524.98	524.98	2179.92
	f) Groundnut (Rainfed)	15.10	15.10	15.10	15.10	60.40
	g) Gingelly	0.64	0.64	0.64	0.64	2.56
	h) Sunflower	0.50	0.50	0.50	0.50	2.00
2	Strengthening of soil testing laboratory	66.50	5.75	7.75	8.75	88.75
3	Establishment of agri-clinic-cum-Mini Soil Testing Laboratory	6.00	-	-	-	6.00
4	IPM	15.00	15.00	15.00	15.00	60.00
5	Strengthening of Extension Activities	49.15	39.15	26.65	26.65	141.60
6	Support to State Seed Farms					
	a)Miralur & Vandurayanpattu	37.15	0	0	0	37.15
	b)State Coconut Nursery	18.70	0	0	0	18.70
	c) State Oilseed Farm	24.52	0	0	0	24.52
	Total	2105.29	1843.17	1840.42	1827.42	**7616.30**

The total budget out lay for agriculture development in Cuddalore district during XI Plan under NADP works out to Rs. 7616.30 Lakhs.

6.3 Horticulture Sector

6.3. Introduction

Cuddalore district is having highly favourable soil and climatic conditions for growing wide range of horticulture crops namely fruits like banana, mango, jack, guava, sapota, vegetables like brinjal, bhendi, lablab, Onion, tomato, cole vegetables, tuber crops like tapioca, sweet potato and yams, ornamental crops like rose, jasmine, marigold, crossandra, medicinal and aromatic plants and spices and plantation crops like coriander, chillies and cashew.

- Cashew is the predominant horticulture crop of Cuddalore district, cultivated in an area of 33130 ha. with the production of 29,277 tonnes of nuts.
- Banana is cultivated in an area of 3648 ha. Producing 94479 tonnes of banana fruits,
- Mango is cultivated in an area of 860 ha.with the production of 5160 tonnes, jack is cultivated in an area of 730 ha. and production is 14600 tonnes.
- Vegetable crops are cultivated in an area of is 6153 ha. Producing 2078854 tonnes of vegetables.

Project - I

i) Project Title : Comprehensive project for the development of Horticulture crops in Cuddalore District]

ii) Project Goals

a. To provide holistic growth of Horticulture sector through area expansion technology promotion extension etc.

b. To enhance Horticulture Production in productivity.

c. To create opportunities for employment generation.

iii) Project Strategy

The following strategies would be adopted to achieve the above goals.

a. Adoption of modern scientific technologies.

b. To increase area production and productivity of Horticulture Crops.

c. To promote capacity building and human resource development through bottom to top level.

iii) Project Components

- Net house structure – to protect horticultural crops from pests and diseases in it is necessary to cover the nursery of Vegetable crops thereby more than 20 per cent yield will be increased.
- Pandal for Vegetable Production –vegetables like snake gourd, bitter gourd, ash gourd and lab – lab require pandal structure for crop growth. Farmers are incurring more expenditure for purchasing wooden poles, nylon rope and labour charges. Therefore it is essential to help the farmers for erecting pandal for increasing Vegetables yield.
- Packages for plant protection to protect vegetables and fruits from pests and diseases, suitable bio insecticides and fungicides should be applied. To purchase these chemicals farmers are spending more money. If these chemicals are supplied under subsidized price, the yield of vegetables and fruits could the further increased by timely applications.
- Plastics crates for vegetables handling and transport – for easy handling and transport plastic crates are required for marketing vegetables and fruits without the damages. Supply of plastic crates under subsidized price, would help the farmers in prepare handling of harvested produce.
- Farm waste shredder / Vegetable waste shredder : To incorporate the farm waste and vegetable waste into soil it is necessary to user the shredder attached with power tiller. To purchase this machine 50 percent subsidy may be given.
- Cashew high density planning: The old cashew Varieties started yielding from 4^{th} year on wards but the latest varieties like VRI-2 VRI-3 and VRI-4 starts yielding from 2^{nd} year on wards. It is also necessary to adopting closer spacing

of 3mx 3m instead of 7mx7m spacing. For adopting closer spacing more number of grafts are required and hence the more number of farmers are required to get grafts, the grafts may be distributed to farmers at subsidized price.

- Bore well with casing pipe – Horticultural Crops require assured irrigation for getting maximum yield. To sink bore wells and purchasing bore well casing pipes subsidy has to be provided to the farms
- Banana bunch cover – To protect the banana bunches from sunlight dews pests and diseases, polyoven gunnies are required. The covered bunches are getting good market price by good colour, vigor and ripening. Farmers require polyone gunnies hence the same may be subsidized.
- Support system for crops – To protect from heavy wind and cyclone banana crop require support system with wooden poles from at flowering stage to harvest stage. To purchase and erecting wooden poles for banana farmers incurring more money. Therefore is necessary to give 50/- subsidy to farmers for providing support system to banana.
- Mango harvester - To protect from damage during mango harvest by old wooden stick it is necessary four modern mango harvesting equipment. By this method good quality mango fruits may be made available in the markets to fetch maximum price. Mango harvester should be supplied at subsidized price to farmers.

- Sales market buildings in districts (Rent and infrastructure) to supply quality Vegetable seeds, fruit plants, grafts and other horticultural planting materials, farm inputs like organic manure, bio fertilizer, bio pesticides micro nutrient mixtures and farm machineries like sprayers made available for sale to farmers at district level Sales out let is required.

- Inter- state exposure visit for 5 days to gain up to date knowledge on farm practices by the to farmers

Moreover the cultivation of horticulture crops have been identified as a promising source of diversification for making agriculture a more profitable one through efficient land use, optimum utilization of natural resources (Soil, water and environment) and creating skilled employment for rural masses. So there is vast scope persist in stepping up the production and productivity of horticulture crops through adoption of hi-tech horticultural techniques.

iv) Project Implementation

At District level, the Programme will be implemented constituting a committee under the chairmanship of District Collector. The Deputy Director of Horticulture will be the member secretary for implementing Horticulture activities.

v) Project Costs

The budget estimates for various components planned for, are detailed below in Table. 6.7.

Table. 6.7 Year-wise Budget Estimates for Horticulture Development

(Rs. in lakhs)

S. No	Components	Units	2008-2009		2009-2010		2010-2011		2011-2012		Total Costs
			Phy. Area (Ha.)	Fin.	Phy. Area (Ha.)	Fin.	Phy. Area (Ha.)	Fin.	Phy. Area (Ha.)	Fin.	
1	Precision Farming										
	a. Drip Component	0.112/ Ha.	250	28.00	350	39.20	450	50.40	600	67.20	184.80
	b. Input Cost	0.250/ Ha.	250	62.50	350	87.50	450	112.50	600	150.00	412.50
	c. Nursery	0.050/ Ha.	250	12.50	350	17.50	450	22.50	600	30.00	82.50
2	Net House Structure for Nursery & Vegetable Production (50 per cent subsidy)	1.000 / 300m^2	130	65.00	150	75.00	175	87.50	200	100.00	327.50
3	Pandal for Vegetable Production (50 per cent subsidy)	1.000 / ha	250	125.00	300	150.00	350	175.00	400	200.00	650.00
4	Package for plant Protection	0.030 / ha	500	7.50	750	11.25	1000	15.00	1250	18.75	52.50
5	Plastics Crates for Vegetable handling and Transport (50 per cent subsidy)	0.025 / No.	1500	1.88	2000	2.50	2500	3.13	3000	3.75	11.26
6	Farm waste shredder/ vegetable waste shredder (50 percent subsidy)	0.400 / No.	25	5.00	30	6.00	40	8.00	50	10.00	29.00
7	Cashew high density planting (90 per cent subsidy)	0.090 / ha	500	40.50	750	60.75	1000	81.00	1500	121.50	303.75
8	Borewell with casing pipe (75 per cent subsidy)	1.500 / No.	200	225.00	250	281.25	300	337.50	400	450.00	1293.75

Table. 6.7 contd…

(Rs. in lakhs)

S. No	Components	Units	2008-2009		2009-2010		2010-2011		2011-2012		Total Costs
			Phy. Area (Ha.)	Fin.	Phy. Area (Ha.)	Fin.	Phy. Area (Ha.)	Fin.	Phy. Area (Ha.)	Fin.	
9	Banana Bunch cover (50 per cent subsidy)	Rs.10 / Cover	200000	10.00	30000	15.00	350000	17.50	400000	20.00	62.50
10	Eraction of net for production of disease free planting material of Tapioca	1.000 / 300 m^2	200	200.00	300	300.00	400	400.00	500	500.00	1400
11	Support systems of Crops Banana	0.001 / No.	1500	1.50	2000	2.00	2500	2.50	3000	3.00	9.00
12	Banana Corm injector (50 per cent subsidy)	Rs.300/ No.	1500	2.25	2000	3.00	2500	3.75	3000	4.50	13.50
13	Mango harvester	Rs.500 / No.	1000	5.00	1500	6.00	2000	10.00	3000	15.00	36.00
14	Sales outlet Points in districts (Rent and infrastructure) (50 per cent subsidy)	Rs.2.60 lakhs/ No.	10	26.00	13	33.80	26	67.60	65	169.00	296.40
15	District Level Farmers Workshop (100 per cent subsidy)	Rs.400 / farmer / day	200	0.80	400	1.60	800	3.20	1000	4.00	9.60
16	Inter State Exposure Visit (5 days) (100 per cent subsidy)	Rs.5000 / farmer	200	10.00	300	15.00	400	20.00	500	25.00	70.00
17	10 hectare mega demo plot for the districts (75 per cent subsidy)	Rs. 25000 / No.	10	1.88	10	1.88	10	1.88	10	1.88	7.52

Table. 6.7 contd…

(Rs. in lakhs)

S. No	Components	Units	2008-2009		2009-2010		2010-2011		2011-2012		Total Costs
			Phy. Area (Ha.)	Fin.	Phy. Area (Ha.)	Fin.	Phy. Area (Ha.)	Fin.	Phy. Area (Ha.)	Fin.	
18	Enterprising farmers associations. (75 per cent subsidy)	Rs.25000 / No.	5	0.938	5	0.938	5	0.938	5	0.938	3.752
19	Community fencing (75 per cent subsidy)	Rs.1.50 lakhs / ha.	25	28.13	50	56.25	100	112.50	200	225.00	421.88
20	Support for betelvine (50 percent subsidy)	0.040 / 20 cents	10	2.5	20	5.00	30	7.50	40	10.00	25.00
21	Post Harvest Management in Onion Cultivation(pack house (100 percent subsidy)	0.150 / ha.	10	1.5	10	1.5	5	0.75	5	0.75	4.50
	Total Finance Requirement			**863.38**		**1172.92**		**1540.65**		**2130.27**	**5707.21**

The budget estimate for all the 21 project components works out to Rs.5707.21 lakhs as could be seen from the table, above.

6.4 Seed Certification Sector

Project - I

i) Project Title : Setting up of Seed Testing Laboratory at Cuddalore

As seeds play a vital role in enhancing the productivity and hence 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 setup, 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. Therefore New Seed Testing Laboratory is proposed to be established during 2008-2009 at Cuddalore district.

ii) Activities Proposed

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

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

8. Computers with Accessories

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

iii) 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. The total cost of the project, thus, works out to Rs.6.00 lakhs, as detailed in Table 6.3.1.

iv) Budget Cost

The budget estimate for this project works out to Rs.6.00 lakhs as could be seen from Table 6.8 below.

Table 6.8. Cost Details and Total Budget Cost

Sl. No.	Name of the Instrument/ Equipment	Approx. Qty required 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.

v) Operation and Maintenance Cost of the Running Laboratory

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

6.5 Agricultural Engineering Sector

Developmental activities have been proposed under to two major streams. In stream I about four major interventions have been proposed and in stream II about four major interventions have been proposed and the details of the proposals are given below.

Stream - I

Project - I

i) Project Title : Introduction of Newly Developed Agrl. Machinery/Implements

Due to industrialization and urbanization and agriculture operation in a short span of time , results in shortage of labour in the rural areas to attend the agricultural operations on time, particularly during peak seasons.

Delay in Agricultural operations result in reduced yields. With these risk factors, Productivity increase alone will help a farmer to earn more per unit area. Agricultural Mechanisation would be vital supplement in increasing productivity. All farmers particularly small/marginal farmers expect incentives for purchasing new type of implements and machineries. Implements which are in dire need for day today have been identified interactions, the departmental staff had with farmers.With these points in view, subsidies are proposed for certain newly developed agrl. Machinery / implements under NADP with subsidy rates upto 75 per cent. An estimated out lay of Rs.1079.28 lakhs may be required for this intervention for four years from 2008-2009 to 2011-2012 as in detail.

ii) Budget Cost

Total Project Cost for this intervention	:	Rs.2158.56 lakhs
Amount proposed as subsidy under NADP	:	Rs.1079.28 lakhs
Farmers' contribution	:	Rs.1079.28 lakhs

Rs.1079.28 lakhs (subsidy amount) will be met from funds provided under Stream - I of NADP. Government of India will provide necessary funds to Government of Tamil Nadu.

Funds proposed to be received under NADP Rs.1079.28 lakhs.

This proposed amount has been phased for four years as follows :

I Year	:	Rs.199.49 lakhs.
II Year	:	Rs.242.21 lakhs
III Year	:	Rs.294.61 lakhs
IV Year	:	Rs.342.98 lakhs
Total	**:**	**Rs.1079.28 lakhs**

Under this intervention, newly developed machinery/implements are supplied to farmers with subsidy pattern as proposed below.

Out of total cost 75 percent subsidy may be allowed to Gender friendly equipments and 50 percent subsidy may be allowed to other implements/equipments. The balance amount will be met by the farmer as farmers' contribution. Types of machineries / implements proposed are the following.

1 Mini combined Harvester TNAU model
2 Multi crop Thrasher (High capacity)
3 Power weeder with attachment (all models)
4 Power Thrasher
5 Paddy Transplanter

6 Post hole digger
7 Maize Husker Sheller
8 Coconut De- husker
9 Ground nut decordicator
10 Chisel plough
11 Power Weeder - Oleo mac
12 Multi crop Thrasher (Tractor PTO)
13 Knapsac Power operated Hydraulic Sprayer
14 Power Operated Chaff Cutter
15 Combine harvester - Tractor operated
16 Gender friendly equipments

iii) Project Implementation

Training will be given by the manufacturers at the time of supply as stipulated by the Chief Engineer (AE) Chennai. Manufacturers will be encouraged to open service outlets where cluster of machinery are available.

Project – II

i) Project Title : Innovative Water Harvesting Structures

With a view to drain the subsurface water particularly in water logged areas, the innovative scheme of digging community borewells have been contemplated under this intervention . it is also proposed that this intervention may be effected on "action plan mode" the major component under this intervention.

ii) Budget Cost

Under this intervention, Subsurface drain in water logged areas and Community bore wells are proposed. As this is a community work, this work will be carried out with 100 per cent Governement Assistance. Educating, motivating and training Percolation Pond users for future maintenance will also be taken up. The Total Project Cost for this intervention: Rs.203.00 lakhs.an amount of Rs.400.00 lakhs (subsidy amount) will be met from funds provided under Stream I of NADP. This proposed amount (Rs 203 lakhs) has been phased out for four years and the details are as below.

I Year	:	Rs.45.50 lakhs.
II Year	:	Rs.53.50 lakhs
III Year	:	Rs.55.50 lakhs
IV Year	:	Rs.48.50 lakhs
Total	**:**	**Rs.203.00 lakhs**

Rs 203.00 lakhs will be met from funds provided under Stream - I of NADP.

Cuddalore district is one of the coastal district in Tamilnadu state. The eastern built of the district that is near coastal line is experience the sea water intrusion by both underground and surface movement. The problem is becoming more apparent in the recent times due to heavy tapping of ground water for irrigation. Water in many of the bore wells as turned into saltish resulting in abandoning cultivation using ground water. This threat is rather witnessed on a large scale in the recent times in the blocks like Keerapalayam, Bhuvanagiri, etc… In summer as well as pre - monsoon season the problem of sea water intrusion is much more severe particularly due to entering of sea water in rivers like Vellar in the upstream even up to 6 to 8 kilometers from the sea.

Project – III

i) Project Title : Control of Sea Water Intrusion

Therefore it is proposed to construct 500 recharge shafts, in water bodies, streams etc. in Government poromboke in the coastal areas of Cuddalore District with 100 per cent Govt. contribution. The estimated cost for four years would be availability. Production increase will fetch additional revenue to a small/marginal farmer besides contributing to Agricultural growth.

ii) Project Components

Under this intervention, Recharge shafts will be constructed with few or all of the components given below.

1. Construction of Recharge shafts

2. Lining of tubewells wherever required with screen pipes at appropriate locations.
3. Providing inlet arrangements
4. Other site specific component if any required.

As this is a community work, this work will be carried out with 100 per cent Government Assistance. Educating and motivating farmers around such recharge shafts is essential which will be carried out by AED.

iii) Project Cost

The cost of the project works out to Rs 250.00 Lakhs for the whole eleventh plan period. The year-wise budget outlays are furnished below(also Table .6.12)

I Year	:	Rs.100.00 lakhs.
II Year	:	Rs.50.00 lakhs
III Year	:	Rs.50.00 lakhs
IV Year	:	Rs.50.00 lakhs
Total	**:**	**Rs.250.00 lakhs**

Rs.250.00 lakhs will be met from funds provided under Stream I of NADP. Government of India will provide necessary funds to Government of Tamil Nadu.

Project - IV

Project Title: Promoting The Concept of Mechanised Villages

The non-availability of agricultural labour is a problem that is gaining strategic importance. Delay in agriculture operation due to shortage of loans, result not only in the yield reduction, but also huge post harvest losses as well. Therefore, promoting the concept of mechanized village has been contemplated in the DAP under NADP.

Total Agricultural Mechanization has to be ensured in every Village for all crops grown in that village in the interest of nation as Agriculture can no longer rely only on

Agricultural labourers alone for Cultural operations. With a vow to achieve total mechanization "The concept of mechanized villages" has been proposed at least for one predominant Village based on the crops grown in different season that area. Farmers of selected Village(s) will be encouraged to buy all identified and available machinery/implements for Paddy/Groundnut in Cuddalore District with 75 per cent subsidy**.**

ii) Budget Cost

The estimated out lay of Rs.1801.78 lakhs may be required for this intervention.

iii) Implementing Agency

Under this intervention, a set of two crops viz., Groundnut and Paddy have **o**ut of total cost 75 per cent subsidy may be allowed to Gender friendly equipments and other implements/equipments. The balance amount will be met by the farmer as his/her contribution. One village is selected per block based on the major cropped area and the farmers willingness to opt for mechanization. The combination for each village differ and detailed in the Annexures.

Training will be given by the manufacturers at the time of supply as stipulated by the Chief Engineer (AE) Chennai. Manufacturers will be encouraged to open service outlets where cluster of machinery are available. AED will play the role of a coordinator for effective functioning of this concept.

Total Project Cost for this intervention	:	Rs.2252.23 lakhs.
Amount given as subsidy under NADP	:	Rs. 1801.78 lakhs
Farmers' contribution	:	Rs. 450.45 lakhs

Rs.1801.78 lakhs (subsidy amount) will be met from funds provided under Stream I of NADP. Government of India will provide necessary funds to Government of Tamil Nadu. Funds proposed to be received under NADP Rs.1801.78 lakhs. This proposed amount has been phased for four years.

I Year	:	Rs. 459.61 lakhs.
II Year	:	Rs. 506.30 lakhs
III Year	:	Rs. 286.39 lakhs
IV Year	:	Rs. 549.50 lakhs
Total	**:**	**Rs. 1801.80 lakhs**

Rs.1801.78 lakhs (subsidy amount) will be met from funds provided under Stream - I of NADP.

Table 6.9 Projects Under Stream - I with Budget Costs

(Rs. in lakhs)

Sl. No.	Interventions	Tentative Budget (2008-09)	
		Nos.	Cost
1	Introduction of Newly Developed Agrl. Machinery / Implements	5950	1079.28
2	Innovative water harvesting structures	793	203.00
3	Control of Sea Water Intrusion	500	250.00
4	Promoting the concept of Mechanised villages Distribution of crop based package of Agrl. Machinery on cluster basis in the adopted village panchayat	13	1801.80
	Total	**7256**	**3334.08**

Thus, under Stream I, for the four projects / interventions planned for, the total budget outlay works out to Rs.3214.08 lakhs for the whole four years of XI Plan period under NADP.

Stream - II

The NADP provides the scope for dovetailing additional funds for strengthening the existing agricultural engineering development. At present there is a Centrally Sponsored Scheme which target mainly individual farmers, particularly small and marginal farmers. Under this Scheme 25 per cent subsidy is allowed subject to specified ceiling for Tractors, Power Tillers and other specified implements. Rs.73.63 lakhs was the final allotment for the year 2007-2008. Targets have been fixed implement wise and due weightage has been given to each implement. But there is demand for Power Tillers and Rotavators in particular. But with the existing allotment made it was not possible to extend assistance to all needy farmers. As such demand of the farmers could not be met immediately. Therefore to reinforce the existing centrally sponsored sources of popularization of farm machineries among farmers, following four forms of interventions have been planned under DAP under NADP. The first intervention presented below.

Project – I

i) Project Title: Popularisation of Agricultural Mechanisation through Conventional Machinery / Equipments

As there is high demand for certain implements such as Rotavators, Power Tillers if funds are allotted sufficiently to fill the existing gaps it would Provisions of the amount to the needy farmers if aimed at, through utilizing of funds from NADP. Considering the prevailing demand in Cuddalore District and keeping the interest of Small/marginal farmers who have small land holdings dovetailing of existing Centrally Sponsored Scheme is proposed for certain AGRL. MACHINERY/IMPLEMENTS under NADP with subsidy rates upto 25 per cent. It is estimated that Rs.369.88 lakhs may be required for this intervention for Cuddalore District for four years from 2008-2009 to 2011-2012.

Hence additional allotment of fund to all categories of framers to an existing Scheme will solve this problem to a considerable extent.

ii) Components

Under this intervention, of agricultural mechanisation is popularaied through the distinction of conventional machineries / equipments as per the existing guidelines of Centrally Sponsored Scheme with 25 percent of amount subsidy and 75 per cent with farmers contribution. The types of machineries, equipments proposed are: pattern as proposed below.

1 Power Tiller
2 Rotavator
3 Cultivator
4 Off-set Disc Harrow
5 Disc Plough

iii) Budget cost and Implementation

Rs.369.86 lakhs (subsidy amount) will be met from funds provided under Stream II of NADP. Funds proposed to be received under NADP Rs.369.88 lakhs.The proposed amount has been phased out for four years (also in Table 6.12).

I Year	:	Rs.73.88 lakhs.
II Year	:	Rs.88.79 lakhs
III Year	:	Rs.101.33 lakhs
IV Year	:	Rs.105.88 lakhs
Total	**:**	**Rs.369.88 lakhs**

Project – II

i) Project Title : Water Harvesting Structures

Intervention II Focuses mainly on the strengthening of the existing activities relating to the development of water harvesting structures.

National Agricultural Development Programme provides scope for dovetailing funds for the existing Schemes under Stream - II. Considering the scope for the

construction of water harvesting structures and feed back from dovetailing of existing State Plan Scheme (Soil Conservation Scheme) it is proposed for construction of certain water harvesting structures like Check dams, percolation ponds, Recharge shaft (All community based works) under NADP with Government contribution upto 100 per cent and individual based works such as Farm pond with 90 per cent contribution.

ii) Components

Under this intervention, the following structures will be constructed following the existing guidelines of State plan Scheme.

1. Farm Pond-Unlined
2. Checkdam-Minor
3. Checkdam-Medium
4. Checkdam-Major
5 Percolation Pond
6 Recharge shaft
7 New village pond
8 Collection well

All community works will be executed with 100 per cent Governement Assistance. Farm pond constructed in individual fields will be carried out with 90 per cent Government assistance and the balance 10 per cent amount will be done by the farmer as his/her contribution. Educating, motivating and training of Watershed community in terms of maintenance will also be taken up, simultaneously.

iii) Project Cost and Financing are as Detailed Below

Total Project Cost for this intervention : Rs.905.11 lakhs.
Amount given as subsidy under NADP : Rs.814.60 lakhs
Farmers' contribution : Rs. 90.51 lakhs

Rs.814.60 lakhs (subsidy amount) will be met from funds provided under Stream - II of NADP.

This proposed amount has been phased for four years. Details are available in the annexure.

I Year	:	Rs.153.40lakhs.
II Year	:	Rs.184.40lakhs
III Year	:	Rs.222.65lakhs
IV Year	:	Rs.254.15lakhs
Total	**:**	**Rs.814.60 lakhs**

Project –III

i) Project Title : Soil Conservation Works

The soil conservation is an important activity for developing agriculture. Due to unchecked soil erosion fertile top soil is carried away leading to poor productivity. As a result area under cultivation has been reduced in certain pockets of this District. Government have at the right time intervened and Government of Tamil Nadu has been implementing Soil Conservation Scheme since 1960. But Soil conservation is a continuous process i.e. Our interest must to be protect all susceptible lands from degradation for better productivity. Though Soil Conservation works have been taken up on demonstration mode since 1960s' still certain pockets are susceptible to Soil erosion. Compartmental bunding and Land shaping are two proven Soil conservation measures suitable for this area.

National Agricultural Development Programme provides scope for dovetailing funds for the existing Schemes under Stream II. Therefore considering the scope for Soil Conservation works and feed back from field level officers, dovetailing of existing State Plan Scheme (Soil Conservation Scheme) is proposed for carrying out Soil Conservation works under methods assistants of non farm NADP with Government contribution upto 90 per cent.

ii) Project Goals

The goals of this form of machineries are

1 To prevent soil loss through Soil conservation.

2 To ensure in situ moisture conservation.

3 To avoid siltation of water storage structures down below.

4 As soil is an important input, agricultural growth at desired level (4 per cent) could be possible.

iii) Project Components

Under this intervention, the following two Soil Conservation measures are proposed to be taken up.

1. Compartmental bunding
2. Land shaping

These works will be executed in individual fields with 90 per cent Government assistance. The balance of 10 per cent amount will be met by the farmer as his/her own contribution Educating and motivating farmers for replication as well as future maintenance will also be carried out by AED.

iv) Project Cost and Financing

Rs.310.05 lakhs (subsidy amount) will be met from funds provided under Stream II of NADP. This proposed amount has been phased out for four years.

I Year	:	Rs.40.95 lakhs.
II Year	:	Rs.62.55 lakhs
III Year	:	Rs.103.05 lakhs
IV Year	:	Rs.103.5 lakhs
Total	**:**	**Rs.310.05 lakhs**

Project – IV

i) Project Title: Water Management Works

Agricultural growth in the recent years go against the general economic trend. Among the many reasons attributed for this deceleration in agricultural growth, water scarcity is the prime reason in certain areas. As a result area under cultivation has been reduced in certain pockets of this District. Government has at the right time intervened and Water Harvesting structures were constructed in almost all the blocks Cuddalore District. Still Government have determined to create Water harvesting structures as many as possible. But water stored must be conveyed / recycled to cultivable lands. Loss due to conveyance water is high in any irrigation network. Also a storage structure for recycling of harvested rainwater for longer periods particularly in dry tracts is also essential. PVC pipe laying ensures better conveyance and Construction of Ground level reservoir fulfills the purpose of prolonged storage To strengthen this activity further the additional funds are sought for from NADP.

Considering the scope for dovetailing of existing State Plan Scheme (Soil Conservation Scheme) laying of PVC pipes and construction of Ground level reservoirs are proposed under NADP with Government assistance upto 90 per cent.

ii) Project Goals

The major goals of these interventions are

- To recycle the harvested rainwater judiciously.
- To ensure water availability even during critical stages of irrigation.

iii) Project Components

Under this intervention, the following structures will be constructed following the existing guidelines of State plan Scheme below.

1 PVC Pipe laying

Works in individual fields will be carried out with 90 per cent Government assistance..The balance 10 per cent amount will be met by the farmer as his/her contribution. Educating, motivating and training of Watershed community in terms of maintenance will also be taken up.

iv) Project Costs

The total costs of the project is Rs.283.50 lakhs and the year-wise details are as follows

I Year	:	Rs.54.00 lakhs.
II Year	:	Rs.67.50 lakhs
III Year	:	Rs. 81.00 lakhs
IV Year	:	Rs. 81.00 lakhs
Total	:	**Rs. 283.50 lakhs**

Table 6.10 Project Based Assistance under the Stream - II

(Rs. in lakhs)

Sl. No.	Interventions	Tentative Budget	
		Nos.	Cost
1	Popularization of Agricultural mechanization through conventional machinery/equipments	1715	369.88
2	Water harvesting structures	1240	814.60
3	Soil conservation works	1395	310.05
4	Water management works	2100	283.50
	Total	**6450**	**1778.03**

For the four projects / interventions under Stream - II, the budget requirement is Rs.1495.00 lakhs.

Grand Total Expenditure

Total cost for the projects planned under Stream I and Stream II are as follows.

Table 6.11 Grand Total out lay for Stream I and Stream II

(Rs. in lakhs)

Particulars	Nos.	Cost
Stream I	7256	3334.09
Stream II	6450	1778.03
Grand Total		**5112.12**

The grand total budget outlay is Rs.5112.12 during XI Plan period under NADP for the Agricultural Engineering projects planned in Cuddalore district.

Table.6.12 Budget Abstract for the Projects Proposed under Agricultural Engineering Sector

(Rs. in lakhs)

S.No	Project Component	2008-09		2009-10		2010-11		2011-12		Total	
		Nos.	Cost	Nos.	Cost	Nos.	Cost	Nos.	Cost	Nos.	Cost
	Stream : I										
1	Introduction of Newly Developed Agrl. Machinery / Implements	1105	199.49	1409	242.21	1484	294.61	1952	342.98	5950	1079.28
2	Innovative water harvesting structures	154	45.50	180	53.50	230	55.50	229	48.50	793	203.00
3	Control of Sea Water Intrusion	40	100.00	60	50.00	80	50.00	80	50.00	260	250.00
4	Promoting the concept of Mechanised villages Distribution of crop based package of Agrl. Machinery on cluster basis in the adopted village panchayat	3	459.61	4	506.30	3	286.39	3	549.50	13	1801.80
	Sub-total	**1302**	**804.60**	**1653**	**852.01**	**1797**	**686.50**	**2264**	**990.98**	**7016**	**3334.09**
	Stream : II										
1	Popularisation of Agricultural mechanisation through conventional machinery/equipments	340	73.88	415	88.79	470	101.33	490	105.88	1715	369.88
2	Water harvesting structures	232	153.40	278	184.40	346	222.65	384	254.15	1240	814.60
3	Soil conservation works	205	40.95	295	62.55	445	103.05	450	103.50	1395	310.05
4	Water management works	125	54.00	200	67.50	250	81.00	250	81.00	825	283.50
	Sub-total	**902**	**322.23**	**1188**	**403.24**	**1511**	**508.03**	**1574**	**544.53**	**5175**	**1778.03**
	Grand total	**2204**	**1126.83**	**2841**	**1255.25**	**3308**	**1194.53**	**3838**	**1535.51**	**12191**	**5112.12**

6.6. Animal Husbandry Sector

6.6.1 Introduction

For the development of Animal husbandry activities 13 projects/interventions have been planned for and listed in Table 6, along with the landset provisions. The total budget cost for all the four years considered in XI Plan works out to Rs.619.58.

For dairy development in the district 17 projects/interventions have been planned for and the year-wise and total budget provision are also given in Table 6.23 The total budget outlay required is Rs.338.325 lakhs as can be noted from the table. With a view to strengthening the research activities in TANUVAS five projects / interventions have been planned with budget outlay of Rs.45.25 as could be visualized from Table 6.23

Project - I

I. Project Title : Intensive Fodder Production, Supplementation of By-pass Protein Feed and Micronutrients to Dairy Cows and Goats and Enhancement of Nutrient Utilization

i) Project Abstract

Fodder deficiency is wide spread and in this drought prone Cuddalore district – green fodder deficit is about 79.6 percent. Inspite of deficient fodder, the farmers do not utilize the alternative fodder resources effectively and do not attempt to increase the efficiency of nutrient utilization from available fodder. This project aims to reduce the pressure on green fodder requirement by utilizing the sugarcane tops, develop micro-level fodder units and increase the efficiency of nutrient utilization in the consumed feed and fodder.

The project proposes to commercialize fodder production by involving the SHG, adoption of the technology of SCT ensiling and feeding and increase the efficiency of nutrient utilization by popularizing chaff cutters, supplementing mineral mixture and supplementing By-pass protein feed to milch animals,.The project will be implemented by the Department of Animal Husbandry and the Department of Dairy Development at a

total cost of Rs. 328.735 lakh in four years .The Project wise budget allocations are summarized below in Table 6.13

Table 6.13 Budget Summary

Title	Agency	Total amount
Popularizing chaff cutter @1No./Block/yr for SHGs/elite farmers (0.10 Lakhs through NADP & 0.10 Lakhs farmer's share)	DAH	5.20
Fodder production by SHGs @ 10 acre/Bl/yr	DAH	122.20
Establishment of 6 x 6 x 4 feet silo to ensile sugarcane tops at 75 per cent of total cost of Rs 15,000/Unit	DAH	11.24
Popularizing mineral mixture to improve livestock production @ 1kg/month at 100 per cent subsidy	DAH	63.32
Supply of mineral mixture to the milch animals at subsidised cost (50 per cent) @ 18 kg/ year	DDD	15.00
Supply of by-pass protein feed to the milch animals (360kgs/ year/animal @ 50 per cent subsidised cost of Rs.9/- per kg.)	DDD	85.80
Chaff cutters for IDF villages on community basis (Mechanised)	DDD	9.10
Chaff cutters for elite farmers (small type) @Rs.20,000 as 100 per cent grant	DDD	1.60
Fodder Development Activities (65 acres in IDF villages & 1850 acres in farmer's field)	DDD	15.275
Total		**328.735**

iii) Problem Focus

Severe green fodder deficiency and under utilization of available other fodder resources together with poor nutrient efficiency results in over dependence on supplemental compounded feed which increase the cost of production.

iv) Project Rationale

Increasing fodder production and its nutrient efficiency will reduce feed cost on production and increase the net income.

v) Project Strategy

- Involving SHG in fodder production,
- Ensiling and feeding of sugarcane tops
- Introduction of fodder chaffers
- Supplementation with mineral mixture and By-pass protein to enhance nutrient efficiency.

vi) Project Goal

To reduce fodder and nutrient demand and increase net profit to dairy farmers.

vii) Project Components

i. Provision of Chaff Cutters to Self Help Groups

One Chaff cutter will be provided to one Self Help Group in each block. The SHG to be provided with the chaff cutter will be identified by the District Administration. The Chaff cutter that are provided will be operated manually with provision for mechanizing the same if necessary in future. The approximate cost of one chaff cutter works out to Rs.10,000/-

Popularizing chaff cutters by providing to SHG/Elite farmers at 50 per cent of the total cost of Rs.0.20 lakh each. A total of 52 chaffers will be distributed at the rate of one per block per year to the total cost of Rs.5.20 lakhs.

ii. Encouraging fodder production in irrigated condition by SHG at the rate of 10 acre per block per year with 100 per cent subsidy on the total cost of Rs.0.20 lakh per acre. The SHG resorting to fodder production will be given training at the cost of Rs.3500. This component will be implemented in 520 acres at the total cost of Rs.122.20 lakhs.

Cost of Fodder Production by the Department of Animal Husbandry and the DDD /Acre

S.No.	Details		Amount (in Rs.)
	I. Training Cost		
1.	Incentive @ Rs.100/person/day, for 2 days, for 15 members	:	3,000.00
2.	Refreshment expenses @ Rs.10/day/person, for 2 days, 15 persons	:	300.00
3.	Study materials including scribbling pad, pen etc.@ Rs.15/person, for 15 members	:	225.00
	Total training cost per SHG	:	3,525.00
II.	**Fodder Cultivation of Fodder**		
1 a)	Bush clearance and land reclamation	:	2,600.00
1.b)	Cost of ploughing	:	1,600.00
2.	Formation of ridges and furrows/beds and irrigation channels	:	500.00
3.a)	Cost of fym 10 mt. @ Rs.300/mt.	:	3,000.00
3.b)	Labour cost for transportation and application, loading and unloading	:	1,000.00
4.a)	Cost of slips 16,000 numbers @ Rs.0.25 /slip	:	4,000.00
4.b)	Planting cost	:	840.00
5.a)	Cost of chemical fertilizers N 150 Kg @ Rs.5.48/kg – 822.00 P 50 Kg @ Rs.10.88/kg – 544.00 K 40 Kg @ Rs.3.85/Kg - 154.00		1,520.00
5. b)	Cost of labour for application	:	200.00
6.	After cultivation weeding	:	840.00
7.	Cleaning the channels	:	500.00
8.	Irrigation charges	:	800.00
9.	Harvesting charges and transportation	:	1,600.00
10.	Miscellaneous expenses	:	800.00
	Total Cost Required Per Acre	**:**	**20,000.00**

iii. The sugarcane farmers will be encouraged to ensile the Post- harvested green sugarcane tops to supplement their animals during summer. For digging the 6' x 6' x 4' cubic feet silo, 75 per cent subsidy on the total cost of Rs.0.15 lakh will be provided. A total of 100 sugarcane farmers will be involved this project in 4 years at the total cost of Rs.11.25 lakhs.

iv. To popularize mineral mixture supplementation 18 kg mineral mixture per year at the rate of 1.5 kg per month will be supplied to a total of 3000 cows in four years with 50 per cent subsidy. The total cost for this proposal is Rs.15.00 lakh.

This programme will be implemented by the Dairy Development Department.

v. The Department of Animal Husbandry will distribute 158300 kgs of mineral mixture to dairy cattle for four years. The total cost will be Rs.63.32 lakhs.

vi. The Department of Dairy Development will distribute bypass protein feed to high yielding milch animals(360kg/animal/year) at 50 per cent subsidized cost of Rs 9/kg. A total of 2600 animals will be covered in 4 years at the total cost of Rs.85.80 lakhs.

vii. The Department of Dairy Department will distribute small sized 8 chaff cutters to elite farmers at 100 per cent subsidy at a unit cost of Rs. 0.20 lakhs , the total cost will be Rs.1.60 lakhs.

viii. The Department of Dairy Department will establish fodder production units in 65 acres in IDF villages & 1850 acres in farmer's field at a unit cost of Rs. 0.235 lakhs/acre, the total amounting to Rs. 15.275 lakhs.

ix. The Department of Dairy Department will distribute 13 numbers of mechanized Chaff cutters for IDF villages on community basis at a unit price of Rs.0.70 lakhs, the total cost amounting to Rs. 9.10 lakhs.

viii) Project Cost

Table 6.14 The Year-wise Budget Outlays

(Rupees in lakhs)

Title	Agency	2008-09	2009-10	2010-11	2011-12	Grand total
Popularizing chaff cutter @ 1/Bl/yr for SHGs/elite farmers at 50 per cent of total cost of Rs 20,000	DAH	1.30	1.30	1.30	1.30	5.20
Fodder production by SHGs @ 10 acre/Bl/yr	DAH	30.55	30.55	30.55	30.55	122.20
Establishment of 6 x 6 x 4 feet silo to ensile sugarcane tops at 75 per cent of total cost of Rs 15,000	DAH	2.81	2.81	2.81	2.81	11.24
Popularizing mineral mixture to improve livestock production @ 1kg/month for one year in one block	DAH	15.83	15.83	15.83	15.83	63.32
Supply of mineral mixture to the milch animals at subsidised cost (50 per cent) @ 18 kg/ year	DDD	3.75	3.75	3.75	3.75	15.00
Supply of by-pass protein feed to the milch animals (360kgs/ year/animal @ 50 per cent subsidised cost of rs.9/- per kg.)	DDD	21.45	21.45	21.45	21.45	85.80
Chaff cutters for elite farmers (small type) @rs.20,000 as 100 per cent grant	DDD	0.4	0.4	0.4	0.4	1.60
Chaff cutters for IDF villages on community basis (Mechanised)	DDD	0	3.50	3.50	2.10	9.10
Fodder Development Activities (65 acres in IDF villages	DDD	--	5.875	4.700	4.700	15.275
Total		**76.09**	**85.465**	**84.29**	**82.89**	**328.735**

In sum, the total costs of the project is Rs 328.735 lakhs, as could be evident from the table above.

ix) Implementation Chart

Title	Agency	2008-09	2009-10	2010-11	2011-12
Popularizing chaff cutter for SHGs/elite farmers	DAH	13	13	13	13
Fodder production by SHGs	DAH	130	130	130	130
Establishment of 6 x 6 x 4 feet silo to ensile sugarcane tops	DAH	25	25	25	25
Popularizing mineral mixture to improve livestock production	DAH	39575	39575	39575	39575
Supply of mineral mixture to the milch animals	DDD	750	750	750	750
Supply of by-pass protein feed to the milch animals	DDD	650	650	650	650
chaff cutters for elite farmers (small type)	DDD	2	2	2	2
Chaff cutters for IDF villages on community basis (Mechanised)	DDD	---	5	5	3
Fodder Development Activities (65 acres in 100 IDF villages	DDD	---	25	20	20

x) Reporting

Concerned project implementing agency will report the progress to respective financial authorities (DAH / DDD).

Project - II

i) Project Title: Genetic Upgradation of Cattle, Buffaloes, Sheep and Goats, Improvement of Livestock Health and Supply of Goat Units to SHG

ii) Project Abstract

This project aims to demonstrate 100 per cent conception rate through programmed breeding in buffaloes and indigenous cows, popularize supplemental feed

strategy to buffalo calves to attain early sexual maturity apart from maintaining data base on breedable bovines in this district.

The Project proposes to demonstrate heat synchronization in buffaloes, followed by AI, popularize concentrate feed supplementing strategy to buffalo calves of both sexes and maintain data base on breedable bovines for future planning.

The project will be implemented by both the Department of Dairy Development and Department of Animal Husbandry at a total cost of **Rs.103.10** lakhs in four years and the budget details are summarized below.

Table 6.15 Budget Abstract

(Rupees in lakhs)

Title	Agency	Total amount
Identification and traceability of breedable bovine population	DAH	31.66
Programmed breeding indigenous cattle & buffalo to increase conception rate	DDD	39.20
Calf to Bull programme to assist as feed cost upto 20 months of age @ 5 / Block	DAH	32.24
Total		**103.10**

iii) Problem Focus

i. The population of buffaloes is in decreasing trend inspite of their ability to convert crop residues into high quality milk. As buffaloes are silent heaters the farmers are unable to detect the heat and this results in very long intercalving period and loss of revenue.

ii. The buffalo calves of both sexes are highly neglected and very often affected with parasites and malnutrition resulting in stunted growth and late sexual maturity.

iv) Project Rationale

Demonstration and Popularizing heat synchronization in buffaloes and indigenous cows followed by AI to achieve 100 per cent conception rate and nutritional supplementation of the buffalo calves will help the buffalo growers to adopt these technologies.

v) Project Strategy

a. Identification and tagging of breedable cattle and buffaloes.
b. Demonstration of heat synchronization followed by Artificial Insemination to improve the conception rate.
c. Demonstrating the effect of supplemental feeding to the buffalo calves on their economic traits.

vi) Project Goals

a. To improve the conception rate and reduce intercalving period in buffaloes.
b. To demonstrate improvement in economic traits on account of proper nutrition to buffalo calves.

vii) Project Components

All the breedable bovines that are brought for insemination will be tagged and the cow Index card (data base) for each tagged bovine will be maintained. A total of 158300 beedable bovines will be thus identified and included in data base in 4 years. The project will be continued even after the completion of NADP. The cost per animal will be Rs.12 to cover the cost of Tag and Rs.8 for the issue of Blue Index card. The total cost will be Rs.**31.66 lakhs** for 1 year. This component will be implemented both by the Department of Animal Husbandry. The cost per animal is estimated as below.

S.No	Item	Total
1	Hormones & animal identification	500.00
2	De-worming	50.00
3	Mineral mixture etc	130.00
4	Miscellaneous & Monitoring	13.00
5	Administrative charges	7.00
	Total	**700.00**

The Indigenous cattle and buffaloes numbering 5600 will be covered at the rate of 1400 per year to heat synchronization and subsequent A.I to achieve 100 percent conception rate. At the unit cost of Rs.700/- per animal, a total of Rs.39.20 lakhs will be utilized in 4 years. In the Calf to Bull development programme, to assist as feed cost for 260 calves in four years period will be supplied with supplemental concentrate feed upto 20 months age at 100 per cent subsidy, the total cost will be Rs.32.24 lakhs.

viii) Project Cost and Financing

The year-wise budget outlays for the various components of this projects are outlined below.

Table 6.16 Year-wise and Component-wise Budget Outlays

(Rupees in lakhs)

Title	Agency	2008-09	2009-10	2010-11	2011-12	Grand total
Identification and traceability of breedable bovine population	DAH	31.66	0	0	0	31.66
Programmed breeding indigenous cattle & buffalo to increase conception rate	DDD	9.80	9.80	9.80	9.80	39.20
Calf to Bull programme to assist as feed cost upto 20 months of age @ 5 / Block	DAH	8.06	8.06	8.06	8.06	32.24
Total		49.52	17.86	17.86	17.86	**103.10**

As could be discerned from the table above, the total budget is estimated at Rs.103.10 lakhs.

ix) Implementation Chart of the Project

S.No.	Project	Agency	2008-09	2009-10	2010-11	2011-12
1.	Identification and traceability of breedable bovine population	DAH	158300	0	0	0
2.	Programmed breeding of Indigenous cattle and Buffalo to increase conception rate	DDD	1400	1400	1400	1400
3.	Calf to Bull programme to assist as feed cost	DAH	65	65	65	65

x) Reporting

Concerned project implementing agency will report the progress to the respective financial authorities (DAH / DDD).

Project III

i) Project Title : Improving Livestock Health

ii) Abstract

This project aims to achieve fool proof and timely disease diagnosis and treatment even in inaccessible remote areas, better surveillance of disease outbreak etc., It will give major emphasis in controlling parasite diseases, establishment of Mobile Veterinary Clinic for off – campus treatment in remote areas, upgrading the existing Animal Disease Investigation Unit as Mobile Veterinary Diagnostic Laboratory and renovation of existing Veterinary dispensaries to provide better on-campus treatment.

At times of calamities which are unprecedented in the District like Tsunami, there is a every possibility of out break of contagious diseases for which ring vaccination are to

be adopted on war footing basis. So, this component requires high level of funding to cover the wide coastal area in the District. The total cost of this proposal is **Rs. 327.71** lakhs in 4 years and will be implemented by the Department of Animal Husbandry and Dairy Development Department.

iii) Problem Focus

Parasitic diseases are the major causes for economic loss in Livestock sector. Parasitic infestation also reduces the vaccine response and enhances disease transmission. The parasitic infestations are highly prevalent in calves and small ruminants. Due to lack of sufficient facilities for sample collection, spot examination and quick diagnosis many ailments particularly at inaccessible and remote areas are under reported. This is one of the main constraints in controlling of Livestock diseases.

iv) Project Rationale

Provision of timely and quick disease diagnostic facilities even in inaccessible and remote areas where livestock population is concentrated will not only control livestock disease outbreak but also reduce economic loss.

v) Project Strategy

1. Providing fool proof off–campus Veterinary facilities through mobile veterinary clinics
2. Strengthening of mobile input units for providing livestock health care
3. Renovation of existing Veterinary dispensaries to provide on–campus quality Veterinary service to Livestock

vi) Project Goal

1. To achieve timely disease diagnosis and control of diseases even is inaccessible remote areas.
2. To ensure better surveillance and prevention of disease out break.
3. To minimize economic loss in Livestock sector due to diseases.

vii) Project Components

1. Control of parasitic diseases through treatment to increase vaccine response.

v) Project Costs

Table 6.17 Budget Provisions for Improving the Livestock

(Rupees in lakhs)

Title	Agency	Total amount
Control of parasitic diseases through treatment to enhance vaccine response	DAH	22.76
Mobile veterinary clinics	DAH	29.15
Strengthening of veterinary Institutions	DAH	150.00
Mobile Animal Disease Diagnostic Lab	DAH	12.00
Disaster management	DAH	113.80
Total		**327.71**

Project - IV

i) Project Title : Establishment Of Mobile Veterinary Clinics In Each Block of Tamil Nadu

ii) Project Rationale

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 at the block headquarters of all the districts except in places where the units are already functioning.

iii) Project Components

- 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.

- 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.
- The unit will be provided with one vehicle at a cost of Rs.4.75 lakh.
- 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.
- Necessary equipments like surgical and obstetrical kits, microscope, AI guns, etc apart from LN2 containers sheath will be provided to each unit.
- Diesel worth Rs.45,000/- will be provided per year to each unit for running the vehicle.
- 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.
- The units will go around the area of operation as per the programme and carryout the activities providing breeding support and veterinary health care.

The equipments and instruments required for one mobile veterinary unit are listed below

Sl.No	Name of the Item	Unit cost (in Rs.)
1.	Surgical Kit	5000
2.	Obstetrical Kit	5000
3.	Microscope	20000
	Total	**30,000**

Anticipated expenditure (recurring and non-recurring expenditure) for one year for Mobile Veterinary Clinic.

Non-recurring Expenditure

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

Recurring Expenditure

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

Establishment of mobile veterinary clinics (four numbers) having equipments like surgical kit, Obstetrical kit, Binocular microscopes, Liquid Nitrogen container, Thermos flask and a Bolero jeep. For each unit diesel worth of Rs 45000 will be provided. The total cost will be Rs 5.832 lakhs to each unit and the total cost will be Rs.23.32 lakhs for four units.. The staff for this will be sourced from the available manpower in the department.

Project - V

i) Project Title : Mobile Animal Disease Diagnostic Laboratory

ii) Project Rationale

For mobility and to provide diagnosis at the farmer's doorsteps, the Animal Disease Diagnostic unit will be provided with one vehicle with facilities to make on the spot diagnosis. The vehicle will be fitted with a refrigerator, a centrifuge, a microscope and equipments to conduct post mortem examinations. This will help in identification of the pathogens quickly and thus undertake disease control measures without wastage of time. The cost of the vehicle is approximately Rs.11.00 lakh. The cost of microscope will be Rs.0.50 lakh cost of refrigerator will be Rs.0.25 lakh, cost of centrifuge will be Rs.0.15 lakh, cost of post mortem kits and other chemicals and chemical reagents will be Rs.0.10 lakh. Establishment of one mobile Animal Disease diagnostic laboratory is very

much essential for the on-spot diagnosis of contagious diseases of Cattle for providing fool proof remedial measures.

iii) Project Components

Renovation of existing 30 Veterinary dispensaries with basic facilities like fencing bore wells water troughs and minor repair works at the cost of Rs 5.00 lakhs for each dispensary at a total cost of Rs 150.00 lakhs.

Particulars	Unit cost	Units	2008-09	2009-10	2010-11	2011-12	Total Units	Grand Total
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	6.971	5	6.971					6.971
5. Animal shelter	21.0		105.0					105.0
Total			**113.80**					**113.80**

iv) Project Costs

The budget requirement for setting up of Mobile Animal Disease Diagnostic Laboratory is Rs.327.71 lakhs as detailed below in Table 6.18

Table 6.18 Budget outlay for Mobile Animal Disease Diagnostic Laboratory

(Rupees in lakhs)

Title	Agency	2008-09	2009-10	2010-11	2011-12	Grand total
Control of parasitic diseases through treatment to enhance vaccine response	DAH	22.76	0	0	0	22.76
Mobile veterinary clinics	DAH	29.15	-	-	-	29.15
Strengthening of veterinary Institutions	DAH	150.00	-	-	-	150.00
Mobile Animal Disease Diagnostic Lab	DAH	12.00	-	-	-	12.00
Disaster management	DAH	113.80	0	0	0	113.80
Total		**327.71**				**327.71**

v) Project Implementation Chart

(Rupees in lakhs)

Project	Agency	2008-09	2009-10	2010-11	2011-12
Control of parasitic disease through treatment	DAH	1	1	1	1
Mobile Veterinary Clinic	DAH	5	0	0	0
Strengthening of veterinary Institutions	DAH	30	0	0	0
Mobile Animal Disease Diagnostic Lab	DAH	1	0	0	0
Disaster management	DAH	1	0	0	0

vi) Reporting

Concerned project implementing agency will report the progress to the respective financial authorities (DAH).

Project - VI

i) Project Title : Enhancement of Milk Production by Improving the Infrastructure Required for Milk Procurement

i) Project Abstract

This project aims at increasing the milk procurement in Co-operatives, avoid unhygienic milk handling by milkmen, introduction of transparency in milk weighment and automation in milk Co-operative societies. It will provide portable milking machine to continuous milk pourers to the milk co-operatives at 100 per cent subsidy. A total of 50 machines will be supplied to the milk pourers 4 years. 13 machines with advanced version will be supplied to ID farms of Dairy Development Department.

For milk weighment electronic balances will be provided to 36 milk Co-operatives with 100 per cent subsidy. P.C. based Automatic Milk collection Station will be installed in 17 milk Co-operatives. A total 40 dormant milk Co-operatives will be revived by providing basic essential infrastructure. The Project will be implemented by the Department of Dairy Development at a total cost of **Rs. 97.87** lakhs and the budget details are summarized below

Title	Agency	Total amount
Portable milking machines for farmers	DDD	9.00
Milking machines for ID farms	DDD	13.00
Milk weighing machine for milk producers co-operative societies	DDD	6.12
P.C.based automatic milk collection stations to IDF villages milk producers cooperative societies	DDD	29.75
Revival of dormant MPCS	DDD	40.00
Total		**97.87**

ii) Problem Focus

Hand milking is time consuming, laborious and unhygienic, More over availability of skilled milk men is also problem now a days. With more and more number of high yielding cows, the number of milking also has to be increased which Necessitate continuous engagement of milk man.

i. The milk pricing depends on total solid content and hence any problem in milk weighment badly affects the return to farmers.
ii. Not – so – Transparent activities at milk collection centres and problem in maintaining summary of milk supplied on daily, monthly and yearly basis affects the confidence of milk pourers.
iii. Non-functional, dormant but potential milk societies for want of certain basic infrastructure forces the farmers to depend on private vendors resulting in exploitation.

iii) Project Rationale

i. Introduction and popularization of simple machine milking will not only minimize milk men problem but also avoid any unhygienic milk handling.
ii. Introduction of electronic weighing machines at the milk procuring societies and vis-a vis transparency will not only reduce man power involvement and pilferage but also improve efficiency in milk procurement
iii. Installation of Automatic Milk collection Stations (AMS) will automatically measure weight of milk, fat content and total solid and give print out of payment slip to farmers. The AMC with personal computer will maintain complete record of the Dairy Co-operative together with all transactions.
iv. By providing essential milk procuring equipments and other infrastructure for record maintenance etc. the hitherto dormant milk societies could be revived and milk procurement increased. It will also free the farmers from the clutches of exploiting private vendors.

iv) Project Strategy

i. 13 Milking machines with advanced version will be supplied to ID farms of Dairy Development Department.
ii. Popularizing machine milking by providing portable milking machine to a total of 50 milk pourers in 4 years period with 100 per cent subsidy.
iii. Providing electronic milk weighing machines to a total of 36 Co-operative milk societies procuring more than 500 lt milk per day.
iv. Providing P.C. based Automatic Milk collection Station facility to a total of 17 milk producers Co-operative societies procuring more than 1000 lt per day.
v. Revival of a total of 40 hitherto dormant but potential milk societies by providing basic and essential milk procuring infrastructure.

v) Project Goal

i. To increase the milk procurement and reduce exploitation by private milk vendors.
ii. To minimize labour problem in milking, milk procurement and avoid unhygienic milk handling.
iii. To ensure transparency in milk weighment at milk collection centre.
iv. To introduce automation in milk procurement and improve efficiency of milk handling.

vi) Project Components

i. Supply of Milking machines with advanced version (13) to ID farms of Dairy Development Department at a unit price of Rs. 1 lakh.
ii. Supply of Portable simple milking machine costing Rs.0.18 lakh each to 50 milk pourers at 100 per cent subsidy.
iii. Supply of electronic milk weighing machines costing Rs.0.17 lakh each to 36 Co-operative milk societies.

iv. Installation of PC based AMS having integrated milk weighing system, Electronic milk testing, Personal Computer with printer and battery with a capacity to analyze 120 – 150 milk samples per hour costing Rs.1.75 lakh to each of 17 Co-operative milk societies.

v. Reviving 40 dormant but potential milk societies each at the cost of Rs.1.00 lakh each.

vii) Project Costs

The year-wise project costs are depicted below in Table 6.19.

Table 6.19 Year-wise Budget Outlays for Infrastructure for Milk Procurement

(Rupees in lakhs)

Title	Agency	2008-09	2009-10	2010-11	2011-12	Grand total
Portable milking machines for farmers	DDD	3.60	1.80	1.80	1.80	9.00
Milking machines for ID farms	DDD	13.00	--	--	--	13.00
Milk weighing machine for milk producers co-op. societies	DDD	1.53	1.53	1.53	1.53	6.12
P.C. based automatic milk collection stations to IDF villages milk producers cooperative societies	DDD	7.00	8.75	8.75	5.25	29.75
Revival of dormant MPCS	DDD	10.00	10.00	10.00	10.00	40.00
Total		**35.13**	**22.08**	**22.08**	**18.58**	**97.87**

The total costs of the project is rs.97.87 lakhs as could be observed from the table above.

viii) Implementation Chart of the Project

S.No.	Project	Agency	2008-09	2009-10	2010-11	2011-12
1.	Supply of Portable Milking machine for farmers.	DDD	20	10	10	10
2.	Milking machines for ID farms	DDD	13	--	--	--
3	Provision of electronic milk weighing machine for Co-operative milk societies.	DDD	9	9	9	9
4.	Provision of P.C based AMS for Co-operative milk societies.	DDD	4	5	5	3
5	Revival of dormant Co-operative milk societies	DDD	10	10	10	10

ix) Reporting

Concerned Project implementing agency will report the progress to respective financial authorities(DDD).

Project - VII

i) Project Title: Enhancement of Milk Production by Improving the Infrastructure Required for Milk Processing

ii) Project Abstract

The unhygienic handling of milk by the milk men and unclean milk production by few milk pourers due to lack of awareness introduces bacterial contamination in fluid milk. Further the odd hour milking and more time taken for transporting the contaminated milk to processing unit increases the bacterial load in milk and escalate the processing cost. This project aims to check the bacterial load in procured fluid milk at the milk collection centres and processed packed milk at retail ends. It further aims at converting the excess fluid milk to value added products.

This project proposes to improve the infrastructure facilities both at Co-operative milk societies and District Co-operative Milk Producers Federation Dairy to achieve the above aims. The proposal includes establishing 5000 litre capacity bulk milk cooler at villages, walk –in cooler at retail end, facility to manufacture ice-cream, milk khoa and energy management system at a total cost of Rs. **63.78 lakhs** as detailed below.

Title	Agency	Total amount
Bulk milk cooler	DDD	30.00
Walk-in coolers	DDD	30.00
Manufacturing facilities for milk khoa	DDD	1.54
Manufacturing facilities for ice cream	DDD	2.24
Total		**63.78**

The Department of Dairy Development will implement this project.

iii) Problem Focus

- The District of Cuddalore produces 1.99 lakh tonnes of milk annually through large number of Co-operative Societies spread over the district.
- The milk procured from Co-operative Societies has to be chilled within half an hour of milking to check further multiplication of bacterial load. More over customary odd hour milking in late evening by the farmers necessitate storing of procured milk at the milk co-operatives transportation next day.
- It is also necessary to convert the excess fluid milk into products which are in demand.

iv) Project Rationale

The District of Cuddalore produces 1.99 lakh tonnes of milk annually which is collected on daily basis from rural areas. By establishing milk coolers the fluid milk could be chilled and stored at milk collection centres and walk -in -coolers will store the processed and packed milk. These measures will keep the bacterial load at minimum and reduce the processing cost.

v) Project Strategy

i. Establishing bulk milk coolers along the rural operating milk routes to maintain quality of fluid milk.
ii. Locating walk–in-coolers at retail ends in urban areas to maintain quality of packed milk.
iii. Establishing Milk khoa and ice cream manufacturing facilities and product production and delivery infrastructure at the District Co-operative milk producers union Dairy to utilize excess fluid milk.

vi) Project Goal

i. To check the bacterial load of unprocessed fluid milk procured in rural collection centres.
ii. To establish facilities to manufacture milk khoa and Ice cream.

vii) Project Components

i. Establishing one number of 5000 lt capacity bulk milk cooler in one of the milk collection centres of milk co-operative at the total cost of Rs.30.00 lakhs.
ii. Establishing a Walk-in-Cooler in urban retail end at the total cost of Rs,.30.00 lakhs.
iii. Establishing 2 Milk Khoa manufacturing units at the total cost of Rs. 1.54 lakhs in 4 years period at the District Co-operative Milk Producers Union Dairy.
iv. Establishing 2 ice cream manufacturing units at the total cost of Rs.2.24 lakhs in 4 years period at the District Co-operative Milk Producers Union Dairy.

viii) Project Cost

The budget outlays are furnished below, in Table 6.20.

Table 6.20 Year-wise Budget Outlays for Infrastructure for Milk Processing

Title	Agency	2008-09	2009-10	2010-11	2011-12	Grand total
Bulk milk cooler	DDD	30.00	0	0	0	30.00
Walk-in coolers	DDD	30.00	0	0	0	30.00
Manufacturing facilities for milk khoa	DDD	0.77	0.77	0	0	1.54
Manufacturing facilities for ice cream	DDD	1.12	1.12	0	0	2.24
Total		**61.89**	**1.89**	**0**	**0**	**63.78**

The total costs of the project is estimated at Rs. 63.78 lakhs

viii) Project Implementation Chart

S.No.	Project	Agency	2008-09	2009-10	2010-11	2011-12
1.	Establishing Bulk Milk Cooler	DDD	1	0	0	0
2.	Establishing Walk in Cooler	DDD	1	0	0	0
3.	Manufacturing facility for Milk Khoa	DDD	1	1	0	0
4.	Manufacturing facility for ice-cream	DDD	1	1	0	0

ix) Reporting

Concerned Project implementing agency will report the progress to respective financial authorities (DDD).

Project - VIII

i) Project Title : Establishment of Quality Germ Plasm Production Centres and Promoting Intensive Sheep / Goat Farming

ii) Project Abstract

To increase the small ruminant population in the Cuddalore District, intensive sheep/goat farming will be encouraged by providing 20 + 1 unit / Block / year which also availability of quality germplasm to the rest of the farmers interested in farming practice. Inbreeding and non-availability of quality germplasm are the major reasons for low productivity in small ruminants. The Government farms which are the major sources of germplasm input do not cope up with the demand. The Project aims at establishing germplasm production centres day SHG for distribution to needy farmers at nominal rates. The Project proposes to supply quality rams / bucks to organized farms at the rate of 2 animals per block at 100 per cent subsidy which will be rotated for every 2 years @ cost of Rs.4000/- animal. The Department of Animal Husbandry and TANUVAS will implement the project at the total cost of Rs.26 lakhs, as given below.

Title	Agency	Total amount
Intensive Sheep / Goat farming to improve meat production by SHGs @ 20 + 1 unit / Block / Year	DAH	21.84
Supply of rams / bucks to SHGs / Elite farmers @ 2/Bl	DAH	4.16
Total		**26.00**

iii) Problem Focus

The district of Cuddalore possesses 0.38 lakhs sheep and 0.57 lakhs goats. However the economic traits in the small ruminants are poor due to heavy inbreeding and poor nutrition resulting in decreased meat production.

iv) Project Rationale

Non-availability of quality male and female germ plasm has resulted in severe inbreeding in small ruminant production of the district. The farmers mainly depend on Government farms for the quality male germplasm. However if the SHG / tribes/elite farmers are encouraged to establish germplasm production centres, the inbreeding could be minimized and meat production increased.

v) Project Strategy

A number of Government and Non-Government Organizations are engaged in breeding of small ruminants though their number is not large. So there is need to rope in such organizations and encourage others in small ruminant breeding on scientific lines for production of rams and bucks so that such organizations can supplement the efforts of Government farms in meeting the requirement of breeding stock.

vi) Project Goals

i. To supply quality Germplasm to needy farmers.
ii. To avoid inbreeding
iii. To increase meat production.
iv. To create model units of Intensive Small Ruminant farming for the transfer of technology through SHGs

vii) Project Component

It is proposed to provide, sheep/Goats each unit comprising of 20 ewes/buck and one Ram/ Doe, by formation of Self Help Groups. The cost per unit (20 females and 1 male) will be Rs.42,000/- .Model Intensive Sheep/Goat farming units will be established through SHGs at a unit size of 20 + 1 / Unit per Block / Year. The unit cost is Rs. 0.42 lakhs for the total number of units of 52, the amount totaling to Rs. 21.84 lakhs.

Supply of Rams / Bucks at 100per cent subsidy to SHG / Elite farmers / Tribes having sheep or goat farm at the rate of 2 per block. The cost of each animal is Rs. 4,000 and a total of 104 animals will be supplied in four year of the project at the total cost of Rs.4.16 lakhs.

ix) Project Cost

The item-wise and year-wise budget allocations are detailed below in Table 6.21.

Table 6.21 Year-wise Budget Outlays for Establishing Germplasm Production Centres for Sheep / Goat

(Rupees in lakhs)

Title	Agency	2008-09	2009-10	2010-11	2011-12	Grand total
Intensive Sheep / Goat farming to improve meat production by SHGs @ 20 + 1 unit / Block / Year	DAH	5.46	5.46	5.46	5.46	21.84
Supply of rams / bucks to SHGs / Elite farmers @ 2/Bl (DAH)	DAH	1.04	1.04	1.04	1.04	4.16
Total		**6.50**	**6.50**	**6.50**	**6.50**	**26.00**

The cost of the project is working out to Rs.26 lakh as envisaged in the table above.

x) Project Implementation Chart

S. No.	Project	Agency	2008-09	2009-10	2010-11	2011-12
1.	Intensive Sheep / Goat farming to improve meat production by SHGs @ 20 + 1 unit / Block / Year	DAH	13	13	13	13
2.	Supply of rams / bucks to SHG/ elite farmers / Tribes	DAH	26	26	26	26

xi) Reporting

Concerned Project implementing agency will report the progress to respective financial authorities (DAH).

Project - IX

i) Project Title : Establishing /Strengthening the Extension Centres, Capacity Building Protocols and Technology Transfer Programmes to Stake Holders to Augment Livestock Production

ii) Project Abstract

Extension services provide the much needed information resource and develop the skill of Livestock growers to adopt newer technologies. Capacity building is a continuous process having the components of Training, Village level meetings, Demonstrations, Learning by seeing etc.

The project aims to update the livestock growers with recent scientific interventions and develop their skill to adopt them. This project proposes to conduct year – round off-campus and on- campus training programmes, village level campaigns on scientific system of Livestock farming, conducting skill development programmes to technical staff, workshops and exposure visit.

While all the trainings to farmers and study tour to Research Stations will be conducted by the Tamil Nadu Veterinary and Animal Sciences University through its training centre at Cuddalore, the skill developmental programmes, study tour for milk pourers of Co-operative societies and workshop for milk producers at society level will be implemented by the Department of Dairy Development. All the programmes proposed will be implemented for 4 years at a total cost of Rs.55.95 lakhs as indicated below.

Title	Agency	Amount
Farmers study tour @ Rs.5000/- per farmer	DDD	7.50
Orientation Training / Workshop For Milk Producers at Society Level	DDD	3.20
Study tour of farmers to livestock and poultry research station (TANUVAS) @ 50 persons/batch	TANUVAS	4.00

Title	Agency	Amount
District Level Livestock Farmers Workshops	TANUVAS	20.00
Strengthening of VUTRC, Cuddalore (TANUVAS) ¨Propaganda Van with Audio Visual aids	TANUVAS	10.00
Capacity building component	TANUVAS	8.00
Propagation of Azolla Cultivation	TANUVAS	3.25
Total		**55.95**

iii) Project Focus

Extension Services are the tools for Technology transfer and capacity building to the Livestock growers. The Extension services provide the much needed information resource to the Livestock growers to update their technical skill.

iv) Project Rationale

Continuous updating of Technical skill is needed to the livestock growers for application of scientific interventions in Livestock farming systems to improve the production.

v) Project Strategy

i. Conducting off -campus and on -campus Training programmes and village level campaigns on scientific system of Livestock farming.

ii. Conducting skill development programmes for Technical staff.

iii. Conducting farmers study tour to expose them to various organized farms and Research Stations.

iv. Providing orientation Training / Workshop for milk pourers at society level.

vi) Project Goal

i. To update the Livestock growers with recent scientific interventions.

ii. To provide a platform to Livestock growers for interaction with to update their skills.

iii. To Transfer viable Technologies for adoption to increase Livestock Production.

vii) Project Components

i. Conducting study tour to 150 continuous milk pourers annually to organized dairy farms and Dairies at a total cost of Rs.7.50 lakh.

ii. Conduct of orientation of training/workshop for milk producers at society level at the unit cost of Rs.0.2 lakhs for a total number of units of 16, with the amount totaling to Rs.3.20 lakhs.

iii. Conduct of 80 training programmes at a unit cost of Rs.0.1 lakh for a total units of 80 numbers in 4 years period, the amount totaling to Rs.8.00 lakhs.

iv. Conducting 4 workshops annually for 4 years benefiting livestock farmers at a unit cost of Rs.5.0 lakhs for four such programmes, the amount totaling to Rs.20.0 lakh.

v. Conducting exposure visit to Research Stations in 4 batches of 50 farmers each / year at a total cost of Rs. 4.00 lakh.

vi. Propagation of Azolla cultivation technology with seed material and other inputs at the farmer's field for 650 units at a total cost of Rs. 3.25 lakhs.

vii) Project Cost

The costs details and their year-wise apportion meant are expostioned in Table 6.22, below.

Table 6.22 Year-wise Budget Outlay for Capacity Building and Strengthening Extension Centre

(Rupees in lakhs)

Title	Agency	2008-09	09-10	10-11	11-12	Grand total
Farmers Study Tour @ Rs.5000/- Per Farmer	DDD	2.00	2.00	2.00	1.50	7.50
Orientation Training / Workshop For Milk Producers At Society level	DDD	0.80	0.80	0.80	0.80	3.20
Capacity building component	TANUVAS	2.00	2.00	2.00	2.00	8.00
District Level Livestock Farmers Workshops	TANUVAS	5.00	5.00	5.00	5.00	20.00
Study tour of farmers to livestock and poultry research station (TANUVAS) @ 50 person/batch	TANUVAS	1.00	1.00	1.00	1.00	4.00
Propagation of Azolla cultivation technology	TANUVAS	1.00	0.75	0.75	0.75	3.25
Strengthening of VUTRC, Cuddalore (TANUVAS) Propaganda Van with Audio Visual aids	TANUVAS	10.00	0	0	0	0
Total		**21.8**	**11.55**	**11.55**	**11.05**	**55.95**

The project costs works out the Rs 55.95 lakhs as depicted in the table above.

viii) Project Implementation Chart

Project	Agency	08-09	09-10	10-11	11-12
Farmers Study Tour @ Rs.5000/- Per Farmer, Totally 150 farmers	DDD	40	40	40	30
Orientation Training / Workshop For Milk Producers At Society Level , 16 numbers	DDD	4	4	4	4
Capacity building component, 80 members	TANUVAS	20	20	20	20
District Level Livestock Farmers Workshops, 4 numbers	TANUVAS	1	1	1	1
Study tour of farmers to livestock and poultry research station (TANUVAS) @ 50 person/batch, 16 numbers	TANUVAS	4	4	4	4
Propagation of Azolla cultivation technology, 650 units	TANUVAS	200	150	150	150
Strengthening of VUTRC, Cuddalore ¨Propaganda Van with Audio Visual aids	TANUVAS	1	0	0	0

ix) Reporting

Concerned Project implementing agency will report the progress to respective financial authorities (DDD / TANUVAS).

6.6.2 Total Budget

The component wise and yearwise budget allocations are exhibited in Table 6.23 given below.

Table 6.23 Budget Outlays for the Various Projects in Animal Husbandry Sector

(Rs. in Lakhs)

Sl. No.	Project Title	2008-2009			2009-10		2010-11		2011-12		Grand Total	
		Unit Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Total Units	Total Cost
1	Popularizing chaff cutter @1No./Block/yr for SHGs/elite farmers (0.10 Lakhs through NADP & 0.10 Lakhs farmer's share) (DAH)	0.1	13	1.3	13	1.3	13	1.3	13	1.3	52	5.2
2	Establishment of 6 x 6 x 4 feet silo to ensile sugarcane tops at 75 per cent subsidy (Total cost: Rs. 0.15 Lakhs/Unit) (DAH)	0.1125	25	2.81	11.24	2.81	11.24	2.81	11.24	2.81	100	11.24
3	Control of parasitic diseases through treatment to enhance vaccine response (DAH)			5.69		5.69		5.69		5.69		22.76
4	Fodder production by SHGs @ 10 acre/ Block/year (DAH)	0.235	130	30.55	130	30.55	130	30.55	130	30.55	520	122.20
5	Intensive sheep/goat farming to improve meat production by SHGs @ 20+1 unit / Block / year (DAH)	0.42	13	5.46	13	5.46	13	5.46	13	5.46	52	21.84
6	Popularizing mineral mixture to improve livestock production @ Rs. 40 / Unit (DAH)	40	0.39575	15.83	0.39575	15.83	0.39575	15.83	0.39575	15.83	1.583	63.32
7	Mobile Veterinary clinics (DAH)	5.83	5	29.15							5	29.15
8	Disaster management (DAH)			113.80								113.80
9	Traceability of breedable bovines @ Rs.20 / Unit (DAH)	0.0002	158300	31.66							158300	31.66
10	Strengthening of veterinary Institutions (DAH)	5	30	150.0							30	150.00

Table 6.23 Contd….. **(Rs. in Lakhs)**

Sl. No.	Project Title	2008-2009			2009-10		2010-11		2011-12		Grand Total	
		Unit Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Total Units	Total Cost
11	Mobile Animal Disease Diagnostic Lab (DAH)	12	1	12.0							1	12.00
12	Supply of Rams / Bucks to SHG / Elite farmers @ 2/Block (DAH)	0.04	26	1.04	26	1.04	26	1.04	26	1.04	104	4.16
13	Calf to bull programme to assist as feed cost upto 20 months age @ 5/Block (DAH)	0.124	65	8.06	65	8.06	65	8.06	65	8.06	260	32.24
	DAH –Total			**407.35**		**70.74**		**70.74**		**70.74**		**619.57**
1	Programmed Breeding Indigenous Cattle & Buffalo To Increase Conception rate (DDD)	0.007	1400	9.80	1400	9.80	1400	9.80	1400	9.80	5600	39.20
2	Supply Of Mineral Mixture To The Milch Animals At Subsidised Cost (50 per cent) @ 18 Kg/ Year (DDD)	0.005	750	3.75	750	3.75	750	3.75	750	3.75	3000	15.00
3	Supply Of By-Pass Protein Feed To The Milch Animals (360kgs/ Year/Animal @ 50 per cent Subsidised Cost Of Rs.9/- Per Kg.) (DDD)	0.033	650	21.45	650	21.45	650	21.45	650	21.45	2600	85.80
4	Milking Machines For ID Farms (DDD)	1.00	13	13.00							13	13.00
5	Portable Milking Machines For Farmers (DDD)	0.18	20	3.6	10	1.8	10	1.8	10	1.8	50	9.00
6	Chaff Cutters For IDF Villages On Community Basis (MECHANISED) (DDD)	0.70	13	9.10							13	9.10

Table 6.23 Contd….. **(Rs. in Lakhs)**

Sl. No.	Project Title	2008-2009			2009-10		2010-11		2011-12		Grand Total	
		Unit Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Total Units	Total Cost
7	Chaff Cutters For Elite Farmers (Small Type) @Rs.20,000 As 100 per cent Grant (DDD)	0.20	2	0.4	2	0.4	2	0.4	2	0.4	8	1.60
8	Bulk Milk Cooler (DDD)	30.00	1	30.00							1	30.00
9	Walk-In Coolers (DDD)	30.00	1	30.00							1	30.00
10	Revival Of Dormant MPCS (DDD)	1.00	10	10.00	10	10.00	10	10.00	10	10.00	40	40.00
11	Fodder Development Activities (65 acres in 100 IDF villages (DDD)	0.235	-	-	25	5.875	20	4.70	20	4.70	65	15.275
12	Manufacturing Facilities For Milk Khoa (DDD)	0.77	1	0.77	1	0.77					2	1.54
13	Manufacturing Facilities For Icecream (DDD)	1.12	1	1.12	1	1.12					2	2.24
14	Milk Weighing Machine For Milk Producers Co-Op. Societies (DDD)	0.17	9	1.53	9	1.53	9	1.53	9	1.53	36	6.12
15	P.C.Based Automatic Milk Collection Stations To IDF Villages Milk Producers Cooperative Societies (DDD)	1.75	4	7.00	5	8.75	5	8.75	3	5.25	17	29.75
16	Farmers Study Tour @ Rs.5000/- Per Farmer (DDD)	0.05	40	2.00	40	2.00	40	2.00	30	1.50	150	7.50
17	Orientation Training / Workshop For Milk Producers At Society Level (DDD)	0.20	4	0.80	4	0.80	4	0.80	4	0.80	16	3.20
	DDD - TOTAL			**144.32**		**68.045**		**64.98**		**60.98**		**338.325**

Table 6.23 Contd….. **(Rs. in Lakhs)**

Sl. No.	Project Title	2008-2009			2009-10		2010-11		2011-12		Grand Total	
		Unit Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Total Units	Total Cost
1	Strengthening of VUTRC, Cuddalore (TANUVAS) ¨Propaganda Van with Audio Visual aids	10	1	10.00							1	10.00
2	Capacity building component (TANUVAS)	0.1	20	2.00	20	2.00	20	2.00	20	2.00	80	8.00
3	District Level Livestock farmers Workshops (TANUVAS)	5	1	5.00	1	5.00	1	5.00	1	5.00	4	20.00
4	Study tour of farmers to livestock and poultry research station (TANUVAS) @ 50 persons/batch (TANUVAS)	0.25	4	1.00	4	1.00	4	1.00	4	1.00	16	4.00
5	Propagation of Azolla Cultivation (TANUVAS)	0.005	200	1.00	150	0.75	150	0.75	150	0.75	650	3.25
	TANUVAS - Total			**19.00**		**8.75**		**8.75**		**8.75**		**45.25**
	Grand total			**570.67**		**147.535**		**144.47**		**140.47**		**1003.15**

In sum the total budget outlay for animal husbandry development in Cuddalore district is Rs 1003.145 lakhs as could be visualized from the table above.

6.7 Fisheries Sector

Keeping in view the potentials , that exist in the district, an attempt has been made to develop both marine and inland fisheries. In marine fisheries five projects and in inland fisheries seven projects have been proposed during eleventh plan under NADP.

A. MARINE

Project - I

i) Project Title : Modernization of Existing Fishing Fleet to Tap the Offshore Resources

ii) Project Abstract

There are 606 mechanized fishing boats and 1010 motorized country crafts engaged in fishing operation. The main fishing method is trawling by mechanized boats and gill netting by motorized country crafts. There is a very good potential of deep sea resources such as Tuna and cattle fish in Cuddalore district deep sea marine waters. These crafts don't have facilities to exploit the deep sea resources such as tuna and cattle fish and they don't have effective communication system.

iii) Background/Problem Focus

To overcome the lacunae in the exploitation of marine resources 60 mechanized boats and 500 FRP boats can be modernized with proper communication system and facilities to exploit the deep sea resources by providing 50 per cent subsidy over the period of four years.

iv) Project Rationale

The unit cost of mechanized boat is Rs.55.00 lakhs and Rs.4.00 lakhs for FRP boats. It is expected to exploit 3000-4000 tonnes of deep sea fishes through mechanized boats and 10,000 – 15,000 tonnes by FRP boats.

v) Project strategy

To introduce 5 boats with tuna long lines for every year offering 50 per cent subsidy to boat owners.

vi) Project Goals

To tap the tuna and tuna like untapped marine resources to increase the marine fish production.

vii) Project Components

Mechanized boat, tuna long line and related accessories.

viii) Project Cost

Project cost : Rs. 137.50 (5 per cent subsidy)

Unit cost	27.50 lakhs * purchase of mechanized boats, tuna long line & storage facilities
No. of units	5.0
Total cost	137.50 lakhs

ix) Project Implementation Chart

The scheme will be implemented and monitored by Fisheries Department. Subsidy will be given boat owners through registered boat builders.

Sl. No.	Particulars	2008-09	2009-10	2010-11	2011-12
1.	Identification of Fishermen	√			
2.	Purchase of Mechanized boats		√		
3.	Installation with fishing accessories			√	
4.	Training			√	√
5.	Sampling and fish catch		√	√	√

x) Reporting

The scheme will be implemented and monitored by Fisheries Department.

Project - II

i) Project Title: Sea Ranching

ii) Project Abstract

In the Cuddalore coast to replenish the wild stock it is essential to introduce the hatchery reared juveniles of the various shrimps and fishes into the open sea through the process of sea ranching. The rearing of 1 million seeds could be carried out at a time in nursery cages for 45 days or until the species reaches juvenile stage and then released into the open sea.(1 unit = 1 million; costing Rs.7.0 lakhs including seed cost ,rearing cost, feed cost, labour cost etc.).

iii) Project Rationale

In the present marine landings the quantity of shrimp and high quality fishes are decreasing. To enhance the quantity of shrimps and other quality fishes it is necessary to replenish the marine resources by ranching the quality shrimp and fish seeds into the sea.

iv) Project Strategy

Shrimp hatcheries will be established the hatchery reared seeds will be sea ranched.

v) Project Goals

5 million of shrimp seeds can be ranched in the open sea in Cuddalore district at the cost of Rs.35,00,000/- over the period of 4 years.

vi) Project Components

Construction of shrimp hatcheries, breeding and rearing of seeds and sea ranching.

vii) Project Cost and Financing

Project cost	:	Rs. 14.00 lakhs
Implementing Agency	:	State Fisheries Department

Unit cost	7.0 lakhs * establishment of shrimp hatchery, water quality labs, seed transportation
No. of units	2.0
Total cost	14.00 lakhs

viii) Project Implementation Chart

S.No.	Particulars	2008-09	2009-10	2010-11	2011-12
1.	Construction of shrimp hatcheries	√			
2.	Breeding and rearing of seeds		√	√	
3.	Sea ranching			√	√

ix) Reporting

The progress of the work will be reported to the state Fisheries Department authorities periodically.

Project - III

i) Project Title : Artificial Reefs

ii) Project 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.

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.

Development of artificial reefs as fish habitats in the inshore area will definitely boost the fish production. These artificial reefs can be deployed in 10 places at the cost of Rs.150 lakhs. The implementing agency will be TAFCOFED.

vi) Project Goals

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

2) 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

Sl.No.	Components	Rs. in lakhs
1.	An FAD made of concrete	5.00
2.	Anchorage, Floor mast Training fisher folk	2.00

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.

Project - IV

i) Project Title : Construction of Fish Marketing Centre

ii) Project Abstract

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

iii) Background / Problem Focus

The retail market at present are poorly maintained. The essential market infrastructure like electricity, water, drainage and civic amenities in most of the retail fish markets are inadequate.

iv) Project Rationale

This is the last link in the marketing channel. Consumers' satisfaction is guaranteed at this retail outlet.

v) Project Strategy

The retail market will be located in 20 district headquarters of Tamilnadu based on the marketing potential.

vi) Project Goals

1. Providing quality fishes at reasonable price.
2. To enhance revenue for the fisher folk engaged in fish marketing

vii) Project Cost

S.No.	Details	Cost (in lakhs)
1	Land development for 750 SQFT including water facilities compound wall, drainage grill gates and flooring etc.	2.00
2	Fabrication and Installation of modern fish stall	6.00
3	Fish storage cabin	1.00
4	Glass Display cabinet	1.00
	Total	**10.00**

Viii) Project Implementation Chart

The retail markets will be implemented in the selected districts in first year itself.

ix) Reporting

All the retail fish markets will be monitored by the Dept. of Fisheries.

Project - V

i) Project Title : To Improve Marketing in Remote Areas

ii) Background / Problem Focus

For quick transportation of fresh fishes which is at present lacking.

iii) Project Rationale

Quick transportation of fish to get fair price.

iv) Project Strategy

The farmer / fishermen will get fair price for the year catches due to quick transportation of fishes to the market.

v) Project Goals

To maintain fish quality & reduce loss to fishermen.

vi) Project Components

Unit cost	0.15 lakhs * purchase of moped & insulated ice box
No. of units	50
Total cost	Rs.7.5 lakhs

vii) Project Implementation Chart

S.No.	Particulars	2008-09	2009-10	2010-11	2011-12
1.	Purchase & supply of moped & ice box	√	√	√	√

B. INLAND

Project - I

i) Project Title : Subsidy Assistance to Private Fish Seed Rearing / Fish Seed Production (50 per cent subsidy)

i) Project Abstract

The fish farmers in Cuddalore district are progressive farmers and evincing interest in adopting modern technologies in fish seed production / fish production. The resources can be utilized to expand the inland fisheries activities in the district. The potential can also be tapped to cater to the need of other districts. Hence, it is proposed to encourage private participation in fish seed production / fish seed rearing by extending subsidy assistance of 50 per cent of the capital cost with a production capacity of 10 million early fry / one million fingerlings. The total cost of one unit will be Rs. 10 .00 lakhs.

ii) Project Rationale

To increase fish seed production and regular supply of fish seed.

iii) Project Strategy

Year round availability of fish seed.

iv) Project Goals

To increase fish production thereby improving socio-economic status.

v) Project Components

Unit cost	5.00 lakhs * construction of fish hatchery, fish breeding ponds, nursery , water supply line
No. of units	10.0
Total cost	50 lakhs

vi) Project Implementation Chart

S.No.	Particulars	2008-09	2009-10	2010-11	2011-12
1.	Selection of fish farmers & establishment of fish seed hatcheries	√	√	√	√

Project - II

i) Project Title : Repairs to Lalpet Fish Farm

ii) Project Abstract

The only fish seed rearing centre is located at Lalpet in the district. The fish seed rearing centre at Lalpet can be repaired and put into use for fish seed rearing activities. In this project, it is proposed to repair the existing 1200 Sq.M. area at an estimated cost of Rs.18.00 lakhs.

iii) Project Rationale

To improve the fish seed production centre at Lalpat.

iv) Project Strategy

Year round availability of fish seed.

v) Project Goals

To increase fish production thereby improving socio-economic status.

vi) Project Components

Unit cost	18.00 lakhs * repair of fish hatchery, fish breeding ponds, nursery , water supply line
No. of units	1.0 (1200 sq.m area)
Total cost	18 lakhs

vii) Project Implementation Chart

S.No.	Particulars	2008-09	2009-10	2010-11	2011-12
1.	Repair and renovation of fish hatchery	√	√		√

Project - III

i) Project Title : Rearing of Fish Seeds in Cages (50 per cent subsidy)

ii) Abstract

In Cuddalore district, there are 106 tanks under the Intensive Inland Fish Culture and Marketing Scheme. These tanks are being leased out to the public. The lessees of the tanks bring seeds from faraway places. In order to rear fish seeds in the tank itself, it is proposed to distribute 50 units of fish seed rearing cages to fish farmers to take up fish seed rearing activities. The cages will be supplied to the fish farmers at 50 per cent subsidy.

iii) Project Rationale

To improve the fish seed production centre.

iv) Project Strategy

Year round availability of fish seed.

v) Project Goals

To increase fish production thereby improving socio-economic status of fishermen.

Unit cost	0.08 lakhs * fish cages and fish seeds
No. of units	30.0
Total cost	2.25akhs

vi) Project Implementation Chart

S.No.	Particulars	2008-09	2009-10	2010-11	2011-12
1.	Fish cage fabrication and installation	√	√	√	√

Project - IV

i) Project Title: Supply of Fishing Crafts and Gears on 50 per cent subsidy to Inland Fishermen

The inland fishermen inhabiting around the Veeranam lake – second largest lake in Tamil Nadu – have to do fishing without insufficient fishing crafts and gears. To enable them for increasing the fishing efficiency 14' FRP boat with nets are provided. This will help them to exploit the abundant fishery resources in Veeranam lake.

ii) Project Rationale

To increase fish catch at Veeranam lake.

iii) Project Strategy

Exploitation of fish resources through improved fishing methods.

iv) Project Goals

To increase fish production thereby improving socio-economic status of fishermen.

Unit cost	0.18lakhs * cost of fishing craft and gear
No. of units	50.0
Total cost	8.75 lakhs

v) Project Implementation Chart

S.No.	Particulars	2008-09	2009-10	2010-11	2011-12
1.	Purchase and supply of fishing craft	√	√	√	√

Project - V

i) Project Title : Establishment of Ornamental Fish Culture and Breeding Unit (100 per cent subsidy)

ii) Project Abstract

There are only few Ornamental fish breeding units in Cuddalore District. Hence to meet out the demand for aquarium keeping fishes Ornamental fish culture and breeding unit can be established in Cuddalore District.

iii) Background / Problem focus

Supply of ornamental fish seed through culture of improved broodstock of fishes.

iv) Project Rationale

To improve the existing stock of ornamental fishes and popularizing ornamental fish farming.

v) Project Strategy

Genetically upgraded ornamental fish stock.

vi) Project Goals

Popularizing ornamental fish culture.

Project - VI

i) Project Title : Capacity Building- Fish Farmers Training

ii) Abstract

To conduct training programmes on fisheries 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.

iii) Background / Problem Focus

To impart knowledge on scientific fish farming in order to enhance 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 60 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

S.No.	Particulars	App. Budget
1.	Stipend@ Rs. 50/ participant for 25 participants/ 3days	Rs. 5000
2.	Extension materials	Rs. 2500
3.	Miscellaneous	Rs. 1500
Total		**Rs. 10000**

ix) Project Implementation Chart

S.No.	Particulars	I Qtr	II Qtr	III 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.

Project - VII

i) Project Title : Establishment of two Fish Landing Centres for Welington Reservoir in the District

ii) Project Abstract

There are 15 fish rearing couber owned by private sectors. One shrimp hatchey is also functioning. The Wellington reservoir has to be provided will landing centres for facilitating a common place for landing of fishes coastal regularly.

Unit cost : Rs. 10.00 lakhs (construction of marketing shed – 5.00 lakhs, Defreezer and accessories = 5.00 lakhs)

Total units proposed : 2

Total cost : Rs. 20.00 lakhs

6.7.1 Total Budget

For all the twelve projects proposed the yearwise budget allocations are provided in Table 6.24, that follows.

Table 6.24 Budget Outlay for Fisheries Sector in Cuddalore District

(Rs.in lakh)

Sl. No.	Components	Implementing Agency	Unit cost	Total units	2008-09		2009-10		2010-11		2011-12		Total cost
					Units	Cost	Units	Cost	Units	Cost	Units	Cost	
	INLAND												
1	Subsidy assistance to private fish seed rearing Farmers (50 per cent Subsidy)	Fisheries Department	5.00	10.00	2.00	10.00	2.00	10.00	2.00	10.00	4.00	20.00	50.00
2	Repairs to Lalpet fish farm	Fisheries Department	18.00	1.00	1.00	18.00							18.00
3	Rearing of fish seed in cages (50 per cent subsidy)	Fisheries Department	0.08	30.00	10.00	0.75	5.00	0.375	5.00	0.38	10.00	0.75	2.25
4	Supply of fishing crafts and gears on 50 per cent subsidy	Fisheries Department	0.18	50.00	10.00	1.75	10.00	1.75	10.00	1.75	20.00	3.50	8.75
5	Establishment of ornamental fish culture and breeding unit (50 per cent)	Fisheries Department	1.10	1.00	1.00	1.11							1.11
6	**Infrastructure Development in Post Harvest**												
(a)	Setting up of retail outlets (50 per cent subsidy)	TNFDC	5.00	2.00	1.00	5.00			1.00	5.00			10.00
(b)	Establishment of one Fish Landing Centres for Wellington reservoir	Fisheries Department	10.00	1.00	1.00	10.00							10.00

Table 6.24 Contd….. **(Rs.in lakh)**

Sl. No.	Components	Implementing Agency	Unit cost	Total units	2008-09		2009-10		2010-11		2011-12		Total cost
					Units	Cost	Units	Cost	Units	Cost	Units	Cost	
	MARINE												
1	Modernization of existing fishing fleet to tap the offshore fishery	Fisheries Department	27.50	5.00	2.00	55.00	1.00	27.50	1.00	27.50	1.00	27.50	137.50
2	FRP	Fisheries Department	2.00	50.00	10.00	20.00	10.00	20.00	10.00	20.00	20.00	40.00	100.00
3	Sea Ranching Programme (Shrimps) in millions	Fisheries Department	7.00	2.00	1.00	7.00					1.00	7.00	14.00
4	Artificial Reefs	TAFCOFED	15.00	10.00	2.00	30.00	2.00	30.00	2.00	30.00	4.00	60.00	150.00
5	Fish Marketing Centre	TNFDC	10.00	2.00	1.00	10.00			1.00	10.00			20.00
6	To improve marketing in remote areas (Supply of moped fitted with ice box	TAFCOFED	0.15	50.00	20.00	3.00	10.00	1.50	10.00	1.50	10.00	1.50	7.50
	Fisheries – Total		**101.00**	**214.00**	**62.00**	**171.61**	**40.00**	**91.13**	**42.00**	**106.13**	**70.00**	**160.25**	**529.11**
1	Farmers Training	TANUVAS	0.10	100.00	25.00	2.50	25.00	2.50	25.00	2.50	25.00	2.50	10.00
	TANUVAS Total		**0.10**	**100.00**	**25.00**	**2.50**	**25.00**	**2.50**	**25.00**	**2.50**	**25.00**	**2.50**	10.00
			101.10	**314.00**	**87.00**	**174.11**	**65.00**	**93.63**	**67.00**	**108.63**	**95.00**	**162.75**	**539.11**

The budget requirement for fisheries development in Cuddalore district is Rs.539.11 lakhs during eleventh plan under NADP.

6.5 Agricultural Marketing Sector

6.5.1 Introduction

With a view to improve the agricultural marketing and agribusiness sector in Cuddalore district, eleven project proposals have been put-forth as outlined below.

Project - I

i) Project Title: Establishment/ Organization of Commodity Groups for Marketing in the State with Financial Assistance from NADP

ii) 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.

iii) Project Strategy

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

iv) Project Goals

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

v) 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

vi) Project Cost and Financing

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

In this project it is proposed to organize 50 commodity groups in various commodities for marketing of agricultural commodities in Cuddalore district over the period of four years. This requires a budget allotment of Rs 4.60 Lakhs as detailed in Table 6.25 A.

Project - II

i) Project Title: Facilitation of Contract Farming between Farmers and Bulk Buyers in the State with Financial Assistance from NADP

ii) 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 taught in case of sugarcane, cotton and other commodities have to be taken into account during formulation of the project. For this in this NADP programme facilitation contract farming between the traders and producer is proposed.

iii) Project Strategy

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

iv) 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.

v) Project Cost

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

In this project it is proposed to organize the meeting on various crops regarding contract farming between farmers and bulk buyers in Cuddalore district for marketing of agricultural commodities in Tamil Nadu over the period of four years. The details are presented in Table 6.25 A.

Project - III

i) Project Title : Dissemination of Market Intelligence

ii) 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.

iii) 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.

iv) Project Components

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

v) Project Cost

In this project it is proposed to disseminate Market intelligence of agricultural commodities to all the Stake holders through different mass media in Cuddalore district over the period of four years. The details are presented in Table 6.25 A.

Project- IV

i) Project Title : Arrangement of Buyers - Sellers Meet

ii) 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.

iii) Project Cost and Financing

In this project it is proposed to arrange for buyers sellers meet in Cuddalore district over the period of four years. The details are presented in Table 6.25 A.

Project - V

i) Project Title: Organizing the Exposure Visits to Important Markets with in the State and Outside the State by Commodity Groups / Farmers and Extension Functionaries

ii) 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 4 per 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 implementing successfully i.e., exposure visits is an important thing to enlighten the farmers for implementing those technologies in their areas also. It is easy to know the new technology through demonstration. Farmers will be selected to visit different places within the State where the technologies are well adopted. Therefore it is proposed to

organize the exposure visit to important markets with in the state and out side 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.

iii) Project Strategy

Organizing the exposure visits to important markets with in the state and out side the state by commodity groups / farmers and extension functionaries.

iv) Project Goals

Organizing the exposure visit to important markets with in the state and out side 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.

v) Project Components

1. Organizing the exposure visit to important markets with in the state by commodity groups / farmers
2. Organizing the exposure visit to important markets out side the state by commodity groups / farmers
3. Organizing the exposure visit to important markets with in the state and out side the state by extension functionaries.

vi) 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. The details are presented in Table 6.25 A.

Project - VI

i) Project Title: Strengthening of Market Extension Centre at each District/ Block Level for Capacity Building and Dissemination of Marketing Information

ii) 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.

iii) Project Strategy

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

iv) 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.

v) Project Components

Strengthening of market extension centre at each district/ block level.

vi) Project Cost

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 Cuddalore district over the period of four years. The Details are presented in Table 6.25 A.

Project - VII

i) Project Title: Strengthening of Selected Village Shandies with Financial Assistance from NADP

ii) 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

iii) Project Strategy

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

iv) Project Components

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

v) Project Cost and Financing

In this project it is proposed to strengthen Village Shandies in Cuddalore district over the period of four years. The Details are presented in Table 6.25 A.

Project - VIII

i) Project Title : Capacity Building of Farmers' Skill

ii) 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 is indicated in Table 6.25.

1 Training on Warehousing and storage
2 Training on Grading
3 Training on Market intelligence
4 Training on Post Harvest Management of selected commodities
5 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.
6 Training to farmers on selected commodities for Export Promotion.

iii) 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.

iv) 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.

v) Project Cost and Financing

In this project it is proposed to organize about five trainings under Capacity Building of Farmers Skill titles for marketing of agricultural commodities in cuddalore district over the period of four years. The Details are presented in Table 6.25 A.

Project - IX

i) Project Title : Strengthening of Selected Market Infrastructure (Equipments) through NADP Funding

ii) Project 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 are given in the Table 1 reflected 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
Mutton and Goat Meat	100.0
Beef and Buffalo Meat	100.0
Meat(Total)	100.0
Eggs	88.2

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

iii) 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 pins

iv) Project Cost

In this project it is proposed to strengthen market infrastructure in Cuddalore district over the period of four years. This will require an outlay of RS. 28 lakhs for the period of four years as detailed in Table 6.25 A..

Project - X

i) Project Title: Establishment of Price Surveillance Mechanism through NADP Funding

ii) 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.

iii) 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.

iv) 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 Cuddalore district over the period of four years. The Details are presented in Table 6.25 A.

Project - XI

i) Project Title: Strengthening of Regulated Market and *Uzhavar Shandies* Publicity through NADP Funding

ii) Rationale

Arrivals to market yards of regulated markets is 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.

iii) Project Components

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

iv) Project Cost

In this project it is proposed to have the publicity programmes with the above components in this district with a financial outlay of Rs. 23 Lakhs over the period of four years as could be seen from Table 6.25.

6.7.2 Project Cost

The total cost for development of agricultural marketing so as to increase the profitability of farmers would be Rs. 1263.77 Lakhs for this district for the next four years.

Table 6.25A Original Project Proposals for Agricultural Marketing and Agri-Business

Particulars	2008-09			2009-10			2010-11			2011-12			Total Cost
	Unit cost	Physical	Financial	Unit cost	Physical	Financial	Unit cost	Physical	Financial	Unit cost	Physical	Financial	
Commodity group formation Major Crops* 50 Groups each groups 25 Farmers	20000	50	1000000	22000	50	1100000	24000	50	1200000	26000	50	1300000	4600000
Market Intelligence dissemination in 100 places	10000	100	1000000	11000	100	1100000							2100000
Purchase of market Intelligence materials One time purchase annual fee for website, various magazines	10000	1	10000	11000	1	11000	12000	1	12000	13000	1	13000	46000
Facilitation of contract farming 20 groups @ 25 farmers per group	15000	20	300000	16500	10	165000	18000	10	180000	19500	10	195000	840000
Exposure visit to markets@ 25000/ 50 farmers/ group	75000	3	225000	82500	1	82500	90000	1	90000	97500	1	97500	495000
Arrangement of buyer seller meetings at 3 different places	20000	3	60000	22000	2	44000	24000		0	26000		0	104000
Streng. Of market extension centre 6 different market places	250000	6	1500000										1500000
Market price surveillance 5 times	10000	5	50000	11000	5	55000	12000	5	60000	13000	5	65000	230000

Table 6.25A Contd….

Particulars	2008-09			2009-10			2010-11			2011-12			Total Cost
	Unit cost	Physical	Financial	Unit cost	Physical	Financial	Unit cost	Physical	Financial	Unit cost	Physical	Financial	
Publicity - regulated market- Hoarding Rs.25000 x 10 times = Rs.2.5 lakhs, F M Radio Rs.1000 x 4 times = Rs.0.04 lakhs, Poster Rs.1000 x 45 nos = Rs. 0.45 lakhs, Folder Rs.1000 x 11 times = Rs. 0.11 lakhs, Wall paintings Rs.2000x 20 = Rs.0.40 lakhs, Village Cultural Programmes Rs.50000 x 3 times = Rs.1.50 lakhs													
Publicity - regulated market	500000	1	500000	550000	1	550000	600000	1	600000	650000	1	650000	2300000
Trainings on Market Intelligence 3 Groups - 25 farmers / Group	10000	3	30000	11000	3	33000	12000	3	36000	13000	3	39000	138000
Commodity Markets 25 farmers / Group	10000	3	30000	11000	3	33000	12000	3	36000	13000	3	39000	138000
Post Harvest 25 farmers / Group	10000	3	30000	11000	3	33000	12000	3	36000	13000	3	39000	138000
Value Addition 25 farmers / Group	10000	1	10000	11000	1	11000	12000	1	12000	13000	1	13000	46000
Export promotion 25 farmers/ group	10000	1	10000	11000	1	11000	12000	1	12000	13000	1	13000	46000
Market infrastructure activities (cold chamber)	700000	4	2800000										2800000
		204	**7555000**		**181**	**3228500**		**179**	**2274000**		**179**	**2463500**	**15521000**

*Oilseeds, Sugarcane, Paddy

Table 6.25B Additional Project Proposals for Agricultural Marketing and Agri-Business -(DDA(AB)

Rs.in lakhs

Sl. No.	Possible Development Interventions	2009-10		2010-2011		2011-2012		Total	
		Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
I.	**Infrastructure**								
1	Construction of rural godowns in the premises of the regulated markets	0	0.00	0	0.00		0.00	0	0.00
2	Storage godowns for storing produce under lock and key for few days	0	0.00	0	0.00	0	0.00	0	0.00
3	Construction of new drying yards @ Rs.3.00 Lakhs/Unit	10	30.00	10	33.00	10	36.00	30	99.00
4	Renovation of dilapidated ones @ Rs.1.00 Lakhs/Unit	10	10.00	10	11.00	10	12.00	30	33.00
5	Construction of new auction halls/modernizing the existing ones @ Rs.30.00 Lakhs/Unit	0	0.00	1	50.00	0	0.00	1	50.00
6	Construction of money disbursement halls/counters	0	0.00	0	0.00	0	0.00	0	0.00
7	Construction of office buildings DDA(AB) office District level	0	0.00	0	0.00	0	0.00	0	0.00
8	Installation of processing units/purchase of new instruments in the premises of the regulated markets								
	(i) Mechanical drier	0	0.00	0	0.00	0	0.00	0	0.00
	(ii) Mechanical winnower	0	0.00	0	0.00	0	0.00	0	0.00
	(iii) Groundnut decorticator	0	0.00	0	0.00	0	0.00	0	0.00
	(iv) Sieving machine	0	0.00	0	0.00	0	0.00	0	0.00

Contd.,

Sl. No.	Possible Development Interventions	2009-10		2010-2011		2011-2012		Total	
		Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
	(v) Cotton Ginning Unit / Pressing Unit	0	0.00	0	0.00	0	0.00	0	0.00
	(vi) Coconut Kernel drying and oil processing units	0	0.00	0	0.00	0	0.00	0	0.00
	(vii) Packaging Units	0	0.00	0	0.00	0	0.00	0	0.00
9	Strengthening the State Ghee and Oil Grading Laboratories	0	0.00	0	0.00	0	0.00	0	0.00
10	Strengthening the Commercial Grading Centres with Laboratory facilities (more numbers can also be included) @	0	0.00	0	0.00	0	0.00	0	0.00
11	Strengthening the infrastructure facilities in the Uzhavar Shandies	0	0.00	0	0.00	0	0.00	0	0.00
12	Construction of cold storage facilities in Uzhavar Shandies and in rural godowns	0	0.00	0	0.00	0	0.00	0	0.00
13	Office automation with computer facility for billing etc. in regulated markets	0	0.00	0	0.00	0	0.00	0	0.00
14	Lawying and relaying of village link roads	0	0.00	0	0.00	0	0.00	0	0.00
15	Provision of Oil moisture meters	0	0.00	0	0.00	0	0.00	0	0.00
16	Provision of Oil testing machines	0	0.00	0	0.00	0	0.00	0	0.00
17	Provision of Electronic balance SAGL., Panruti @ Rs.0.50 Lakhs/Unit	1	0.50	0	0.00	0	0.00	1	0.50
18	Others if any (Specify)								
	Provision of Digital Handy moisture meter DDA (AB)-1, AO-3 Nos. & AAO 13 No. @ Rs.0.15 lakhs/No.	17	2.55	0	0.00	0	0.00	17	2.55

Contd.,

Sl. No.	Possible Development Interventions	2009-10		2010-2011		2011-2012		Total	
		Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
II.	**Publicity and Propaganda**								
1	Market committee-wise strengthening of the Publicity and Propaganda units	0	0.00	0	0.00	0	0.00	0	0.00
2	Market committee-wise purchase of extension education aids	0	0.00	0	0.00	0	0.00	0	0.00
3	Strengthening the regional Publicity and Propaganda wings of the Marketing Board and establishing more regional units	0	0.00	0	0.00	0	0.00	0	0.00
4	Pre-harvest campaigns on large scale @ Rs.0.05 Lakhs/Unit	130	6.50	130	6.50	130	6.50	390	19.50
5	Others if any (Specify)								
	Printing of Digital Banners Leaflets, folders	0	1.36	0	0.00	0	1.64	0	3.00
III.	**Public relations**								
1	Construction of bus-stop shed un front of the regulated markets and in selected villages	0	0.00	0	0.00	0	0.00	0	0.00
2	Taking up public relations activities in the villages	0	0.00	0	0.00	0	0.00	0	0.00
3	Construction of common village threshing floors	0	0.00	0	0.00	0	0.00	0	0.00
4	Construction of village common discussion (Chavadi) hall	0	0.00	0	0.00	0	0.00	0	0.00
5	Distribution of tarpaulins to small and marginal farmers @ Rs.0.05 Lakhs/No.	260	13.00	325	17.86	390	23.40	975	54.26
6	Installation of electric light facilities including solar lights in the community threshing floors	0	0.00	0	0.00	0	0.00	0	0.00

Contd.,

Sl. No.	Possible Development Interventions	2009-10		2010-2011		2011-2012		Total	
		Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
7	Construction of over head tanks, laying of street pipelines and provision of public drinking water taps in a village or two wherein the market arrivals are more	0	0.00	0	0.00	0	0.00	0	0.00
8	Provision of Education loan to the children of a few regular customers	0	0.00	0	0.00	0	0.00	0	0.00
9	Celebrating the regulated market fortnight in each district (just like co-operative weeks/fortnight)	0	0.00	0	0.00	0	0.00	0	0.00
10	Others if any (Specify)	0	0.00	0	0.00	0	0.00	0	0.00
IV.	**Facilities to farmers / Stakeholders**								
1	Construction of rest/stay rooms for farmers I regulated markets	0	0.00	0	0.00	0	0.00	0	0.00
2	Construction/modernization of the common toiletry facilities in the regulated markets	0	0.00	0	0.00	0	0.00	0	0.00
3	Provision of parking lot facilities in the needy centers	0	0.00	0	0.00	0	0.00	0	0.00
4	Providing drinking water facilities to animals	0	0.00	0	0.00	0	0.00	0	0.00
5	Provision of transport facilities/routing the vehicle to transport commodities to the regulated markets	0	0.00	0	0.00	0	0.00	0	0.00
6	Creating farm inputs retailing facilities	0	0.00	0	0.00	0	0.00	0	0.00
7	Others if any (Specify)	0	0.00	0	0.00	0	0.00	0	0.00
V.	**Any other innovative interventions (specify)**								
1	Provision of computer with Internet and touch screen viewing facility @ Rs.2.50 lakhs/No.	5	12.50	10	27.50	15	45.00	30	85.00
	Grand Total	**433**	**76.41**	**486**	**145.86**	**555**	**124.54**	**1474**	**346.81**

Table 6.25C Additional Project Proposals for Agricultural Marketing and Agri-Business- (Market Committee)

Rs.in lakhs

Sl. No.	Possible Development Interventions	2009-10		2010-2011		2011-2012		Total	
		Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
I.	**Infrastructure**								
1	Construction of rural godowns in the premises of the regulated markets	3	105.00	1	35.00	1	35.00	5	175.00
2	Storage godowns for storing produce under lock and key for few days	2	70.00	1	35.00	1	35.00	4	140.00
3	Construction of new drying yards/renovation of dilapidated ones	15	45.00	20	60.00	20	60.00	55	165.00
4	Construction of new auction halls/modernizing the existing ones	1	25.00	1	25.00	1	25.00	3	75.00
5	Construction of money disbursement halls/counters	0	0.00	0	0.00	0	0.00	0	0.00
6	Construction of office buildings and staff quarters	1	50.00	1	50.00	1	50.00	3	150.00
7	Installation of processing units/purchase of new instruments in the premises of the regulated markets								
	(i) Mechanical drier	0	0.00	0	0.00	0	0.00	0	0.00
	(ii) Mechanical winnower	1	0.50	1	0.50	1	0.50	3	1.50
	(iii) Groundnut decorticator	1	4.00	0	0.00	0	0.00	1	4.00
	(iv) Sieving machine	0	0.00	0	0.00	0	0.00	0	0.00
	(v) Cotton Ginning Unit / Pressing Unit	0	0.00	0	0.00	0	0.00	0	0.00
	(vi) Coconut Kernel drying and oil processing units	0	0.00	0	0.00	0	0.00	0	0.00
	(vii) Packaging Units	0	0.00	0	0.00	0	0.00	0	0.00

Contd.,

Sl. No.	Possible Development Interventions	2009-10		2010-2011		2011-2012		Total	
		Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
8	Strengthening the State Ghee and Oil Grading Laboratories	0	0.00	0	0.00	0	0.00	0	0.00
9	Strengthening the Commercial Grading Centres with Laboratory facilities (more numbers can also be included)	0	0.00	0	0.00	0	0.00	0	0.00
10	Strengthening the infrastructure facilities in the Uzhavar Shandies	0	0.00	0	0.00	0	0.00	0	0.00
11	Construction of cold storage facilities in Uzhavar Shandies and in rural godowns	0	0.00	0	0.00	0	0.00	0	0.00
12	Office automation with computer facility for billing etc. in regulated markets	0	0.00	0	0.00	0	0.00	0	0.00
13	Lawying and relawying of village link roads	0	0.00	0	0.00	0	0.00	0	0.00
14	Provision of Oil moisture meters	0	0.00	0	0.00	0	0.00	0	0.00
15	Provision of Oil testing machines	0	0.00	0	0.00	0	0.00	0	0.00
16	Provision of Electronic weighing machines	0	0.00	0	0.00	0	0.00	0	0.00
17	Others if any (Specify)	0	0.00	0	0.00	0	0.00	0	0.00
II.	**Publicity and Propaganda**								
1	Market committee-wise strengthening of the Publicity and Propaganda units	1	2.00	1	2.00	1	2.00	3	6.00
2	Market committee-wise purchase of extension education aids	1	0.50	1	0.75	1	1.00	3	2.25
3	Strengthening the regional Publicity and Propaganda wings of the Marketing Board and establishing more regional units	1	2.00	1	2.00	1	2.00	3	6.00
4	Pre-harvest campaigns on large scale	0	0.00	0	0.00	0	0.00	0	0.00
5	Others if any (Specify)	0	0.00	0	0.00	0	0.00	0	0.00

Contd.,

Sl. No.	Possible Development Interventions	2009-10		2010-2011		2011-2012		Total	
		Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
III.	**Public relations**								
1	Construction of bus-stop shed un front of the regulated markets and in selected villages	0	0.00	0	0.00	0	0.00	0	0.00
2	Taking up public relations activities in the villages	0	0.00	0	0.00	0	0.00	0	0.00
3	Construction of common village threshing floors	0	0.00	0	0.00	0	0.00	0	0.00
4	Construction of village common discussion (Chavadi) hall	0	0.00	0	0.00	0	0.00	0	0.00
5	Distribution of tarpaulins to small and marginal farmers	0	0.00	0	0.00	0	0.00	0	0.00
6	Installation of electric light facilities including solar lights in the community threshing floors	0	0.00	0	0.00	0	0.00	0	0.00
7	Construction of over head tanks, laying of street pipelines and provision of public drinking water taps in a village or two wherein the market arrivals are more	0	0.00	0	0.00	0	0.00	0	0.00
8	Provision of Education loan to the children of a few regular customers	0	0.00	0	0.00	0	0.00	0	0.00
9	Celebrating the regulated market fortnight in each district (just like co-operative weeks/fortnight)	0	0.00	0	0.00	0	0.00	0	0.00
10	Others if any (Specify)	0	0.00	0	0.00	0	0.00	0	0.00

Contd.,

Sl. No.	Possible Development Interventions	2009-10		2010-2011		2011-2012		Total	
		Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
IV.	**Facilities to farmers / Stakeholders**								
1	Construction of rest/stay rooms for farmers I regulated markets	1	25.00	0	0.00	0	0.00	1	25.00
2	Construction/modernization of the common toiletry facilities in the regulated markets	0	0.00	0	0.00	0	0.00	0	0.00
3	Provision of parking lot facilities in the needy centers	1	2.00	0	0.00	0	0.00	1	2.00
4	Providing drinking water facilities to animals	0	0.00	0	0.00	0	0.00	0	0.00
5	Provision of transport facilities/routing the vehicle to transport commodities to the regulated markets	0	0.00	0	0.00	0	0.00	0	0.00
6	Creating farm inputs retailing facilities	5	10.00	0	0.00	0	0.00	5	10.00
7	Others if any (Specify)	0	0.00	0	0.00	0	0.00	0	0.00
V.	**Any other innovative interventions (specify)**	0	0.00	0	0.00	0	0.00	0	0.00
	Grand Total	**34**	**341.00**	**28.00**	**210.25**	**28.00**	**210.50**	**90.00**	**761.75**

The overall budget outlay for all the eleven projects proposed above works out to Rs.1263.77 lakhs as could be evidenced from the table above.

Budget Abstract

(Rs.in lakhs)

Sl.No.	Particulars	2008-09	2009-10	2010-11	2011-12	Total
A.	Original Project	75.550	32.280	22.740	24.640	155.21
B.	Additional Project DDA	-	76.41	145.86	124.54	346.81
C.	Additional Project Market Committee	-	341.00	210.25	210.50	761.75
	Grand Total	**75.55**	**449.69**	**378.85**	**359.68**	**1263.77**

6.7.3 Implementation

Department of Agricultural Marketing and Agribusiness, Government of Tamil Nadu will be the implementing agency for proposed projects. 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 projects jointly.

6.8 Irrigation Development (PWD)

6.8.1 Introduction

In Cuddalore District three major river basins namely (i) Cauvery – Coleroon River basin (ii) Vellar River basin and (iii) Lower penniyar basin are available .The development proposals for each of the basins are outlined below.

1 Cauvery – Coleroon River basin

The tanks and the Channels in the Basin are very old ones which are in use from the Chola and Pallava periods. The system tanks and non-system tanks are fed only in the rainy season and no perennial supply through the rivers. Most of the tanks and irrigation sources have not been taken up for improvements for the last 15 years and only a few tanks were taken up for improvements considering the availability of funds.

The following improvements are proposed in this project

1 Standardisation of tank bunds with adequate width and side slops.
2 Desilting of tank beds for increasing the capacity of tanks
3 Dilapidated sluices are to be reconstructed.
4 Renovation or protection of weirs.
5 Reconstruction of drops in the Channels.
6 Spouts in the Channels are proposed to be reconstructed.
7 Approach earthern roads leading to anicuts, reservoirs are proposed to be black topped with two course of WBM
8 Jeep track in canal banks for possible reaches

9 Repairs to sluices and weirs

10 Providing controlled shuttering arrangements to sluices.

11 Improvements in the field channels.

The total cost of the project works out to Rs.1805 lakhs as exhibited in Table 6.26 below, for the whole period of XI plan under NADP.

Table 6.26 Year-wise works to be taken up under NADP (PWD) during XI Plan Period

Sl.No.	Year	No. of Works	Value of Works (Rs. In Lakhs)
1	2008-2009	22	550.00
2	2009-2010	18	490.00
3	2010-2011	12	420.00
4	2011-2012	11	345.00
	Total		**1805.00**

Scope and Benefit

By improving the tanks, Channels, sluices, and weirs for its optimum functions, it will be very much useful for storing the required quantity of water in the tank. The drinking water facilities, irrigation systems and water management techniques will also be improved. The cost of the project works out to Rs.550.00 lakhs for 2008-09 and Rs.1805 for the whole period of XI plan. The benefit cost ratio of the project is 4.32 and the ERR value is 49.70 per cent.

The above proposals are not covered in the IAMWARM Project. By implementing this proposal an ayacut of 34265 hectares are expected to be benefitted in this Coleroon Basin in Cuddalore District. The incremental benefit of the project is furnished below.

Name of Anicut	:	Lower Anicut & Sethiathope Anicut
Command Area in ha (Ayacut).	:	34265 Ha.
Average Cultivation in ha.	:	25698 Ha.
Taluk	:	Chidambaram & Kattumannarkoil
BC. Ratio	:	4.32
ERR	:	49.7 per cent

2. Vellar River Basin

Most of the tanks and irrigation sources have not been taken up for improvement in the last 15 years. Therefore the following activities have been proposed under NADP.

- Standardization of bund with adequate width and side slopes
- Desilting of tank bed and the standardization of bunds
- Dilapidated sluices to be reconstructed
- Weir leakages are to be arrested by constructing a skin wall in the upstream reconstruction
- Drops in the channels have to be reconstructed
- Approach earthen roads leading to anicuts reservoirs are to be black topped with two courses of WBM
- Jeep able track in canal banks, in selected places
- Repairs to sluices and weirs
- Providing controlled shuttering arrangements to sluices

It is proposed to take up 30 items of works at an estimated cost of Rs.657 lakhs during 2008-09 and Rs .1978 lakhs for the whole XI plan period, as detailed below in Table 6.27.

Table 6.27 Budget for Irrigation Systems (PWD) Development in Vellar Basin

Sl. No.	Year	No. of Works	Estimate Cost (Rs.in Lakhs)
1.	2008-2009	30 Nos.	657.00
2.	2009-2010	22 Nos.	509.00
3.	2010-2011	27 Nos.	520.00
4.	2011-2012	18 Nos.	292.00
	Total	**97 Nos.**	**1978.00**

3. Planning and Design Division

Interventions with major works involved in lower Penniyar and lower Vellar basins have been planned for during XI plan under NADP.

Lower Penniyar Basin

- Rehabilitation and Renovation of Walajah channel supply channels and its tanks.
- Lower Vellar Basin
- Rehabilitation and Renovation of Virudhachalam anicut system, supply channels and its tanks
- Rehabilitation and Renovation of Kattumailur anicut, supply channels and its tanks
- Rehabilitation and renovation of main and branch supply channels of willington Reservoir and its feeding tanks
- Improvements of Tholudur anicut by providing additional shutters to increase the discharge capacity

The particulars on the works to the taken up year wise and the budget estimates for XI plan period under NADP are furnished in Table 6.29 that follows.

Table 6.28 Planning and Design Sub Division, Cuddalore

S. No	Year	Taluk	Name of Scheme	Anicut Details			Tank Details			Channel	Ayacut in (ha)	Rough Cost in lakhs
				Anicut Length	Head Sluice	Sand Vent	No. of Tanks/Bund Length	No. of Weir	No. of Sluice			
Lower Penniyar Basin												
1	2008-09	Panruti	Rehabilitation and Renovation of Walajah channel supply Channel and its Tank	…..	…..	…..	7 No/ 12134 m	7 Nos	15 Nos	20500 m	752.83	246.5
Lower Vellar Basin												0
1	2009-10	Vrudhachalam	Rehabilitation and Renovation of Virudhachalam Anicut System, supply and its Tanks	101.80 m	5 Nos	13 Nos	14 Nos/ 26706m	15 Nos	28 Nos	52675 m	10152.76	600
2	2009-10	Vridhachalam	Rehabilitation and Renovation of Kattumailur Anicut, supply Channel and its Tank	45.10 m	1 Nos	1 Nos	1 Nos/ 2100 m	1 Nos	3 Nos	6300 m	294.26	75
3	2010-11	Tittagudi	Rehabilitation and Renovation of Main and Branch supply channels of Willingdon Reservoir and its feeding tanks.	….	…..	…..	26 Nos/ 22300m	26 Nos	30 Nos	48075 m	10926.19	2000
4	2011-12	Tittagudi	Improvements to Tholudur aicut by providing additional Shutters to increase the discharge capacity.	118.90 m	16 Nos	…..	25 Nos/ 46139m	16Nos	54 Nos	29200 m	636.03	1500
			Total									**4421.5**

The total budget cost for the whole XI period under NADP is Rs.8204.05 lakhs.

6.8.2 Total Budget (PWD)

The budget requirements for both the river basins as well as for Planning and Design division for XI Plan period under NADP are summarized below, in Table 6.29.

Table 6.29 Budget Summary – PWD

(Rs. in lakhs)

Sl.No.	Basin proposed	2008-09	2009-10	2010-11	2011-12	Total
1.	Cauvery – Coleroon river basin	550	490	420	345	1805
2.	Vellar-basin	657	509	520	292	1978
3.	Planning and Design division	246.5	675	2000	1500	4421.50
	Grand Total	**1453.50**	**1674**	**2940**	**2137**	**8204.50**

In sum the irrigation works proposed for development under NADP, works out to the total of Rs.8204.05 in Cuddalore district.

6.9 Over all Budget

The budget outlay for all the development activities planned for sector wise during XI plan period is summarized below in Table 6.30.

Table 6.30 District Plan Budget Summary

(Rs. in lakhs)

S.No	Sector Name	2008-09	2009-10	2010-11	2011-12	Total
1	Agriculture	2111.29	1843.17	1840.42	1827.42	7622.30
2	Horticulture	863.38	1172.92	1540.65	2130.27	5707.22
3	Animal Husbandry	570.67	147.54	144.47	140.47	1003.15
4	Fisheries	174.11	93.63	108.63	162.75	539.12
5	Agricultural Engineering	1126.83	1255.25	1194.53	1535.51	5112.12
6	Agricultural Marketing	75.55	449.69	378.85	359.68	1263.77
7	Public Works Department	1453.50	1674.00	2940.00	2137.00	8204.50
Total		**6375.33**	**6636.20**	**8147.55**	**8293.10**	**29452.18**

For the plan of Cuddalore district the total budget outlay required for XI plan period under NADP is Rs. 29452.18 lakhs as indicated in the table, above.

PROCEEDINGS

During the Cuddalore District NADP - DAP proposal presentation meeting at Collector's Camp Office on 23.05.2008 at 9.00 am the following suggestion were made by the farmer representatives with the permission of District Collector.

1. Pertaining to the Agricultural Department, all the farmer representatives and the Panchayat Union Chairmen had proposed to purchase one mobile soil test van to easy and speedy analysis of soil and water samples farmers field itself.

   Accordingly discussed with agricultural department officials and received the revised proposal with budget and it was included in the draft District Agricultural Plan in Agricultural proposal proposal already drawn Rs. 28.50 lakhs to purchase a mobile soil test lab van and chemicals.

2. The district Collector recommended to increase the proposed amount for includes the recharge shaft to control the sea water intrusion in the proposal already made by the Agricultural Engineering department.

   Accordingly it was discussed with agricultural Engineering Department officials and received the revised proposal with increased budget Rs. 250 lakhs for four years in the stretch of 57 kms coastal line in Cuddalore district and included in the report.

3. During the discussion in the District Agricultural Plan meeting the farmer representative Mr. Vijayakumar from Parangipettai block and Mr. Karmangudi Venkatesan from Vridhachalam block suggested increasing the proposal amount for laying out of PVC pipes to convey water from source to field.

   Accordingly it is increased and included sum of Rs. 283.5 lakhs under water management.

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வேளாண் அபிவிருத்தி திட்டங்கள் கடலூரில் ஆட்சியர் ஆலோசனை

கடலூர், மே 24: தேசிய வேளாண் அபிவிருத்தி திட்டங்கள் குறித்து ஆட்சியர் ராஜேந்திர ரத்னூ கடலூரில் அதிகாரிகளுடன் ஆலோசனை நடத்தினார்.

கடந்த சில ஆண்டுகளாக மொத்த உள்நாட்டு பொருட்களின் மதிப்பின் ஆண்டு வளர்ச்சி எட்டு விழுக்காடாக இருந்தது. 80ம் ஆண்டில் விவசாய பொருட்களின் மதிப்பு வளர்ச்சி 3 விழுக்காடாக இருந்தது. ஆனால் எதிர் பார்த்தபடி திட்ட இலக்கு எட்டப்படவில்லை. இந்நிலையில் தேசிய மேம்பாட்டுக்குழு நடந்த கூட்டத்தில் விவசாய வளர்ச்சிக்காக தேசிய வேளாண்மை வளர்ச்சி திட்டங்களை அமல்படுத்த மத்திய அரசு முடிவு செய்தது.

அதைத் தொடர்ந்து மத்திய அரசு பதினோராம் ஐந்தாண்டு திட்டத்தில் வேளாண்மை உற்பத்தியை 4 சதவிகிதத்திற்கு உயர்த்த திட்டமிட்டுள்ளது. அதை எட்டபல்வேறு துறைகளின் மூலம் மாநில, மாவட்ட வேளாண் திட்டங்கள் வகுக்கப்பட்டு மத்திய அரசின் ஒப்புதல் பெற்று செயல்படுத்த முடிவு செய்யப்பட்டுள்ளது.

அதைத் தொடர்ந்து வேளாண்துறை, தோட்டக்கலைத்துறை, வேளாண்மை பொறியியல் துறை, வேளாண் விற்பனைத் துறை, விதை சான்று துறை, பொதுப்பணித்துறை போன்ற துறைகளை சேர்ந்த அதிகாரிகளுடன் ஆட்சியர் ராஜேந்திர ரத்னூ ஆலோசனை நடத்தினார். அந்த கூட்டத்தில் வேளாண் இணை இயக்குனர் சந்தானம், தோட்டக்கலைத்துறை இயக்குனர் ராஜசேகரன், கோவை வேளாண் பல்கலைக்கழக பேராசிரியர் பாலாஜி, விவசாய சங்க பிரதிநிதிகள் கார்மாங்குடி வெங்கடேசன், திட்டக்குடி வேணுகோபால், ரவீந்திரன், விஜயகுமார் மற்றும் அனைத்து துறை அதிகாரிகள் கலந்து கொண்டனர்.

இது குறித்து கூட்டத்தில் கலந்து கொண்ட உயர் அதிகாரி ஒருவர் கூறுகையில், மாநில அளவில் விவசாயம் மற்றும் அதனை சார்ந்த தொழில்களுக்கான சிறப்பு வளர்ச்சி திட்டங்களை உருவாக்க வேண்டும் என்பதற்காக இந்த கூட்டம் நடத்தப்படுகிறது. ஒவ்வொரு மாநில மும், மாவட்ட வேளாண் திட்டங்களை ஒன்றிணைத்து மாநில வேளாண் திட்டத்தை தயாரிக்க வேண்டும்.

மாநில வேளாண் திட்டங்கள் இதர மாவட்ட வளர்ச்சி திட்டங்களுடன் ஒன்றிணைக்க வேண்டும். மாநிலங்கள் மாவட்டங்களுக்கு அளிக்க வேண்டிய நிதி, இதர ஆதாரங்களை தெரிவிக்க வேண்டும்.

இந்தியாவில் உள்ள அனைத்து மாநிலங்களுக்கும் தேசிய வேளாண் வளர்ச்சி திட்டத்தின் மூலம் 25 ஆயிரம் கோடி ரூபாய் 5 வருடங்களுக்கு ஒதுக்கப்பட்டுள்ளது. ஒரு வருடத்திற்குள் 5 ஆயிரம் கோடி ரூபாய் மாநில அரசுகளின் திட்டத்திற்கு ஏற்ப நிதி ஒதுக்கீடு செய்யப் படும். பல்வேறு துறைகளின் பரிந்துரைகள் அரசிற்கு அனுப்பப்படும்.

அரசின் ஒப்புதல் பெற்றவுடன் நிதிஒதுக்கப்பட்டு பணிகள் துவங்கப்படும் என்றார்.

இதன் மூலம் மழை பெய்த பிறகு அளவை மட்டுமே அறிய முடியும்; பொதுமக்களை முன்னெச்சரிக்கை நடவடிக்கையாக பாதிக்கப்படும் பகுதிகளில் இருந்து காப்பாற்றவோ வெளியேற்றவோ இயலாமல் மாவட்ட நிர்வாகத்திற்கு சிரமம் ஏற்பட்டது. இதை கருத்தில் கொண்டு தேசிய வேளாண்மை அபிவிருத்தி திட்டத்தின் கீழ் வேளாண்மைத்துறை மூலம் காட்டுமன்னார்கோவில் பகுதியில் முழு தட்பவெப்ப அளவு தளம் அமைக்க நடவடிக்கை எடுக்கப்பட்டுள்ளது. இதற்காக ரூ. நிதி ஒதுக்கீடு செய்யப்பட்டுள்ளது.

அதற்காக காட்டுமன்னார்கோவில் ஏதாவது ஒரு தேர்வு செய்யப்பட்டு நிர்வாகம் எடுத்து இதன்படி வே

இயற்கை சீற்றங்களை தஞ்சை மாவட்டத்தில் முழு தட்ப வெப்ப மாவட்டம் காட்டுமன்னார்கோவிலில் அமைய உள்ளது.

ரெட்டிச்சாவடி அருகே புதுச்சேரி ரவுடி வெட்டிக் கொலை

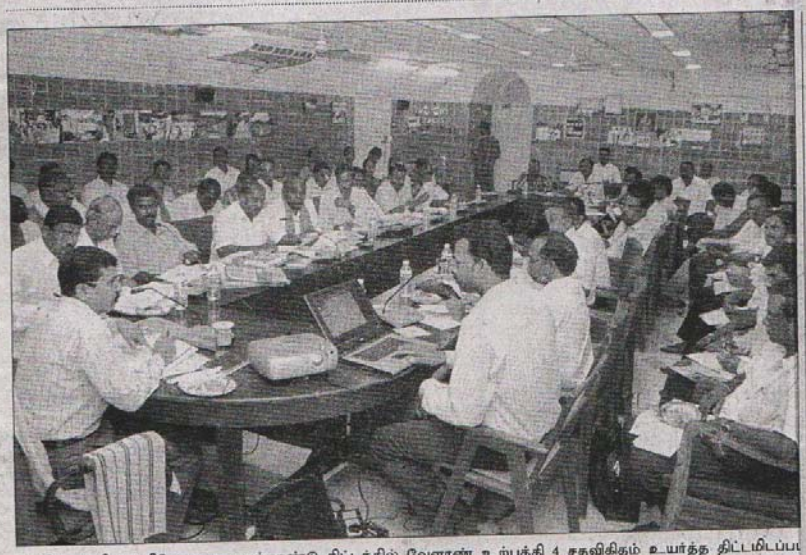
கடலூர், மே 24: ரெட்டிச்சாவடி அருகே நடந்த கொலை வழக்கு தொடர்பாக புதுச்சேரி ரவுடி வெள்ளைகுணா கடலூர் கோர்ட்டில் ஆஜர்படுத்தப்பட்டார்.

புதுச்சேரி பிரபல ரவுடி வெள்ளைகுணா தற்போது புதுச்சேரி மத்திய சிறையில் அடைக்கப்பட்டுள்ளார்.

இவருக்கு போட்டியாக இருந்த சுந்தரம் என்பவர் கடந்த 23-6-2004ம் ஆண்டு கடலூர் கோர்ட்டில் ஆஜரா கையெழுத்து விட்டு புது திரும்பிக் கொண்டிருந்தார்.

அப்போது சாவடியை அடுத்த அருகே சுந்தர் கார் மீது வெடி வீசப்பட்டன. காரில் இருந்து தப்பி ஓடினார். சென்ற 20பே கும்பல் சுந்தர் வெட்டிக் கொ

இது தெ



மத்திய அரசின் பதினோராவது ஐந்தாண்டு திட்டத்தில் வேளாண் உற்பத்தி 4 சதவிகிதம் உயர்த்த திட்டமிடப்பட்டுள்ளது. அது தொடர்பாக கடலூரில் மாவட்ட ஆட்சியர் ராஜேந்திர ரத்னூ தலைமையில் ஆலோசனைக்கூட்டம் நடந்தது.

மோட்டார் சைக்கிள் மோதி முதிய

சிதம்பரம், மே 2

தம்பிக்கு நல்

கிராமத்தை

நாதன்(52).

தினம் மாலை

உள்ள தனது

நின்று கொண்

அப்போது

சிதம்பரம் நோ

ருந்த மோட்ட

குருநாதனும்,

இளை ஓட்டி

மையாக்கினார்

சேர்ந்த முகம்

வரும் படுகாய

குருநாதன்

புதுச்சேரி ஜிப்

யில் அனுமதி

இறந்தார். முத

அரசு மருத்

சிகிச்சை பெற்

குறித்து புவ

வழக்குப்பதிவு

வருகின்றனர்.

தினகரன் - கடலூர், சனிக்கிழமை 24/5/2008
பக்கம் : 16

National Agricultural Development Programme –

Sensitization Workshop Meeting held on 23.05.2008 at Cuddalore District

District Agriculture Plan Meeting chaired by District Collector, Cuddaore

District Agriculture Plan presented by the TNAU Scientist

Participants in the meeting (Farmers, Officers from Line Departments, Elected Members, etc.)

Agricultural Officers explaining about the Soil Testing Mobile Van

Agricultural Engineer explaining the Concept of Control of Sea Water Intrusion

Elected Members from Various Parts of Cuddalore District