NATIONAL AGRICULTURAL DEVELOPMENT PROGRAMME (NADP)

DISTRICT AGRICULTURE PLAN

ERODE 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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Prof. C.RAMASAMY
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FOREWORD

Date .....

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

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

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

(C.RAM AS AMY)

Coimbatore
June 30, 2008

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Dr. K. Palanisami
Director, CARDS

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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

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

Erode District was formed as the sixteenth District of Tamil Nadu in September 1979. The District is situated between 10.35' and 11.60' of North Latitude and above the Mean sea level of 171.91m. The District has its southern border with Dindigal District, Eastern border with Namakkal and Karur Districts, Northern border with Karnataka State and Western border with Coimbatore District. The District has its headquarters at Erode. The soil of the district is predominantly red sandy to red gravel type. The type occurs to a large extent in Bhavani, Erode and Dharapuram taluks. Red loamy soil is found in Gobichettipalayam Taluk.

The Agricultural activity in the district is well supported by some perennial rivers. Cauvery and Bhavani are the two main rivers in this district. The river Bhavani extensively benefits agriculture in Sathyamangalam and Gobichettipalayam taluks. Cauvery river provides irrigation facilities to a limited extent in Bhavani taluk. Noyyal is another river flowing through Erode and Kangayam Taluks.

Erode district consists of seven taluks and 20 blocks, with an area of 8,160 Sq.km. The district had a population of 25.74 lakhs as per 2001 Census. The district is having 59 town panchayats and 539 revenue villages. The district has been divided into 20 Agriculture blocks with seven taluks *viz.,* Erode, Gobichettipalayam, Bhavani, Dharapuram, Perundurai, Sathyamangalam and Kangayam.

1.2 Main Points of SWOT of the District

Strengths

- The farmers in the district are very progressive and innovative in adopting modern technologies and crop varieties.

- The district is one of the leading districts in the state in terms of productivity of many crops such as paddy, sugarcane, pulses, coconut and turmeric.

- Erode has a big turmeric market and some of the surrounding towns in the district have a large number of agro-processing industries such as rice mills, coconut and groundnut oil mills.

- In view of high level of urbanization with about 46 per cent of the total population in the district living in urban areas, the district has a good local market for its agricultural commodities especially fruits and vegetables.

Weaknesses

- Low rainfall and heavy dependence on north-east monsoon.
- Limited availability of groundwater.
- Increasing scarcity of labour due to sharp increase in migration from rural to urban areas.

- In many southern parts of the district such as Kangeyam and Dharapuram taluks, the soils are poor in nutrient and organic matter content and hence characterized by low agricultural productivity.

- The area under rainfed crops in the district has been declining over the last three decades due to increasing scarcity of labour and stagnation in yield and profitability of rainfed crops.

Opportunities

- Opportunities to promote new crop varieties and new technologies such as precision farming and System of Rice Intensification.

- Opportunities to introduce water-saving technologies under canal irrigation systems especially in the Lower Bhavani Project area in view of the huge seepage loss of water from canals.

- Further expansion of area under tapioca, sunflower and horticultural crops is possible through implementation of water-saving technologies. Dryland agriculture has a good potential in this district by appropriate combination of crops, tree crops and livestock enterprises.

- The traditional sylvipasture system that combines sheep rearing with naturally growing trees such as Acacia could be further improved with a range of quick-growing tree species and sheep breeds.

Threats

- Increasing scarcity of groundwater is a major threat to expansion of irrigated agricultural production.

- Threats from industrial pollution in many parts of Erode District due to the release of effluents from leather tanneries, paper industries and textile dying industries.

- The traditional animal breed known as "Kangayam bulls" native to this district and known for their draught power is on the decline which is a major threat to the sustainable farming systems in the district.

- Declining interest among farmers in continuing agriculture due to increasing employment opportunities in non-agricultural sector and increasing risk in crop production coupled with stagnation in productivity and profitability of many crops.

1.3 Areas / Sectors, which need to be addressed in the District

Agricultural and allied sectors such as horticulture, animal husbandry, sericulture, and fisheries are the sectors to be covered under NADP. Besides these, special programmes for water conservation and repair and maintenance of canal, tank and small irrigation structures are also proposed to be taken up under the NADP. The main focus will be on repairing the canal irrigation systems to prevent seepage loss of water,

modernization of tanks and a few small irrigation structures and check dams and establishment of low pressure drip irrigation system in the Lower Bhavani Project area to effectively harness seepage water from main canal and reuse it for agricultural purposes.

1.4 Various On-going Programmes in the District – A Brief Contextual Gist

The Agriculture Department is implementing various schemes to increase the production and productivity of a wide range of crops cultivated in the district. The schemes implemented in the district are Integrated Cereal Production Scheme, National Pulses Development Scheme, Integrated Cotton Development Scheme, Oilseed Production Programme, Intensive Maize Development Scheme, Seed Production Scheme, Farmers' Training Centre, Crop Productivity Competitions, Part II Plan Schemes, Supply of tarpaulins to Agricultural Extension Centres, Revamping Agricultural Extension Centres, Coconut Development Scheme, Sugarcane Development Scheme, Eriophyte mite control, and Seed village scheme.

In addition, the Department of Horticulture is implementing National Horticulture Mission, Microirrigation scheme, Precision Farming and Integrated Horticulture Development Scheme.

There is lot of scope to further strengthen these schemes and dovetail them with the schemes under NADP.

1.5 The District Plan at a Glance

The district plan covers a wide range of activities involving crop-specific as well as non-crop-specific development activities. Allied sectors such as horticulture, agricultural engineering, agricultural marketing, animal husbandry, sericulture and fisheries are proposed to be developed under the NADP with investments on popularization of latest technologies, strengthening extension support, farmers training as well as through strengthening the required infrastructural facilities needed to spur growth in agricultural and rural sectors. The Agricultural Engineering Department and the Water

Resources Organization of the Public Works Development have submitted proposals to conserve water and improve water conveyance efficiency under various canal irrigation projects in the district. The abstract of the activities and the proposed budgetary requirements are given in Table 1.

Table 1. Abstract of Activities Proposed and Financial Support sought under NADP

Sl. No	Name of Department	Financial Proposal for N.A.D.P (in lakh Rs.)				
		2008-09	2009-10	2010-11	2011-12	Total
1	Agriculture	598.92	394.34	467.56	465.73	1926.55
2	Horticulture	1426.3	1046.3	1048.3	798.3	4319.2
3	Animal Husbandry	812.75	250.438	246.395	245.93	1555.51
4	Fisheries	134	136	134.5	2.5	407
5	Agricultural Engineering	589.03	580.53	579.08	579.93	2328.57
6	Agricultural Marketing	99.2	541.43	457.50	481.07	1579.20
7	Sericulture	241.675	227.125	298.795	316.125	1083.72
8	Public Works Department	1541.9	1969.85	1799.55	1692.9	7004.2
	Total	**5443.78**	**5146.01**	**5031.68**	**4582.49**	**20203.95**

1.6 Public Private Partnerships that can be envisaged in the Proposed Plan

Public-private partnership can be envisaged in developing agricultural infrastructure such as revamping marketing infrastructure, value addition, cold storage, strengthening seed production, parasite production, soil testing, precision farming, microirrigation and custom-hiring of farm implements and machinery.

1.7 Expected Outcomes as a Result of Implementation of the Plan

The implementation of the plan will ensure four per cent growth rate in agricultural sector in the district. Besides, it will substantially improve the rural employment and income of farmers as well as agricultural labour households. By developing allied sectors such as animal husbandry, sericulture, and fisheries, it will ensure rural income and nutritional security and help enhance the overall standard of living of the rural communities in a sustained way.

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.

Sensitization Workshop

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

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

Preparation of Draft Action Plan and Presentation in District Collectors Meeting

Based on the baseline information and proposals, draft action plan was prepared and this was presented in the District Collector's Meeting held on 24-05-2008 at Erode 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.

Finalization

The feedbacks received in the District Collector's Meeting were 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

Erode District was formed as the sixteenth District of Tamil Nadu in September 1979. The District is situated between 10.35' and 11.60' of North latitude and 76.49' and 77.58' East longitude and above the mean sea level of 171.91m. The District has its southern border with Dindigul District, Eastern border with Namakkal and Karur Districts, Northern border with Karnataka State and Western border with Coimbatore District. The District has its headquarters at Erode.

The soils of the district are predominantly red sandy to red gravel type. The type occurs to a large extent in Bhavani, Erode and Dharapuram taluks. Red loamy soil is found in Gobichettipalayam Taluk.

The maximum and minimum temperatures recorded in the district are 36.7^{o} C, and 19.2^{o} C respectively. The normal rainfall of the district is 717 mm.

The agricultural activity in the district is well supported by some perennial rivers. Cauvery and Bhavani are the two main rivers in this district. The river Bhavani extensively benefits agriculture in Sathyamangalam and Gobichettipalayam taluks. Cauvery river provides irrigation facilities to a limited extent in Bhavani taluk. Noyyal is another river flowing through Erode and Kangayam taluks.

Erode district consists of seven taluks and 20 blocks, with an area of 8,160 Sq.km. The district had a population of 25.74 lakhs as per 2001 Census. The district is having 59 town panchayats and 539 revenue villages. The district has been divided into 20 Agriculture blocks with seven taluks *viz.,* Erode, Gobichettipalayam, Bhavani, Dharapuram, Perundurai, Sathyamangalam and Kangayam.

Figure 1. Map of Erode District with Development Blocks

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

Crop Activities in the District

The district is benefited from major canal irrigation projects spread over the entire district with the exception of Dharapuram and Kangeyam taluks, where the majority of drylands are concentrated. Groundwater is an important source of irrigation during non-canal season as well as in areas outside the command areas of canal irrigation projects. Given the variety of soil types and irrigation sources, a number of crops are cultivated

and the pattern of crop diversification is well-suited to minimize the risks in agricultural production given the low rainfall in the district. The cropping patterns adopted in canal-irrigated areas as well as in drylands are given Table 2.

Table 2. Cropping Pattern of Erode District

Irrigation Project	Crop pattern
Kalingarayan Canal	
Three Crops area	I Paddy - June to September - October
	II Paddy - October-November to Jan.-Feb.
	III Paddy - January-February to April - May
Double Crops area	I Paddy - June-July to October-November
	II Paddy - December to April
Single Crop area	Turmeric - May-June to February-March (or) Sugarcane - March-April to January-February
	Banana - June-July-January-February
Thadappalli-Arakkankottai Canal	
Double Crops area	I Paddy - April to August
	II Paddy - September-January
Single Crop area	Sugarcane - April to January-February
Lower Bhavani Project Area	
I Turn	Paddy - August to September-January
II Turn	Groundnut or Gingelly – December-January to March-April
Mettur West Bank Canal	
I Crop –Paddy	August-September to January
II Crop -Cotton / Gingelly	February - July
New Amaravathy Project	
Paddy	August-September to January-February
Parambikulam-Aliyar Project Area	
Maize or Cotton or Groundnut or Ragi	August to December-January
Cropping pattern in dry lands	
Groundnut with Redgram as mixed crops	July-August to December - January
Cholam or Cumbu with Cowpea or	September-October to January-February
Blackgram as mixed crop	
Ragi	July - August to October - November

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

The area under crops under irrigated and unirrigated conditions is given in Table 3.

Table 3. Area under Crops in the District (2005-06)

(Area in ha)

Crops	Irrigated	Unirrigated	Total Area	Area under high yielding varieties
Paddy	43423 (26.93)	116 (0.08)	43539 (14.47)	43423
Jowar	317 (0.20)	2173 (1.55)	2490 (0.83)	2490
Bajra	61 (0.04)	407 (0.29)	468 (0.16)	276
Ragi	35 (0.02)	7034 (5.03)	7069 (2.35)	4595
Maize	7865 (4.88)	5985 (4.28)	13850 (4.6)	NA
Total Cereals	51701 (32.07)	15737 (11.26)	67438 (22.41)	NA
Black Gram	80 (0.05)	1137 (0.81)	1217 (0.4)	NA
Green Gram	282 (0.17)	1454 (1.04)	1736 (0.58)	NA
Horse Gram	16 (0.01)	7315 (5.23)	7331 (2.44)	NA
Cow Pea	316 (0.20)	3087 (2.21)	3403 (1.13)	NA
Other Pulses	8 (0.00)	995 (0.71)	1003 (0.33)	NA
Total Pulses	1083 (0.67)	18150 (12.99)	19233 (6.39)	NA
Spices	9629 (5.97)	288 (0.21)	9917 (3.29)	NA
Sugarcane	41402 (25.68)	0 (0.00)	41402 (13.76)	NA
Groundnut	11537 (7.16)	35453 (25.37)	46990 (15.61)	NA
Sunflower	1711 (1.06)	3 (0.00)	1714 (0.57)	NA
Gingelly	11301 (7.01)	2049 (1.47)	13350 (4.44)	NA
Coconut	18472 (11.46)	0 (0.00)	18472 (6.14)	NA
Cotton	4531 (2.81)	121 (0.09)	4652 (1.55)	NA
Fodder crops	7938 (4.92)	64050 (45.83)	71988 (23.92)	NA
Fruit crops	9689 (6.01)	148 (0.11)	9837 (3.27)	NA
Vegetables	9673 (6.00)	1454 (1.04)	11127 (3.7)	NA
Flowers	1466 (0.91)	92 (0.07)	1558 (0.52)	NA
Net sown area	161217 (100.00)	139765 (100)	300982 (100)	-
Area cropped more than once	23687	32	23719	-
Gross cropped area	184904	139797	324701	-

Note: NA – Not available

Source: Office of the Joint Director of Agriculture, Erode

The data on area under different crops in Erode district reveal that water-intensive crops such as paddy and sugarcane each occupies about 25 per cent of the net sown area. About one third of the net sown area under irrigation is under cereal crops. Among the irrigated crops, coconut ranks third with a share of about 11 per cent, while irrigated groundnut and gingelly each had a share of seven percent in the net sown area of the district. Fruits and vegetables each constitute about six percent of the net sown area under irrigation. Among the unirrigated crops fodder crops account for about 45 per cent of net sown area followed by groundnut (25 per cent of net sown area) and pulses (13 per cent).

Livestock Activities in the District

Animal Husbandry occupies a very important place in the district. The Animal Husbandry department has contributed immensely to livestock development in Erode district and in providing additional income to the poor farmers in the villages. It aims at augmenting the production potential of livestock and poultry, thereby increasing the production of milk, meat and eggs in the Erode district. It envisages provision of timely veterinary assistance and healthcare to the livestock and poultry and provision of employment potential to the farmers of livestock farming, protects livestock and poultry against contagious and infectious diseases and provides facilities for scientific breeding of cows and buffaloes in the District. Farmers are educated on various aspects of animal husbandry and fodder production by various extension methods.

Erode district is one of the rich districts in cattle wealth and poultry development activities. Kangeyam breed, Kollegal breed and Alambodies are the famous breeds in the District. The Kangeyam bulls are known for their draught capacity, while the other breeds are also reared for agricultural purposes. Many milch breeds are available throughout the district. The Tamil Nadu Milk Producers' Federation has a milk collection center and processing plant at Erode from where milk is transported to different parts of the State every day.

There is constant expansion of poultry activity both under layer and broiler in the district. It tends to occupy the major animal husbandry activity in the district in the coming years. The details of animal population as a whole and breedable population as per the livestock Census of 2003 are given below:

1. Plough Animals	:	96,700
2. Dairy Animals		
i. Cattle	:	3,98,572
ii. Buffaloes	:	2,30,004
3. Sheep	:	5,26,470
4. Goat	:	4,45,212
5. Poultry (Layers)	:	35,23,000

Breedable Population in Erode District

Cattle

1. Exotic	:	1186
2. Cross Breed	:	119117
3. Native Pure	:	27594
4. Indigenous	:	31817
5. Total	:	179714

Buffaloes

1. Murrah	:	2877
2. Graded	:	40304
3. Indigenous	:	87486
4. Total	:	130667

Source: Regional Joint Director of Animal Husbandry, Erode

Fisheries

Inland fisheries are the only resource for fisherman in the district. Being a landlocked district, there is no scope for marine fisheries. Bhavanisagar is a major reservoir in the district. There is a fresh water biological station at Bhavanisagar, which has been undertaking studies on the economics and bionomics of the fisheries of various reservoirs. More than 30 varieties of fish are found in the Bhavanisagar reservoir. The fish caught in the reservoir are marketed through the Central Fishery Corporation at Mettupalayam. The Corporation transports fishes to various places in the state including Chennai.

2.2 District at a Glance

2.2.1. Location and Geographical Units

Erode district is situated in between Karnataka state in North–West, Coimbatore district in the West, Dindigul District and Karur District in the South, Salem and Namakkal District in the East. The District is lying between 10.35' and 11.60' of north latitude and 76.49' and 77.58' of East longitude and 171.91 metres above the mean sea level. The river Cauvery flows on the North and Eastern part of the district. The District has its headquarters at Erode.

2.2.2. Demographic Profile

As per the Census 2001, Erode district had a total population of about 25.8 millions, out of which about 13.88 millions, accounting for about 54 percentage of total population live in rural areas and about 11.94 millions, accounting for about 46 percent of total population live in urban areas. The decadal growth rate of rural population during 1991 to 2001 has been negative (-20.74 per cent) while the urban population has shown a decadal growth rate of 107.46 per cent. This shows that the rate of urbanization has been high in the district. The overall decadal population growth rate in the district was 10.94 percent which is marginally less than that for the State as a whole. The literacy rate among male population of the district was higher at 75 percent while the female literacy rate was only 55 per cent. The overall literacy rate in the district was 65 per cent which is lower than that of the Tamil Nadu State.

2.2.2.1. Occupational Classification of Population

The details of occupation classification of population in the district are presented in Table 4. Among the total workforce in the district, more than 90 per cent are main workers comprising of cultivators, accounting for about 20 per cent, agricultural labour constituting about 29 per cent and other workers accounting for about 40 per cent. Marginal workers account for about eight per cent of the total working population in the district and non-workers account for about 44 per cent of the total population in the district.

Table 4.Occupational Classification of Population

Sl. No.	Industrial category	Persons	Percent to total workers
1.	Total main workers	1317991	91.88
	a) Cultivators	280072	19.52
	b) Agricultural labourers	411010	28.65
	c) Household Industry Manufacturing, Processing, Servicing and Repairs	68201	4.75
	d) Other workers	558708	38.95
2.	Marginal workers	116,414	8.11
3.	Total workers	1434405	100.00
4.	Non workers	1147095	--
5.	Total population	2581500	

2.2.3. Topography and Agro Climatic Characteristics

The average maximum temperature recorded in the district is 36.7^{o}C, and the minimum temperature is 19.2^{o}C. The normal rainfall of the district is 717 mm. Details on season-wise normal rainfall and actual rainfall received during the last five years are given in Table 5.

Table 5. Rainfall Distribution in Erode District (2003-2007)

(Rainfall in mm)

Sl. No.	Month	Normal	2003	2004	2005	2006	2007
1.	January	15.0		4.5	15.9	7.8	0.1
2.	February	10.6		1.3	24.5	0	7.0
	Winter total	**25.6**	**2.2**	**5.8**	**40.4**	**7.8**	**7.1**
3.	March	17.2		8.3	10.6	23.5	0.4
4.	April	54.0		32.3	111.4	54.3	61.8
5.	May	91.0		257.1	141.7	58	28.1
	Summer total	**162.2**	**133.0**	**297.7**	**263.7**	**135.8**	**90.3**
6.	June	29.8		13.6	28	32.5	37.3
7.	July	33.3		57.9	59.1	0.9	24.1
8.	August	64.2		14.5	66.6	58.6	65.4
9	September	85.6		92.5	82	86.1	95.6
	Southwest monsoon	**212.9**	**137.4**	**178.5**	**235.7**	**178.1**	**222.4**
10	October	168.8		218	288.4	182.8	163.9
11.	November	113.7		96.7	281	193.3	83.3
12.	December	33.8		0	86.5	6.3	227.8
	Northeast monsoon	**316.3**	**352.0**	**314.7**	**655.9**	**382.4**	**475.0**
	Grand Total	**717.0**	**624.6**	**796.7**	**1195.7**	**704.1**	**794.8**

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

2.2.4. Land Use Pattern and Land holdings

The details of land use pattern are presented in Table 6. The total geographical area is 8.16 lakh hectares. Of this, about 28 per cent was under forests, and 0.02 per cent was under pastures and grazing lands. As much as about ten per cent of the total area is under non-agricultural uses. The area under cultivable waste was 0.19 per cent. The current fallows, however, accounted for more than 10 per cent of the total area, while other fallows constitute about 13 to 14 per cent of the total geographical area of the district. The net sown area of the district was about three lakh hectares constituting about 37 per cent of the geographical area of the district.

Table 6. Land Use Pattern in Erode District

(Area in ha)

Land use	Area	
	2004-05	**2005-06**
Total Geographical Area	816,191 (100.00)	816,191 (100.00)
Forests	228,749 (28.03)	228,749 (28.03)
Permanent pastures and grazing lands	187 (0.02)	187 (0.02)
Barren and uncultivable lands	7074 (0.90)	7074 (0.90)
Miscellaneous tree crops and groves	1360 (0.20)	1362 (0.20)
Land put to non-agricultural use	79,473 (9.74)	80,708 (9.89)
Cultivable waste	527 (0.06)	556 (0.068)
Current Fallows	83,316 (10.21)	90,697 (11.11)
Other Fallow Lands	115,677 (14.17)	105,878 (12.97)
Net Area Sown	300,065 (36.76)	300,982 (36.88)
Area Sown more than once	29,150	23,719
Gross cropped area	329,215	324,701
Cropping Intensity (%)	109.70	107.90

Source: Season and Crops Report for Tamil Nadu, Government of Tamil Nadu

The land holding pattern in the district is given in Table 7.

Table 7. Land Holding Pattern in Erode District

Size of holding in hectare	Numbers				Area (ha)			
	SC	ST	Others	Total	SC	ST	Others	Total
Below 0.02	175	1	1673	1854	1.90	0.01	19.27	21.185
0.02 – 0.50	4521	192	89296	94009	1100.40	58.08	22742.35	23901
0.50 – 1.00	2913	295	70061	73269	2098.97	210.35	50187.71	52497.0
1.00 – 2.00	2502	463	78556	81521	3451.65	669.27	112153.7	116574
2.00 – 3.00	602	99	33800	34519	1448.37	221.94	81838.47	83508.8
3.00 – 4.00	186	29	16509	16724	631.18	99.7	56822.13	57553.0
4.00 – 5.00	58	5	8790	8853	254.73	21.69	39170.98	39447.4
5.00 – 7.50	49	1	9592	9642	288.39	5.98	57433.55	57732.9
7.50–10.00	3	3	3355	3361	25.98	24.57	28720.00	28770.6
10.00–20.00	5	0	2680	2685	57.59	0	34805.62	34863.2
Above 20.00	0	0	307	307	0	0	10751.35	10751.3
Total	**11014**	**1088**	**314619**	**326744**	**9359.14**	**1311.6**	**494645**	**505621**

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

The data provided in the above table indicate that the small holdings with a size of less than 2 ha constitute more than 75 per cent of the total number of holdings in the district and this category accounted for only about 38 per cent of the land area owned. On the other hand, the relatively larger land holdings with a size of more than five ha accounted for about just five percent of the total number of holdings in the district with more than one-fourth of the total land owned in the district.

2.2.5. Irrigation and Ground Water

The data on source-wise area irrigated in the district are given in Table 8. The data presented in the table revealed that canals are the major sources of irrigation accounting for more than 50 per cent of the total irrigated area in the district followed by wells accounting for about one third of the total area irrigated. Groundwater, including ordinary wells and tubewells, accounts for more than 40 percent of the total area irrigated by all sources. Tanks and other minor sources of irrigation accounted for the remaining area irrigated.

Table 8. Source-wise Area Irrigated in Erode District

(Area in ha)

S. No.	Source	2004-05	2005-06
1	Canal	82829 (55.33)	91904 (57.01)
2	Tank	509 (0.34)	228 (0.14)
3	Wells	57974 (38.72)	52474 (32.55)
4	Others		
	a) Tube wells	7055 (4.71)	14659 (9.09)
	b) Other sources	1346 (0.90)	1952 (1.21)
5	Total	149713 (100)	161217 (100)

Source: Season and Crops Report for Tamil Nadu, Government of Tamil Nadu

Note: Figures in parentheses are percentage to total area irrigated by all sources

The classification of blocks based on level of groundwater exploitation is given in Table 9.

Table 9. Classification of Blocks Based on Level of Exploitation of Ground Water Potential

Over Exploited (above 100 percent)	Critical (90-100 percent)	Semi Critical (70-90 percent)	Safe (less than 100 percent)
Ammapet	Bhavanisagar	Bhavani	Chennimalai
Anthiyur	Sathyamangalam	Dharapuram	Erode
Nambiyur	Thalavadi	Gobi	Kodumudi
		Kangeyam	Uthukuli
		Kundadam	
		Modakurichi	
		Mulanur	
		Perundurai	
		T N Palayam	
		Vellakoil	

Source: Public Works Department, Erode

The data presented in the above table indicate that only four blocks are classified as safe blocks in terms of groundwater development, ten blocks are classified as semi-critical and the remaining six blocks are classified as critical or overexploited. This indicates that there is very limited scope for further expansion of groundwater irrigation in the district.

2.3 Development Vision and Strategy

The district is fairly developed in terms of both industries and agriculture. Textiles, leather processing, sugar industries, rice milling, and oil extraction are some of the industries concentrated in this district. The district ranks top position in rice productivity and has a well developed market for turmeric which is an important commercial crop in the irrigated command areas of the district. Drylands, mostly concentrated in the central and southern parts of the district offer potential for rainfed agriculture with a strong focus on livestock and poultry production. The main focus areas of agricultural development in the district are:

- Increasing the productivity of irrigated crops such as rice, sugarcane, turmeric through better water management and sustainable management of soil and water ecosystems
- Increasing the productivity of irrigated dry crops and rainfed crops such as pulses, groundnut, sunflower, gingelly, maize and fodder crops
- Increasing the production and distribution of quality seeds and planting material for both field crops and horticultural crops.
- Development of agro-based industries based on major crops of the district such as sugarcane, rice, turmeric and oilseeds
- Strengthening rural infrastructure and marketing facilities
- Development and introduction of labour-saving machinery and equipments
- Promoting agro-forestry and traditional sylvipastoral systems in central and southern parts of the district with focus on animal husbandry; and
- Water harvesting and soil conservation technologies for rainfed areas of the district.

CHAPTER - III

SWOT ANALYSIS OF THE DISTRICT

3.1 Introduction

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

3.2 SWOT Analysis of the District (with focus separately on the Agriculture and Allied Sectors)

The SWOT analysis of agricultural sector of the district is presented below:

Strengths	The farmers in the district are very progressive and innovative in adopting modern technologies and crop varieties. This is borne out by the fact the district is one of the leading districts in the state in terms of productivity of many crops such as paddy, sugarcane, pulses, coconut and turmeric. Even in crops where the productivity is low it is mainly due to the erratic behaviour of monsoon, poor soils and inadequate irrigation facilities. Erode has a big turmeric market and some of the surrounding towns in the district such as Kangeyam and Vellakovil have a large number of agro-processing industries such as rice mills, coconut and groundnut oil mills. In terms of rural infrastructure Erode district is well-placed as compared to the other districts in the state with the road density of 0.46 km per sq.km of geographical areas as compared to the state average of 0.43 km. Most villages in the district are connected by fairly good network of roads suitable for easy transportation of agricultural produces. In view of high level of urbanization with about 46 per cent of the total population in the district living in urban areas, the district has a good local market for its agricultural commodities especially for fruits and vegetable.
Weaknesses	The plains in the district receive an annual average rainfall of 600 to 700 mm which mainly occurs during northeast monsoon season. Therefore, successful crop production depends heavily on the success / failure of monsoon thus making agricultural production riskier in many parts of the district. Limited availability of groundwater is a major weakness plaguing the agricultural development in this district. Increasing scarcity of labour due to sharp increase in migration from rural to urban areas is responsible for higher wage rates for agricultural labour which forces farmers to shift

	towards annual crops such as coconut. In many southern parts of the district such Kangeyam and Dharapuram taluks the soils are poor in nutrient and organic matter content and hence characterized by low agricultural productivity. The area under rainfed crops in the district has been declining over the last three decades due to increasing scarcity of labour and stagnation in yield and profitability of these crops. The area under traditional rainfed crops such as sorghum, cowpea, green gram, and horse gram have declined over a period of time.
Opportunities	In view of the progressive nature of the farmers and their willingness to learn new techniques and take risks, there are ample opportunities to promote new crop varieties and new technologies such as precision farming, System of Rice Intensification, etc. There are lots of opportunities to introduce water-saving technologies under canal irrigation systems especially in the Lower Bhavani Project area in view of the huge seepage loss of water from canals. There is also scope for introducing water-saving technologies at farm level, especially for high water-intensive crops such as sugarcane, turmeric and banana. Further expansion of area under tapioca, sunflower, and horticultural crops is possible through implementation of water-saving technologies. Dryland agriculture has a good potential in this district by appropriate combination of crops, tree crops and livestock enterprises. The traditional sylvipasture system that combines sheep rearing with naturally growing trees such as Acacia could be further improved with a range of quick-growing tree species and sheep breeds.
Threats	Increasing scarcity of groundwater in many parts of the district is a major threat to expansion of irrigated agricultural production. Further, threats from industrial pollution around the wetland areas of Erode town due to the release of effluents from leather tanneries and textile dying industries and the pollution of Noyyal river by the dying industries in Tiruppur and the pollution of groundwater from the effluents released by the industries located inside the SIPCOT industrial estate near Perundurai are likely to become major constraints not only for increasing agricultural productivity but also for sustaining the productivity levels already reached. The traditional animal breed known as “Kangayam bulls” native to this district and known for their draught power is on the decline which is a major threat to the sustainable farming systems in the district. Declining interest among farmers in continuing the agriculture due to increasing employment opportunities in non-agricultural sector and increasing risk in crop production coupled with stagnation in productivity and profitability of many crops is yet another threat to agriculture sector.

3.3 Accommodating SWOT – Addressing Issues Emerging out of the Analysis

In view of the high productivity achieved in some crops such as paddy, sugarcane, pulses and turmeric, sustaining the growth rate and further increase in productivity are possible only by continued modernization of production techniques and introduction of latest crop varieties. As labour and water are the two basic resources which are increasingly becoming scarce in the district, there is a need for introducing labour-saving and water-saving technologies. These requirements are adequately addressed in the proposed district plan. The productivity enhancement techniques such as production and distribution of quality seeds, popularization of SRI technique in paddy, hybrid rice cultivation, soil health improvement, and technology demonstration in rice and most of the other crops, as well as distribution of hybrid seeds in major crops are some of the strategies proposed to address the issue of enhancing productivity in the district. Since Erode district is one of the low rainfall districts of Tamil Nadu, there are a number of proposals to take up water-saving measures in canal-irrigated areas and to promote allied activities such as animal husbandry in rainfed areas.

Strengthening extension activities will also be given top priority through technology demonstration, production of short films on modern technologies, farmers' training and study tours within and outside the state, strengthening Farmers' Interest Groups and TANWABE Groups, etc. Marketing is one of the most neglected aspects of agricultural modernization strategies. Therefore, the District Agricultural Plan for Erode district envisages modernization of agricultural marketing infrastructure as well as developing marketing skills of farmers in the district by strengthening rural shandies, dissemination of market intelligence, commodity group formation, training farmers in marketing and storage, facilitating contract farming and arranging for buyers-sellers meetings.

3.4 Sectoral / Regional Growth Drivers of the District

Agro-processing industries especially rice milling and oil extraction have significant potential for further expansion in the southern parts of the district which is

ideally placed in terms of agro-climatic conditions, raw material availability and skilled manpower supply. Further intensification of sylvipastoral systems is an important strategy to increase the productive potential of drylands in the southern parts of the district such as Kangeyam, Vellakovil, Kundadam and Mulanur blocks. Milk and meat production could be further increased with adequate support in the form of popularization of new breeds of milch animals and sheep and goats, increased emphasis on fodder production and increasing veterinary infrastructure.

In the eastern, northern and north-eastern parts of the district, which are relatively well-endowed in water resources, intensification of agricultural production through introduction of water-saving technologies should receive top priority so as to enhance productivity and production.

Composite Index of Agricultural Development of Erode 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, the 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 Erode district is taken from various government publications like Season and Crops Report and Economic Appraisal of Tamil Nadu for the four periods 1990-91, 1995-96, 2000-01 and 2005-06. In all, 25 indicators of agricultural development as given in Table 10 were used for estimating the composite index of development for the district. The 25 indicators were grouped into six different components viz., 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 Erode district, which was classified as ‘developed’ in agricultural development from 90-91 to 2000-01, was classified as ‘developing’ in agriculture during 2005-06. In terms of overall agricultural development, its rank among the 29 districts of Tamil Nadu varied from 9 to 18 during the period from 1990-91 to

2005-06. As far as the individual components of agricultural development are concerned, its ranks in the above periods are summarized in Table 11. The table shows that except in fisheries, in all other components the performance of Erode district in the period of study is good. For example, in irrigation its ranks are between 10 and 15 in all the four periods. Similarly, in livestock also it occupied between 2nd and 6th rank.

Table 10. Selected Indicators of Agricultural Development for Erode District

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

Table 11. Rank of Erode District in terms of Agricultural Development among other Districts of Tamil Nadu during 1990-91 to 2005-06

Component of Composite Index		Crop-Area-Variables	Irrigation	Livestock-	Fisheries	Fertilizer	Cultivators -Labourers	Overall
Period	1990-91	8	14	6	-	-	10	9
	1995-96	11	12	3	27	9	15	9
	2000-01	19	10	2	27	12	14	14
	2005-06	24	15	3	27	14	12	18

CHAPTER – IV

DEVELOPMENT OF AGRICULTURAL SECTOR

4.1 Introduction

The district is benefited from major canal irrigation projects spread over the entire district with the exception of Dharapuram and Kangeyam taluks, where the majority of drylands are concentrated. Groundwater is an important source of irrigation during non-canal season as well as in areas outside the command areas of canal irrigation projects. Given the variety of soil types and irrigation sources, a number of crops are cultivated and the pattern of crop diversification is well-suited to minimize the risks in agricultural production given the low rainfall in the district.

4.2 Land Use

The land use pattern in the district is presented in Table 12. The total geographical area is 8.16 lakh hectares. Of this, about 28 per cent was under forests, and 0.02 per cent was under pastures and grazing lands. As much as ten per cent of the total area was under non-agricultural uses. The area under cultivable waste was 0.19 per cent. The current fallows, however, accounted for more than 10 per cent of the total area, while other fallows constituted about 13 to 14 per cent of the total geographical area of the district. The net sown area of the district was about three lakh hectares constituting about 37 per cent of the geographical area of the district.

4.3 Soil Health

The soils of the district are mostly red sand and gravel with moderate amounts of red-loam and occasional black loam tracts. Vast stretches of the upland regions are mostly and gravelly. Red-loam occurs mostly in lands under Kalingarayan channel and in beds of tanks in Erode taluk and to some extent in the valleys in Perundurai and Dharapuram taluks. It also occurs in the hilly tracts of Bhavani taluk. Soils of Bhavani, Erode, Dharapuram and Perundurai taluks are chiefly gravelly, stony and sandy of the red variety. Soils of Gobichettipalayam and Sathyamangalam taluks are mostly of the red

sandy variety. Red loam is prevalent mostly in Gobichettipalayam and Perundurai taluks. Area under different soil types in the district are given in the Table 13 and 14 and the soil map of the district is provided in Figure 2.

Table 12. Land Use Pattern in Erode District

(Area in ha)

Land use	Area	
	2004-05	**2005-06**
Total Geographical Area	816,191 (100.00)	816,19 (100.00)
Forests	228,749 (28.03)	228,749 (28.03)
Permanent pastures and grazing lands	187 (0.02)	187 (0.02)
Barren and uncultivable lands	7074 (0.90)	7074 (0.90)
Miscellaneous tree crops and groves	1360 (0.20)	1362 (0.20)
Land put to non-agricultural use	79,473 (9.74)	80,708 (9.89)
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Other Fallow Lands	115,677 (14.17)	105,878 (12.97)
Net Area Sown	300,065 (36.76)	300,982 (36.88)
Area Sown more than once	29,150	23,719
Gross cropped area	329,215	324,701
Cropping Intensity	109.70 percent	107.90 percent

Source: Season and Crops Report for Tamil Nadu, Government of Tamil Nadu

Table 13. Area under different Soil Types

Sl. No.	Soil Type	Area (ha)
1.	Red Soil	607737
2.	Black Soil	10113
3.	Alluvial Soil	40030
4.	Saline & Alkaline Soil	77148

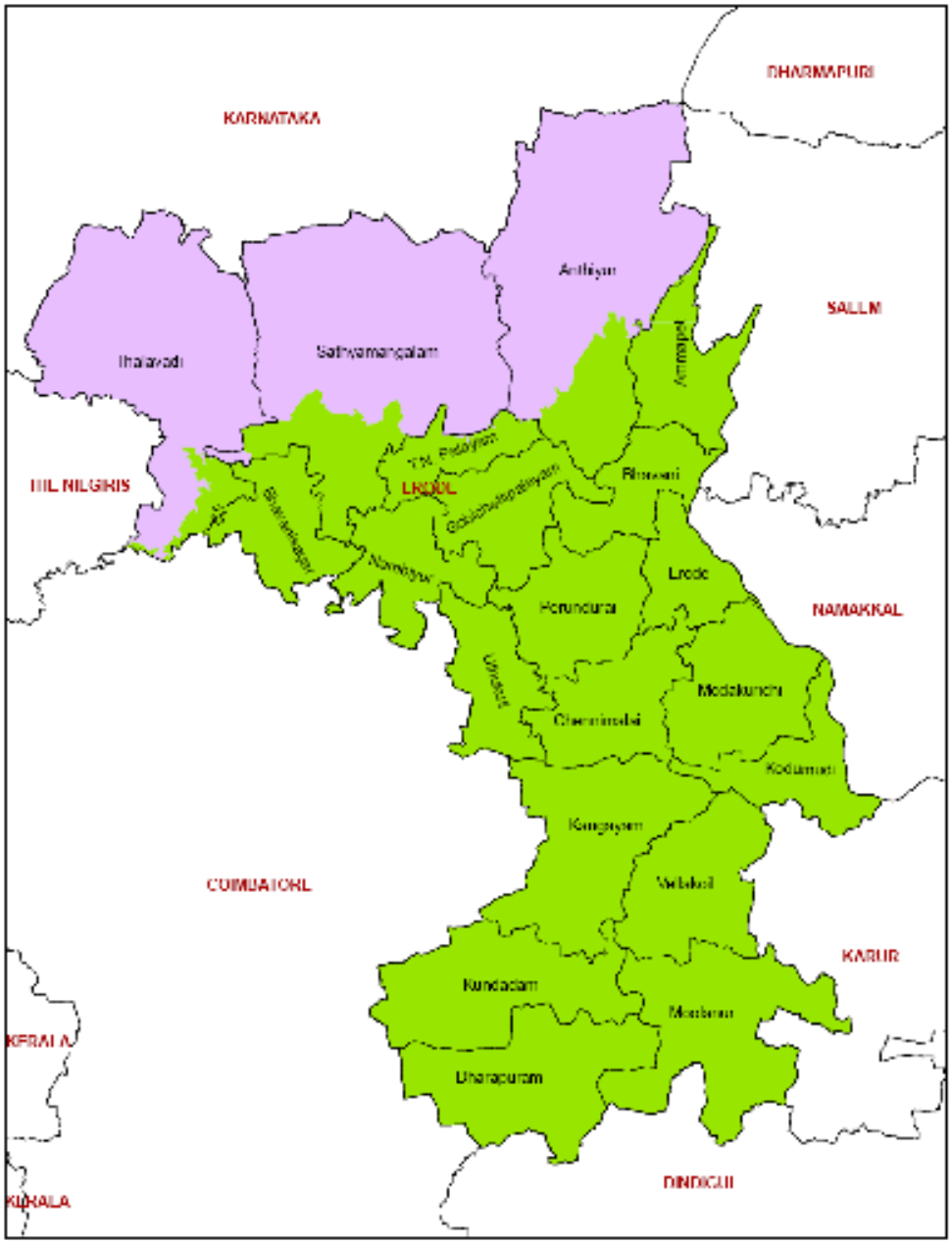
Source : Records of the Office of Joint Director of Agriculture, Erode

The details on area under different problem soil categories such as saline and alkaline soils are given in the Table 14.

Table 14. Area under different Soil Types in Erode District

Soil Description	Area (ha)
Moderately deep, fine loamy, mixed, Alfisols	61992.19
Moderately shallow, fine loamy, mixed, Alfisols	60418.91
Deep, fine loamy, mixed, Inceptisols	59436.81
Moderately deep, fine, montmorillonitic, Vertisols	55689.02
Very deep, fine loamy, mixed, Alfisols	55331.57
Moderately deep, fine, montmorillonitic, Inceptisols	53649.07
Shallow, clayey, mixed, Ultisols	33967.66
Deep, fine, mixed, Inceptisols	33888.47
Shallow, loamy, mixed, Inceptisols	32686.08
Very deep, loamy skeletal, mixed, Inceptisols	31034.20
Very shallow, loamy, mixed, Entisols	28128.16
Moderately deep, clayey skeletal, mixed, Alfisols	27386.04
Deep, fine loamy, mixed, Alfisols	24638.41
Moderately shallow, loamy skeletal, mixed, Entisols	23236.37
Deep, fine, montmorillonitic, Vertisols	20464.35
Shallow, loamy, mixed, Entisols	17994.51
Shallow, loamy skeletal, mixed, Alfisols	17791.24
Deep, fine, montmorillonitic, Inceptisols	14151.48
Moderately shallow, fine, mixed, Inceptisols	12540.84
Moderately deep, loamy skeletal, mixed, Inceptisols	12228.58
Moderately shallow, coarse loamy, mixed, Entisols	11828.75
Deep, contrasting particle size, mixed, Entisols	11138.03
Deep, fine, kaolinitic, Inceptisols	11024.46
Moderately deep, fine, mixed, Inceptisols	10659.98
Deep, fine, montmorillonitic, Entisols	10632.81
Shallow, sandy skeletal, mixed, Inceptisols	10441.50
Very deep, fine, montmorillonitic, Vertisols	9159.48
Very deep, fine loamy, mixed, Inceptisols	7314.40
Moderately shallow, fine loamy, mixed, Inceptisols	5579.06
Moderately deep, loamy skeletal, mixed, Ultisols	4034.44
Deep, coarse loamy, mixed, Alfisols	3936.48
Very shallow, loamy, mixed, Inceptisols	2877.10
Shallow, loamy skeletal, mixed, Inceptisols	2827.07
Shallow, clayey skeletal, mixed, Alfisols	2688.59
Moderately deep, fine loamy, mixed, Inceptisols	2604.97
Very deep, fine, mixed, Alfisols	2113.03
Deep, loamy skeletal, mixed, Inceptisols	1548.89
Shallow, clayey skeletal, mixed, Inceptisols	1422.25
Moderately shallow, clayey skeletal, mixed, Alfisols	1160.35
Very deep, fine silty, mixed, Entisols	107.13
Moderately deep, fine, mixed, Alfisols	42.02
	789794.75

AGROCLIMATIC ZONES OF ERODE 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.

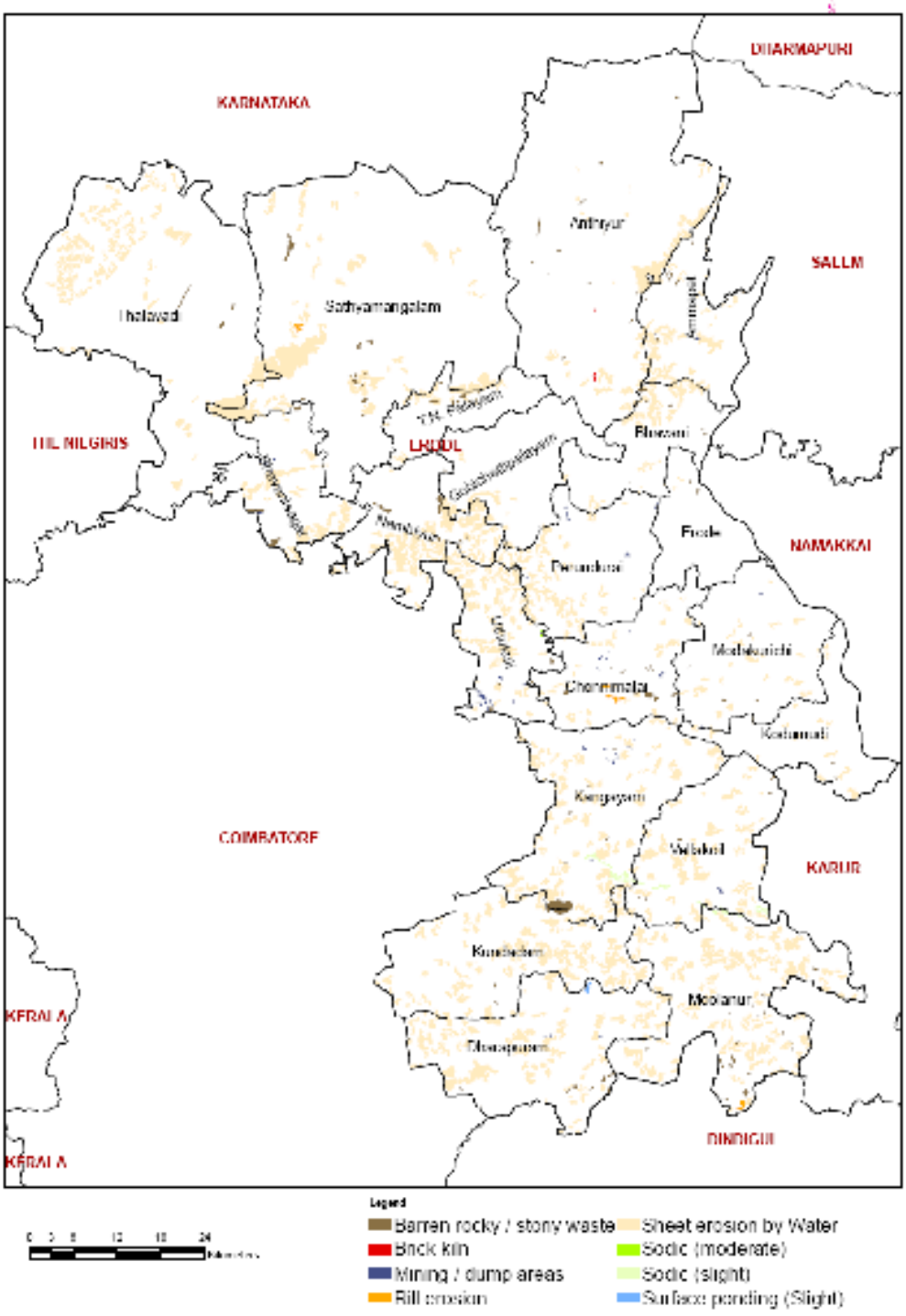
High Rainfall Zone

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 ERODE 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

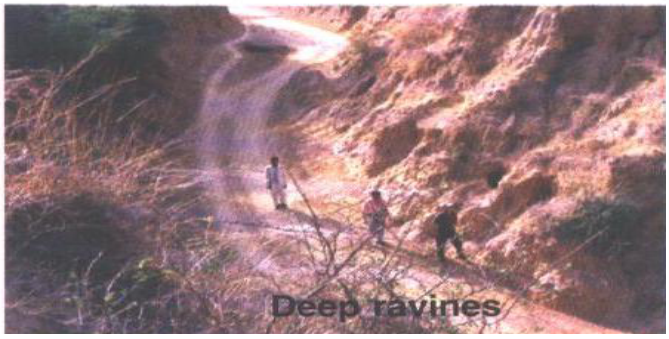
When the surface runoff goes in the form a concentric flow, a tiny water channels are formed in the field. These are small rivulets of such a size that they can be worked over with farm machinery. Rills are generally associated with the cultivated lands and are visible in the ploughed soil after first 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

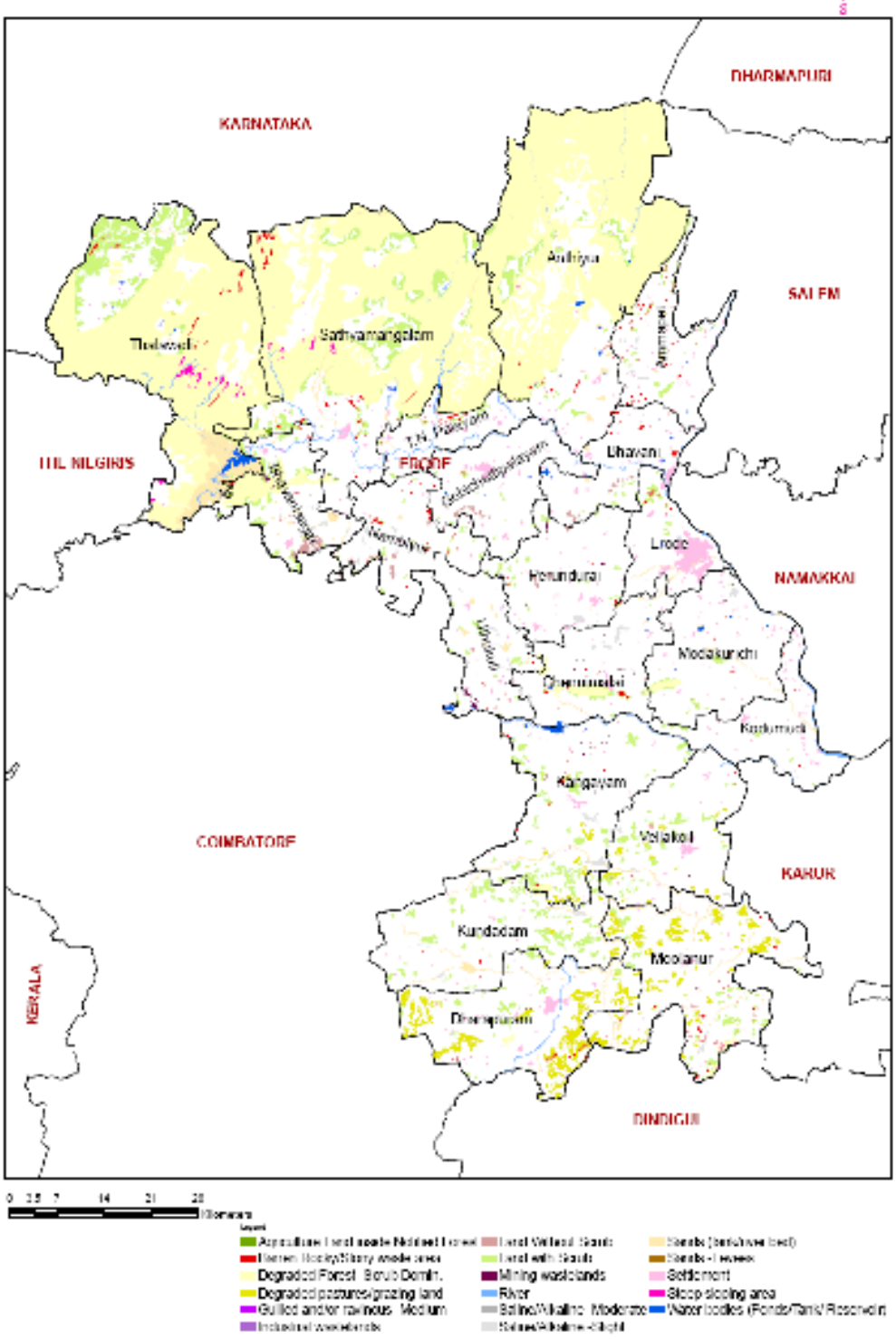
Barren / rocky / stony areas are the rock exposures of varying lithology often barren and devoid of soil and vegetal cover. They occur in hill forests as openings or as isolated exposures on plateau and plains. These can be easily delineated from other type of degraded land because of their severe nature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

4.4 Water Resources and Management

The area irrigated by different irrigation projects in the district is given in Table 15. The Thadappalli, Arakkankottai and Perumugai Athani canals benefit the northern taluks of the district *viz.,* Gobichettipalayam and Sathyamangalam. Paddy and sugarcane are the major crops cultivated in the command areas of these canals. Lower Bhavani Project is the major canal irrigation project benefiting north-western, northern and central parts of the district with two irrigation turns lasting for one crop season each. Canals taking off from Parambikulam Aliyar Project located in the neighbouring Coimbatore district benefit Kangayam taluk, while Amaravathy canal project benefits Dharapuram taluk. Groundwater is the chief source of irrigation other than canals, while tanks account for very meager share of total area irrigated in the district. The canals coming under Lower Bhavani Project are unlined and hence there is lot of seepage of water which lends scope for reusing the seepage water by appropriate technologies. Water use in the command areas of Parambikulam Aliyar Project is relatively more efficient due to the lined canals and the regulation of water release in such a way that it suits the cultivation of only irrigated dry crops.

Table 15. Source of Irrigation and Major Crops grown under Different Irrigation Projects

(Area in ha)

Name of the Irrigation Project	Area covered	Crop grown
Thadapalli Canal	6465	Paddy, Sugarcane
Arkkankottai Canal	2466	Paddy, Sugarcane
Perumugai Athani Canal	420	Paddy, Sugarcane
Old Amaravathi Canal	3947	Paddy, Sugarcane
Kalingarayan Canal	5296	Paddy, Turmeric, Sugarcane
New Amaravathi Canal	3851	Paddy, Sugarcane
Mettur West Bank Canal	6177	Paddy, Sugarcane
Lower Bavani Project I	36695	Paddy, Sugarcane
Lower Bavani Project II turn	37762	Groundnut, Ragi, Gingelly
Parambikulam Aliyar Project	14613	Groundnut, Ragi, Cotton
Vattamalaikkarai Zone	1140	Paddy, Groundnut
Uppar Dam	2424	Paddy, Groundnut
Gunderi Pallam	989	Paddy, Groundnut
Varattupallam	1169	Paddy, Groundnut

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

4.5 Major Crops and Varieties in the District

The details on major crops and varieties are given in Table 16. Most of the cereal crop varieties cultivated in the district are those released by TNAU, whereas in crops such as sunflower, maize, vegetables private varieties dominate. Bt cotton is slowly gaining foothold in this district albeit in a small area. Sunflower, maize and tapioca are relatively newer crops to the district and the area under these crops is increasing faster due to their low cost of cultivation and less labour requirement.

Table 16. Major Crops and Varieties in the District

(Area in ha)

Crops	Irrigated	Unirrigated	Total Area	Varieties
Paddy	43423 (26.93)	116 (0.08)	43539 (14.47)	ADT 36, ASD 16, ASD 8, ADT 43, Co 43, IR 20, White Ponni and Bhavani
Jowar	317 (0.20)	2173 (1.55)	2490 (0.83)	BSR 1, APK 1
Ragi	35 (0.02)	7034 (5.03)	7069 (2.35)	4595
Maize	7865 (4.88)	5985 (4.28)	13850 (4.6)	Co 1, Co HM 4,
Total Cereals	51701 (32.07)	15737 (11.26)	67438 (22.41)	-
Total Pulses	1083 (0.67)	18150 (12.99)	19233 (6.39)	-
Spices	9629 (5.97)	288 (0.21)	9917 (3.29)	NA
Sugarcane	41402 (25.68)	- (-)	41402 (13.76)	
Groundnut	11537 (7.16)	35453 (25.37)	46990 (15.61)	TMV 7, VRI 2, VRI 3
Sunflower	1711 (1.06)	3 (0.00)	1714 (0.57)	Private varieties
Gingelly	11301 (7.01)	2049 (1.47)	13350 (4.44)	TMV 3, Co2, TMV 6, SVPR 1
Castor	72 (0.05)	1224 (0.88)	1296 (0.93)	TMV 5, Jothy
Coconut	18472 (11.46)	0 (0.00)	18472 (6.14)	Traditional varieties, Tall X Dwarf hybrids released by private companies
Cotton	4531 (2.81)	121 (0.09)	4652 (1.55)	LRA 5166, MCU 5, MCU 9, Mahyco Bt
Fodder crops	7938 (4.92)	64050 (45.83)	71988 (23.92)	NA
Fruit crops	9689 (6.01)	148 (0.11)	9837 (3.27)	NA
Vegetables	9673 (6.00)	1454 (1.04)	11127 (3.7)	NA

Note: NA – Not available

Source: Office of the Joint Director of Agriculture, Erode

4.6 Input Management

The details on fertilizer consumption in the district during the years 2003-04 and 2004-05 are given in Table 17. The share of fertilizer consumption in Erode district to total fertilizer consumption in the state is hovering around five percent which is almost on par with the share of gross cropped area in the district to that of the state. The fertilizer consumption per ha in the district was higher than of the state during the year 2003-04, whereas the fertilizer consumption per ha of gross cropped area in the district was below the state level fertilizer consumption per ha during the year 2004-05.

Table 17. Consumption of Nitrogen, Phosphorus and Potassium Fertilizers

Particulars	2003-04				2004-05			
	N	P	K	Total	N	P	K	Total
Total fertilizer consumption in Erode (lakh tonnes)	0.18	0.11	0.08	0.37	0.22	0.15	0.11	0.48
Total fertilizer consumption in Tamil Nadu state (lakh tonnes)	3.78	1.59	1.76	7.13	6.75	2.11	2.53	11.39
% share of Erode district to total fertilizer consumption in the state	4.76	6.92	4.55	5.19	3.26	7.11	4.35	4.21
% share of Erode district to Gross cropped area in the state	4.65	4.65	4.65	4.65	5.59	5.59	5.59	5.59
Fertilizer consumption in Erode district (kg/ha)	72.83	44.51	32.37	149.70	66.83	45.56	33.41	145.80
Fertilizer consumption Tamil Nadu (kg/ha)	71.11	29.91	33.11	134.12	114.62	35.83	42.96	193.41

Source: Tamil Nadu – An Economic Appraisal, Government of Tamil Nadu

4.7 Farm Mechanisation / Farm Equipments

The district has more than 1.25 lakh energized pumpsets out of the total number of about 17.70 million pumpsets in the state as a whole.

4.8 Special Projects / Programmes On-going in the District

The details of special project / programmes ongoing in the district are given in Table 18.

Table 18. Details of Special Project / Programmes Ongoing in the District

(Rs. in lakhs)

S. No	Schemes	2005-06		2006-07		2007-08	
		Target	Achieve-ment	Target	Achieve-ment	Target	Achieve-ment
1.	Integrated Cereal Production Scheme	11.139	11.291	25.897	25.897	14.59	12.49
2.	National Pulses Development Scheme	15.380	13.300	16.524	16.4	22.53	7.01
3.	Integrated Cotton Development Scheme	16.960	14.558	13.258	13.192	26.51	2.01
4.	Oilseed Production Programme	57.374	47.385	62.154	62.086	79.99	46.87
5.	Accelerated Maize Development Scheme	1.950	2.052	87.543	87.623	6.96	1.88
6.	Oilseed Production scheme	54.87	54.79	66.67	68.152	71.47	17.43
7.	Seed Production Scheme	118.365	118.06	51.602	51.502	67.50	33.36
8.	Farmers' Training Centre	3.2	3.2	-	-	-	-
9.	Crop Productivity Competitions	0.58	0.50	0.56	0.56	1.14	-
	Part II Plan Schemes						
10	Supply of tarpaulins to Agricultural Extension Centres;	0.516	0.516	0.516	0.516	-	-
11.	Revamping Agricultural Extension Centres	1.5	1.5	1.5	1.5	6	-
12.	Coconut Development Scheme	8.625	8.377	28.400	27.825	11.95	9.6
13.	Sugarcane Development Scheme	0.172	0.172	0.172	0.172	0.16	0.116
14.	Eriophyte mite control	73.485	73.44	73.44	73.44	-	-
15.	Seed village scheme	--	--	73.485	73.44	5.05	3.77

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

4.9 Constraint Analysis

The major constraints affecting agricultural production in the district are low rainfall and the resulting water constraints, poor soils, labour scarcity during peak seasons and pollution of soil and water ecosystems in some parts of the district. The data on yield of major crops under irrigated and rainfed conditions in Erode district are compared with

that of the state-level average for Tamil Nadu as well as with the highest yield obtained in the state. In crops such as paddy, bajra, irrigated ragi, maize, red gram, green gram, black gram, other pulses and sugarcane, the yield achieved in Erode district is either on par or higher that of the state-level average. Yield of rice and redgram in Erode district is very close to the highest yield obtained in the state. The details are furnished in Table 19.

Table 19. A comparison of Yield of Major Crops in Erode District and Tamil Nadu (Yield in kg/ha)

Crop	Irrigated / rainfed	Erode district	Tamil Nadu state	Highest yield in the state
Rice	Irrigated	4124	2541	4160
Jowar	Irrigated	756	1422	4854
	Unirrigated	327	660	1979
	Combined	382	732	3244
Bajra	Irrigated	2165	2165	3777
	Unirrigated	1065	1065	2377
	Combined	1208	1157	2802
Ragi	Irrigated	2166	2166	3145
	Unirrigated	997	1192	3027
	Combined	1003	1325	3007
Maize	Irrigated	1275	1189	1609
Red gram		1311	540	1311
Green gram		570	336	713
Black gram		515	328	730
Horse gram		344	365	621
Other pulses		214	202	344
Sugarcane (in terms of cane in tonnes / ha)	Irrigated	108	105	139
Cotton	Irrigated	458	359	510
	Unirrigated	187	195	305
	Combined	451	260	508
Groundnut	Irrigated	2926	2654	3519
	Unirrigated	1269	1386	2099
	Combined	1676	1775	3161
Gingelly	Irrigated	803	665	944
	Unirrigated	677	371	677
	Combined	784	469	784
Sunflower	Irrigated	1967	1240	2310
Coconut (nuts/ha)	Irrigated	16933	13782	25742

Source: Season and Crops Report for Tamil Nadu, Government of Tamil Nadu

4.9.1 Yield Gap Analysis of Major Crops

Reasons for the Yield Gap

1. Non availability of quality seed material in high yielding varieties/ hybrids required by the farmers
2. Lack of awareness about the latest technologies among the farmers on various crops
3. Technological gap

Top three technologies mostly adopted

1. Use of improved varieties recommended by TNAU
2. Drip irrigation
3. Optimum time of sowing

Top three technologies least adopted

1. Need-based plant protection measures not undertaken
2. Recommended organic manure, NPK and Micronutrients as well as fertigation are not followed
3. Farm machineries implements

4.10 Recommended Interventions for the District, with detailed Action Plan with Costs

In agricultural sector, the important crops such as paddy, millets, maize (irrigated and rainfed), sunflower, gingelly, and groundnut (irrigated and rainfed), will be covered under the proposed plan. Strengthening state seed farms, parasite breeding stations, soil testing laboratories and pesticide testing laboratories have also been proposed to provide supporting infrastructure and input supply for agricultural sector. In addition, adequate emphasis has been given to strengthening extension activities, developing marketing infrastructure and implementing special projects especially on harnessing and conservation of water resources by the Water Resources Organization of Public Works Department and the Agricultural Engineering Department. Soil and water conservation programmes are proposed to conserve these two precious natural resources to enhance and sustain productivity. Farm mechanization to reduce the cost of cultivation is also envisaged to a significant extent. The crop-wise / Activity-wise costs for agricultural sector for the period from 2008-09 to 2009-12 are furnished in Table 20.

Table 20. Crop-wise / Activity-wise Cost for Agricultural Sector

Unit: Rs. in Lakhs

Sl.No.	Crop / Activity	2008-09	2009-10	2010-11	2011-12	Grand Total
1	Paddy	108.75	109.50	137.25	93.00	448.50
2	Maize - Irrigated	45.00	75.00	112.50	150.00	382.50
3	Maize - Rainfed (Hill area)	22.50	29.25	29.25	29.25	110.25
4	Millets - Ragi Rainfed (Hill area)	2.08	2.58	2.58	2.58	9.82
5	Groundnut - Irrigated	6.00	6.00	6.00	6.00	24.00
6	Groundnut - Rainfed	9.20	9.20	14.00	14.00	46.40
7	Gingelly	27.70	28.14	28.80	29.46	114.10
8	Sunflower	11.30	15.55	18.55	28.80	74.20
9	Extension Activities	146.75	86.75	86.75	86.75	407.00
10	State Seed Farm, Bhavani	14.61	0.00	0.00	0.00	14.61
11	State Seed Farm, Sathy	42.17	0.00	0.00	0.00	42.17
12	State Oilseed Farm, Bhavanisagar	11.95	0.00	0.00	0.00	11.95
13	Sugarcane Parasite Breeding Centre, Gobi	25.00	0.00	0.00	0.00	25.00
14	Coconut Parasite Breeding Centre, Gobi	25.00	0.00	0.00	0.00	25.00
15	Seed processing unit building Constracttion Rs.50 lakhs	50.00	0.00	0.00	0.00	50.00
16	Soil Testing Laboratory	38.20	30.30	30.30	24.30	123.10
17	Mobile Soil Testing Laboratory	6.21	0.07	0.08	0.09	6.45
18	Pesticide Testing Laboratory	1.50	2.00	1.50	1.50	6.50
19	DAP 2 % for Pulses	5.00	--	--	--	5.00
	Grand Total	**598.92**	**394.34**	**467.56**	**465.73**	**1926.55**

4.11 Projected outcome and Growth Rate during the Plan Period

The expected outcome by implementing the proposed projects is to achieve a growth rate of four percent in agricultural sector in Erode district.

4.12 Researchable Issues

- Reclamation of soil and water resources affected by industrial and domestic pollutants
- Design and development of cost-effective, labour-saving farm machinery and implements
- Crop varieties suitable for dryland areas of the district
- Water-saving technologies for turmeric, sugarcane and coconut.
- Increasing the productivity of rainfed fodder crops such as jowar and horse gram
- Development of fodder grass varieties suitable for traditional sylvipastoral system of the district, and
- Conservation of traditional draught bullock breed *viz.,* Kangayam which is facing the threat of extinction.

CHAPTER - V

ALLIED AGRICULTURAL SECTORS

5.1 Introduction

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

5.2 Horticulture Development

Erode district is conducive for cultivation of a variety of horticultural crops. Most of the farmers are small holders of land and cultivating less remunerative crops like paddy, maize, tapioca and groundnut. The farmers are very progressive and enthusiastic to adopt new technologies. After the intervention of Horticulture Department in this district the farmers are ready to go in for cultivation of horticultural crops which prove remunerative. The constraint is horticulture crop cultivation involves high cost and improved technologies, for which they need some support from Government in the form of subsidies and training. The details on area, production and productivity of horticultural crops in the district are given in Table 21.

Table 21. Area, Production & Productivity of Horticulture Crops in Erode District in 2007-08

S.No	Name of the Crop	Area (ha.)	Production (Tonnes)	Productivity (tonnes / ha)
1	Fruits	7128	200225	28.09
2	Vegetables	14018	430072	30.68
3	Spices	7767	115572	14.88
4	Medicinal and aromatic Plants	649	6440	10.00
5	Flowers	1055	11078	10.50
6	Plantation Crops	529	1121	2.12
	Total	**31146**	**764508**	**-**

Source: Office of the Assistant Director of Horticulture, Erode

5.3 Sericulture Development

Sericulture is a commercial sustainable farm based economic enterprise favoring rural poor in the unorganized sector, because of its relatively low requirement of fixed capital and high returns. India ranks second in respect of world raw silk production after China and made significant stride in Sericulture during last two decades. Tamilnadu is the third largest producer of mulberry silk in the country. Government of Tamilnadu has created basic infrastructure support to sericulture. Today high quality of Cocoons and silk yarn produced are compatible to the industry standards. Suitable agro climatic conditions and enterprising farmers helped the growth of the industry.

Sericutlure Scenario in Erode District

1. Total area of Mulberry : 2088 ha

   Irrigated area : 2074 ha
   Rainfed area : 14 ha

2. Total Sericulture Farmers

   Classification as per mulberry holding Area
   Up to 1.00 Acre of Mulberry : 1327 farmers
   Above 1.00 Acre of Mulberry : 1741 farmers

3. Classification as per Social Background
   SC Farmers having Mulberry : 112 farmers
   ST Farmers having Mulberry : 6 farmers
   MBC Farmers having Mulberry : 396 farmers
   Other Farmers having Mulberry : 2554 farmers

4. Classification as per Gender
   Women Sericulture Farmer : 482 farmers
   Men Sericulture Farmer : 2586 farmers

The details on area under mulberry cultivation and cocoon production in Erode district are given in Table 22. It could be observed from the table that the area under mulberry and production of cocoon have increased significantly over the years in Erode district. Most of the area under mulberry cultivation is concentrated in northern parts of the district.

Table 22. Sericulture in Erode District
(Area in ha and cocoon production in tonnes)

Name of the Taluk	2005-2006		2006—2007		2007-2008	
	Mulberry area	Production of cocoon	Mulberry area	Production of cocoon	Mulberry area	Production of cocoon
Bhavani	65.41	211.33	107.43	315.16	351.56	415.87
Gobichetty-Palayam	133.37	458.89	180.73	690.25	629.03	699.26
Sathyaman-galam	98.50	205.34	147.62	320	514.03	360.17
Erode	31.24	41.05	48.81	107.6	113.26	59.52
Perundurai	21.90	51.88	24.94	54.96	75.59	84.68
Dharapuram	81.93	205.66	125.22	361.11	404.43	323.12
	432.36	1174.15	634.75	1849.08	2087.89	1942.62

Source: Records of the Office of the Assistant Director of Sericulture, Erode

5.3.1 Production of Silkworm Seed

Two Govt. Silkworm layings production centers are functioning in Erode district which cater the demand of sericulture farmers of this district. Cross breed Disease Free Layings production has been increased from 4.11 lakhs in 2003-04 to 13.34 lakhs during 2006-2007. Table 23 shows the increase in production of layings.

Table 23. Details of Silkworm Seed Production

Year	Place of the Grainage		Total DFL's Produced In Lakhs
	Erode (Production in Lakhs)	Thalavadi (Production in Lakhs)	
2003-04	2.72	1.39	4.11
2004-05	4.10	2.20	6.30
2005-06	6.11	2.00	8.11
2006-07	9.49	3.85	13.34
2007-08	7.32	4.59	11.91

Source: Records of the Office of the Assistant Director of Sericulture, Erode

Rearing of silkworm, up to second moult is called as chawki , which plays vital role in success of the crop. For that private chawki rearing centers have been established in Erode district with the assistance of Catalytic Development Programme. Erode is the only district in Tamil Nadu which have 13 Private CRC's functioning successfully. The details on development of private chawki rearing centres in Erode district are provided in Table 24.

Table 24. Development of Private Chawki Rearing Center's in Erode

Year	No.of Private CRC's functioning	No.of DFL's distributed as chawki
2002-03	1	38,729
2003-04	3	2,14,756
2004-05	5	5,40,104
2005-06	7	11,04,406
2006-07	12	19,34,182
2007-08	13	21,72,702

Source: Records of the Office of the Assistant Director of Sericulture, Erode

5.3.2 Infrastructure Availability and Support Services

The Department of Sericulture oversees the development of Cocoon production and promoting silk reeling units in this district. The department is also assisted in the implementation of programmes like part II and Catlaytic Development Programme. Under Part II Scheme, the farmers are assisted for plantation of new improved mulberry varieties like V1 and MR2. Under Catalytic Development Programme, the farmers were assisted for the construction of separate rearing shed (Unit Cost 1.20 Lakhs and 0.55 Lakhs), procurement of improved rearing appliances, installation of drip irrigation system to the mulberry garden, establishment of new CRC's and for the establishment of new reeling units and twisting units etc. The details of administrative infrastructure available for sericulture development in Erode district are provided in Table 25.

Table 25. Administrative Infrastructure Available in Erode District

Sl.No	Infrastructure details	No's	Places
1	O/O Asst.Director.	3	Erode , Thalavadi , Madahalli
2	Govt.Cross Breed Grainages	2	Erode , Thalavadi.
3	Govt.Coccon Markets,	3	Gobi (Mobile) Kankayam (Mobile) Thalavadi (regular)
4	Technical Service Center's	10	Bhavani , Gobi, Sathy, Thalavadi , Kuthialathur , Simitahalli , Erode , Dharapuram, Kundadam , Manurpalayam
5	Govt.Silk Farms	2	Hasanur , and Geermalam
6	Govt.CRC	1	Ramapuram
7	Farmers Training Center	1	Bharathipuram
8	Govt.Silk Reeling unit	1	Thalavadi.

Source: Records of the Office of the Assistant Director of Sericulture, Erode

5.3.3 Promotion of Post Cocoon Sector

Mobile cocoon markets at Gobichettipalayam and Kangeyam, and a regular market at Thalavadi are functioning to avoid hardship to farmers in traveling long distance in search of markets. More over new private reeling units were established in Erode district during the year 2006-07. The total numbers of reeling units established under Catalytic Development programme were 12. These private reeling units are functioning at Padiyur, Vellakoil, Kongampalayam, Sivagiri, Appakoodal, Gobichettipalayam, Kalichettipalayam , and Kondaiampalayam. Each reeling unit has the capacity to reel 1000 to 1200 kgs of cocoon per month. New generation of reeling entrepreneurs and traditional weavers of Sathyamangalam taluk are brought to common platform to understand each others requirement in terms of production and delivery schedule.

5.3.4 Schemes Implemented during 2006-07

The details of schemes implemented during the year 2006-07 and 2007-08 are provided in Table 26 and Table 27 respectively.

Table 26. Sericulture Schemes Implemented during 2006-07

(Rs. In lakhs)

Sl. No.	Name of the Scheme	Farmers	Subsidy amount
	Part II		
1.	Plantation subsidy	21	2,00000
2.	Conduct of Seminar (Awareness programme)	0	0.09000
	Plan		
3.	Plantation subsidy	212	2.00000
4.	**Catalytic development programme**		
5.	Construction of Rs.1.00 Lakh unit cost rearing shed	20	10.00000
6.	Construction of Rs.0.50 Lakh cost rearing shed	105	26.25000
7.	Setting up of Rs.0.30 Lakh rearing appliances	55	8.25000
8.	Setting up of Rs.0.34 Lakh rotary mountages	50	12.75000
9.	Installation of Drip irrigation system to mulberry garden	87	20.45435
10.	Construction of vermicompost shed	10	1.05000
11.	Formation of private CRC's	5	7.50000
12.	Establishment of cottage basin reeling units	8	12.25000
13.	Establishment of hot air chamber	2	0.87000
14.	Supply of 50 percent subsidy disinfectants	248	2.69529
	Total	**1013**	**106.15964**

Source: Records of the Office of the Assistant Director of Sericulture, Erode

Table 27. Sericulture Schemes allotted for 2007-08

(Rs. in lakhs)

Sl. No.	Name of the Scheme	Farmers	Subsidy amount
	Part II		
1.	Plantation subsidy	325	4.87500
	Catalytic development programme		
2.	Construction of Rs.1.20 lakh unit cost rearing shed	8	4.80000
3.	Construction of Rs.0.55 lakh unit cost rearing shed	100	27.50000
4.	Setting up of Rs.0.40 lakh rearing appliances	152	45.60000
5.	Installation of drip irrigation system to mulberry garden	150	22.50000
6.	Formation of private CRC's	4	6.90000
7.	Establishment of cottage basin reeling units	4	7.50000
8.	Establishment of multiend reeling unit	1	7.50000
9.	Supply of 50 percent subsidy disinfectants	226	3.39000
	Total	**970**	**130.56500**

Source: Records of the Office of the Assistant Director of Sericulture, Erode

5.4 Animal Husbandry

The Animal Husbandry department has contributed immensely to livestock development in Erode district and in providing additional income to the poor farmers in the villages. Erode district is one of the rich districts in cattle wealth and poultry development activities. Kangeyam breed, Kollegal breed and Alambodies are the famous breeds in the District. The Kangeyam bulls are known for their draught capacity, while the other breeds are also reared for agricultural purposes. There are many milch breeds available throughout the district. The district has made rapid progress in the field of Animal Husbandry. The Tamil Nadu Milk Producers' Federation has a milk collection center and processing plant at Erode from where milk is transported to different parts of the State every day.

There is constant expansion of poultry activity both under layer and broiler in the district. It tends to occupy the major animal husbandry activity in the district in the coming years.

Animal Population (Census – 2003)

a. Plough Animals	:	96,700
b. Dairy Animals		
i. Cattle	:	3, 98,572
ii. Buffaloes	:	2, 30,004
c. Sheep	:	5, 26,470
d. Goat	:	4, 45,212
e. Poultry (Layers)	:	35, 23,000

5.5 Fisheries Development

Inland Fisheries

Inland fisheries are the only resource for fisherman in the district. Being a landlocked district, there is no scope for marine fisheries. Bhavanisagr is a major reservoir in the district. There is a fresh water biological station at Bhavanisagar, which has been undertaking studies on the economics and bionomics of the fisheries of various reservoirs. More than 30 varieties of fish are found in the Bhavanisagar reservoir. The fish caught in the reservoir are marketed through the Central Fishery Corporation at Mettupalayam. The Corporation transports the fish to various places including Chennai.

The details of water spread area available for fish production in Erode district are provided in Table 28.

Table 28. Water Spread Area available for Aquaculture

(Area in ha)

Sl. No.	Particulars	Nos.	Area (ha)
1.	Provincialized water bodies - Government	4	87.0
2.	Public Works Department	73	1151.24
3.	Forest Department	4	50.0
4.	Panchayat	184	288.0
5.	Reservoirs	7	8918.71

Number of Farm Ponds already created for promoting aquaculture activities: **Nil**

The details of fish catch from provincialized and other water bodies are provided in Table 29.

Table 29. Fishery Production in Erode District

(in Tonnes)

Sl. No.	Year	Catch from provin-cialized water (Govt)	Catch from the other prov. water	Total
1.	2005-06	34.8	3174.2	3209.0
2.	2006-07	45.88	2740.12	2786.0
3.	2007-08 (upto 29.02.2008	31.236	2712.746	2744.0

Source: Assistant Director (Fisheries), Erode

5.6 Social Forestry Development

In terms of natural resources such as forests, rivers, climate, soil and minerals the district is fairly endowed. Forest occupies over 29 percent of the total area in the district. The district has total forest are of 2.29 lakh hectares, with Sathyamangalam and Bhavani taluks together accounting for as much as 94 percent of this area. Sathy taluk alone accounts for 61 percent of the forest area in the district. Sathyamangalam, Thalamalai, Burgur and Anthiyur are the four forest ranges coming under Divisional Forest Office, Erode. The important forest products are sandalwood, rosewood, timber, teak, bamboo, firewood, charcoal, tamarind and herbs. There is still vast scope for tapping the forest potential.

5.6.1 Tree Planting in Farmers' Holdings

The scheme is introduced in Tamil Nadu during 2007-08 for the benefit of small and marginal farmers in which tree crops of drought tolerant in nature with fast growing and high yielding *viz.,* casuarina, eucalyptus, peyan and intercropped with malai neem, teak, silver oak and pungan were planted free of cost by the forest department and taken care of by the farmers and incentives were given to the beneficiaries based on the performance.

The details of beneficiaries of farm forestry in Erode and Sathyamangalam divisions are furnished in Table 30 and Table 31 respectively.

Table 30. List of Beneficiaries of Farm Forestry – Range wise Particulars (Erode Division)

Sl. No.	Range	Taluk	No. of beneficiars	No. of seedlings planted	Area of planting (ha)
Block Planting					
1.	Erode	Perundurai	17	16000	9.00
2.	Kangeyam	Dharapuram	5	10000	5.00
Sub-Total			**22**	**26000**	**14.00**
Intercropping					
1.	Burgur	Bhavani	149	33000	84.00
2.	Erode	Perundurai	33	10000	26.00
3.	Kangeyam	Dharapuram	80	32000	80.00
Sub-Total			**262**	**75000**	**190.00**
Grand Total			**284**	**101000**	**204.00**

Table 31. List of Beneficiaries of Farm Forestry – Range wise Particulars (Sathyamangalam Division)

Sl. No.	Range	Taluk	No. of beneficiaries	No. of seedlings planted	Area of planting (ha)
Block Planting					
1.	Bhavanisagar	Sathyamangalam	7	5000	17.85
Sub-Total			**7**	**5000**	**17.85**
Intercropping					
1.	Bhavanisagar	Sathyamangalam	29	11000	68.75
2.	T.N.Palayam	Sathyamangalam	50	18000	112.5
3.	Hasanur	Sathyamangalam	18	6000	37.50
4.	Sathyamangalam	Sathyamangalam	25	10000	62.50
Sub-Total			**123**	**45000**	**281.25**
Grand Total			**130**	**50000**	**299.10**

Source : Records of the Divisional Forest Officer, Erode & Sathyamangalam

5.6.2 National Afforestation Project (2003-04 to 2007-08)

In this project, 27 villages were selected and grown with tree crops in an area of 1500 ha with the budget outlay of Rs.347.790 lakhs under Integrated Forest Management Scheme which is in operation in Erode division.

5.7 Food Processing Units

Erode district has about 3671 food products industries as on 31st March 2005. Besides this, there are about 606 small scale industrial units engaged in the production of beverages and tobacco-based productions.

5.8 Development of Rural Industries

Value – Addition of Farm Produce Status and Prospects

The district has a number of agro-based industries comprising of spinning mills and cotton textiles (5244 units), jute, hemp and mesta products (119 units), wood and wooden products (385 units), paper and paper products (1277 units). The agro-based products produced from important agricultural raw materials are provided below:

Raw Material		Product
1. Cotton	-	Yarn
2. Groundnut	-	Oil & Oil cake
3. Turmeric	-	Powder
4. Paddy	-	Rice
5. Chillies	-	Chilli powder
6. Maize	-	Maize flour and poultry feed
7. Cumbu	-	Cumbu flour / broken grains
8. Ragi	-	Ragi flour / broken grains
9. Jowar	-	Jowar flour
10. Sunflower	-	Oil & Oil cake
11. Gingelly	-	Oil & Oil cake
12. Coconut	-	Copra, oil and oil cake
13. Castor	-	Oil & Oil cake

5.9 Agricultural Marketing

There are 25 regulated markets spread over through out the district. These are located in Erode, Avalpoondurai, Anthiyur, Alangiyam, Boothapadi, Bhavani, Chittode, Dharapuram, Gobichettipalayam, Kangayam, Kavindapadi, Kodumudi, Kunnathur, Moolanur, Mylampadi, Nambiyur, Perundurai, Punjaipuliampatti, Sathyamangalam, Sivagiri, Thalavadi, Vellakoil, Vellankovil, Muthur, and Elumathur.

The commodities notified are cotton, groundnut, tobacco, turmeric, maize, sugarcane, paddy, chillies, gingelly, coconut, copra, sorghum, cumbu, ragi, sunflower, castor, and pulses. The details of arrival of commodities in the regulated markets over years are furnished in Table 32. There has been an increase in the arrival of cotton, tobacco, turmeric, maize, paddy, coconut, and copra to the regulated markets in the district. The arrival of coarse cereals and millets, chillies and castor have been very meager, while the arrival of sunflower seeds to the regulated markets has shown a remarkable growth over the last five years with the expansion in area under cultivation of sunflower in the district. The arrival of pulses has declined sharply in recent years. The total quantity of agricultural commodities marketed through regulated markets had increased over the years from about 1.62 lakh tones in 2003-04 in 2003-04 to more than 2.50 lakh tonnes in 2007-08.

Table 32. Arrivals of Commodities to the Regulated Markets

(in tonnes)

Sl. No.	Particulars	2003-04	2004-05	2005-06	2006-07	2007-08 (up to Feb.)
1.	Cotton	13506	17627	17244	20581	9662
2.	Groundnut	6843	8877	9336	4378	3482
3.	Tobacco	6295	11589	10768	10337	10690
4.	Turmeric	23904	32684	35673	38445	27192
5.	Maize	13391	18450	22593	20212	20590
6.	Sugar	45354	15327	13258	20817	45062
7.	Paddy	5040	33088	22686	23658	19061
8.	Chillies	171	289	299	228	153
9.	Gingelly	7923	4730	9779	8352	5275
10.	Coconut	15887	13045	20633	26688	51274
11.	Copra	5958	4764	17451	16202	22106
12.	Sorghum	615	4092	2471	1088	1664
13.	Cumbu	286	4315	682	437	150
14.	Ragi	635	187	967	629	162
15.	Sunflower	2722	6051	11198	41335	30673
16.	Castor	60	88	31	52	14
17.	Pulses	13849	23266	8680	6439	3633
	Total	**162439**	**198469**	**203749**	**239878**	**250843**

Source: Records of the Office of Erode Market Committee

There are no co-op marketing societies functioning in the district at present. There are four Farmers' Markets (Uzhavar Sandhai) functioning in the district at Erode, Gobichettipalayam, Sathyamangalam, and Dharapuram.

5.10 Agricultural Credit

The details regarding the number of cooperative societies and banks are given in Table 33.

Table 33. Number of Cooperative Societies and Banks

Sl. No.	Type of societies	No. of societies
1.	District Central Co-operative Bank	1
2.	Primary Agricultural Credit Society	220
3.	Primary Land Development Bank	12
4.	Non-Agricultural Credit Society	54
5.	Co-operative Marketing	6
6.	Co-operative Urban Bank Society	6
7.	Consumer Co-operative Wholesale Store	1
8.	Primary Co-operative Society	21
9.	Laundary Society	1
10.	Lawyers service Co-operative Society	1
11.	Diesel Locorailway employees Co-operative Society	1
12.	Co-operative Printing Press Society	1
13.	District Co-operative Union Bank	1
14.	Labour Contract Society	1
15.	Sathyamangalam Lamp society	1
16.	Land colonization Society	3
17.	Gobi Taluk Jally Stone Workers coop Society (Special types)	1
18.	Students coop. Stores	124
19.	Lift Irrigation Coop. Society	NA
	Total	**456**

Source: Records of the Office of the District Collector and Joint Director of Agriculture, Erode

5.10.1 Credit disbursement to Priority Sector / Agriculture

Erode district is having three revenue divisions spread over in 20 blocks and there are 273 bank branches, apart from PACBs operating in this district, catering to the financial needs and effectively rendering the yeomen service to more than 26 lakhs people with specific thrust on Agriculture, Small Scale Industries and people living below poverty line.

The Annual Credit Plan (ACP) for the financial year 2008-09 has been drafted with an overall outlay of Rs.2703.30 crores. Required importance was given to Agriculture, SSI sectors, poverty alleviation, education and employment generation programmes.

The potential linked plan 2008-09 of NABARD is one of the guideline documents for the projections under annual credit plan, apart from various ongoing and proposed programmes of the district. The details of annual credit plan for Erode district for the year 2008-09 are given below:

5.10.2 Annual Credit Plan 2008-09 – Erode District

Agriculture

	Activity		**Amount (Rs.crores)**
1.	Minor Irrigation	:	30.57
2.	Land Development	:	23.91
3.	Farm Mechanisation	:	67.50
4.	Plantation and Horticulture	:	18.17
5.	Others	:	60.12
6.	Crop Loan	:	936.03
	Total	**:**	**1136.30**
	Allied Activities		
7.	Dairy Development	:	28.10
8.	Poultry Development	:	27.13
9.	Sheep/Goat rearing etc.	:	8.83
10.	Fisheries	:	0.12
11.	Forestry	:	0.26
12.	Storage	:	21.71
	Total	**:**	**86.15**
Agriculture and Allied activities		**:**	**1222.45**
Non-Farm Sector		**:**	**922.19**
Other Priority Sector		**:**	**558.66**
Total ACP 2008-09		**:**	**2703.30**

Source: Annual Credit Plan for Erode District, Lead Bank Office (Canara Bank), Erode

A comparison of Annual Credit Plan for Erode district for the year 2007-08 and 2008-09 is given in Table 34. There has been a six per cent increase in allocation for agricultural and allied sectors, while the increase in credit allocation to other sectors such as small scale industries and other priority sectors is about 25 per cent.

Table 34. A Comparison of Annual Credit Plan for 2007-2008 and 2008-09

(Rs.in Crores)

Sector	ACP 2007-08	ACP 2008-09	Increase
Agri. and allied sectors	1152.42	1222.45	70.03 (6 percent)
SSI	741.53	922.19	180.66 (24 percent)
OPS	446.05	558.66	112.61 (25 percent)
Total	2340.00	2703.30	363.30 (15 percent).

Source: Annual Credit Plan for Erode District, Lead Bank Office (Canara Bank), Erode

The target and achievements over years from 2000-01 to 2007-2008 are provided in Table 35. There has been a two-fold increase in targets as well as in achievements as per the annual credit plan over the last eight years. The Annual Credit Plan of Erode district for 2008-09 envisages an outlay of Rs.2703.30 crores under priority sector advances. This outlay records a growth of Rs.363.30 crores over that of 2007-08.

Table 35. Previous Years Plan and Achievements

(Rs. in Crores)

Year	Target	Achievement	Percentage
2000-2001	832.49	852.32	102.30
2001-2002	1002.32	1026.48	102.40
2002-2003	1066.11	1099.76	103.10
2003-2004	1172.96	1209.39	103.00
2004-2005	1345.67	1348.65	100.02
2005-2006	1710.44	1714.10	100.20
2006-2007	2143.12	2212.53	103.20
2007-2008 upto Dec. 2007	1755.29	1782.94	102.00

Source: Annual Credit Plan for Erode District, Lead Bank Office (Canara Bank), Erode

5.10.3. 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 Erode district is furnished in Table 36.

Table 36. Activity Wise Credit Disbursement and Projections under Agricultural and Allied Sectors in Erode District

(Rs. lakh)

Sectors	2008-09	2009-10	2010-11	2011-12
Crop loan	93602.00	98282.10	103196.20	108356.00
Term loan				
Micro Irrigation	3057.00	3209.85	3370.34	3538.86
Land Development	2391.00	2510.55	2636.08	2767.88
Farm Mechanization	6750.00	7087.50	7441.88	7813.97
Plantation & Horticulture	1816.00	1906.80	2002.14	2102.25
Forestry & Waste land Development	26.00	27.30	28.67	30.10
Dairy Development	2810.00	2950.50	3098.03	3252.93
Poultry	2713.00	2848.65	2991.08	3140.64
Sheep/Goat/Piggery	884.00	928.20	974.61	1023.34
Fisheries	12.00	12.60	13.23	13.89
Storage Godown & Market yards	2171.00	2279.55	2393.53	2513.20
Bio-gas	0.00	0.00	0.00	0.00
Sericulture	0.00	0.00	0.00	0.00
Others	6012.00	6312.60	6628.23	6959.64
Sub total - Term loan	28642.00	30074.10	31577.81	33156.70
Total Agriculture Credit (1+2)	122244.00	128356.20	134774.01	141512.70
Non Farm sector	92219.00	96829.95	101671.40	106755.00
Other Priority Sector	55866.00	58659.30	61592.27	64671.88
Grand Total	**270329.00**	**283845.45**	**298037.68**	**312939.58**

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. 283845.45, Rs. 298037.68 and Rs. 312939.58 lakhs. The total flow of agriculture credit in terms of crop loan and term loan in 2011-12 would be Rs. 141512.70 lakhs. The flow of credit for non farm sector and other priorty sectors in 2011-12 would be Rs.106755.00 and Rs.64671.88 lakhs respectively.

5.11 Special Projects / Programmes On-going in the Districts

Some of the on-going special programmes in the district are given in the following Tables.

Table 37. National Horticulture Mission 2006-07

(Rs. in Lakhs)

Sl. No.	Name of the component	Unit	Funds Received						Total		Achievement		Percent
			Annual Target		I Phase release fund		II Phase release		Phy	Fin	Phy	Fin	
			Phy	Fin	Phy	Fin	Phy	Fin					
1.	Small Nursery (1 ha)	No	2	3.00	--	--	--	--	--	--	--	--	--
2.	Vegetable seed production				--	--	--	--	--	--	--	--	--
	Private Sector	Ha	5	1.25	--	--	--	--	--	--	--	--	--
3.	Establishment of New Garden (ha)												
	(i) Fruits Perennials	Ha	280	31.50	100	11.25	150	16.88	250	28.13	280	13.825	49
	(ii) Fruits Non perennials	Ha	200	15.0	100	7.50	100	7.5	200	15	200	--	--
4.	Loose flowers												
	(i) Small and Marginal farmers	Ha	120	14.40	50	6.0	50	6	100	12.00	120	--	--
	(ii) Other Farmers	Ha	30	2.38	30	2.38	--	--	30	2.38	30	--	--
5.	Spices	Ha	260	29.25	250	28.13	10	1.13	260	29.26	--	--	--
	(i) Aromatic plants	Ha	150	16.88	150	16.88	--	--	150	16.88	--	--	--
	(ii) Medicinal Plants	Ha	500	56.25	500	56.25	--	--	500	56.25	500	42.50	75
6	**Creation of Water resources and sources**												
	Community tanks, ponds, on farm water reservoirs with use of plastic lining	Nos	7	70.00	1	10.0	6	60.00	7	70	7	70.00	10

Table 37 Contd…. **(Rs. in Lakhs)**

Sl. No.	Name of the component	Unit	Funds Received						Total		Achievement		Percent
			Annual Target		I Phase release fund		II Phase release		Phy	Fin	Phy	Fin	
			Phy	Fin	Phy	Fin	Phy	Fin					
7.	Protected cultivation												
	Shade Net	Sq.mt	2000	0.14	2000	0.14	--	--	2000	0.14	--	--	--
8.	Promotion of INM/IPM	Ha	1000	10.00	250	2.50	250	2.50	500	5	--	--	-
9.	Organic farming												
	(i) Adoption of Organic farming	Ha	300	30.00	25	2.50	--	--	25	2.50	--	--	--
	(ii) Vermi compost Unit	Nos.	10	3.00	5	1.50	--	--	5	1.50	--	--	--
10.	HRD including horticulture institute												
	(i) Outside State	Nos.	50	1.25	--	--	--	--	--	--	--	--	--
	(ii) Within State	Nos.	500	7.5	--	--	--	--	--	--	--	--	--
11.	Pollination support through beekeeping												
	Distribution of Colonies with hives	No.	200	1.6	15	0.12	150	1.2	165	1.32	165	1.32	82.5
	Total		**5614**	**293.40**	**3476**	**145.15**	**716**	**95.21**	**4192**	**240.36**	**1302**	**127.645**	**44**

Source: Records of the Office of the Deputy Director of Horticulture, Erode

Table 38. Micro Irrigation Scheme 2006-07

(Rs. in Lakhs)

Sl. No.	Name of the Scheme	Target for the year 2006-07		Achievement		Remarks
		Phy	Fin	Phy	Fin	
1.	Drip irrigation					Beneficiaries list received for 3766.75 ha from Sugar mill & JDA
	(a) Horticulture	100	434.592	276.0	--	
	(b) Non-Horticulture	1409	--	--	--	
2	Total	1509	434.592	276.0	--	
3	Drip Demonstration	5	0.75	--	--	
	Training to staff	--	--	--	--	
4	Training to Farmers	5	1.25	--	--	
5	Seminar Exhibition Publicity	--	2.00	--	--	
	Monitoring and administrative cost					
6		--	3.289	--	--	
	Grand Total	1509 + 5 Nos.	441.881	276.0	--	

Source: Records of the Office of the Deputy Director of Horticulture, Erode

Table 39. Precision Farming 2005-06

(Rs. in Lakhs)

Sl. No.	Name of the Scheme	Target for the year 2005-06		Achievement		Remarks
		Phy	Fin	Phy	Fin	
1.	Precision farming (crops selected hybrid tomato, bhendi, beans & banana)	105	141.852	100	2.87	1) 2 Numbers of JRF selected and joined. 2) Soil samples taken 3) Farmers training completed

Source: Records of the Office of the Deputy Director of Horticulture, Erode

Table 40. Integrated Horticulture Development Scheme

(Rs. in Lakhs)

Sl. No.	Kind	General				S.C.			
		Physical		Finance		Physical		Finance	
		Tar	Ach	Tar	Ach	Tar	Ach	Tar	Ach
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1.	Fruit Plants	60	60	3.751	3.751	14	16	0.859	0.859
2.	Vegetables	744	752	2.807	2.807	181	172	0.425	0.425
3.	Spices	16	16	0.82	0.82	3	3	0.217	0.217
4.	Plantation crops	7	7	1.636	1.400	3	3	0.267	0.265
5.	Others	10	10	0.253	0.25	-	-	-	-
Total		**837**	**845**	**9.267**	**9.028**	**201**	**194**	**1.768**	**1.768**

Sl. No.	Kind	S.T.				Total			
		Physical		Finance		Physical		Finance	
		Tar	Ach	Tar	Ach	Tar	Ach	Tar	Ach
		(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1.	Fruit Plants	1	1	0.043	0.043	75	77	4.653	4.653
2.	Vegetables	-	-	-	-	925	924	3.232	3.232
3.	Spices	-	-	-	-	19	19	1.039	1.037
4.	Plantation crops	-	-	-	-	10	8	1.903	1.667
5.	Others	-	-	-	-	10	10	0.253	0.250
Total		**1**	**1**	**0.043**	**0.043**	**1039**	**1038**	**11.078**	**10.84**

Source: Records of the Office of the Deputy Director of Horticulture, Erode

5.12 Interventions now recommended for the District, with detailed Costing Horticulture

5.12.1 Precision Farming

This is a proven farming technique in which the farming activities are done with high precision to take care of location-specific requirements. High quality of products ensures higher prices and assured markets. It is proposed to cover an area of 500 Ha, every year, in selected pockets of Erode District. Assistance will be given at the rate of 75 percent of project cost or Rs. 80000/ha whichever is less.

5.12.2 Nursery and Vegetable Production

Due to high cost of Hybrid Vegetable seeds, it is important to raise nursery in a hygienic manner for which net house is ideal in which the seedlings of any kind will be grown. There is great awareness among farmers in this district regarding quality seedlings. Installation of net house involves high cost which needs assistance to a tune of 50 percent. It is proposed to erect to 40 net houses for vegetable cultivation with nursery in the district during the plan period.

5.12.3 Plastic Crates for Vegetable Handling & Transport

It is estimated that post harvest loss to the extent of 30 percent of the produce has been incurred by the farmers by mishandling. Cost of packing materials is unbearable by the farmers. It is proposed to supply plastic crates of standard size at 50 percent cost to the farmers to have a safe packing & transport.

5.12.4 Banana Bunch Cover

Banana is being cultivated an area about 6000 ha in Erode district with variation in the quality of the produce. To improve the quality of Banana bunch it is necessary to protect the bunch by cover, for which degradable polythene sheets of 20 micron will be supplied to the farmers at 50 percent cost with a vision to sell their produce to export markets.

5.12.5 Support System for Crops

High risky crops like banana, betelvine and gloriosa which are prime crops of this district needs protection from risk. Proper supporting system is necessary for assured crop for which 75 per cent assistance will be provided for propping materials.

5.12.6 District Level Farmers' Workshops

Crop specific and location specific district level farmers workshop will be convened to create awareness among farmers regarding high value and new technologies of horticulture crops

5.12.7 Interstate Exposure Visit

Exposure visit for four batch/year will be organized @ 50/batch to get exposed with adoption of new technologies *from* other states.

5.12.8 Ten Hectare Mega Demonstration

Like minded farmers will be encouraged to adopt all new technologies of Horticulture from seed to market at selected place in an area of 10 ha, which will serve as a visual aid and model farm. For the district as a whole, mega demonstrations like this will be organized @ one /year/district under the NADP.

5.12.9 Community Fencing

Fencing is more important for horticulture crop production in hilly areas and adjoining areas of the forest. Solar/ electric fencing will be installed to protect the crops. Assistance will be provided under NADP at 50 percent to the farmers on community basis.

CHAPTER – VI

DISTRICT PLAN

6.1 Introduction

The district plan has both crop-specific and non-crop specific components such as strengthening state seed farms, pesticide testing laboratories, marketing infrastructure, animal husbandry components including livestock production and disease control, fishery and sericulture. Among crops, paddy, maize, millets and oilseeds will be given priority. Delivery and popularization of farm machinery and equipments, soil and water conservation, and water saving in canal commands through modernization of canals and other irrigation structures will also be covered under the district plan for Erode district.

6.2 Growth Drivers

The growth drivers of agricultural sector in the district are major crops including paddy, maize, groundnut, sunflower and gingelly. Livestock production, sericulture and fishery also are expected to play a key role in accelerating the economic growth in rural areas.

6.3 Innovative Schemes

Schemes have been devised keeping in view the emerging priorities of the district's agricultural and allied sectors. Micro irrigation, precision farming, system of rice intensification and strengthening of rural markets, organizing demonstration programmes, involving self-help groups in seed production and distribution and interstate farmers' tour are some of the innovative programmes included in the district agriculture plan.

6.4 Vision of XI Plan

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

6.5 District Plan

6.5.1 Target for Production and Productivity for XI Plan (Year Wise)

The targeted area and productivity of major crops covered under NADP are given in Table 41.

Table 41. Projected Area and Productivity of Major Crops Covered under NADP

S. No.	Crop	Normal Area	Projected Area Coverage (Ha.)					Normal (tonnes / ha) Productivity	Projected Productivity (Tonnes /Ha.)				
			2007-08	2008-09	2009-10	2010-11	2011-12		2007-08	2008-09	2009-10	2010-11	2011-12
1	Paddy	55000	56000	57000	57000	57000	58000	4.7	5.0	5.5	6.0	6.5	7.0
2	Maize - Irrigated	16000	20000	22000	25000	26000	32000	5.0	6.0	6.5	7.0	7.5	8.0
3	Maize - Rainfed	5000	5000	7000	7000	8000	8000	3.0	3.5	4.0	4.5	5.0	5.0
4	Millets - Ragi Rainfed	6500	6500	6600	6600	6800	6800	1.0	1.1	1.2	1.3	1.4	1.5
5	Oilseeds - Irrigated	40000	41000	42000	43000	44000	45000	1.4	1.5	1.6	1.7	1.8	2.0
6	Oilseeds - Rainfed	34000	35000	36000	37000	38000	38000	0.8	0.9	1.0	1.0	1.2	1.2
	Total	**156500**	**163500**	**170600**	**175600**	**179800**	**187800**						

6.5.2 Strategy for Achieving XI Five Year Plan Projections

6.5.2.1 Paddy

i) Rationale

As paddy occupies a prime position in ensuring food security to the people, it is necessary to increase the paddy productivity further. Paddy productivity in the district is one of the highest in the state. However, there is scope for increasing the productivity of paddy further in this district by using appropriate crop varieties with suitable crop production techniques.

ii) Project Goal

To increase and sustain the productivity of paddy

ii) Project Strategy

Adequate supply of improved seeds and hybrid seeds, better water control measures and adoption of system of rice intensification, etc would go a long way in sustaining and increasing the productivity of paddy in this district. Assistance to TANWABE groups and self-help groups for seed production, seed mini kit, popularization of hybrid rice and green manure production are some of the important strategies envisaged for increasing rice productivity in the district.

iv) Project Components and Project Costs

The various components of the project and the costs involved over a period of four years are provided Table 42.

v) Implementation

The project will be implemented over a period of four years *viz.*, 2008-09 to 2011-12. Except the one time grant to TANWABE and FIG for seed production which will be implemented only in the first year, all the other components will be implemented over the four years period.

vi) Reporting

The block-level officials of the Department of Agriculture will implement the project and report the progress to the district-level officials.

Table 42. Interventions for Increasing the Productivity and Production of Paddy

(Rs. in Lakhs)

S. No	Components	Unit	2008-2009		2009-2010		2010-2011		2011-2012		Grand Total	
			No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total Cost	Total units	Total Cost
1	**One time grant to TANWABE / FIG** to take certified seed production and distribution @ Rs.50000/- per group (30 Tonnes /year)	Nos.	25	12.500	0	0.000	0	0.000	0	0.000	25	12.500
2	Incentive for seed production to Self Help Groups @ Rs.3 / kg.-TANWABE Groups	Tonnes	250	7.500	250	7.500	250	7.500	250	7.500	1000	30.000
3	Seed distribution subsidy for seeds produced by Self Help Groups@ Rs.5/kg.	Tonnes	250	12.500	250	12.500	250	12.500	250	12.500	1000	50.000
4	Supply of Quality Certified seeds at nominal cost to enhance the SRR @ Rs.5/- per kg.	Tonnes	200	10.000	200	10.000	200	10.000	200	10.000	800	40.000
5	**Seed Minikit** of new HYV @ Rs.100/- minikit	Nos	4000	4.000	4000	4.000	4000	4.000	4000	4.000	16000	16.000
6	**Hybrid Rice seed production** subsidy@ Rs.20/- kg FIG / TANWABE Groups @ 10 Ac / group (4 Tonnes) (100 groups)	Tonnes	10	2.000	20	4.000	40	8.000	0	0.000	70	14.000
7	**Hybrid Rice seed distribution** subsidy - 75 % cost or Rs.100/- whichever is less	Tonnes	10	10.000	20	20.000	40	40.000	0	0.000	70	70.000
8	Distribution of Green Manure seeds at 75 % subsidy of Rs.15/kg.	Tonnes	75	11.250	100	15.000	125	18.750	150	22.500	450	67.500

Table 41 Contd…. **(Rs. in Lakhs)**

S. No	Components	Unit	2008-2009		2009-2010		2010-2011		2011-2012		Grand Total	
			No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total Cost	Total units	Total Cost
9	Distribution of **Soil Health Card** @ Rs.100/- per card (Soil + Water testing)	Nos	10000	10.000	10000	10.000	10000	10.000	10000	10.000	40000	40.000
10	Publicity & Training @ Rs.50000/- per district	Lakhs	1	0.500	1	0.500	1	0.500	1	0.500	4	2.000
11	**Promotion of SRI (VARIETY)** Distribution of Marker, Conoweeder and other items, Demo @ Rs.3000 / Ha.	Ha	250	7.500	250	7.500	250	7.500	250	7.500	1000	30.000
12	**Demonstration on SRI / Hybrid Rice** @ 1 demonstration / 100 Ha. Rs.3000/Demo.@ 0.4 ha	No	500	15.000	500	15.000	500	15.000	500	15.000	2000	60.000
13	**Village campaigns - Rat campaigns** Kharif / Rabi @ Rs.2500/- per campaign	Nos	100	2.500	100	2.500	100	2.500	100	2.500	400	10.000
14	Production of short film on New technologies each Rs.2.5 lakhs	Lakhs	1	2.500	0	0.000	0	0.000	0	0.000	1	2.500
15	Publicity / POL @ Rs.1.0 lakh/district	Lakhs	1	1.000	1	1.000	1	1.000	1	1.000	4	4.000
	Grand Total			**108.750**		**109.500**		**137.250**		**93.000**	0	**448.500**

6.5.2.2 Maize

i) Rationale

Maize is becoming popular in the district in recent times due to its huge demand for poultry feed production. Due to its low cost of cultivation and low water requirement, the crop is catching up in irrigated garden lands as well as under rainfed conditions in the district. Maize productivity in the district is about 20 percent lower than the highest yield recorded in the state during the year 2005-06. Therefore, there is scope for increasing the productivity of maize through appropriate strategies.

ii) Project Goal

To increase the productivity and production of maize

iii) Project Strategy

Adequate supply of improved seeds and hybrid seeds is the major strategy required to increase the productivity of maize. The seed distribution subsidy is proposed to be 50 percent for irrigated maize and 90 per cent for rainfed maize. Besides seed subsidy, it is proposed to provide 90 per cent subsidy for purchase of tarpaulins for rainfed maize.

iv) Project Components and Project Costs

The various components of the project and the costs involved over a period of four years are provided in Table 43 for irrigated maize and in Table 43 for rainfed maize.

v) Implementation

The project will be implemented over a period of four years *viz.,* 2008-09 to 2011-12. All the components will be implemented over the four years period.

vi) Reporting

The block-level officials of the Department of Agriculture will implement the project and report the progress to the district-level officials.

Table 43. Interventions for Increasing the Productivity and Production of Maize (Irrigated)

(Rs. in Lakhs)

S.No	Components	Unit	2008-2009		2009-2010		2010-2011		2011-2012		Grand Total	
			No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total Cost	Total units	Total Cost
1	**Pvt.Hyb - Seed** distribution Subsidy (50 % or Rs 75/Kg)	Tonnes	60	45.000	100	75.000	150	112.500	200	150.000	510	382.500
Total				**45.000**		**75.000**		**112.500**		**150.000**		**382.500**

Table 44. Interventions for Increasing the Productivity and Production of Maize (Rainfed)

(Rs. in Lakhs)

S. No	Components	Unit	2008-2009		2009-2010		2010-2011		2011-2012		Grand Total	
			No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total Cost	Total units	Total Cost
1	Pvt.Hyb – Seed distribution Subsidy (90 %) Rs.135/kg.	Tonnes	10	13.500	15	20.250	15	20.250	15	20.250	55	74.250
2	TARPAULIN 90 % subsidy @Rs.9000/-	NO.	100	9.000	100	9.000	100	9.000	100	9.000	400	36.000
	Total			**22.500**		**29.250**		**29.250**		**29.250**		**110.250**

6.5.2.3 Millets

i) Rationale

The productivity of most of the millets is becoming popular in the district in recent times due to its huge demand for poultry feed production. Millets are mostly cultivated under rainfed conditions in the district. Consequently, productivity of millets in the district is about 30 to 50 percent lower than the highest yield recorded in the state during the year 2005-06. Therefore, there is scope for increasing the productivity of millets through appropriate strategies.

ii) Project Goal

To increase the productivity and production of millets.

iii) Project Strategy

Adequate supply of improved seeds and hybrid seeds is the major strategy required to increase the productivity of millets. The seed distribution subsidy is proposed to be 90 per cent for millets. Besides seed subsidy, it is proposed to conduct technology demonstration in 30 ha each year over a period of four years at a cost of Rs. 3600 per ha per year. The total cost of different interventions works out to Rs.9.82 lakhs for the entire four years period.

iv) Project Components and Project Costs

The various components of the project and the costs involved over a period of four years are provided in Table 45.

v) Implementation

The project will be implemented over a period of four years *viz.,* 2008-09 to 2011-12. All the components will be implemented over the four years period.

v) Reporting

The block-level officials of the Department of Agriculture will implement the project and report the progress to the district-level officials.

Table 45. Interventions for Increasing the Productivity and Production of Millets

(Rs. in Lakhs)

S.No	Components	Unit	2008-2009		2009-2010		2010-2011		2011-2012		Grand Total	
			No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total Cost	Total units	Total Cost
1	**Distribution of Seeds** @ 90 % subsidy of Rs.10/kg.	Tonnes	10	1.000	15	1.500	15	1.500	15	1.500	55	5.500
2	**Technology Demonstrations** @ Rs.3600/ha. including Minor Millets 90 % subsidy	Ha	30	1.080	30	1.080	30	1.080	30	1.080	120	4.320
	Grand Total			**2.080**		**2.580**		**2.580**		**2.580**	**0**	**9.820**

6.5.2.4 Groundnut

i) Rationale

Groundnut is traditionally cultivated in the district both under irrigated and rainfed conditions. The area under rainfed groundnut is almost three times the area under irrigated groundnut cultivation. Groundnut productivity in the district is about 20 percent lower than the highest yield recorded in the state under irrigated conditions and the yield difference under rainfed condition is about 40 per cent. Appropriate strategies are necessary to bridge the yield gap in both irrigated and rainfed crops.

ii) Project Goal

To increase the productivity and production of groundnut

iii) Project Strategy

Adequate supply of improved seeds, farmers training, extension activities and distribution of micronutrient mixture for rainfed groundnut cultivation are some of the strategies proposed to be taken up under NADP. In each of the four years of implementation of NADP, twenty number of two days' training programme on irrigated groundnut cultivation will be organized with 50 farmers per batch. The seed distribution subsidy would involve a cost of Rs.12000 per tonne of seed and micronutrient mixture is to be provided at 50 per cent subsidy. Both these subsidies would be provided only to rainfed groundnut cultivation.

iv) Project Components and Project Costs

The various components of the project and the costs involved over a period of four years are provided in Table 46 for irrigated groundnut and in Table 47 for rainfed groundnut.

v) Implementation

The project will be implemented over a period of four years *viz.,* 2008-09 to 2011-12. All the components will be implemented over the four years period.

vi) Reporting

The block-level officials of the Department of Agriculture will implement the project and report the progress to the district-level officials.

Table 46. Interventions for Increasing the Productivity and Production of Groundnut (Irrigated)

(Rs. in Lakhs)

S.No	Components	Unit	2008-2009		2009-2010		2010-2011		2011-2012		Grand Total	
			No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total Cost	Total units	Total Cost
1	Farmers Training @ Rs.25000/No. (50 Farmers/two days)	Nos	20	5.000	20	5.000	20	5.000	20	5.000	80	20.000
2	Publicity / POL @ Rs.1.0 lakh/district per year	L.Rs.		1.000		1.000		1.000		1.000	0	4.000
	Total			**6.000**		**6.000**		**6.000**		**6.000**	**0**	**24.000**

Table 47. Interventions for Increasing the Productivity and Production of Groundnut (Rainfed)

(Rs. in Lakhs)

S.No	Components	Unit	2008-2009		2009-2010		2010-2011		2011-2012		Grand Total	
			No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total Cost	Total units	Total Cost
1	**Seed distribution** Subsidy @ Rs 12000/ Tonnes	Tonnes	60	7.200	60	7.200	100	12.000	100	12.000	320	38.400
2	M.N.Mixture distribution @ 50 percent cost limited to Rs.500/Ha.	Ha	400	2.000	400	2.000	400	2.000	400	2.000	1600	8.000
	Total			**9.200**		**9.200**		**14.000**		**14.000**	**0**	**46.400**

6.5.2.5 Gingelly

i) Rationale

Gingelly is traditional oilseed crop of the district cultivated both under irrigated and rainfed conditions. Irrigated gingelly cultivation is common in both garden land conditions as well as a rice fallow crop under the canal command areas in the district. The area under rainfed gingelly is less one fourth of the area under irrigated gingelly cultivation. Gingelly productivity in the district is about 15 percent lower than the highest yield recorded in the state under irrigated conditions. Appropriate strategies are therefore necessary to bridge the yield gap in gingelly cultivated under irrigated conditions.

ii) Project Goal

To increase the productivity and production of gingelly under irrigated condition.

iii) Project Strategy

Adequate production and distribution of improved seeds, integrated nutrient management and supply of tarpaulins to farmers cultivating gingelly are some of the strategies proposed to be taken up under NADP. The seed production subsidy would involve a cost of Rs.10000 per tonne, and seed distribution would involve a cost of Rs.12000 per tonne. The integrated nutrient management would be taken up in 500 ha each over the period of four years of implementation of NADP.

iv) Project Components and Project Costs

The various components of the project and the costs involved over a period of four years are provided in Table 48.

v) Implementation

The project will be implemented over a period of four years *viz*., 2008-09 to 2011-12. All the components will be implemented over the four years period.

vi) Reporting

The block-level officials of the Department of Agriculture will implement the project and report the progress to the district-level officials.

Table 48. Interventions for Increasing the Productivity and Production of Gingelly

(Rs. in Lakhs)

S.No	Components	Unit	2008-2009		2009-2010		2010-2011		2011-2012		Grand Total	
			No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total Cost	Total units	Total Cost
1	Seed production Subsidy @ Rs 10000/Tonnes	Tonnes	10	1.000	12	1.200	15	1.500	18	1.800	55	5.500
2	Seed distribution Subsidy @ Rs.12000/ Tonnes	Tonnes	10	1.200	12	1.440	15	1.800	18	2.160	55	6.600
3	INM @ 50 % subsidy of Rs.100/ha.	Ha.	500	0.500	500	0.500	500	0.500	500	0.500	2000	2.000
4	TARPAULIN 50 % subsidy @Rs.5000/-	Nos.	500	25.000	500	25.000	500	25.000	500	25.000	2000	100.000
	Grand Total			**27.700**		**28.140**		**28.800**		**29.460**		**114.100**

6.5.2.6 Sunflower

i) Rationale

In recent years, the area under sunflower is gaining momentum in the district both under canal command areas as well as under well-irrigated garden lands. Farmers are increasingly resorting to sunflower cultivation due to its low cost of cultivation, shorter duration and better returns. Sunflower productivity in the district is about 15 percent lower than the highest yield recorded in the state under irrigated conditions. Appropriate strategies are therefore necessary to bridge the yield gap in sunflower cultivated under irrigated conditions.

ii) Project Goal

To increase the productivity and production of sunflower.

iii) Project Strategy

Adequate production and distribution of hybrid seeds, demonstration of production technology, seed mini kit and subsidy for integrated nutrient management are some of the strategies proposed to be implemented under NADP. The seed production subsidy will be 50 per cent with an upper limit of Rs.150/kg. Production technologies will be demonstrated in the farmers' fields @ Rs.5000 per ha in 50 demonstration plots in the first year which will be increased to 75 in the second and third years and to 100 in the fourth year. Two hundred hybrid seed mini kits will be provided with 100 per cent subsidy each year for the entire four years period. Integrated nutrient management subsidy of 50 per cent or @ Rs.100 per ha would also be provided to 500 ha each year for four years of implementation of NADP.

iv) Project Components and Project Costs

The details of various components of the project and the costs involved over a period of four years are provided in Table 49.

v) Implementation

The project will be implemented over a period of four years *viz*., 2008-09 to 2011-12. All the components will be implemented over the entire four years period.

vi) Reporting

The block-level officials of the Department of Agriculture will implement the project and report the progress to the district-level officials.

Table 49. Interventions for Increasing the Productivity and Production of Sunflower

(Rs. in Lakhs)

S.No	Components	Unit	2008-2009		2009-2010		2010-2011		2011-2012		Grand Total	
			No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total Cost	Total units	Total Cost
1	Hybrid Seed distribution @ 50 % subsidy limited to Rs.150/kg.	Tonnes	5	7.500	7	10.500	9	13.500	15	22.500	36	54.000
2	Crop Production technology Demonstration @ Rs.5000/ha.	Ha.	50	2.500	75	3.750	75	3.750	100	5.000	300	15.000
3	Hybrid Seed Minikit @ free of cost (1 kg kit @ Rs.400/no.)	Nos.	200	0.800	200	0.800	200	0.800	200	0.800	800	3.200
4	INM 50 % subsidy or @ Rs.100/-Per HA	Ha.	500	0.500	500	0.500	500	0.500	500	0.500	2000	2.000
	Grand Total			**11.300**		**15.550**		**18.550**		**28.800**	**0**	**74.200**

6.6 Interventions/Strategies Proposed by the Agrl. Engineering Department

6.6.1 Introduction of Newly Developed AgrI. Machinery/ Implements and Popularization of Machinery and Equipments

i) Rationale

In view of acute labour scarcity and hike in labour cost prevailing in Erode District, the agricultural operation nowadays become highly exorbitant and to over come this situation farm mechanization is need of the hour mostly for all crops starting from field preparation to harvest of the crop.

ii) Project Goal

To introduce and popularize the use of latest labour-saving machineries and implements.

iii) Project Strategy

Subsidized supply of machineries and equipments is an important strategy to popularize the use of labour-saving machineries and equipments among farmers. All the machineries and equipments will be provided at 50 per cent subsidy and the gender-friendly equipments will be provided at 75 per cent subsidy. Another important strategy is to popularize the conventional machineries and implements using the concept of forming mechanized villages with cluster approach. Paddy and maize are the two crops to be covered under this approach.

iv) Project Components and Project Costs

The project component includes a list of 17 newly-developed machineries and five conventional machineries and equipments covering various farm operations for different crops. The various machineries and equipments to be provided and their costs over a period of four years are provided in Table 49 and the components under popularization of machineries are provided in Table 50.

v) Implementation

The project will be implemented over a period of four years *viz.,* 2008-09 to 2011-12. All the components will be implemented over the entire four years period.

vi) Reporting

The block-level officials of the Agricultural Engineering Department will implement the project and report the progress to the district-level officials.

Table 50. Supply of Agricultural Machinery by the Agricultural Engineering Department

(Rs. in Lakhs)

S. No	Project Component	Unit Cost	Subsidy %	2008-09		2009-10		2010-11		2011-12		Total	
				No	Cost	No	Cost	No	Cost	No	Cost	No	Cost
1	Mini combined Harvester TNAU model	2.50	50 %	4	5.00	2	2.50	2	2.50	2	2.50	10	12.50
2	Multi-crop Thrasher (High capacity)	2.10	50 %	4	4.20	4	4.20	4	4.20	4	4.20	16	16.80
3	Power weeder with attachment	1.00	50 %	10	5.00	10	5.00	10	5.00	10	5.00	40	20.00
4	Power Thrasher	1.00	50 %	5	2.50	5	2.50	5	2.50	5	2.50	20	10.00
5	Paddy Transplanter	1.40	50 %	50	35.00	50	35.00	50	35.00	50	35.00	200	140.00
6	Post hole digger	0.85	50 %	2	0.85	2	0.85	2	0.85	2	0.85	8	3.40
7	Shredder (Heavy)	1.00	50 %	1	0.50	1	0.50	1	0.50	1	0.50	4	2.00
8	Shredder (Medium)	0.40	50 %	2	0.40	2	0.40	2	0.40	2	* 0.40	8	1.60
9	Maize Husker Sheller	0.90	50 %	1	0.45	*1*	0.45	1	0.45	1	0.45	4	1.80
10	Coconut De- husker	0.60	50 %	2	0.60	*2*	0.60	2	0.60	2	0.60	8	2.40

Table 50 Contd… **(Rs. in Lakhs)**

S.No	Project Component	Unit Cost	Subsidy %	2008-09		2009-10		2010-11		2011-12		Total	
				No	Cost	No	Cost	No	Cost	No	Cost	No	Cost
11	Ground nut decorticator	0.35	50 %	4	0.70	4	0.70	4	0.70	4	0.70	16	2.80
12	Chisel Plough	0.12	50 %	2	0.12	2	0.12	2	0.12	2	0.12	8	0.48
13	Power Weeder -Oleo mac	0.65	50 %	1	0.33	1	0.33	1	0.33	1	0.33	4	1.30
14	Power Operated Chaff Cutter	0.30	50 %	2	0.30	2	0.30	2	0.30	2	0.30	8	1.20
15	Japanese Yanmar 8-row transplanter with nursery raising system	10.50	50 %	1	5.25	1	5.25	1	5.25	0	0.00	3	15.75
16	Combine harvester-Tractor operated	12.00	50 %	1	6.00							1	6.00
17	Gender friendly equipments	0.08	75 %	50	3.00	50	3.00	50	3.00	50	3.00	200	12.00
	Total			**142**	**70.2**	**139**	**61.7**	**139**	**61.7**	**138**	**56.45**	**558**	**250.05**

Table 51. Popularization of Agricultural Machinery

(Rs. in Lakhs)

S. No	Project Component	Unit Cost	Subsidy %	2008-09		2009-10		2010-11		2011-12		Total	
				No	Cost	No	Cost	No	Cost	No	Cost	No	Cost
	Stream : II												
I.	**Popularization of agricultural mechanization through conventional machinery and equipments**												
a	Power Tiller	1.10	25 %	25	7.25	25	7.25	20	5.80	10	2.90	80	23.20
b	Rotavator	0.90	25 %	30	6.75	30	6.75	30	6.75	30	6.75	120	27.00
c	Cultivator	0.16	25 %	4	0.16	4	0.16	4	0.16	4	0.16	16	0.64
d	Off-set Disc Harrow	0.47	25 %	2	0.235	2	0.235	2	0.235	2	0.235	8	0.94
e	Disc Plough	0.35	25 %	10	0.875	10	0.875	10	0.875	10	0.875	40	3.50
	Total			**71**	**15.27**	**71**	**15.27**	**66**	**13.82**	**56**	**10.92**	**264**	**55.28**
II	**Promoting the concept of Mechanised villages**												
1	**Distribution of crop based package of Agrl, Machinery on cluster basis in the adopted villages**												
	1. Paddy	31.60	75 %	5	118.50	5	118.50	5	118.50	5	118.50	20	474.00
	2. Maize	19.91	75 %	5	74.66	5	74.66	5	74.66	5	74.66	20	298.64
	Total			**10**	**193.16**	**10**	**193.16**	**10**	**193.16**	**10**	**193.162**	**40**	**772.64**

6.6.2 Water Harvesting, Soil Conservation and Water Management

i) Rationale

In view of low rainfall in the district, poor groundwater status, soil erosion due to wind and rain and inadequacies in existing practice of water management in the district, it is necessary to introduce appropriate scientific water harvesting and soil conservation practices in Erode District. There is ample scope for reducing the wastage of water in the command areas of Lower Bhavani and Amaravathi Canal irrigation projects through canal lining as well as on-farm water management.

ii) Project Goal

To promote scientific water harvesting, soil conservation and water management on a sustainable basis.

iii) Project Strategy

Introduction of innovative water harvesting structures along with conventional water harvesting structures is proposed under NADP with 90 to 100 per cent subsidy. Soil conservation works and water management activities are also proposed to be taken with subsidy component ranging from 75 to 100 percent.

The Water Resources Organization of the Public Works Department and the Agricultural Engineering Department have made a number of proposals for harnessing water resources as well as to reduce the losses from existing canal and tank irrigation projects. As many of the old irrigation systems are in dilapidated condition and in a state of disrepair, it is absolutely necessary to rehabilitate and / or carry out repair works in these systems / projects so as to economize water use and improve conveyance efficiency and water use efficiency. Better water control and delivery could be achieved by these measures so that the productivity per unit of water could be enhanced significantly.

iv) Project Components and Project Costs

The project component includes a list of two innovative water harvesting structures such as lined farm pond and rejuvenation of percolation ponds with two

recharge shafts while traditional water harvesting technologies such as construction of farm ponds, check dams (major, medium and minor), percolation ponds, recharge shafts, village tanks and collection wells are also proposed. Soil conservation works include compartmental bunding, land shaping and terrace support wall. Water management at farm level is proposed to be improved with the introduction of PVC pipes for conveyance, ground-level reservoirs and provision of fertigation assembly.

The details of activities and activity-wise budgetary allocation sought under the NADP for water harvesting, soil conservation and water management at farm level are provided in Table 52.

The budgetary requirement for installing low-pressure drip irrigation systems under Lower Bhavani Project canals to be taken by the Agricultural Engineering Department are given in Table 53. The details of activities and financial requirements for improving the irrigation canals through concrete lining and special repair works by the Water Resource Organization of the Public Works Department are provided in Tables 54 through 56.

v) Implementation

The project will be implemented over a period of four years *viz.,* 2008-09 to 2011-12. All the components will be implemented over the entire four years period.

vi) Reporting

The block-level officials of the Agricultural Engineering Department will implement the project and report the progress to the district-level officials.

Table 52. Water Harvesting, Soil Conservation and Water Management

(Rs. in Lakhs)

S. No	Project Component	Unit Cost Rs. in lakhs	Subsidy (%)	2008-09		2009-10		2010-11		2011-12		Total	
				No	Cost Rs in lakh	No	Cost	No	Cost	No	Cost	No	Cost
	Innovative water harvesting structures												
1	Lined farm pond with mobile sprinkler	3.00	90 %	1	2.70	1	2.70	1	2.70	1	2.70	4	10.80
2	Rejuvenation of percolation ponds with two recharge shafts	1.00	100 %	10	10.00	10	10.00	10	10.00	10	10.00	40	40.00
II	**Water Harvesting Structures**												
a	Farm pond -Unlined	0.50	90 %	50	22.5	50	22.5	50	22.5	50	22.5	200	90.00
b	Checkdam-Minor	0.30	100 %	25	7.50	25	7.50	25	7.50	25	7.50	100	30.00
c	Checkdam-Medium	0.75	100 %	30	22.50	30	22.50	30	22.50	30	22.50	120	90.00
d	Checkdam-Major	1.00	100 %	40	40.00	40	40.00	40	40.00	40	40.00	160	160.00
e	Percolation Pond	3.25	100 %	15	48.75	15	48.75	15	48.75	15	48.75	60	195.00
f	Recharge Shaft	0.30	100 %	10	3.00	10	3.00	10	3.00	10	3.00	40	12.00
g	New village Tank	1.50	100 %	20	30.00	20	30.00	20	30.00	20	30.00	80	120.00
h	Collection Well	0.40	90 %	0	0	0	0	0	0	0	0	0	0
III	**Soil conservation works**												
a	Compartmental bunding (ha)	0.03	90 %	100	2.70	100	2.70	100	2.70	100	2.70	400	10.80
b	Land Shaping (ha)	0.10	90 %	25	2.25	25	2.25	25	2.25	25	2.25	100	9.00
c	Terrace Support Wall (ha)	0.30	90 %	250	67.50	250	67.50	250	67.50	250	67.50	1000	270.00
IV	**Water Management works**												
a	PVC Pipe laying	0.15	90 %	100	13.50	100	13.50	100	13.50	100	13.50	400	54.00
b	Ground level Reservoir	0.80	90 %	50	36.00	50	36.00	50	36.00	50	36.00	200	144.00
c	Fertigation Assembly	0.12	50 %	25	1.50	25	1.50	25	1.50	25	1.50	100	6.00
	Total			**751**	**310.4**	**751**	**310.4**	**751**	**310.4**	**751**	**310.4**	**3004**	**1241.6**

Table 53. Cost Estimates for Installing Low Pressure Drip System in the LBP Area

(Rs. in lakhs)

Activity	2008-09	2009-10	2010-11	2011-12	Total
Agri.Engineering-LBP - Drip Irrigation by Low Pressure System	337.5	562.5	562.5	562.5	2025.00

Table 54. Repair and Rehabilitation Works for Irrigation Systems under Water Resources Organization of the Public Works Department (Lower Bhavani Project)

(Rs. in lakhs)

S. No.	Works	2008-09	2009-10	2010-11	2011-12	Total
1	Special Repair works to Thadappalli canal	148.55	170.55	210.55	30.40	560.05
2	Special Repair works to Arakkankottai canal	30.30	95.60	35.40	-	161.30
3	Special Repair works to Gunderipallam dam	41.00	20.00	-	-	61.00
4	Special Repair works to Perumballam dam	60.05	6.00	6.00	-	72.05
5	Repair works to tanks in Gobichettipalayam taluk	9.50	30.20	15.10	-	54.80
6	Special Repair works to Varattuppallam dam	110.00	80.00	-	-	190.00
7	Special Repair works to main canals of Varattuppallam dam	190.00	-	-	-	190.00
8	Special Repair works to distribution canals taking off from main canals of Varattuppallam dam	-	210.00	210.00	50.00	470.00
9	Special Repair works to supply channels feeding the tanks in Bhavani taluk	-	70.00	70.00	300.00	440.00
10	Special Repair works to Chiththaar dam and its supply channels	-	-	30.00	-	30.00
	Total	**589.40**	**682.35**	**577.05**	**380.40**	**2229.20**

Table 55. Repair and Rehabilitation Works for Irrigation Systems under Water Resources Organization of the Public Works Department (Mettur West Bank Canal Project)

(Rs.in lakhs)

S. No.	Year	Name of Work	Cost (in Lakhs)	Extent of Area to be benefited (ha)
I.	**2008-09**			
1		Rehabilitation and Improvements to distributary at mile 12 / 2 – 005 of Mettur West Bank Canal.	25.00	169.42
2		Rahabilitation and Improvements to distributary at mile 14 / 7 – 510 of Mettur West Bank Canal.	50.00	235.98
		Total	**75.00**	
1	**2009-10**	Rehabilitation and Improvements to distributary at mile 14 / 2 – 510 of Mettur West Bank Canal.	25.00	179.41
2		Rahabilitation and Improvements to distributary at mile 20 / 3 – 548 of Mettur West Bank Canal.	50.00	106.23
		Total	**75.00**	
1	**2010-11**	Rehabilitation and Improvements to distributary at mile 13 / 7 – 392 of Mettur West Bank Canal.	15.00	86.42
2		Rahabilitation and Improvements to distributary at mile 19 / 5 – 403 of Mettur West Bank Canal.	35.00	115.49
		Total	**50.00**	
1	**2011-12**	Rehabilitation and Improvements to distributary at mile 22 / 0 – 008 of Mettur West Bank Canal.	20.00	91.40
2		Rahabilitation and Improvements to distributary at mile 1 / 6 – 627 of Mettur West Bank Canal.	30.00	133.20
		Total	**50.00**	
		Grand Total	**250.00**	

Table 56. Repair and Rehabilitation Works for Irrigation Systems under Water Resources Organization of the Public Works Department (Amaravathi River System)

(Rs.lakhs)

S.No.	Name of work	2008-09	2009-10	2010-11	2011-12	Total
1.	Rehabilitation works of Alangiyam Anicut	240.00	-	-	-	240.00
2.	Rehabilitation of Dhalavaipattinam leading channel and cross masonry works	300.00	-	-	-	300.00
3.	Rehabilitation of Dharapuram leading channel and cross masonry works	-	-	610.00	-	610.00
4.	Rehabilitation of Kolinjivadi anicut, leading channel, Kolathupalayam leading channel, Veerachimangalam leading channel and cross masonry works	-	650.00	-	-	650.00
5.	Rehabilitation of Nanjaithalaiyar anicut, leading channel and cross masonry works	-	-	-	250.00	250.00
6.	Rehabilitation of Sundakkampalayam anicut, leading channel and cross masonry works		-	-	150.00	150.00
7.	Rehabilitation and modernization of Amaravathi main canal from 28/7 miles to 39/2 mile in Amaravathy New System	-	-	-	300.00	300.00
	Total	**540.00**	**650.00**	**610.00**	**700.00**	**2500.00**

6.7 Strategies for Horticulture Development under NADP

The strategies for promoting horticulture in Erode district include i) Precision Farming, ii) Nursery & Vegetable Production, iii) Plastic crates for vegetable handling & transport, iv) Supply of Banana Bunch cover, v) Support system for crops, vi) Organizing District Level Farmers' Workshops, vii) Interstate Exposure Visit, viii) Ten hectare Mega Demonstration, and ix) Community Fencing.

i) Rationale

Horticulture plays a vital role in the food and nutritional security of the people as well as in earning foreign exchange through export of raw and value added horticultural products. Since the productivity of most of the horticultural crops are low in Erode district, it is of paramount importance to increase the productivity of these crops by popularizing modern production and post harvest techniques. Erode district is conducive for cultivation of a variety of horticulture crops. Most of the farmers are small holders of land and cultivating less remunerative crops like paddy, maize, tapioca and groundnut. The farmers are very progressive and enthusiastic to adopt new technologies. After the intervention of Horticulture Department in this district, the farmers are ready to go in for cultivation of Horticulture crops which prove remunerative. The constraint is horticulture crop cultivation involves high cost and improved technologies, for which they need some support from Government in the form of subsidies and training.

ii) Project Goals

1. Aim to achieving four percent annual growth in Horticulture sector during XI plan period by ensuring a holistic development of Horticulture and allied sector.
2. To ensure that the local needs/ crops/ priorities are better reflected in the Horticulture plans of the district.
3. To achieve the goal of reducing the yield gaps in important horticulture crops through focused interventions.
4. To maximize returns to the farmers in Horticulture and allied sectors.

iii) Project Strategies

The following strategies will be adopted to enhance the production and marketability of horticultural crops.

6.7.1 Precision Farming

This is a proven farming technique in which the farming activities are done with high precision to take care of location-specific requirements. High quality of products ensures higher prices and assured markets. It is proposed to cover an area of 500 Ha, every year, in selected pockets of Erode District. Assistance will be given at the rate of 75 percent of project cost or Rs. 80000/ha whichever is less.

6.7.2 Nursery and Vegetable Production

Due to high cost of hybrid vegetable seeds, it is important to rise nursery in a hygienic manner for which net house is ideal in which the seedlings of any kind will be grown. There is great awareness among farmers in this district regarding quality seedlings. Installation of net house involves high cost which needs assistance to a tune of 50 percent. It is proposed to erect 40 net houses for vegetable cultivation with nursery in the district during the plan period.

6.7.3 Plastic Crates for Vegetable Handling and Transport

It is estimated that post harvest loss to the extent of 30 percent has been incurred by the farmers. Cost of packing materials is unbearable by the farmers. It is proposed to supply plastic crates of standard size at 50 percent cost to the farmers to have a safe packing & transport.

6.7.4 Banana Bunch Cover

Banana is being cultivated in an area of about 6000 ha in Erode district with variations in the quality of the produce. To improve the quality of banana bunch, it is necessary to protect the bunch by cover, for which degradable polythene sheets of 20 micron will be supplied to the farmers at 50 percent cost with a vision to sell their produce to export market.

6.7.5 Support System for Crops

High risky crops like banana, betelvine and gloriosa which are prime crops of this district needs protection from risk. Proper supporting system necessary for assured crop for which 75 percent assistance will be provided for propping materials.

6.7.6 District Level Farmers' Workshops

Crop specific and location specific district level farmers workshop will be convened to create awareness among farmers regarding high value and new technologies of horticulture crops.

6.7.7 Interstate Exposure Visit

Exposure visit for four batch/year will be organized @ 50/batch to get exposed with adoption of new technologies from other states.

6.7.8 Ten ha Mega Demonstration

Like minded farmers will be encouraged to adopt all new technologies of Horticulture from seed to market at selected place in an area of 10 ha, which will serve as a visual aid and model farm. For the district, mega demonstration like this will be organized @1/year/district under funding support from NADP.

6.7.9 Community Fencing

Fencing is more important for horticulture crop production in hilly areas and adjoining areas of the forest. Solar/ electric fencing will be installed to protect the crops. Assistance will be provided under NADP at 50 percent to the farmers on community basis.

i) Project Components and Costs

The details of project components and costs are given in Table 57.

ii) Implementation

The project will be implemented over a period of four years from 2008-09 to 2011-12.

iii) Reporting

The block level officials in the Department of Horticulture will implement the project and report to the district-level official once in a month.

Table 57. Horticulture Development Plan for Erode District

(Rs. in lakhs)

Sl. No.	Activities	Unit cost (in Rs.)	2008-09		2009-10		2010-11		2011-12	
			Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
1	Precision Farming									
	a) Drip component	11200	500	56.00	500	56.00	500	56.00	500	56.00
	b) Input cost	25000	500	125.00	500	125.00	500	125.00	500	125.00
	c) Nursery	5000	500	25.00	500	25.00	500	25.00	500	25.00
2	Nursery and Vegetable Production	1.00 lakhs/300 Sq.m	20	10.00	10	5.00	5	2.50	5	2.50
3	Plastic crates for Vegetable handling and Transport	250 / crate	2000	2.50	2000	2.50	4000	5.00	4000	5.00
4	Banana bunch cover	10/ piece	100000	5.00	100000	5.00	100000	5.00	100000	5.00
5	Support system for crops									
	a) Banana		1000	1125.00	600	750.00	600	750.00	400	500.00
	b) Gloriosa	40000 /Ha	100	20.00	100	20.00	100	20.00	100	20.00
6	District level farmers workshop	400/farmer/day	200	0.80	200	0.80	200	0.80	200	0.80
7	Interstate Exposure Visit (5 days)	5000/farmer	200	10.00	200	10.00	200	10.00	200	10.00
8	10 ha Mega demo plot	25 lakhs each	1	25.00	1	25.00	1	25.00	1	25.00
9	Support for betelvine	40000 for 20 cents	10	2.00	10	2.00	20	4.00	20	4.00
10	Community Fencing – 50 % cost	100000/ha	40	20.00	40	20.00	40	20.00	40	20.00
	Total			**1426.30**		**1046.30**		**1048.30**		**798.30**

6.8 Input Requirement Projections (Year wise) - Main Focus shall be given for Certified Seed Production of Agri / Horti / Fodder crops

The major thrust areas in input supply are production and distribution of quality seeds by facilitating private seed production as well as by strengthening state seed farms. This proposal has a component for assisting Self-Help Groups and TANWABE groups in the production and distribution of certified seeds of select crops such as paddy. This component is already included in the interventions proposed for respective crops. In the following sections, a proposal for strengthening state seed farms in the district is provided (Table 58).

6.8.1 Support to State Seed Farms

I. Support to State Seed Farm at Bhavani

Total Extent : 81.81 Acres

Table 58. Details on Strengthening State Seed Farm at Bhavani

S. No.	Details	Available Nos.	Working Nos.	Required Nos.	Cost per unit (Rs.)	Total amount required (Rs.)
1.	Irrigation facilities					
	a. Open well	1	-	-	-	-
	b. Bore well	3	3	-	-	-
	c. Electric Motor	3	3	1	75000	75,000
	d. Oil Engine	-	-	-	-	-
2.	Thrashing floor	4	2	-	-	-
3.	Seed Godowns	4	2	-	-	-
4.	Machinery and Implements					
	a. Power tiller	1	-	-	-	-
	b. Thrasher	1	-	-	-	-
	c. Tractor	-	-	-	-	-
	d. Sprayer					
	i. Hand operated	-	-	1	1500	1500
	ii. Power operated	-	-	1	4500	4500

Source: Joint Director of Agriculture, Erode

5. Clearing of Bushes

a) Area to be cleared = 20 Acres
b) Cost of clearing the bushes @ of 15000 /Acre = Rs.300000

6. a. No. of Farm Ponds available. -

b. Deepening of ponds and strengthening the bunds. -

7. Cement / Pipelining of irrigation channels.

a) Pipeline Laying for 500 meters @ Rs.900/Meter = Rs.4,50,000
b) RCC Lining & pump House = Rs.3,00,000

8. Any other items required.

c) Protection cover to State Seed Farm = Rs.3,00,000
d) Tarpaulin @ Rs.10000/ No - 3 Nos. = Rs. 30,000

Total (Sl.No.1 to 8) = Rs.14,61,000

Seed Processing Unit Building construction cost = Rs.50,00,000

9. Area under cultivation as on date (Table 59)

Table 59. Details on Area and Quantity of Seed Produced in the State Seed Farm at Bhavani

Sl. No.	Details	Area in acres	Qty. Produced (Tonnes)
1.	Seed Purpose	61.4	109.0
2.	Non Seed Purpose	3.4	45.0
	Total	64.8	154.0

Source: Joint Director of Agriculture, Erode

10. After strengthening the infrastructural facilities the total area that can be brought for cultivation and production of seed are furnished in Table 60.

Table 60. Targeted area and production of seeds at State Seed Farm at Bhavani

Sl.No.	Details	Area in acres	Qty. Produced (Tonnes)
1.	Seed Purpose	61.4	130.0
2.	Non Seed Purpose	3.4	50.0
	Total	64.8	180.0

Source: Joint Director of Agriculture, Erode

II. Support to State Seed Farm at Sathyamangalam

The total extent of the farm is 36.1 acres. The details on facilities required and the expenditures are given in Table 61.

Table 61. Details on Strengthening State Seed Farm at Sathyamangalam

S. No.	Details	Available Nos.	Working Nos.	Required Nos.	Cost per unit (Rs)	Total amount required (Rs)
1.	Irrigation facilities					
	a. Open well	3	1	-	-	-
	b. Bore well	-	-	2	200000	4,00,000
	c. Electric Motor	2	2	4	35000	1,40,000
	d. Oil Engine	0	0	-	-	-
2.	Thrashing floor	2	2	-	-	-
3.	Seed Godowns	2	2	2000/sqft	Rs.600/ sqft	12,00,000
4.	Machinery and Implements					
	a. Power tiller	2	1	-	-	-
	b. Thrasher	-	-	-	-	-
	c. Tractor	-	-	-	-	-
	d. Sprayer					
	i. Hand operated	-	-	1	1500	1500
	ii. Power operated	1	1	-	-	-

Source: Joint Director of Agriculture, Erode

5. Clearing of Bushes

a) Area to be cleared = 22 Acre
b) Cost of clearing the bushes. = Rs.3,00,000

6. a. No.of Farm Ponds available. -

b. Deepening of ponds and strengthening the bunds -

7. Cement / Pipelining of irrigation channels for

1500 meters@700/meter = Rs.10,50,000

8. Any other items required.

(a) Protection cover to SSF for 1500 meter x 750/Meter = Rs.11,25,000

Total (Sl.No.1 to 8) = Rs. 42,16,500

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9. Area under cultivation as on date (Table 62)

Table 62. Present Area under Cultivation and Quantity of Seed Produced, State Seed Farm at Sathyamangalam

Sl.No.	Details	Area in (acre)	Qty. Produced (Tonnes)
1.	Seed Purpose	7.0	1.0
2.	Non Seed Purpose	7.0	250.0
	Total	14.0	251.0

Source: Joint Director of Agriculture, Erode

After strengthening the infrastructure facilities the total area that can be brought for cultivation and production of seed are furnished in Table 63.

Table 63. Expected Results from Strengthening State Seed Farm at Sathyamangalam

Sl. No.	Details	Area	Qty. Produced (Tonnes)
1.	Seed Purpose	20.0	40.0
2.	Non Seed Purpose	10.0	400.0
	Total	30.0	440.0

Source: Joint Director of Agriculture, Erode

III. Support to State Oilseed Farm, State Coconut Nursery, Bhavanisagar

Total Extent : 33.14 Acres

Table 64. Details of Facilities Required and Expenditure on State Oilseed Farm at State Coconut Nursery, Bhavanisagar

Sl. No.	Details	Available Nos.	Working Nos.	Required Nos.	Cost per unit (Rs.)	Total amount required (Rs.)
1.	Irrigation facilities					
	a. Open well	1	-	-	-	-
	b. Bore well	-	-	-	-	-
	c. Electric Motor	1	1	-	-	-
	d. Oil Engine	-	-	-	-	-
2.	Thrashing floor	2	2	-	-	-
3.	Seed Godowns	3	3	-	-	-
4.	Machinery and Implements					
	a. Power tiller	-	-	-	-	-
	b. Thrasher	-	-	-	-	-
	c. Tractor	-	-	-	-	-
	d. Sprayer					
	i. Hand operated	-	-	1	5000	5000
	ii.Power operated	-	-	-	-	-

5. Clearing of Bushes

a) Area to be cleared - 1300 sq.meters
b) Cost of clearing the bushes. - @ Rs.150/ sq.meters = Rs.1,95,000

6. a. No.of Farm Ponds available. : Nil

b. Deepening of ponds and strengthening the bunds. : Nil

7. Cement / Pipelining of irrigation channels. : Nil

8. Any other items required.

(a) Protection cover to SOSF/ SCN for 1300 meter. @ Rs.750/Meter = Rs. 9,75,000

(b) Bag closures 1 No. =Rs. 5000
© Tarpaulins 2 No @Rs.7500/No. =Rs. 15,000

Total (Sl.No.1 to 8) = Rs.11,95,000

9. Area under cultivation as on date (Table 65)

Table 65. Area under Cultivation at State Oilseed Farm, State Coconut Nursery, Bhavanisagar

Sl. No.	Details	Area in Acre	Qty. Produced
1.	Seed Purpose	5.80	13.825 Tonnes
2.	Non Seed Purpose	4.75	35600 Coconut seedlings per year
	Total	10.55	

Source: Joint Director of Agriculture, Erode

10. After strengthening the infrastructure facilities the total area that can be brought for cultivation and production of seed are furnished in Table 66.

Table 66. Expected Outcome from Strengthening State Oilseed Farm, State Coconut Nursery, Bhavanisagar

Sl. No.	Details	Area in Acres	Qty. Produced
1.	Seed Purpose	5.80	15.5 Tonnes
2.	Non Seed Purpose	4.75	60000 Coconut seedlings per year
	Total	10.55	

Source: Joint Director of Agriculture, Erode

6.8.2 Support to Parasite Breeding Centres

Strengthening of two parasite breeding centres in the district is proposed to be taken up under funding from NADP. The proposals are given below:

I. Strengthening Sugarcane Parasite Breeding Centre, Gobichettipalayam – 2008–09

a) Building cost	:	15.00 lakhs
b) Machineries and Equipments	:	10.00 lakhs

Total	**:**	**25.00 lakhs**

II. Strengthening Coconut Parasite Breeding Station, Gobichettipalayam-2008-09

a) Building cost	:	15.00 lakhs
b) Machineries and Equipments	:	10.00 lakhs

Total	**:**	**25.00 lakhs**

6.9 Thrust areas of the District

- Production and supply of quality seed / planting materials of varieties/hybrids
- Precision farming in agriculture and horticulture crops
- Diversification of crops to suit the available resources and market oriented
- Augmenting area under SRI cultivation of rice
- Bringing more area under drip fertigation to overcome the water scarcity and to get higher yields of good quality produce
- Soil and water conservation measures and inclusion of green manure crops are necessary to restore the soil fertility
- Promoting Agribusiness development
- Integrated Farming System to suit different agro ecosystem
- Value added produce of agricultural and horticultural crops
- Post harvest technologies
- Introduction of farm machineries suitable to small and marginal holdings to overcome the scarcity of labour, and
- Integrated Pest and Disease management

6.10 Strategy for Bridging the Gap of Research and Extension

The details of interventions proposed for bridging the gap between research and extension and the costs involved in implementing these strategies are provided in Table 67.

Table 67. Strategies for Bridging the Gap of Research and Extension

(Rs. in lakhs)

S. No	Components	Unit	2008-2009		2009-2010		2010-2011		2011-2012		Grand Total	
			No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total Cost	Total units	Total Cost
1	Formation of **FIG** @ 12500/group for training and office automation, ID card	Nos	60	7.50	60	7.50	60	7.50	60	7.500	240	**30.000**
2	**Exposure visit to inter state** @ 30 farmers/tour 10 days @ Rs.1000/day/farmer (3.0 lakhs)	No.of tours	3	9.00	3	9.00	3	9.00	3	9.000	12	**36.000**
3	**Exposure visit within the state** 50 farmers/tour 5 days @ Rs.300/day/farmer (Rs.0.75 lakhs)	Nos	3	2.25	3	2.25	3	2.25	3	2.250	12	**9.000**
4	**District level exhibition**/ Kisan Mela @ Rs.2.0 lakhs per District	Lakhs	1	2.00	1	2.00	1	2.00	1	2.000	4	**8.000**
5	Publicity & Propaganda printing of Lit., Display boards, conduct of Press tours technology transfer through TV, Radio and other Mass Media @ Rs.2.0 lakhs/District	Tonnes	1	2.00	1	2.00	1	2.00	1	2.000	4	**8.000**
6	Video conferencing facilities to District Head Quarters @ Rs.10 lakhs/District	Tonnes	1	10.000	0	0.000	0	0.000	0	0.000	1	**10.000**

Table 67 Contd… **(Rs. in lakhs)**

S. No	Components	Unit	2008-2009		2009-2010		2010-2011		2011-2012		Grand Total	
			No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total Cost	Total units	Total Cost
7	**Farmers Training** through **FTC** @ 40 trainings (2 days)/year (@ 50 farmers/training) Rs.20000/training	Nos	20	4.00	20	4.00	20	4.00	20	4.000	80	**16.000**
8	Creation of **Automatic Weather Station** at Block Level onetime @Rs.2.5 lakhs/unit	Nos.	20	50.00							20	**50.000**
9	**Organic model Farm** with Integrated farming approach.@ Rs.50000/unit/farmer.	Nos.	20	10.00	20	10.00	20	10.00	20	10.000	80	**40.000**
10	Exposure visit abroad @rs.50.00lakhs/per trip	Nos.	1	50.00	1	50.00	1	50.00	1	50.000	4	**200.000**
	Grand Total			**146.75**		**86.75**		**86.75**		**86.750**	0	**407.000**

Creating awareness among the farmers about the various technologies by conducting the following programmes / activities:

- Farm Level Demonstration
- Skill Demonstration
- Training
- Exposure visits
- Entrepreneur development
- Group formation

1. Regulatory issues / reforms if required : Nil
2. Market linkage programme

   Contract farming (crops / area covered) : Nil

Important wholesale markets dealing with agricultural produces in the district are given below:

1. Erode	-	Turmeric Market (Daily)
2. Chittode	-	Sugarcane Jaggery Market (Weekly)
3. Kavindapadi	-	Sugarcane Jaggery Market (Weekly)
4. Dharapuram	-	Sugarcane Jaggery Market (Weekly)

The detailed component-wise programme for strengthening marketing activities and market infrastructure is provided in the following table. The proposal includes commodity group formation, market intelligence, facilitation of contract farming, training, market infrastructure development including strengthening of village shandies, trainings and arranging for buyers-sellers meetings.

6.11 Strengthening of Agricultural Marketing and Agribusiness Development

6.11.1 Current Status of Agribusiness

Agriculture, as a primary sector provides livelihood to 56 percent of the population and contributes around 13 percent of the State GDP. In value terms between 65 and 75 percent of agricultural produce is transacted in markets, usually through long marketing chains, regulated markets and an emerging commercialized retail system in urban centers. Unorganized small players (handling less than 0.5

tons/day) process more than 75 percent of industry output. The Government is taking efforts to achieve targeted growth rate of 4 percent in Agriculture during XI Plan period. Though fertile soil, good quality water and long period of sunlight which are the basic requirements for Agriculture are available in abundance in Tamil Nadu, still the productivity has not been enhanced to its potential level.

The Government is taking efforts to attain sustainable agricultural development by bringing agriculture as a commercial venture by switching over from the present method of cultivation through adoption of new scientific method of cultivation to increase the productivity to manifold, value addition, processing and utilization of marketing opportunities. To improve the marketing opportunities for agricultural produce, the Uzhavar Santhai, post harvest management, cold storage facilities for perishables, food processing, establishment of export zones and terminal markets have been taken up. To reduce the loss of the food products which are upto 30 per cent, necessary provisions are made in the Agricultural Industrial Policy to ensure remunerative price to the produce, encourage food processing sector and export to earn foreign exchange by increasing the food processing from the present level of1 percent to 10 percent, out of the total production, increasing value addition from 7 percent to 30 percent. Under this policy, all assistance which is provided to other industries will be extended to agro based industries, agricultural machineries and industries manufacturing micro irrigation equipments.

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

6.11.2 Agribusiness and the National Development Goals

The Planning Commission's Mid-Term Appraisal (MTA) of the Tenth Plan notes that achieving higher growth rates depends on reversing the decline in growth of

the agricultural sector and requires a move away from 'business as usual'. Under the eleventh Plan, areas identified for special attention in the agriculture sector included among others: (i) diversification to high value crops and activities; (ii) increasing cropping intensity; (iii) strengthening of marketing, processing and value addition infrastructure; (iv) revamping and modernizing the extension systems and encouraging the private sector to provide extension services; and (v) bridging the gap between research and farmers' yields.

For the agriculture sector, the eleventh Plan projected an annual growth rate of 4 percent which was seen as achievable if growth of 6 to 8 percent could be achieved in horticulture. These growth rates have not eventuated largely because constraints identified in the Plan have not been overcome. These constraints include lack of modern and efficient infrastructure, poor technological support and post harvest management, underdeveloped and exploitative market structures, inadequate research and extension to address specific agricultural problems and linkages with farmers and industry. The strong relationship between agriculture and rural poverty means that current plans, policy and sector performance will be unable to address the needs of rural poor.

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

6.11.3 Major Constraints and Challenges in Agricultural Marketing and Agribusiness Development in the State

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

Agricultural development continues to remain the most important objective of State planning and policy. The experience of agricultural development in the state has shown that the existing systems of delivery of agricultural inputs and marketing of agricultural output have not been efficient in reaching the benefits of technology to all the sections of farmers. The timely, quality and cost effective delivery of adequate inputs still remains a dream despite the marketing attempts of the corporate sector and the developmental programmes in the state. Also, the farmers are not able to sell their surplus produce remuneratively. There are plenty of distress sales among farmers both in agriculturally developed as well as backward regions of the State. There are temporal and spatial variations in the markets and the producers' share in consumers' rupee has not been satisfactory, except for a few commodities. In fact, in some commodities like tomato in some regions of the State, producers end up making net losses at the same time when traders make substantial profits from the same crop. However, it needs to be recognized that producers' relative share in the final price of a product certainly goes down with the increase in the number of value-adding stages, and therefore, cannot be used as an indicator of a market's efficiency or inefficiency. Nevertheless, the other aspects of the market performance like absolute share of the

producer in terms of remunerability, fluctuations in prices across seasons, large spatial price differences and lack of proper market outlets itself, are the issues which have become increasingly crucial in the present context. There are structural weaknesses of agricultural markets like unorganized suppliers as against organized buyers, weak holding capacity of the producers and the perishable nature of the produce in the absence of any storage infrastructure. In the presence of these characteristics of the market, the rural producers cannot simply be left to fend for themselves so far as marketing of their produce is concerned. And if the marketing system does not assure good returns to producers, not much can be achieved in the field of product quality and delivery which are critical for processing and manufacturing sectors. In the environment of liberalization and globalization, the role of the state in agricultural marketing and input supply is being reduced, and an increasing space is being provided to the private sector to bring about better marketing efficiency in input and output markets. On the other hand, processors and/or marketers face problems in obtaining timely, cost effective, and adequate supply of quality raw materials.

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

6.11.4 Sector Problem Analysis

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

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

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

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

6.11.5 Project Rationale

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

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

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

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

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

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

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

6.11.6 Project Strategy

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

6.11.7 Project Approach

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

6.11.8 Project Goals

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

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

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

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

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

6.11.9 Needed Interventions and Detailed Project Report

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 and Uzhavar Shandies Publicity, and
11. Market Infrastructure

6.11.9.1 Establishment / Organization of Commodity Groups for Marketing in the State with Financial Assistance from NADP

i) Project Rationale

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

Based on the international experience, in view of expanding retail trade, organizing the farmers and equipping the commodity groups can facilitate the aggregation of produce and also enhance the bargaining power of the farmers. The experience in Malaysia, Thailand and Philippines indicated that the retail chains will

depend on some intermediary agency for sourcing the produce. If this role can be taken by the farmers' commodity groups, the commodities can move directly to the market without any intermediary. Further, adoption of technology both in production and post-harvest management which is expected to flow from the organized retailers and other research institutions can be efficient through the farmers' commodity groups. There is no single model for organizing the farmers for the whole country. Depending on the strength of the existing farmers' institutions, various models could be adopted. The model of farmers' marketing commodity groups cannot be the same throughout the country. It can be cooperatives, SHGs or any other form. Therefore it is proposed to organize the commodity groups for marketing of agricultural commodities in Tamil Nadu over the period of four years.

ii) Project Strategy

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

iii) Project Goals

Organizing group marketing of major agricultural commodities for realizing higher prices through establishing commodity groups.

iv) Project Components

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

v) Project cost and Financing

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

In this project, it is proposed to organize 160 commodity groups in eight commodities for marketing of agricultural commodities in Erode district over the period of four years. This will require resources of Rs 36.80 lakhs over a period of four years. The details are presented in Table 69 A.

vi) Reporting

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

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

6.11.9.2 Facilitation of Contract Farming between Farmers and Bulk Buyers in the State with Financial Assistance from NADP

i) Project Rationale

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

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

Contract farming 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 Contract farming 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 more than 50 years in Tamil Nadu. In case of cotton, maize and medicinal plants there are few cases of contract farming. Contract farming in milk, eggs and broiler production is successfully taking place in large scale in Tamil Nadu. The lessons taught in case of sugarcane, cotton and other commodities have to be taken into account during formulation of the project. For this, in this NADP programme facilitation contract farming between the traders and producer is proposed.

ii) Project Strategy

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

iii) Project Components

1. Organising meeting with farmers, large scale buying firms, crop insurance companies and banks.
2. Identification of willing / co operating Farmers/ commodity clusters
3. Organising the willing farmers in to groups
4. Arranging the Groups to have contract/agreement with select large scale buyers, banks and crop insurance firms.
5. Periodical watching of contracts and conflict management.

iv) Project Cost and Financing

Arranging / organising Commodity Groups involve several rounds of meeting with large number of farmers and traders, train them 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 Erode district for marketing of agricultural commodities in Tamil Nadu over the period of four years. This will require resources of Rs 6.78 lakhs for the period of four years. The details are presented in Table 69 A.

v) Implementation of the Project

The project will be implemented over a period of four years.

vi) Reporting

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

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

6.11.9.3 Dissemination of Market Intelligence

i) Project Rationale

Rural (primary and periodic) Markets are the first contact points of farmers with the market economy, both for selling and buying. As there have been high price differentials many times between the Wholesale Markets and the Rural Markets, there is room for arbitrage which is being exploited by the traders to their advantage. Therefore, it is imperative to make the Wholesale Markets as the price discovery point and the Rural Markets as the price takers with due consideration for transport and other costs. As the Rural Markets have few traders, the tendency to collude among them is high. In the Wholesale Markets, as traders are many, one can expect a fair price. In a country like India with 70 percent of its population living in about

6.25 lakhs villages and depending on agriculture as their main occupation, accurate and timely information about the market prices of the agricultural commodities is of extreme significance.

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

ii) Project Strategy

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

iii) Project Components

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

iv) Project Cost and Financing

In this project, it is proposed to disseminate market intelligence of agricultural commodities to all the stakeholders through different mass media in Erode district over the period of four years. This will require resources of Rs.29.22 lakhs for the period of four years. The details are presented in Table 69 A.

v) Implementation of the Project

The project will be implemented over a period of four years.

vi) Reporting

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

6.11.9.4 Arrangement of Buyers - Sellers Meet

i) Project Rationale

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

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

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

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

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

Buyers and sellers meet functions as platform linking agribusiness community namely farmers, traders, commission agents, agricultural processed food organizations, millers and 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 aspects of success i.e. technology and human resources. Besides display of agricultural commodities through exhibitions, the meet aspect covers all the latest market related interventions and provides need based solutions to farmers through direct contact with experts.

ii) Project Cost and Financing

In this project it is proposed to arrange for 40 buyers-sellers meet in Erode district over the period of four years. This will require resources of Rs.9.2 lakhs for the period of four years. The details are presented in Table 69 A.

6.11.9.5 Organizing the Exposure Visits to Important Markets with in the State and out side the State by Commodity Groups / Farmers and Extension Functionaries

i) Project Rationale

The goal of four percent growth in agriculture can only be achieved by increasing productivity per unit of land. Considering the costs and constraints of resources such as water, nutrients and energy, the genetic enhancement of productivity should be coupled with input use efficiency. This can be made possible only by creation and utilization of new and improved technology. Since new technology creation and development is a slow process, for attaining the desired four percent growth during the XIth Plan period, we will have to rely more on known and

proven technology. Agriculture research system claims to have a large number of promising technologies to achieve high growth and promote farming systems that improve natural resource base. However, these are not seen at farmers' fields at large. Visit of other areas, where new technologies are implementing successfully i.e., exposure visits is an important thing to enlighten the farmers for implementing those technologies in their areas also. It is easy to know the new technology through demonstration. Farmers will be selected to visit different places within the State where the technologies are well adopted. Therefore it is proposed to organize the exposure visit to important markets 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.

ii) Project Strategy

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

iii) Project Goals

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

iv) Project Components

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

v) Project Cost and Financing

Visit of important markets, where new opportunity for marketing of the commodity and consumer preference i.e., exposure visits to SAFAL market, Bangalore is an important thing to enlighten the farmers for marketing their produce

as well as consumer preference. It is easy to know the marketing of the commodity through observation and participation in the well developed markets. Farmers will be selected to visit different market places within the State where the new opportunities for marketing of commodities exist. This will require resources of Rs.31.403 lakhs for the period of four years. The details are presented in Table 69 A.

vi) Reporting

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

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

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

i) Project Rationale

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

farmers. Hence, there is an urgent need to strengthening of market extension centre at each district/ block level with LCD projectors and lap top computer including internet facilities.

ii) Project Strategy

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

iii) Project Goals

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

iv) Project Components

Strengthening of market extension centre at each district/ block level.

v) Project Cost and Financing

Over the last few years, mass media has seen a phenomenal growth in the country both in terms of reach and advance in technology. This medium has not been exploited to its full potential for the purpose of agricultural extension specifically market led extension. A concerted and well-coordinated effort now needs to be made to use the electronic media in the Extension strategy by strengthening infrastructure facility. In this project it is proposed to strengthening market extension centre in Erode district over the period of four years. This will require resources of Rs.5.00 lakhs for the period of four years. The details are presented in Table 69 A.

vi) Implementation of the Project

The project will be implemented over a period of four years.

vii) Reporting

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

6.11.9.7. Strengthening of Selected Village Shandies with Financial Assistance from NADP

i) Project Rationale

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

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

ii) Project Strategy

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

iii) Project Components

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

iv) Project Cost and Financing

In this project, it is proposed to strengthen Village Shandies in Erode district over the period of four years. This will require resources of Rs. 28.52 lakhs for the period of four years. The details are presented in Table 68.

v) Reporting

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

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

6.11.9.8 Capacity Building of Farmers' Skill

i) Project Rationale

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

The role of the market as knowledge and information exchange amongst the converging farmers needs to be appreciated and harnessed. Farmers get benefit from deregulation of markets, minimum guaranteed price scheme, contract farming, and crop/income insurance, only to the extent they organize in marketing groups, self-help groups, cooperatives or companies and learn skills suited to the new marketing environment. Understanding quality standards (including FAQ), learning the terms of contract and insurance, and choosing and preparing the produce for the market are going to be essential skills for farmers. There is a need for greater synergy between extension services and market. State Marketing Departments and Boards, APMCs, Krishi Vigyan Kendras (KVKs), Marketing Cooperatives, NGOs and PRIs should pay increasing attention to train the farmers in marketing related skills. All stakeholders in the Supply Chain (i.e. from farmers to consumers) should be exposed to the following characteristics and complexities of the marketing system to make it more efficient. Hence, in this project the following training programmes are proposed with budget requirement of Rs. 12.88 lakhs.

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

ii) Project Strategy

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

iii) Project Components

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

iv) Project Cost and Financing

In this project, it is proposed to organize about 112 trainings under Capacity Building of Farmers Skill titles for marketing of agricultural commodities in Erode district over the period of four years. This will require resources of Rs 12.88 lakhs for the period of four years. The details are presented in Table 69 A.

v) Reporting

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

6.11.9.9 Strengthening of Selected Market Infrastructure (equipments) through NADP Funding

i) Rationale

Considering the importance of different markets, there is an urgent need to develop these markets in a phased manner with necessary infrastructural amenities to have a strong base of the marketing channel. Suitability and adequacy of marketing infrastructure depends on the type and quantity of marketed surpluses of agricultural produce in the State. The estimated marketed surpluses of various commodities are given in Table 68 reflected the need for improvement in the market infrastructure in coming years.

Table 68. Estimates of Marketed Surpluses of Various Commodities

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

** Source of Marketed Surplus (MS) Output Ratio for Fruits and Vegetables is Achyra, S S (2003). Agricultural Marketing in India, (as a part of Millennium Study of Indian Farmers), p.134
(Original Source- Agril Statistics at a Glance 2001. Agril. Statistics Division, Directorate of Economics and Statistics, Ministry of Agriculture, New Delhi).

ii) Project Components

1. Purchasing and establishing price display board and mobile controlled display board
2. Purchasing and establishing collection centres
3. Purchasing and establishing chilli dryers
4. Purchasing and establishing cool chambers/cold storage
5. Purchasing and establishing price display mechanism and electronic weighing machines
6. Purchasing and establishing moisture meter
7. Purchasing and distribution of tarpaulins, plastic crates and storage bins

iii) Project Cost and Financing

In this project, it is proposed to strengthen market infrastructure in Erode district over the period of four years. This will require resources of Rs.186 lakhs for the period of four years. The details are presented in Table 69 A.

iv) Reporting

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

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

Table 69A. Original Project Proposals for Agricultural Marketing and Agri-Business

(Rs.in lakhs)

S.No	Components	2009			2010			2011			2012			Total
		Unit cost	Phy.	Fin.	Unit cost	Phy.	Fin.	Unit cost	Phy.	Fin.	Unit cost	Phy.	Fin.	
1	**Commodity group formation**													
	Paddy	0.2	12	2.4	0.22	12	2.64	0.24	12	2.88	0.26	12	3.12	11.04
	Coconut	0.2	12	2.4	0.22	12	2.64	0.24	12	2.88	0.26	12	3.12	11.04
	Sunflower	0.2	4	0.8	0.22	4	0.88	0.24	4	0.96	0.26	4	1.04	3.68
	Maize	0.2	5	1	0.22	5	1.1	0.24	5	1.2	0.26	5	1.3	4.6
	Turmeric	0.2	3	0.6	0.22	3	0.66	0.24	3	0.72	0.26	3	0.78	2.76
	Ragi	0.2	1	0.2	0.22	1	0.22	0.24	1	0.24	0.26	1	0.26	0.92
	Pulses	0.2	1	0.2	0.22	1	0.22	0.24	1	0.24	0.26	1	0.26	0.92
	Vegetables	0.2	2	0.4	0.22	2	0.44	0.24	2	0.48	0.26	2	0.52	1.84
2	**Market Intelligence dissemination**													
	LCD Display	0.1	5	0.5	0.11	5	0.55	0.12	0	0	0.13	0	0	1.05
	Newspaper	0.1	60	6	0.11	60	6.6	0.12	60	7.2	0.13	60	7.8	27.6
	LCD Display Rail	0.1	0	0	0.11	1	0.11	0.12	0	0	0.13	0	0	0.11
	Purchase of marketing materials	0.1	1	0.1	0.11	1	0.11	0.12	1	0.12	0.13	1	0.13	0.46
3	**Facilitation of contract farming**													
	Maize	0.15	10	1.5	0.165	10	1.65	0.18	6	1.08	0.195	6	1.17	5.4
	Sunflower	0.15	2	0.3	0.165	2	0.33	0.18	2	0.36	0.195	2	0.39	1.38

Table 69 A Contd…. **(Rs.in lakhs)**

S. No	Components	2009			2010			2011			2012			Total
		Unit cost	Phy.	Fin.	Unit cost	Phy.	Fin.	Unit cost	Phy.	Fin.	Unit cost	Phy.	Fin.	
4	**Capacity Building**													
	Warehousing & storage	0.1	4	0.4	0.11	4	0.44	0.12	4	0.48	0.13	4	0.52	1.84
	Market Intelligence	0.1	5	0.5	0.11	5	0.55	0.12	5	0.6	0.13	5	0.65	2.3
	Commodity Markets	0.1	4	0.4	0.11	4	0.44	0.12	4	0.48	0.13	4	0.52	1.84
	Post Harvest	0.1	5	0.5	0.11	5	0.55	0.12	5	0.6	0.13	5	0.65	2.3
	Grading	0.1	4	0.4	0.11	4	0.44	0.12	4	0.48	0.13	4	0.52	1.84
	Value addition	0.1	2	0.2	0.11	2	0.22	0.12	2	0.24	0.13	2	0.26	0.92
	Export Training	0.1	4	0.4	0.11	4	0.44	0.12	4	0.48	0.13	4	0.52	1.84
5	**Exposure visit to markets**													
	Within State	0.2	4	0.8	0.22	4	0.88	0.24	4	0.96	0.26	4	1.04	3.68
	Out side state	0.75	4	3	0.825	4	3.3	0.9	4	3.6	0.975	4	3.9	13.8
	Visit to National Markets	1.5	2	3	1.65	2	3.3	1.815	2	3.63	1.9965	2	3.993	13.923
6	**Arrangement of buyer seller meetings**	0.2	10	2	0.22	10	2.2	0.24	10	2.4	0.26	10	2.6	9.2
7	**Strengthening market extension centre**	2.5	2	5	2.75	0	0	3	0	0	3.25	0	0	5
8	**Strengthening village shandies**	0	0	0	0	0	0	0	0	0	0	0	0	0
	Market price surveillance	0.1	12	1.2	0.11	12	1.32	0.12	12	1.44	0.13	12	1.56	5.52
	Publicity - regulated market	5	1	5	5.5	1	5.5	6	1	6	6.5	1	6.5	23
9	**Market infrastructure activities**													
	Plastic Crates	0.005	2000	10	0.0055	2000	11	0.006	2000	12	0.0065	2000	13	46
	Tarpaulin	0.05	1000	50	0.055	500	27.5	0.06	500	30	0.065	500	32.5	140
Total			**3181**	**99.2**	**14.6355**	**2680**	**76.23**	**15.981**	**2670**	**81.75**	**17.343**	**2670**	**88.623**	**345.803**

Table 69 B. Additional Project Proposals for Agricultural Marketing and Agri-Business DDA(AB)

(Rs.in lakhs)

Sl. No.	Possible Development Interventions	2009-10		2010-20011		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	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/renovation of dilapidated ones	0	0.00	0	0.00	0	0.00	0	0.00
4	Construction of new auction halls/modernizing the existing ones	0	0.00	0	0.00	0	0.00	0	0.00
5	Construction of money disbursement halls/counters	0	0.00	0	0.00	0	0.00	0	0.00
6	Construction of office buildings and staff quarters	1	50.00	0	0.00	0	0.00	1	50.00
7	Installation of processing units/purchase of new instruments in the premises of the regulated markets								
	(i) Mechanical drier	0	0.00	0	0.00	0	0.00	0	0.00
	(ii) Mechanical winnower	0	0.00	0	0.00	0	0.00	0	0.00
	(iii) Groundnut decorticator	0	0.00	0	0.00	0	0.00	0	0.00
	(iv) Sieving machine	0	0.00	0	0.00	0	0.00	0	0.00
	(v) Cotton Ginning Unit / Pressing Unit	0	0.00	0	0.00	0	0.00	0	0.00
	(vi) Coconut Kernel drying and oil processing units	0	0.00	0	0.00	0	0.00	0	0.00
	(vii) Packaging Units	0	0.00	0	0.00	0	0.00	0	0.00

Contd., **Rs.in lakhs**

Sl. No.	Possible Development Interventions	2009-10		2010-20011		2011-2012		Total	
		Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
8	Strengthening the State Ghee and Oil Grading Laboratories								
	a) Electronic Balance	7	2.50	0	0.00	0	0.00	7	2.50
	b) Refrigerater	7	1.40	0	0.00	0	0.00	7	1.40
	c) Digital water bath	7	0.70	0	0.00	0	0.00	7	0.70
	d) Water soil	7	0.70	0	0.00	0	0.00	7	0.70
	e) Digital Hot Air oven	7	1.40	0	0.00	0	0.00	7	1.40
	f) Chromotography	2	3.00	0	0.00	0	0.00	2	3.00
	g) Spectrophotometer	2	0.80	0	0.00	0	0.00	2	0.80
	h) Ghee R.M.Unit	7	0.50	0	0.00	0	0.00	7	0.50
	i) B.R.Meter	7	1.40	0	0.00	0	0.00	7	1.40
	j) Heating mandle	7	0.30	0	0.00	0	0.00	7	0.30
	k) Gas connection	7	0.30	0	0.00	0	0.00	7	0.30
	l) Hot plate	7	0.30	0	0.00	0	0.00	7	0.30
9	Strengthening the Commercial Grading Centres with Laboratory facilities (more numbers can also be included)	2	3.00	1	1.50	1	1.50	4	6.00
10	Strengthening the infrastructure facilities in the Uzhavar Shandies	0	0.00	0	0.00	0	0.00	0	0.00

Contd.,

Sl. No.	Possible Development Interventions	2009-10		2010-20011		2011-2012		Total	
		Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
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								
	a) Deputy Director Agriculture (AB) office	1	1.75	0	0.00	0	0.00	1	1.75
	b) Uzhavar Shandhai	3	1.50	0	0.00	0	0.00	3	1.50
	c)Agmark Laboratories	7	3.50	0	0.00	0	0.00	7	3.50
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								
	a) Digital moisture meter	4	0.50	0	0.00	0	0.00	4	0.50
	b) Handy Moisture meter	4	0.10	0	0.00	0	0.00	4	0.10
15	Provision of Oil testing machines							0	0.00
16	Provision of Electronic weighing machines (upto 5 kgs.)	4	0.10	0	0.00	0	0.00	4	0.10
17	Others if any (Specify)	0	0.00	0	0.00	0	0.00	0	0.00
II.	**Publicity and Propaganda**							0	0.00
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

Contd.,

Sl. No.	Possible Development Interventions	2009-10		2010-20011		2011-2012		Total	
		Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
3	Strengthening the regional Publicity and Propaganda wings of the Marketing Board and establishing more regional units	0	0.00	0	0.00	0	0.00	0	0.00
4	i) Pre-harvest campaigns on large scale	20	1.00	20	1.00	20	1.00	60	3.00
	ii) Post harvest campaign	20	1.00	20	1.00	20	1.00	60	3.00
	iii) Value addition training	16	1.60	16	1.60	16	1.60	48	4.80
5	Others if any (Specify)	0	0.00	0	0.00	0	0.00	0	0.00
III.	**Public relations**							0	0.00
1	Construction of bus-stop shed un front of the regulated markets and in selected villages	0	0.00	0	0.00	0	0.00	0	0.00
2	Taking up public relations activities in the villages	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

Contd.,

Sl. No.	Possible Development Interventions	2009-10		2010-20011		2011-2012		Total	
		Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
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)**	0	0.00	0	0.00	0	0.00	0	0.00
	Grand Total	**156**	**77.35**	**57**	**5.10**	**57**	**5.10**	**270**	**87.55**

Table 69 C. 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	5	150.00	5	155.00	5	160.00	15	465.00
2	Storage godowns for storing produce under lock and key for few days	3	24.00	3	30.00	3	36.00	9	90.00
3	Construction of new drying yards/renovation of dilapidated ones	10	40.00	10	45.00	10	50.00	30	135.00
4	Construction of new auction halls/modernizing the existing ones	9	90.00	10	100.00	7	70.00	26	260.00
5	Construction of money disbursement halls/counters	5	30.00	2	13.00	6	42.00	13	85.00
6	Construction of office buildings and staff quarters	2	30.00	0	0.00	0	0.00	2	30.00
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	0	0.00	0	0.00	0	0.00	0	0.00
	(iii) Groundnut decorticator	0	0.00	0	0.00	0	0.00	0	0.00
	(iv) Sieving machine	0	0.00	0	0.00	0	0.00	0	0.00
	(v) Cotton Ginning Unit / Pressing Unit	0	0.00	0	0.00	0	0.00	0	0.00
	(vi) Coconut Kernel drying and oil processing units	0	0.00	0	0.00	0	0.00	0	0.00
	(vii) Packaging Units	0	0.00	0	0.00	0	0.00	0	0.00
8	Strengthening the State Ghee and Oil Grading Laboratories	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.
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**	0	0.00	0	0.00	0	0.00	0	0.00
1	Market committee-wise strengthening of the Publicity and Propaganda units	0	0.00	0	0.00	0	0.00	0	0.00
2	Market committee-wise purchase of extension education aids	5	5.00	5	5.00	5	5.00	15	15.00
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	2	2.00	2	2.50	2	3.00	6	7.50
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	1	1.00	1	1.20	1	1.40	3	3.60
2	Taking up public relations activities in the villages	5	0.10	5	0.15	5	0.35	15	0.60
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	45	2.25	70	3.50	50	2.50	165	8.25
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	1	3.00	1	3.30	1	3.70	3	10.00
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)	2	0.50	2	0.60	2	0.80	6	1.90
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	3	6.00	3	7.00	3	8.00	9	21.00
2	Construction/modernization of the common toiletry facilities in the regulated markets	2	2.00	2	2.20	2	2.30	6	6.50
3	Provision of parking lot facilities in the needy centers	2	2.00	2	2.20	2	2.30	6	6.50

Contd.,

Sl. No.	Possible Development Interventions	2009-10		2010-2011		2011-2012		Total	
		Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
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)**	0	0.00	0	0.00	0	0.00	0	0.00
	Grand Total	**102**	**387.85**	**123**	**370.65**	**104**	**387.35**	**329**	**1145.85**

Budget Abstract

(Rs.in lakhs)

Sl.No.	Particulars	2008-09	2009-10	2010-11	2011-12	Total
A.	Original Project	99.20	76.23	81.75	88.62	345.80
B.	Additional Project DDA(AB)	-	77.35	5.10	5.10	87.55
C.	Additional Project Market Committee	-	387.85	370.65	387.35	1145.85
	Grand Total	**99.20**	**541.43**	**457.50**	**481.07**	**1579.20**

6.12 Sericulture Development under NADP

i) Goals of Sericulture Department in Erode District are

Enhancing the silk output so as to be able to export if possible and reduce imports to the extent possible.

- To improve the quality of silk so as to cater to the demands of the industry.
- To produce silk of global standards.
- To create employment and avenues of generation of income for the people.
- To improve the standards of living of the farmers.
- Optimum utilization of resources to meet the above ends by increasing capacities, productivities etc.
- To make the activity sustainable for long term returns.

To achieve these goals the following activities are proposed under financial support from NADP (Table 70):

Table. 70 Proposed Activities for Sericulture Development under NADP

(Rs in Lakhs)

Name of the Scheme	2008-2009		2009-2010		2010-2011		2011-2012	
	Projected Area: 6000 Acre's		Projected Area: 7000 Acre's		Projected Area : 8000 Acre's		Projected Area : 9000 Acre's	
	Projected Cocoon: 39.00 Lakh's KG		Projected Cocoon: 45.50 Lakh's KG		Projected Cocoon: 56.00 Lakh's KG		Projected Cocoon: 63.00 Lakh's KG	
	Unit (Acre)	Amount (Rs. in lakhs)	Unit (Acre)	Amount (Rs. in lakhs)	Unit (Acre)	Amount (Rs. in lakhs)	Unit (Acre)	Amount (Rs. in lakhs)
Reimbursement of cost of saplings (Rs. in lakhs)	300	16.5	300	16.5	300	0.165	300	16.5
Assistance to farmers for Establishment of chawki Rearing Centers.	3	5.175	5	8.625	5	8.625	5	8.625
Assistance to Farmers for construction of Rearing houses. (Lev:1)	75	45.000	75	45.000	100	60.000	100	60.000
Assistance to Farmers for construction of Rearing houses. (Lev:2)	175	48.125	175	48.125	250	68.750	250	68.750
Assistance to CRC Entrepreneur & TSC for incubation chamber	18	18.000	3	3.000	5	5.000	5	5.000
Assistance to Farmers for procurement of rearing appliance	175	52.500	175	52.500	250	75.000	250	75.000
Strengthening of TSC's	10	3.000	0	0.000	0	0.000	0	0.000
Establishment of new Cottage basin reeling units and assistance for training	5	24.500	5	24.500	5	24.500	5	24.500
Establishment of new Twisting units	5	28.875	5	28.875	7	40.420	10	57.750
Grand Total		**241.675**		**227.125**		**298.795**		**316.125**

Source: Records of the Office of the Assistant Director of Sericulture, Erode

TABLE 71: BUDGET PROPOSAL – ANIMAL HUSBANDRY SECTOR – 2008 -2012

S.No.	Scheme Components	Unit Cost	2008-2009		2009-2010		2010-2011		2011-2012		Total	
			No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost
I	**FEED AND FODDER DEVELOPMENT**											
1	Augmentation of fodder production (Co-3) through SHGs/women entrepreneurs 0.235 lakhs/acre, 10 acres/block/year, 20 blocks, 200 acres/year for 4 years, 800 acres in 4 years (DAH)	0.235	200	47	200	47	200	47	200	47	800	188.00
2	Establishment of 6x6x6 feet silo to ensile sugarcane tops @Rs.0.15 Lakh/unit, 75% subsidy, 50 units/year, 200 units in 4 years (DAH)	0.1125	50	5.625	50	5.625	50	5.625	50	5.625	200	22.50
3	Supply of mineral mixture to dairy cows @ Rs.600/cow/year, 1 kg/cow/month @ Rs.50/kg, 12 kg/year, 5000 cows/year, 20,000 cows in 4years - 4 blocks (DAH)	0.006	5000	30	5000	30	5000	30	5000	30	20000	120.00
4	Supply of hand operated chaff cutters to SHG farmers @ Rs.0.20 Lakh/unit, 50% subsidy, 1 unit/block/year, 20 blocks, for 4 years,20 units/year, 80 units in 4 years totally (DAH)	0.1	20	2	20	2	20	2	20	2	80	8.00
5	Supply of mineral mixture to the milch animals at subsidized cost (50% subsidy), @ 18 kg per year, (DDD)	0.005	2750	13.75	2750	13.75	2750	13.75	2750	13.75	11000	55.00

S.No.	Scheme Components	Unit Cost	2008-2009		2009-2010		2010-2011		2011-2012		Total	
			No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost
6	Supply of by-pass protein feed to the milch animals (360 kg/animal/year @ 50% subsidized cost of Rs.9/- per kg (DDD)	0.033	300	9.9	300	9.9	300	9.9	300	9.9	1200	39.60
7	Chaff cutters for elite farmers (small type) @ Rs.0.20 Lakhs as 100% grant (DDD)	0.2	4	0.8	2	0.4	2	0.4	2	0.4	10	2.00
8	Fodder development activities for production of fodder seed/slips in dairy or chilling centres and land of DDD) 5 Acres (DDD)	2.1	5	10.5	0	0	0	0	0	0	5	10.50
9	Fodder development activities 50 acres in farmers field (DDD)	0.235	15	3.525	15	3.525	10	2.35	10	2.35	50	11.75
II	**GENETIC UPGRADATION**											
1	Identification and traceability of breedable bovines @ Rs.20/animal, for 2,92,800 animals (DAH)	0.0002	292800	58.56	0	0	0	0	0	0	292800	58.56
2	Programmed breeding indigenous cattle and buffalo to increase conception rate (DDD)	0.007	5100	35.7	5100	35.7	5100	35.7	5100	35.7	20400	142.80
III	**IMPROVEMENT OF LIVESTOCK HEALTH**											
1	Establishment of mobile veterinary clinics @ Rs.5.832 Lakhs/unit, one unit/taluk, 4 taluks, 4 units, (DAH)	5.832	4	23.328	0	0	0	0	0	0	4	23.328

S.No.	Scheme Components	Unit Cost	2008-2009		2009-2010		2010-2011		2011-2012		Total	
			No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost
2	Institutional Development-Strengthening of veterinary institutions with basic facilities like fencing, bore-wells, water troughs, minor repairs etc. @ Rs.5.0 Lakh /Institution, for 48 units (DAH)	5	48	240	0	0	0	0	0	0	48	240.00
3	Establishment of a mobile veterinary diagnostic laboratory @ Rs.12.00 Lakhs /unit, one unit (DAH)	12	1	12	0	0	0	0	0	0	1	12.00
4	Control of parasitic diseases through treatment to enhance vaccine response @ Rs.1/sheep or goat and Rs.3 /calf, 4 times per year, Rs.15.82 Lakhs/year, for 4 years, (DAH)			15.82		15.82		15.82		15.82		63.28
5	Buffalo calf development programme (300 calves/year) (DDD)	0.148	300	44.4	300	44.4	300	44.4	300	44.4	1200	177.60
6	Mobile input units @ Rs.4.5 Lakhs/unit, 14 units (DDD)	4.5	14	63	0	0	0	0	0	0	14	63.00
IV	**PROCESSING AND MARKETING FACILITIES**											
1	Portable milking machines for farmers(DDD)	0.18	25	4.5	25	4.5	25	4.5	25	4.5	100	18.00
2	Bulk milk cooler (DDD)	30	1	30	0	0	0	0	0	0	1	30.00
3	Walk-in coolers (DDD)	30	1	30	0	0	0	0	0	0	1	30.00
4	Revival of dormant MPCS (DDD)	1	5	5	5	5	5	5	5	5	20	20.00
5	Manufacturing facilities for milk khoa(DDD)	0.77	1	0.77	1	0.77	0	0	0	0	2	1.54
6	Manufacturing facilities for panner (DDD)	1.02	1	1.02	1	1.02	0	0	0	0	2	2.04

S.No.	Scheme Components	Unit Cost	2008-2009		2009-2010		2010-2011		2011-2012		Total	
			No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost
7	Manufacturing facilities for ice-cream (DDD)	1.12	1	1.12	1	1.12	0	0	0	0	2	2.24
8	Milk weighing machines for milk producers co-operated societies (DDD)	0.17	50	8.5	50	8.5	50	8.5	50	8.5	200	34.00
9	PC based automatic milk collection stations to milk producers co-operative societies (DDD)	1.75	4	7	2	3.5	2	3.5	2	3.5	10	17.50
10	Energy management system (DDD)	10	1	10	0	0	0	0	0	0	1	10.00
V	**EXTENSION FACILITIES**											
1	Farmers study tour at Rs.5000/farmer (DDD)	0.05	40	2	40	2	40	2	30	1.5	150	7.50
2	Skill development training for technical staff (DDD)	0.05	35	1.75	35	1.75	35	1.75	35	1.75	140	7.00
3	Orientation training/workshop for milk producers at society level (DDD)	0.2	4	0.8	4	0.8	4	0.8	4	0.8	16	3.20
4	Strengthening of TANUVAS Centre at Erode with facilities for skill oriented training programmes and disease investigation Rs.10.00 Lakhs/ unit, 1 unit (TANUVAS)	10	1	10	0	0	0	0	0	0	1	10.00
5	Training programmes on modern technologies in livestock farming under CAT, 2 days, 20 farmers per batch, Rs.10,000/batch, 20 batches, (TANUVAS)	0.1	5	0.5	5	0.5	5	0.5	5	0.5	20	2.00

S.No.	Scheme Components	Unit Cost	2008-2009		2009-2010		2010-2011		2011-2012		Total	
			No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost
6	Skill oriented training programmes on value-addition of milk and meat to women SHGs, 2 days, 20 members/ batch,Rs.10,000/ batch, 20 batches (TANUVAS)	0.1	5	0.5	5	0.5	5	0.5	5	0.5	20	2.00
	SMALL RUMINANTS											
I	**FEED AND FODDER DEVELOPMENT**											
1	Supply of salt licks to SHG goat farmers with 10 goats, @ Rs.50/salt lick, 4 salt licks/year, Rs.200/farmer/year 1000 farmers/year, 4000 farmers in 4 years (DAH)	0	1000	2	1000	2	1000	2	1000	2	4000	8.00
II	**GENETIC UPGRADATION**											
1	Supply of Tellicherry bucks (80 nos) to women SHG farmers @ Rs.4000 / buck (DAH)	0.04	80	3.2	0	0	0	0	0	0	80	3.20

S.No.	Scheme Components	Unit Cost	2008-2009		2009-2010		2010-2011		2011-2012		Total	
			No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost
III.	**EXTENSION FACILITIES**											
1	Training programmes on scientific sheep and goat rearing to women SHGs, 2 days, 20 members/ batch, Rs.10,000/batch, 40 batches, (TANUVAS)	0.1	10	1	10	1	10	1	10	1	40	4.00
2	Training programmes on hygienic meat production, processing and establishment of modern retail meat units to women SHGs, 2 days, 20 members/ batch, Rs.10,000/batch, 40 batches, (TANUVAS)	0.1	10	1	10	1	10	1	10	1	40	4.00
IV.	**OTHERS**											
1	Supply of stall-fed goat units (20+1 unit) to SHGs @ Rs.0.42 Lakhs/unit, one unit/block/year, 20 blocks, 4 years, 80 units, (DAH)	0.42	20	8.4	20	8.4	20	8.4	20	8.4	80	33.60
2	Strengthening of PDDL, Erode for 'NAI Free Establishment Certification' – Import of ELISA kits and consumables Rs.0.20 Lakhs/kit, for 336 kits and consumables for Rs.0.30 Lakhs (one kit to screen 225 samples and 336 kits to screen 75,600 sera samples (DAH)	0	0	67.5	0	0	0	0	0	0	0	67.50
	DISTRICT TOTAL			**812.475**		**250.438**		**246.395**		**245.93**		**1555.238**

A. Feed and Fodder development

Abstract

Intensive fodder production activity will be taken up by the Department of Animal Husbandry, Erode, covering a total area of 800 acres at the rate of 10 acres/block/year in all the 20 blocks of the district for a total period of 4 years through Self Help Groups and women entrepreneurs at a total cost of Rs. 188 lakhs. The Aavin, Coimbatore, will also take up fodder cultivation activity of 50 acres in the land available at Unions, Chilling Centers, and Milk Producers Co-operative Societies. The Aavin, Erode will also produce fodder slips and seeds in the 5 acres of land available at dairy and chilling centers. The total cost of fodder and fodder seeds and slips production through Aavin, Erode will be Rs. 22.25 lakhs for 55 acres totally.

Mineral mixture will be supplied to the dairy cows through the Department of Animal Husbandry, Erode to the small farmers at Rs.600/- per cow per year (One kg/animal/month, 12 kg for one year, @ Rs.50/kg) at subsidized rate @ 5000 farmers per year, for 4 years. A total of 20,000 cows will be supplemented with mineral mixture at a total cost of Rs.120.00 lakhs. The Aavin, Erode will supply mineral mixture to the milch animals of the society members at subsidized cost (50 % subsidy) of Rs. 500/- @ 18 kg per year/cow. A total number of 11000 animals will be benefited at a total cost of Rs. 55 lakhs. Improvement in milk yield and fertility rates is expected from these 31000 cows benefited. Salt licks will be supplied by the Department of Animal Husbandry, Erode to the SHG goat farmers with 10 goats, @ Rs.50/salt lick, 4 salt licks per year/farmer, Rs.200/year/farmer, for 4000 farmers at a total cost of Rs. 8.00 lakhs.

Hand operated chaff cutters will be supplied by the Department of Animal Husbandry, Erode to the SHG farmers at Rs.20,000/- per unit with 50 per cent subsidy (Rs.10000/- per unit), one unit per block per year, 20 units per year, 80 units in a total period of 4 years at a total cost of Rs. 8 lakhs. The Aavin, Erode will supply 10 numbers of hand operated chaff cutters @ Rs.0.20 lakh/unit to the elite members at one unit/farmer at a total cost of Rs. 2.00 lakhs.

The Aavin, Erode will supply by-pass protein feed to the milch animals of the members of the society (360 kg/animal/year) for 1200 cows @ 50% subsidy of Rs.9/- per kg. The total cost will be Rs. 39.6 lakhs. A total number of 200 units of silo pits will be established for ensiling of sugarcane tops in a period of 4 years through the Department of Animal Husbandry, Erode @ 50 units per year @ Rs. 0.15 lakhs/unit @ 75% subsidy. The total cost of the project will be Rs. 22.5 lakhs.

Budget

Sl. No.	Particulars	Amount (Rs. in lakhs)
1.	Augmentation of fodder production (Co-3) through SHG/women entrepreneurs, Rs. 0.235 lakhs/acre, 10 acres/block/year, 20 blocks, for 4 years, 800 acres totally (DAH)	188.0
2.	Fodder production at Unions, Chilling Centers, Dairies and MPCS @ Rs.0.235 lakhs/acre, 50 acres. (DDD)	11.75
3.	Fodder slips and seeds production in dairy and chilling centers @ Rs.2.1 lakhs/acre, 5 acres totally (DDD)	10.50
4.	Supply of mineral mixture to dairy cows @ Rs.600/cow/year, for 20,000 cows (DAH)	120.00
5.	Supply of mineral mixture at 50% subsidy @ Rs. 500/- for 18 kg (one year supply) for 11000 animals (DDD)	55.00
6.	Supply of salt licks to SHG goat farmers with 10 goats, @ Rs.50/salt lick, 4 salt licks per year/farmer, Rs.200/year/farmer, for 4000 farmers (DAH)	8.00
7.	Supply of hand operated chaff cutters to SHG farmers @ Rs.0.20 lakhs/unit, 50% subsidy, 1 unit/block/year, 20 blocks, 80 units for 4 years (DAH)	8.00
8.	Provision of hand operated chaff cutters to elite farmers @ Rs.0.20 lakh/unit, one unit/farmer, 10 units totally for 10 farmers (DDD)	2.00
9.	Supply of by-pass protein feed to the milch animals (360 kg/animal/year) @ 50 % subsidy, Rs.9/kg, Rs.3,300/- per animal /year, for 1200 cows in a period of 4 years (DDD)	39.60
10.	Establishment of 6x6x6 feet silo to ensile sugarcane tops Rs. 0.15 lakhs/unit, 75% subsidy, 50 units/year, 200 units in 4 years (DAH)	22.50
	Total	**465.35**

Background/ Problem focus

With shrinkage of pasture lands, rapid urbanization and conversion of agricultural lands in to residential sites, Erode district is facing a severe shortage of fodder. The district is 67.9% deficit in green fodder and 83.6% deficit in dry fodder. Many farmers do not supplement minerals in the feed of dairy cattle due to lack of awareness. Supplementation of minerals in dairy cows will improve milk production and reduce infertility problems. Supplementation of micronutrients in small ruminants is not a common practice among the poor farmers. In ruminants, decreasing the particle size of fodder will enhance the utilization of nutrients and improve the production. Most of the dairy farmers are unaware of this technology. By-pass protein feeding is a newer technology in dairy nutrition. It enhances milk production and nutrient utilization with an overall improvement in production and productivity in dairy cows. Conventional feeding although is cheaper does not provide a complete feed to the dairy cows leading to nutritional deficiencies and decreased production and productivity.

Project rationale

There is an acute shortage of fodder and the farmers find it difficult to maintain high producing dairy cows owing to the huge demand for green and dry fodder. Hence intensive fodder production activity has to be taken up to meet this heavy demand. Supplementation of micronutrients and by-pass protein feed to dairy cows and micronutrients to goats is not a common practice and sensitization of the farmers through supply of mineral mixture for their cows and goats for one year will help them to realize their importance. Chopping of fodder will help in the effective utilization of nutrients. Further, ensiling of sugarcane tops during surplus production will help in the availability of fresh fodder to the animals during periods of non-availability. Thus ensiled sugarcane tops will retain the freshness and nutrients including vitamins and enhance the assimilation leading to overall improvement in production and productivity.

Project strategy

- Self Help Groups and interested women entrepreneurs will be selected from each block. Augmentation in quality and quantity of fodder from common property resources through group approach is proposed. Fodder slips will be procured from

State Agricultural University and members who have water source alone will be selected. 10 acres of Co-3 fodder will be produced per block involving the SHGs and interested women entrepreneurs. They will be supplied with all inputs for fodder production. Training on scientific fodder production will be given to the SHGs @ Rs.0.035 lakh/SHG. Inputs for fodder production will be provided @ Rs.0.20 lakhs/acre. A total number of 20 Groups will be involved in fodder production in all the 20 blocks @ 10 acres/block/year for a period of 4 years. The project will be implemented by the Department of Animal Husbandry, Erode.

- Fodder production will be taken up by Aavin, Erode in the 50 acres at the members' fields. The cost of production of fodder per acre will be Rs.0.235 lakhs and the total cost of fodder production for 50 acres will be Rs.11.75 lakhs. Further Aavin, Erode will produce fodder seeds and slips in the 5 acres of land available at the dairy or chilling centres @ Rs.2.1 lakhs per acre and the total cost of production will be Rs. 10.5 lakhs.

- There are 20 blocks in the district with a total cross-bred cattle population of about 2.5 lakhs numbers. Infertility is the major problem and deficiency of minerals in the feed of cattle is common since most of the farmers do not provide a complete feed to their cows. Hence supply of 40 grams of mineral mixture per cow per day for one year will largely help to augment milk production and to improve the fertility rate in the cows. The cost of a kg of mineral mixture is Rs.50/- and is sufficient to feed a cow for one month. A total of Rs.600/- is necessary to provide 40 grams of mineral mixture per day per cow for one year. A total of 20,000 cows will be supplied with mineral mixture. Improvement in milk yield and fertility rates is expected from the 20,000 cows benefited. This project will be taken up by the Department of Animal Husbandry, Erode. Mineral mixture will also be supplied by the Aavin, Erode to the milch animals of the members of the society at subsidized cost (50%), @ 18 kg/year/cow @ Rs.500/cow/year. A total number of 11000 cows will be benefited at a total cost of Rs. 55 lakhs.

- Salt licks will be supplied by the Department of Animal Husbandry, Erode to the SHG goat farmers with 10 goats. A total number of 4 salt licks will be supplied to each farmer per year, @ Rs.50/salt lick. A total number of 4000 farmers will be supplied with salt licks at a total cost of Rs.8.00 lakhs.

- Hand operated chaff cutters will be supplied by the Department of Animal Husbandry, Erode to the SHG farmers at Rs.20,000/- per unit (50% subsidy) , one unit per block per year, 20 units per year, 80 units in a total period of 4 years at a total cost of Rs. 8 lakhs.

- Hand operated chaff cutters will be supplied to ten elite farmers @ Rs.0.20 lakh/unit at one unit/farmer as 100% subsidy, for 10 farmers totally at a cost of Rs.2.00 lakhs.. This project will be implemented by Aavin, Erode.

- The Aavin, Erode will supply by-pass protein feed to the milch animals of the members of the society (360 kg/animal/year) for 1200 cows @ 50% subsidy of Rs.9/- per kg. The total cost will be Rs. 39.6 lakhs.

- A total number of 200 units of silo pits will be established for ensiling of sugarcane tops in a period of 4 years through the Department of Animal Husbandry, Erode @ 50 units per year @ Rs. 0.15 lakhs/unit @ 75% subsidy. The total cost of the project will be Rs. 22.5 lakhs.

Project goals

- Augmentation of fodder production to meet the fodder shortage (850 acres totally)
- Supplementation of micronutrients in the feed of dairy cows and goats to enhance production and fertility.
- Enhancement of nutrient utilization in fodder by use of hand-operated and mechanized chaff cutters to enhance the nutrient utilization.
- Supply of by-pass protein to 1200 milch animals to enhance production.
- Production of fodder seeds and slips to augment fodder production (5 acres totally)
- Establishment of 200 units of silo pits for ensiling sugarcane tops to enhance the availability and utilization of nutrients.

Project components

- Fodder production – 850 acres
- Fodder seeds and slips production – 5 acres
- Mineral mixture supply to 31000 cows
- Supply of salt lick to 4000 goat farmers
- Provision of hand operated chaff cutters to elite farmers – 90 units
- Establishment of 200 units of silo pits to ensile sugarcane tops.
- Supply of by-pass protein feed to 1200 milch animals.

Project cost and financing

I. Fodder production

Unit Cost of Fodder Production

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 farm yard manure 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
	Total cost of cultivation of fodder per acre	**:**	**23,525.00**

(Rs. in lakhs)

Project	2008-2009	2009-2010	2010-2011	2011-2012	Total amount
1. Augmentation of fodder production (Co-3) through SHG/women entrepreneurs, Rs. 0.235 lakhs/acre, 200 acres/year for 4 years, 800 acres totally (DAH)	47.00	47.00	47.00	47.00	**188.00**
2. Fodder production in 50 acres by Aavin Erode @ 0.235 lakhs/acre in four years (DDD)	3.525	3.525	2.35	2.35	**11.75**
3. Fodder slips and seeds production in dairy and chilling centers @ Rs.2.1 lakhs/acre(Land Development Rs.0.70 lakh, implements/ equipments – Rs. 0.10 lakh, store room – Rs. 0.20 lakh, facilities for irrigation – Rs. 0.50 lakh and recurring expenditure – Rs. 0.60 lakh), 5 acres totally (DDD)	10.50	-	-	-	**10.50**
4. Supply of mineral mixture to dairy cows @ Rs.600/cow/year, for 20,000 cows. The cost of mineral mixture per kg is Rs.50/- The requirement is 1kg/cow/month, 12 kg/cow/year, for 20,000 cows (DAH)	30.00	30.00	30.00	30.00	**120.00**
5. Supply of mineral mixture to the milch animals of the members of the society at subsidized cost (50%), @ 18 kg/year/cow @ Rs.500/cow/year for a total number of 11000 cows	13.75	13.75	13.75	13.75	**55.00**
6. Supply of salt licks to SHG goat farmers with 10 goats, @ Rs.50/salt lick, 4 salt licks per year/farmer, Rs.200/year/farmer, for 4000 farmers	2.00	2.00	2.00	2.00	**8.00**

7. Provision of hand operated chaff cutters to SHG farmers @ Rs.0.20 lakh/unit, 50% subsidy, one unit/ block/year, 20 blocks, for 4 years, 80 units totally	2.00	2.00	2.00	2.00	**8.00**
8. Provision of hand operated chaff cutters to elite farmers @ Rs.0.20 lakh/unit, one unit/farmer, 10 units totally for 10 farmers (DDD)	0.80	0.40	0.40	0.40	**2.00**
9. Supply by-pass protein feed to the milch animals of the members of the society (360 kg/animal/year) for 1200 cows @ 50% subsidy of Rs.9/- per kg. (DDD)	**9.90**	**9.90**	**9.90**	**9.90**	**39.60**
10. Establishment of 6x6x6 feet silo to ensile sugarcane tops Rs. 0.15 lakhs/unit, 75% subsidy, 50 units/year, 200 units in 4 years (DAH)	**5.625**	**5.625**	**5.625**	**5.625**	**22.50**
Total	**125.10**	**63.675**	**63.675**	**63.675**	**465.35**

Implementation chart of the project

Project	2008-2009	2009-2010	2010-2011	2011-2012
1. Augmentation of fodder production (CO-3) through SHG/women entrepreneurs, Rs. 0.235 lakhs/acre, 10 acres/block/year, 20 blocks, for 4 years, 800 acres totally (DAH)	✓	✓	✓	✓
2. Fodder production at Unions, Chilling Centers, Dairies and MPCS @ Rs.0.235 lakhs/acre, 50 acres. (DDD)	✓	✓	✓	✓
3. Fodder slips and seeds production in dairy and chilling centers @ Rs.2.1 lakhs/acre, 5 acres totally (DDD)	✓			
4. Supply of mineral mixture to dairy cows @ Rs.600/cow/year, for 20,000 cows (DAH)	✓	✓	✓	✓
5. Supply of mineral mixture at 50 % subsidy @ Rs. 500/- for 18 kg (one year supply) for 11000 animals (DDD)	✓	✓	✓	✓

6. Supply of salt licks to SHG goat farmers with 10 goats, @ Rs.50/salt lick, 4 salt licks per year/farmer, Rs.200/year/farmer, for 4000 farmers (DAH)	✓	✓	✓	✓
7. Supply of hand operated chaff cutters to SHG farmers @ Rs.0.20 lakhs/unit, 50% subsidy, 1 unit/block/year, 20 blocks, 80 units for 4 years (DAH)	✓	✓	✓	✓
8. Provision of hand operated chaff cutters to elite farmers @ Rs.0.20 lakh/unit, one unit/farmer, 10 units totally for 10 farmers (DDD)	✓			
9. Supply of by-pass protein feed to the milch animals (360 kg/animal/year) @ 50 % subsidy, Rs.9/kg, Rs.3,300/- per animal /year, for 1200 cows in a period of 4 years	✓	✓	✓	✓
10. Establishment of 6x6x6 feet silo to ensile sugarcane tops Rs. 0.15 lakhs/unit, 75% subsidy, 50 units/year, 200 units in 4 years	✓	✓	✓	✓

Reporting

Fodder and fodder seeds and slips production

The Regional Joint Director of Animal Husbandry, Erode and the General Manager, The Erode District Co-operative Milk Producers Union Limited, Erode will implement the projects. Monthly progress of the projects will be submitted to the concerned higher authorities.

Supply of mineral mixture and by-pass protein feed to the dairy cows and salt licks to goat farmers

The General Manager, The Erode District Co-operative Milk Producers Union Limited, Erode and the Regional Joint Director of Animal Husbandry, Erode, will implement the projects. Monthly progress of the projects will be submitted to the concerned higher authorities.

Provision of hand operated chaff cutters to SHG and elite farmers

The General Manager, The Erode District Co-operative Milk Producers Union Limited, Erode and the Regional Joint Director of Animal Husbandry, Erode will

implement the projects. Monthly progress of the projects will be submitted to the concerned higher authorities.

Establishment of 200 units of 6x6x6 feet silo to ensile sugarcane tops

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

B. Genetic Upgradation of livestock and improvement of livestock health

Abstract

a. Tracking the breedable bovines in the district

It is estimated that the district has a total number of 2,92,800 breedable bovine population. Tracking the breedable bovines with an ear tag and a passbook at a cost of Rs.20/- per animal is proposed. The total outlay is Rs. 58.56 lakhs. The project will be jointly implemented by the Department of Animal Husbandry, Erode and Aavin, Erode.

b. Synchronized breeding of cattle and buffaloes

Estrus synchronization will be carried out in 20,400 numbers of cattle and buffaloes to increase the conception rate at a total cost of Rs. 142.80 lakhs @ Rs.700 / animal. The project will be implemented by Aavin, Erode.

c. Genetic upgradation of goats

Tellicherry bucks (superior germ plasm) will be maintained by the Self Help Group Women in the district for cross-breeding of the non-descript poorly performing goats to augment chevon production. Each active SHG will be provided with one Tellicherry buck @ Rs. 4,000/- per buck. A total number of 80 bucks will be supplied at a total cost of Rs. 3.20 lakhs. The project will be implemented by the Department of Animal Husbandry, Erode.

d. Establishment of mobile veterinary clinics, mobile diagnostic laboratory and mobile input units

Mobile veterinary clinics (4 units) will be established at a total cost of Rs. 23.328 lakhs @ Rs.5.832 lakhs/unit under the Department of Animal Husbandry,

Erode for provision of health cover facilities in remote areas in the district. A mobile veterinary diagnostic laboratory will be established at a cost of Rs.12.00 lakhs/unit by the Department of Animal Husbandry, Erode. Mobile input routes (14 units) will be established under the Aavin, Erode at a total cost of Rs. 63.00 lakhs @ Rs.4.50 lakhs/unit to provide additional health cover and timely insemination services to the members of the Societies.

e. Strengthening of veterinary institutions

A total number of 48 veterinary institutions in the district will be strengthened with basic facilities like fencing, provision of bore-wells, water troughs and minor repair works also will be carried out at a total cost of Rs. 240.00 lakhs @ Rs.5.00 lakhs / institution. The project will be implemented by the Department of Animal Husbandry, Erode.

f. Control of parasitic diseases to enhance vaccine response

The sheep, goats and calves (below one year of age) will be dewormed four times in a year before vaccinating them to enhance the vaccine response in them. The cost of the project will be Rs.15.82 lakhs per year. The total cost will be Rs. 63.28 lakhs for 4 years. The project will be implemented by the Department of Animal Husbandry, Erode.

g. Buffalo calf development programme

The total cost for the supply of feed, vaccines and deworming will be Rs.14,800/-/buffalo calf. A total number of 1200 calves will be benefited at a period of 4 years @ 300 calves per year. The total project cost will be Rs.177.60 lakhs. The project will be implemented by the Aavin, Erode.

h. Supply of stall-fed goat units

Goat units (20+1) will be supplied to the women self help groups in the district @ Rs.0.42 lakhs /unit. One unit/block/year, for 4 years, 20 blocks, 80 units totally at a total cost of Rs. 33.60 lakhs. The project will be implemented by the Department of Animal Husbandry, Erode

Budget **(Rupees in lakhs)**

Sl. No.	Particulars	Amount Rs. in lakhs
1.	Tracking the breedable bovine population with an ear tag and a passbook @ Rs.20/- animal, for 2,92,800 animals (DAH and DDD)	58.56
2.	Programmed breeding of cattle buffaloes @ Rs.700/animal, for 20,400 cows and buffaloes (DDD)	142.80
3.	Supply of 80 Tellicherry bucks to the self help groups @ Rs.4,000/- per buck	3.20
4.	Establishment of mobile veterinary clinics @ Rs.5.832 lakhs/unit, 4 units totally (DAH)	23.328
5.	Establishment of mobile veterinary diagnostic Laboratory @ Rs.12.00 lakhs/unit	12.00
6	Establishment of mobile input units @ Rs. 4.5 lakhs/unit, 14 units totally (DDD)	63.00
7.	Strengthening of 48 veterinary institutions with basic facilities like fencing, provision of bore-wells, water troughs and minor repair works @ Rs.5.00 lakhs/unit (DAH)	240.00
8.	Control of parasitic diseases to enhance vaccine response @ Rs.1/- per sheep or goat and Rs.3/- per calf below one year, Rs. 15.82 lakhs/year, for 4 years (171236 calves, 506015 sheep and 562270 goats) - DAH	63.28
9.	Buffalo calf development programme @ Rs. 14,800/- per calf, 300 calves/year, 1200 calves for 4 years (DDD)	177.60
10	Supply of stall-fed goat units (20+1) to SHG @ Rs.0.42 lakhs/unit, one unit/block/year, for 4 years, 20 blocks, 80 units totally - DAH	33.60
	Total	**817.368**

Background/ Problem focus

a. Tracking the breedable bovines in the district

It is estimated that the district has a total number of 2,92,800 breedable bovine population. Tracking the breedable bovines with an ear tag and a passbook will help to follow the animals and will be the first step in the registration of bovines with accurate details about the animal, its health status etc.

b. Synchronized breeding of cattle and buffaloes

Estrus synchronization will be planned in indigenous cattle and buffaloes to increase conception rate. Buffaloes exhibit silent heat and hence become difficult to inseminate them for conception.

c. Genetic up gradation of goats

The present stock of goats available with the farmers in the district is inferior in terms of production and performance. Tellicherry goat breed performs well under field conditions. Cross-breeding of the non-descript goats with such superior germplasm will augment chevon production in the district.

d. Establishment of mobile veterinary clinics, mobile diagnostic laboratory and mobile input units

There is a 51% shortfall in the number of veterinary institutions in the district as against the total livestock population. Further, door-to-door timely diagnostic and health cover facilities especially in the remote villages of the district is very essential as these villages have a considerable livestock population and the farmers mainly depend on these animals for their livelihood. Mobile input units are also proposed with the same background.

e. Strengthening of veterinary institutions

A total number of 48 veterinary institutions in the district lack certain basic facilities like fencing, provision of bore-wells, water troughs and minor repair works need to be carried out.

f. Control of parasitic diseases to enhance vaccine response

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

g. Buffalo calf development programme

There is a decline in the production and productivity of buffaloes in the district. There is mortality in the buffalo calves due to under nourishment. The farmers must be encouraged to raise buffaloes through the care and management of buffalo calves to improve the production of buffaloes in the district.

h. Supply of stall-fed goat units

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

Project rationale

a. Tracking the breedable bovines in the district

It is estimated that the district has a total number of 2,92,800 breedable bovine population. Tracking the breedable bovines with an ear tag and a passbook will help to follow the animals and will be the first step in the registration of bovines with accurate details about the animal, its health status etc.

b. Synchronized breeding of cattle and buffaloes

Buffaloes exhibit silent heat and it becomes difficult to provide timely insemination services leading to huge economic losses. Because of this reason, the farmers are reluctant to rear buffaloes. Estrus synchronization will bring all the animals to heat at a specific time and will help to provide timely insemination.

c. Genetic upgradation of goats

The present stock of goats available with the farmers in the district are inferior in terms of production and performance. Tellicherry goat breed performs well under field conditions. Cross-breeding of the non-descript goats with such superior germplasm will augment chevon production in the district.

d. Establishment of mobile veterinary clinics, mobile diagnostic laboratory and mobile input units

Each mobile veterinary clinic will consist of one VAS and one driver. The staff for the clinic will be sourced from the available staff in the department. The unit will be provided with one vehicle at a cost of Rs. 4.75 lakhs. The VAS will be in-

charge of the vehicle. The vehicle will cover remote and inaccessible villages on a scheduled programme of operation. Medicines will be sourced from the veterinary institutions available in the block itself. Necessary equipment like gags, scalpels, scissors, suture needles, forceps, A.I. guns etc. apart from Liquid Nitrogen containers and sheath will be provided to each unit. Diesel worth Rs.45,000/- will be provided per year to each unit. The unit will prepare a tour programme on 6 days a week basis and the farmers will be intimated well in advance. A mobile veterinary diagnostic laboratory will be established at a cost of Rs.12.00 lakhs/unit. 14 mobile input units will be established by the Aavin, Erode to provide inputs to the members of the society @ Rs.4.5 lakhs/unit. The total cost will be Rs.63 lakhs for 14 units. .

e. Strengthening of veterinary institutions in the district

A total number of 48 veterinary institutions in the district will be strengthened with basic facilities like fencing, provision of bore-wells, water troughs and minor repair works also will be carried out at a total cost of Rs. 240.00 lakhs @ Rs.5.00 lakhs / institution.

f. Control of parasitic diseases to enhance vaccine response

The sheep, goats and calves (below one year of age) will be dewormed 4 times in a year before vaccinating them to enhance the vaccine response in them. The cost of deworming will be Rs.1/- per sheep or goat and Rs. 3 /- for a calf below 1 year of age. The deworming will be done 4 times a year, before vaccination. The total cost of the project will be Rs.15.82 lakhs per year. The total cost will be Rs. 63.28 lakhs for 4 years. The project will be implemented by the Department of Animal Husbandry, Erode.

g. Buffalo calf development programme

The total cost for the supply of feed, vaccines and deworming will be Rs.14,800/-/buffalo calf. A total number of 1200 calves will be benefited at a period of 4 years @ 300 calves per year. The total project cost will be Rs.177.6 lakhs. The project will be implemented by the Aavin, Erode.

h. Supply of stall-fed goat units to SHG

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

Project Strategy

a. Tracking the breedable bovines in the district

It is estimated that the district has a total number of 2,92,800 breedable bovine population. Tracking the breedable bovines with an ear tag and a passbook at a cost of Rs.20/- per animal is proposed. The total outlay is Rs. 58.56 lakhs.

b. Synchronized breeding of cattle and buffaloes

Buffaloes exhibit silent heat and it becomes difficult to provide timely insemination services leading to huge economic losses. Because of this reason, the farmers are reluctant to rear buffaloes. Estrus synchronization will bring all the animals to heat at a specific time and will help to provide timely insemination.

c. Genetic upgradation of goats

Tellicherry bucks will be maintained by the Self Help Group Women in the district for cross-breeding of the non-descript poorly performing goat breeds to augment chevon production. Each active SHG will be provided with one Tellicherry buck @ Rs. 4,000/- per buck.

d. Establishment of mobile veterinary clinics, mobile diagnostic laboratory and mobile input units

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

intimated well in advance. A mobile veterinary diagnostic laboratory will be established at a cost of Rs.12.00 lakhs/unit. 14 mobile input units will be established by the Aavin, Erode to provide inputs to the members of the society @ Rs.4.5 lakhs/unit. The total cost will be Rs.63 lakhs for 6 units. .

e. Strengthening of veterinary institutions in the district

A total number of 48 veterinary institutions in the district will be strengthened with basic facilities like fencing, provision of bore-wells, water troughs and minor repair works also will be carried out at a total cost of Rs. 240.00 lakhs @ Rs.5.00 lakhs / institution.

f. Control of parasitic diseases to enhance vaccine response

The sheep, goats and calves (below one year of age) will be dewormed 4 times in a year before vaccinating them to enhance the vaccine response in them. The cost of deworming will be Rs.1/- per sheep or goat and Rs. 3 /- for a calf below 1 year of age. The deworming will be done 4 times a year, before vaccination. The total cost of the project will be Rs.15.82 lakhs per year. The total cost will be Rs. 63.28 lakhs for 4 years. The project will be implemented by the Department of Animal Husbandry, Erode.

g. Buffalo calf development programme

The total cost for the supply of feed, vaccines and deworming will be Rs.14,800/-/buffalo calf. A total number of 1200 calves will be benefited at a period of 4 years @ 300 calves per year. The total project cost will be Rs.177.60 lakhs. The project will be implemented by the Aavin, Erode.

h. Supply of stall-fed goat units to SHG

Supply of stall-fed goat units (20+1) to SHG @ Rs.0.42 lakhs/unit, one unit/block/year, for 4 years, 20 blocks, 80 units totally

Project goals

- Tracing the breedable bovines in the district.
- Estrus synchronization in selected 20,400 cattle and buffaloes
- Upgradation of the existing native non-descript goats through cross-breeding with Tellicherry bucks (80 numbers) to increase the chevon production.

- Establishment of 4 mobile veterinary clinics, a mobile diagnostic laboratory and 14 mobile input units.
- Strengthening of 48 veterinary institutions in the district with basic facilities.
- Control of parasitic diseases in sheep, goats and calves (below one year of age) through deworming to enhance vaccine response.
- To develop 1200 buffalo calves through supply of feed.
- To establish 80 stall-fed goat units to promote intensive management of goats.

Project components

a. Tracking the breedable bovines in the district

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

b. Synchronized breeding of cattle and buffaloes

Estrus synchronization will be carried out in 20,400 numbers of cattle and buffaloes at a total cost of Rs. 142.80 lakhs @ Rs.700/animal. It involves use of hormones, deworming, monitoring etc.

c. Genetic upgradation of goats

1. Supply of Tellicherry bucks
2. Maintenance of the animals by women SHGs in the district
3. Cross-breeding of the native non-descript goats with superior germplasm

d. Establishment of mobile veterinary clinics, mobile diagnostic laboratory and mobile input units

Each mobile veterinary clinic will consist of one VAS and one driver. The staff for the clinic will be sourced from the available staff in the department. The unit will be provided with one vehicle at a cost of Rs. 4.75 lakhs. The VAS will be in-charge of the vehicle. The vehicle will cover remote and inaccessible villages on a scheduled programme of operation. Medicines will be sourced from the veterinary institutions available in the

block itself. Necessary equipment like gags, scalpels, scissors, suture needles, forceps, A.I. guns etc. apart from Liquid Nitrogen containers and sheath will be provided to each unit. Diesel worth Rs.45,000/- will be provided per year to each unit. The unit will prepare a tour programme on 6 days a week basis and the farmers will be intimated well in advance. A mobile veterinary diagnostic laboratory will be established at a cost of Rs.12.00 lakhs/unit.14 mobile input units will be established by the Aavin, Erode to provide inputs to the members of the society @ Rs.4.5 lakhs/unit. The total cost will be Rs.63 lakhs for 14 units.

e. Strengthening of veterinary institutions in the district

A total number of 48 veterinary institutions in the district will be strengthened with basic facilities like fencing, provision of bore-wells, water troughs and minor repair works also will be carried out at a total cost of Rs. 240.00 lakhs @ Rs.5.00 lakhs / institution.

f. Control of parasitic diseases to enhance vaccine response

The sheep, goats and calves (below one year of age) will be dewormed 4 times in a year before vaccinating them to enhance the vaccine response in them. The cost of deworming will be Rs.1/- per sheep or goat and Rs. 3 /- for a calf below 1 year of age. The deworming will be done 4 times a year, before vaccination. The total cost of the project will be Rs.15.82 lakhs per year. The total cost will be Rs. 63.28 lakhs for 4 years. The project will be implemented by the Department of Animal Husbandry, Erode.

g. Buffalo calf development programme

The total cost for the supply of feed, vaccines and deworming will be Rs.14,800/-/buffalo calf. A total number of 1200 calves will be benefited at a period of 4 years @ 300 calves per year. The total project cost will be Rs.177.6 lakhs. The project will be implemented by the Aavin, Erode.

h. Supply of stall-fed goat units to SHG

Supply of stall-fed goat units (20+1) to SHG @ Rs.0.42 lakhs/unit, one unit/block/year, for 4 years, 20 blocks, 80 units totally.

Project cost and financing **(Amount in Rs. lakhs)**

Project	2008-2009	2009-2010	2010-2011	2011-2012	Total Cost
1. Tracking the breedable bovine population with an ear tag and a passbook @ Rs.20/- animal, for 2,92,800 animals	58.56	-	-	-	58.56
2. Programmed breeding of cattle and buffaloes @ Rs.700/animal for 5100 animals/ year for 4 years	35.70	35.70	35.70	35.70	142.80
3. Supply of 80 Tellicherry bucks to the self help groups @ Rs.4,000/- per buck.	3.20	-	-	-	3.20
4. Establishment of mobile veterinary clinics @ Rs.5.832 lakhs/unit (Jeep – Rs. 4.75 lakhs, Equipments – Rs. 0.30 lakhs, LN2 container large and small – Rs. 0.35 lakhs, Recurring Expenditure - Rs. 0.432 lakhs) 4 units totally (DAH)	23.328	-	-	-	23.328
5. Establishment of mobile veterinary diagnostic laboratory @ Rs.12.00 lakhs/unit (Vehicle - Rs.11.00 lakhs, microscope - Rs.0.50 lakh, refrigerator - Rs.0.25 lakh, centrifuge – Rs.0.15 lakh, post mortem kits and other chemicals and reagents - Rs.0.10 lakh) - DAH	12.00	-	-	-	12.00
6. Establishment of mobile input units @ Rs.4.5 lakhs/unit (Salary for veterinarian and attendant and traveling expenses – Rs. 3.60 lakhs, Equipments – Rs. 0.66 lakh, Administrative charges – Rs. 0.24 lakhs) 14 units totally (DDD)	63.00	-	-	-	63.00
7. Strengthening of 48 veterinary institutions with basic facilities like fencing, provision of bore-wells, water troughs and minor repair works @ Rs.5.00 lakhs/unit (DAH)	240.00	-	-	-	240.00
8. Control of parasitic diseases to enhance vaccine response @ Rs.1/- per sheep or goat and Rs.3/- per calf below one year, Rs. 15.82 lakhs/year for 4 years (171236 calves, 506015 sheep and 562270 goats) – DAH	15.82	15.82	15.82	15.82	63.28
9. Buffalo calf development programme @ Rs. 14,800/- per calf, 300 calves/year, 1200 calves for 4 years (DDD)	44.40	44.40	44.40	44.40	177.60
10. Supply of stall-fed goat units (20+1) to SHG @ Rs.0.42 lakhs/unit, one unit/block/year, for 4 years, 20 blocks, 80 units totally	8.40	8.40	8.40	8.40	33.60
TOTAL	**504.408**	**104.32**	**104.32**	**104.32**	**817.368**

Implementation chart of the project

Project	2008-2009	2009-2010	2010-2011	2011-2012
1. Tracking the breedable bovine population with an ear tag and a passbook	✓			
2. Programmed breeding of cattle and buffaloes	✓	✓	✓	✓
3. Supply of 80 Tellicherry bucks to the self help groups	✓			
4. Establishment of mobile veterinary clinics, 4 units totally	✓			
5. Establishment of 1 mobile veterinary diagnostic laboratory	✓			
6. Establishment of mobile input units, 14 units totally	✓			
7. Strengthening of 48 veterinary institutions with basic facilities like fencing, provision of bore-wells, water troughs and minor repair works	✓			
8. Control of parasitic diseases to enhance vaccine response @ Rs.1/- per sheep or goat and Rs.3/- per calf below one year, Rs. 15.82 lakhs/year, for 4 years	✓	✓	✓	✓
9. Buffalo calf development programme @ Rs.14,800/- per calf, 300 calves/year, 1200 calves for 4 years	✓	✓	✓	✓
10. Supply of stall-fed goat units (20+1) to SHG @ Rs.0.42 lakh/unit, one unit/block/year, for 4 years, 20 blocks, 80 units totally	✓	✓	✓	✓

Reporting

a. Tracking the breedable bovines in the district

The project will be jointly implemented by the Department of Animal Husbandry, Erode and Aavin, Erode and will submit periodical monthly reports to the appropriate authorities

b. Synchronized breeding of cattle and buffaloes

The project will be implemented by the Aavin, Erode and will submit periodical monthly reports to the appropriate authorities

c. Genetic upgradation of goats

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

d. Establishment of mobile veterinary clinics

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

e. Establishment of mobile veterinary diagnostic laboratory

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

f. Establishment of mobile input units

The project will be implemented by the Aavin, Erode and will submit periodical monthly reports to the appropriate authorities

g. Strengthening of veterinary institutions with basic facilities

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

h. Control of parasitic diseases to enhance vaccine response

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

i. Buffalo calf development programme

The project will be implemented by the Aavin, Erode and will submit periodical monthly reports to the appropriate authorities.

j. Supply of stall-fed goat units to SHG

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

C. Improvement of facilities for milk collection, marketing, processing and value-addition

Abstract

One hundred portable milking machines will be supplied to the members of the society at a total cost of Rs.18.0 lakhs @ Rs.0.18 lakhs/unit. Provision of milking machines will help to improve the collection and quality of milk. One bulk milk cooler will be established at the chilling centre to improve the keeping quality of milk until it is processed. The total cost will be Rs.30 lakhs. One unit of walk-in-cooler will be

established at Aavin, Erode at a total cost of Rs. 30.0 lakhs. A total number of 20 dormant societies will be revived with necessary inputs @ Rs.1.0 lakh per unit at a total cost of Rs. 20 lakhs. Two khoa manufacturing units (@ Rs.0.77 lakhs/unit), two paneer making units (@ Rs.1.02 lakhs/unit) and two ice-cream making units (@ Rs. 1.12 lakhs/unit) will be established at a total cost of Rs. 5.82 lakhs to promote value-addition of milk. A total of 200 numbers of milk weighing machines will be established at milk producers' co-operative societies for accurate weighment of milk at a total cost of Rs. 34.00 lakhs. A total number of 10 PC-based automatic milk collection stations will be established at milk producers' co-operative societies at a total cost of Rs.17.50 lakhs @ Rs.1.75 lakhs/unit. A project on energy manageme

Budget **(Rupees in lakhs)**

Sl. No.	Particulars	Amount
1.	Supply of portable milking machines to members of the Society @ Rs. 0.18 lakh, 100 Units totally (DDD)	18.00
2.	Provision of bulk milk cooler @ Rs.30.0 lakhs/unit (DDD)	30.00
3.	Provision of a walk-in-cooler @ Rs. 30.0 lakhs/unit (DDD)	30.00
4.	Revival of 20 dormant milk producers' co-operative societies @ Rs.1.0 lakhs/unit, 20 societies (DDD)	20.00
5.	Establishment of two khoa manufacturing units @ Rs. 0.77 lakh/unit (DDD)	1.54
6.	Establishment of two paneer manufacturing units @ Rs. 1.02 lakhs/unit (DDD)	2.04
7.	Establishment of two ice-cream manufacturing units @ Rs. 1.12 lakhs/unit (DDD)	2.24
8.	Supply of 200 milk weighing machines to milk producers' co-operative societies @ Rs. 0.17 lakh/unit (DDD)	34.00
9	Provision of PC-based automatic milk collection stations to milk producers' co-operative societies @ Rs. 1.75 lakhs/unit, 10 units (DDD)	17.50
10	Energy management system (DDD) @ Rs. 10 lakhs per unit	10.00
	Total	**165.32**

Background/ Problem focus

Presently hand-milking is practiced by the farmers. There is shortage of milkmen and problems of mastitis are common in hand milking. Automatic milking machines save time, labour and prevents the occurrence of mastitis in cows. Establishment of a bulk milk coolers and walk-in-coolers will help to maintain the quality of milk until it is processed

and marketed. A total number of 20 milk producers' co-operative societies are dormant. This leads to decrease in the quantity of milk procured. They have to be revived with necessary inputs to improve the quantum of milk production in the district.

Facilities for the manufacture of value-added milk products like khoa, paneer and ice-cream have to be strengthened to utilize surplus milk during certain seasons. Also this will meet to the demand for these products by the urban population. Electronic weighing balances are to be provided to small societies for accurate weighment of milk. Further, in societies handling more than 500 litres of milk per day, it is essential to establish PC-based automatic milk collection stations to save time, labour and to have accurate weighment of milk and to store data of milk. Energy management system in the main processing plant will save power and will be economical.

Project rationale

Milking machines will save labour, time and prevent the occurrence of mastitis in dairy cows. Bulk milk coolers and walk-in-coolers will help to keep the quality of milk until it is processed and marketed. Revival of dormant milk producers' co-operative societies will boost the milk production. Establishment of manufacturing units for khoa, paneer and ice cream will help in value-addition of milk. Provision of milk weighing machines to societies will help in the accurate weighment of milk. Automatic PC-based milk collection stations will save time, manpower, provide accurate weighment of milk, stores the milk data for several months and provide confidence among the members of the societies. Energy management system in the main processing plant will save power and will be economical.

Project strategy

One hundred portable milking machines will be supplied to the members of the society at a total cost of Rs.18.0 lakhs @ Rs.0.18 lakhs/unit. Provision of milking machines will help to improve the collection and quality of milk. One bulk milk cooler will be established, to improve the keeping quality of milk until it is processed. The total cost will be Rs.30.0 lakhs. One unit of walk-in-cooler will be established at Erode dairy a total cost of Rs. 30.0 lakhs for storage of processed milk. A total number of 20 dormant

societies will be revived with necessary inputs @ Rs.1.0 lakh per unit at a total cost of Rs. 20 lakhs. Two khoa manufacturing units (@ Rs.0.77 lakhs/unit), two paneer making units (@ Rs.1.02 lakhs/unit) and two ice-cream making units (@ Rs. 1.12 lakhs/unit) will be established at a total cost of Rs. 5.82 lakhs to promote value-addition of milk. A total of 200 numbers of milk weighing machines will be established at milk producers' co-operative societies for accurate weighment of milk. A total number of 10 PC-based automatic milk collection stations will be established at milk producers' co-operative societies at a total cost of Rs.17.50 lakhs @ Rs.1.75 lakhs/unit. A project on energy management system will be implemented at a total cost of Rs.10.0 lakhs.

Project goals

- Clean milk production, saving labour and time and prevention of mastitis through installation of milking machines.
- Improvement of the milk quality until processing and marketing through establishment of bulk milk coolers and walk-in-coolers.
- Augmentation of milk production through revival of dormant societies.
- Value-addition of milk by establishing khoa, paneer and ice-cream making units.
- Accurate weighment of milk in societies through supply of weighing machines.
- Saving time, labour and accurate weighment of milk through establishment of automatic PC-based milk collection stations.
- Energy conservation in the main dairy processing plant.

Project components

One hundred portable milking machines will be supplied to the members of the society at a total cost of Rs.18.0 lakhs @ Rs.0.18 lakhs/unit. Provision of milking machines will help to improve the collection and quality of milk. One bulk milk cooler will be established to improve the keeping quality of milk until it is processed. The total cost will be Rs.30.0 lakhs. One unit of walk-in-cooler will be established at Erode dairy at a total cost of Rs. 30.0 lakhs for storage of processed milk. A total number of 20 dormant societies will be revived with necessary inputs @ Rs.1.0 lakh per unit at a total cost of Rs. 20 lakhs. Two khoa manufacturing units (@ Rs.0.77 lakhs/unit), two paneer making units (@ Rs.1.02 lakhs/unit) and two ice-cream making units (@ Rs. 1.12 lakhs/unit) will be established at a total cost of Rs. 5.82 lakhs to promote value-addition of milk. A total of

200 numbers of milk weighing machines will be established at milk producers' co-operative societies for accurate weighment of milk. A total number of 10 PC-based automatic milk collection stations will be established at milk producers' co-operative societies at a total cost of Rs.17.50 lakhs @ Rs.1.75 lakhs/unit. A project on energy management system will be implemented at a total cost of Rs.10.0 lakhs.

Project cost and financing (Rs. in lakhs)

S. No.	Project	2008 -2009	2009 -2010	2010 2011	2011 -2012	Total Cost
1.	Supply of portable milking machines to members of the Society @ Rs. 0.18 lakhs, 25 units/ year for 4 years (DDD)	4.50	4.50	4.50	4.50	18.000
2.	Provision of bulk milk cooler @ Rs.30.0 lakhs/unit (DDD)	30.00	-	-	-	30.00
3.	Provision of a walk-in-cooler @ Rs. 30.0 lakhs/unit (DDD)	30.00	-	-	-	30.00
4.	Revival of 20 dormant milk producers' co-operative societies @ Rs.1.0 lakhs/unit, 20 societies (DDD)	5.00	5.00	5.00	5.00	20.00
5.	Establishment of two khoa manufacturing units @ Rs. 0.77 lakhs/unit (DDD)	0.77	0.77	-	-	1.54
6.	Establishment of two paneer manufacturing units @ Rs. 1.02 lakhs/unit (DDD)	1.02	1.02	-	-	2.04
7.	Establishment of two ice-cream manufacturing units @ Rs. 1.12 lakhs/unit (DDD)	1.12	1.12	-	-	2.24
8.	Supply of 200 milk weighing machines to milk producers' co-operative societies @ Rs. 0.17 lakh/unit (DDD)	8.50	8.50	8.50	8.50	34.00
9.	Provision of PC-based automatic milk collection stations to milk producers' co-operative societies @ Rs. 1.75 lakhs/unit, 10 units (DDD)	7.00	3.50	3.50	3.50	17.50
10.	Energy management system @ Rs. 10 lakhs per unit (Solar water heating unit - 5000 litres) – 1 unit (DDD)	10.00	-	-	-	10.00
	Total	**97.91**	**24.41**	**21.5**	**21.5**	**165.32**

Implementation chart of the project

Project	2008-2009	2009-2010	2010-2011	2011-2012
1. Supply of portable milking machines to members of the Society	✓	✓	✓	✓
2. Provision of bulk milk cooler	✓			
3. Provision of a walk-in-cooler	✓			
4. Revival of 20 dormant milk producers' co-operative societies	✓	✓	✓	✓
5. Establishment of two khoa manufacturing units	✓	✓		
6. Establishment of two paneer manufacturing units	✓	✓		
7. Establishment of two ice-cream manufacturing units	✓	✓		
8. Supply of 200 milk weighing machines to milk producers' co-operative societies	✓	✓	✓	✓
9. Provision of PC-based automatic milk collection stations to milk producers' co-operative societies	✓	✓	✓	✓
10. Energy management system	✓			

Reporting

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

D. Capacity building of farmers / technical staff

Abstract

The following training programmes will be conducted by the Veterinary University Training and Research Centre,Erode to the farmers and women SHGs at a total cost of Rs. 12.00 lakhs

1. Modern technologies in livestock farming
2. Skill-oriented programmes on value-addition of milk and meat
3. Scientific sheep and goat rearing
4. Hygienic meat production, processing and establishment of modern retail meat units

The following training programmes will be conducted by the Aavin, Erode to the technical staff and dairy farmers at a total cost of Rs. 17.70 lakhs

1. Farmers study tour
2. Skill development training for technical staff of Aavin, Erode
3. Orientation training/workshop for milk producers' at society level

Budget

I. Training Programmes by the TANUVAS Centres at Erode

Particulars	Amount (Rs. in lakhs)
1. Training programmes on modern technologies in livestock farming under CAT, 2 days, 20 farmers / batch, Rs. 500/farmer, Rs.10,000 /batch, 20 batches @ 5 batches/year, (TANUVAS)	2.00
2. Skill-oriented training programmes on value-addition of milk and meat to women SHGs, 2 days, 20 members / batch, Rs. 500/member, Rs.10,000 /batch, 20 batches @ 5 batches/year, (TANUVAS)	2.00
3. Training programmes on scientific sheep and goat rearing to women SHGs, 2 days, 20 members / batch, Rs. 500/member, Rs.10,000 /batch, 40 batches @ 10 batches/year, (TANUVAS)	4.00
4. Training programmes on hygienic meat production, processing and establishment of modern retail meat units to women SHGs, 2 days, 20 members / batch, Rs. 500/member, Rs.10,000 /batch, 40 batches @ 10 batches/year, (TANUVAS)	4.00
Total	**12.00**

II. Training Programmes by the Aavin, Erode

Activity	Total Cost (Rs. in lakhs)
1. Farmers study tour @ Rs.5000/farmer, 150 farmers for 4 years	7.50
2. Skill development training for technical staff of Aavin, Erode 35 staff per year, @ Rs.5000/- per staff, for 4 years	7.00
3. Orientation training/workshop for milk producers' at society level Rs.20,000 per programme, 4 programmes/year, for 4 years	3.20
Total	**17.70**

TOTAL BUDGET FOR TRAINING	**29.70**

Background/ Problem focus

The farmers are not aware of the latest technologies available in the areas of livestock farming. Value-addition of milk and meat are the thrust areas in the livestock industry.

Project rationale

The training programmes are planned to provide the latest technological developments in the filed of animal husbandry.

Project strategy

The Training Programmes will be conducted by the Veterinary University Training and Research Centre, Erode and by the Aavin, Erode.

Project goals

- Capacity building in the areas of livestock farming, value-addition of milk and meat, sheep and goat rearing and hygienic meat production, processing and establishment of modern retail meat units.
- Enlightening the technical staff and dairy farmers on latest developments in the dairy industry through training programmes and study tours.

Project components

The following training programmes will be conducted by the Veterinary University Training and Research Centre, Erode to the farmers and women SHGs at a total cost of Rs. 12.00 lakhs.

1. Modern technologies in livestock farming
2. Skill-oriented programmes on value-addition of milk and meat
3. Scientific sheep and goat rearing
4. Hygienic meat production, processing and establishment of modern retail meat units.

The following training programmes will be conducted by the Aavin, Erode to the technical staff and dairy farmers at a total cost of Rs. 17.70 lakhs.

1. Farmers study tour
2. Skill development training for technical staff of Aavin, Erode.
3. Orientation training/workshop for milk producers' at society level

Project cost and financing

I. Training Programmes by the TANUVAS Centre at Erode

Project	2008-2009	2009 -2010	2010-2011	2011-2012	Total Cost
1. Training programmes on modern technologies in livestock farming under CAT, 2 days, 20 farmers / batch, Rs. 500/farmer, Rs.10,000 /batch, 20 batches @ 5 batches/year,	0.50	0.50	0.50	0.50	2.00
2. Skill-oriented training programmes on value-addition of milk and meat to women SHGs, 2 days, 20 members / batch, Rs. 500/member, Rs.10,000 /batch, 20 batches @ 5 batches/year,	0.50	0.50	0.50	0.50	2.00
3. Training programmes on scientific sheep and goat rearing to women SHGs, 2 days, 20 members / batch, Rs. 500/member, Rs.10,000 /batch, 40 batches @ 10 batches/year,	1.00	1.00	1.00	1.00	4.00
4. Training programmes on hygienic meat production, processing and establishment of modern retail meat units to women SHGs, 2 days, 20 members / batch, Rs. 500/member, Rs.10,000 /batch, 40 batches @ 10 batches/year,	1.00	1.00	1.00	1.00	4.00
Total	**3.00**	**3.00**	**3.00**	**3.00**	**12.00**

II. Training Programmes by the Aavin, Erode

(Rs. in lakhs)

Project	2008-2009	2009 -2010	2010-2011	2011-2012	Total Cost
1. Farmers study tour @ Rs.5000/farmer, 150 farmers for 4 years	2.00	2.00	2.00	1.50	7.50
2. Skill development training for technical staff of Aavin, Erode 35 staff per year, @ Rs.5000/- per staff, for 4 years	1.75	1.75	1.75	1.75	7.00
3. Orientation training/workshop for milk producers' at society level Rs.20,000 per programme, 4 programmes/year, for 4 years	0.80	0.80	0.80	0.8	3.20
Total	**4.55**	**4.55**	**4.55**	**4.05**	**17.7**
Total Budget for Training	**7.55**	**7.55**	**7.55**	**7.05**	**29.70**

Implementation chart of the project

I. Training Programmes by the TANUVAS Centre at Erode

Project	2008-2009	2009-2010	2010-2011	2011-2012	Total
1. Training programmes on modern technologies in livestock farming under CAT	✓	✓	✓	✓	✓
2. Skill-oriented training programmes on value-addition of milk and meat to women SHGs	✓	✓	✓	✓	✓
3. Training programmes on scientific sheep and goat rearing to women SHGs	✓	✓	✓	✓	✓
4. Training programmes on hygienic meat production, processing and establishment of modern retail meat units to women SHGs	✓	✓	✓	✓	✓

2. Training Programmes by the Aavin, Erode

Project	2008-2009	2009 -2010	2010-2011	2011-2012
1. Farmers study tour @ Rs.5000/farmer, 150 farmers for 4 years	✓	✓	✓	✓
2. Skill development training for technical staff of Aavin, Erode 35 staff per year, @ Rs.5000/- per staff, for 4 years	✓	✓	✓	✓
3. Orientation training/workshop for milk producers' at society level Rs.20,000 per programme, 4 programmes/year, for 4 years	✓	✓	✓	✓

Reporting

The Head of the Veterinary University Training and Research Centre, Erode and the General Manager, Aavin, Erode will submit periodical progress report on the training programmes conducted to the higher authorities.

E. Institutional development

Abstract

The TANUVAS Centre at Erode will be strengthened for the effective disease surveillance, monitoring and extension services at a total cost of Rs. 10.00 lakhs.

Budget **(Rs. in lakhs)**

Particulars	Amount (Rs. in Lakhs)
Strengthening of the TANUVAS Centre at Erode with facilities for skill oriented training programmes and disease investigation (TANUVAS)	10.00

Background/ Problem focus

The Veterinary University Training and Research Centre, Erode is the peripheral Center of the Tamil Nadu Veterinary and Animal Sciences University, Chennai with jurisdiction of the Erode district for the farmers to contact and to get technical help and guidance regarding all matters of animal health and production. The services rendered by the staff of the Centre to the Animal Husbandry Department in tackling problems in repeat breeders, infertility and abortion are immense and it has been well appreciated by the dairy farmers in the district. Infectious infertility and mastitis cases are studied by culture and antibiogram and the service to dairy farmers in the district ensures successful treatment of such economic diseases. The services are extended to the poultry industry in tackling the disease problems like Infectious Bursal Disease, Infectious Bronchitis, Ranikhet disease, and Infectious Hydropericarditis. The training programmes offered on various disciplines of livestock farming by this Centre has motivated and helped the farmers to start successful livestock farms. This Centre does not have certain basic facilities. Strengthening of the Veterinary University Training and Research Centre, Erode will help in the effective surveillance and monitoring of livestock diseases and conduct of extension activities in the district.

Project rationale

The Veterinary University Training and Research Centre at Erode is the peripheral Centre of the Tamil Nadu Veterinary and Animal Sciences University, Chennai. This Centre serves the farmers of the Erode district in the areas of livestock health and production. The technical services and training programmes offered by this Centre is being utilized by the farming community. Strengthening of this Centre will help in the effective surveillance and monitoring of livestock diseases and conduct of extension activities in the district.

Project strategy

The Veterinary University Training and Research Centre, Erode will be strengthened with facilities like LCD projector, laptop computer with printer, micro weighing balance, Laminar air flow, deep freezer, Ice-cream making machine, AV aids, furniture for training hall @ Rs. 10.00 lakhs.

Project goals

Strengthening of the Veterinary University Training and Research Centres,Erode for the effective surveillance and monitoring of livestock diseases and conduct of extension activities in the district.

Project components

The Veterinary University Training and Research Centre, Erode will be strengthened with facilities like LCD projector, laptop computer with printer, micro weighing balance, Laminar air flow, deep freezer, Ice-cream making machine, AV aids, furniture for training hall @ Rs. 10.00 lakh

Project cost and financing (Rs. in lakhs)

Project	2008-2009	2009 -2010	2010-2011	2011-2012	Total amount
Strengthening of the TANUVAS Centre at Erode with facilities for skill oriented training programmes and disease investigation @ Rs. 10.00 lakhs/unit, 1 unit with a LCD projector, DVD Player, laptop computer, blow up charts racks, teaching aids, equipment like incubator, hot air oven, laminar air flow, distillation apparatus, pipettes, autoclave, refrigerator and feed analytical equipment (TANUVAS)	10.00				**10.00**

Implementation chart of the project

Project	2008-2009	2009-2010	2010-2011	2011-2012
Strengthening of the TANUVAS Centre at Erode with facilities for skill oriented training programmes and disease investigation (TANUVAS)	✓			

Reporting

Strengthening of TANUVAS Centre

The Heads of the Centre will implement the projects and the progress of the projects will be submitted to the Tamil Nadu Veterinary and Animal Sciences University, Chennai.

F. Strengthening the facilities for the effective disease surveillance

Abstract

The Poultry Disease Diagnostic Laboratory at Erode will be upgraded to BSL II level for ‘’NAI Free Certification.’’ ELISA kits will be imported to test the presence of Avian Influenza antibodies. The cost of one ELISA kit is Rs. 0.20 lakhs and will be sufficient to screen 225 samples. A total number of 75,600 sera samples will be screened using 336 numbers of ELISA kits. The cost of 336 ELISA kits will be Rs. 67.20 lakhs and the cost of other consumables will be 0.30 lakhs. The total project outlay is Rs. 67.50 lakhs. The project will be implemented by the Department of Animal Husbandry, Erode.

Budget

Particulars	**Amount (Rs. in Lakhs)**
Strengthening of PDDL, Erode for ‘NAI Free Certification’ – import of ELISA kits 336 numbers @ Rs.0.20 lakhs/kit, Rs.67.20 lakhs totally for ELISA kits. and purchase of other consumables for Rs.0.30 lakhs.(DAH)	**67.50**

Background/ Problem focus

Although Avian Influenza has not been recorded so far in Tamil Nadu, the exporters of egg and egg products in the state have incurred heavy losses to the tune of Rs.200 Crores as the importing countries banned the import of eggs and egg products from Tamil Nadu. The PDDL, Erode will be upgraded to BSL II level with the funds that are provided under the World Bank assisted project on ‘’ Preparedness Control and Containment of Avian Influenza’’. The layer farms involved in export of eggs have to produce ‘NAI Free Establishment Certification’ and ELISA kits have to be imported for routine screening of sera samples for A.I antibodies. The cost of one ELISA kit is Rs. 0.20 lakhs and will be sufficient to screen 225 samples. A total number of 75,600 sera

samples will be screened using 336 numbers of ELISA kits. The cost of 336 ELISA kits will be Rs. 67.20 lakhs and the cost of other consumables will be 0.30 lakhs. The total project outlay is Rs. 67.50 lakhs. The project will be implemented by the Department of Animal Husbandry, Erode.

Project rationale

Although Avian Influenza has not been recorded so far in Tamil Nadu, the exporters of egg and egg products in the state have incurred heavy losses to the tune of Rs.200 Crores as the importing countries banned the import of eggs and egg products from Tamil Nadu. The PDDL, Erode will be upgraded to BSL II level with the funds that are provided under the World Bank assisted project on '' Preparedness Control and Containment of Avian Influenza''. The layer farms involved in export of eggs have to produce 'NAI Free Establishment Certification' and ELISA kits have to be imported for routine screening of sera samples for A.I antibodies for certification.

Project strategy

50 layer farms in 3 districts involved in export of egg and its products will be enrolled by granting a license by paying Rs.1,000/farm as registration fees. For making these farms as NAI Free establishments, routine clinical and sero-surveillance for A.I. has to be undertaken in these farms. Clinical surveillance will be undertaken by specially appointed veterinarians (3 numbers @ Rs. 10,000/month) who will visit each farm once in 21 days @ one farm per day and examine the birds for clinical signs of A.I. and also do post-mortem for dead birds to rule out A.I. They will also supervise serum collection.

For sero-surveillance, 420 serum samples (60 samplesx7 flocks) have to be collected from each farm once in 21 days as per OIE norms. Thus, 21,000 samples have to be collected from the 50 farms once in 21 days. For this purpose, 14 specially trained blood collectors will be appointed (@ Rs.3,000/ month/person).Ina day 4 blood collectors will collect 420 samples in a farm. In 15 days, the blood collectors will complete blood collection and will be engaged in serum separation, labeling, washing etc. in other days. For testing serum samples, the existing PDDL, Erode will upgraded to BSL II level with funds sourced from the Government of India. Serum samples will be pooled @ 5:1 and the pooled samples will be tested by ELISA for antibodies of A.I.

The serum samples will be tested with imported ELISA kits. Each kit costs Rs. 0.20 lakhs and can test 225 samples. Every year 75,600 pooled samples have to be tested and 336 ELISA kits are required per year. Thus an amount of Rs.67.20 lakhs is needed for the purchase of ELISA kits and additional cost of Rs. 0.30 lakhs is needed for the purchase of consumables like pipette tips etc. For testing of samples, 1 specially trained lab technician will be employed at Rs.6000/month. He will test 4200 samples in 21 days.

A fees of Rs.50/- will be collected from the farm owners per sample tested. In each farm, 420 serum samples will be collected and 84 pooled samples (5:1) will have to be tested. Thus for each farm, Rs.4,200/- will have to be paid by the owner once in 21 days. There will be revenue of Rs. 3.78 lakhs every 21 days (75,600x50) for the lab by way of fee for sample testing. This revenue and the registration fee amount (Rs.50,000 @ Rs.1,000/farm, for 50 farms) will be the corpus fund and will be utilized for payment of salary to the Vets, lab technician, and blood collectors

Project Goals

Strengthening of PDDL, Erode for 'NAI Free Establishment Certification'

Project Components

Strengthening of PDDL, Erode for 'NAI Free Establishment Certification' by import of ELISA kits for screening of pooled sera samples for A.I.

Project Cost and Financing (Rs. in lakhs)

Project	2008-2009	2009-2010	2010-2011	2011-2012	Total amount
Strengthening of PDDL, Erode for 'NAI Free Certification' – purchase of ELISA kits 336 numbers	67.50	-	-	-	**67.50**

Implementation Chart of the Project

Project	2008-2009	2009-2010	2010-2011	2011-2012
Strengthening of PDDL, Erode for 'NAI Free Certification' – purchase of ELISA kits 336 numbers	✓	-	-	-

Reporting

The Regional Joint Director of Animal Husbandry, Erode will implement this Project and send progress reports to the higher authorities.

TABLE 72: BUDGET PROPOSAL – FISHERIES SECTOR – 2008 – 2012

Sl. No.	Components	Implementing Agency	Unit cost (Rs.in lakh)	Total units	2008-09		2009-10		2010-2011		2011-12		Total cost (Rs.in lakh)
					Units	cost	Units	cost	Units	cost	Units	cost	
1	**Fish Seed Production**												
	a. Repair and renovation of old fish farm (0.50 ha) & Pungar fish farm (2)	Fisheries Department	120.00	2.50	0.50	60.00	1.00	120.00	1.00	120.00			300.00
	b. Creation of additional nursery space fish farm (2)	Fisheries Department	0.03	2000.00	2000.00	50.00							50.00
2	**Expansion of fish culture**												
	a. Supply fish seeds with 50% subsidy	Fisheries Department	0.01	750.00	250.00	1.50	250.00	1.50	250.00	1.50			4.50
3	**Infrastructure development in harvest and post harvest sector**												
	a. Supply of fishing implements with (50% subsidy)	TNFDC	0.05	100.00	20.00	1.00	30.00	1.50	30.00	1.50	20.00	1.00	5.00
	b. Development of landing centre	Fisheries Department	10.00	3.00	1.00	10.00	1.00	10.00	1.00	10.00			30.00
	c. Supply of mopeds with insulated ice boxes (50% subsidy)	TAFCOFED	0.15	50.00	10.00	1.50	20.00	3.00	10.00	1.50	10.00	1.50	7.50
	d. Setting up of modern fish stall	TNFDC	10.00	1.00	1.00	10.00							10.00
	Fisheries -Total		**140.23**	**2906.50**	**2282.50**	**134.00**	**302.00**	**136.00**	**292.00**	**134.50**	**30.00**	**2.50**	**407.00**

Sl. No.	Components	Implementing Agency	Unit cost (Rs.in lakh)	Total units	2008-09		2009-10		2010-2011		2011-12		Total cost (Rs.in lakhs)
					Units	cost	Units	cost	Units	cost	Units	cost	
	a. Farmers training Rs. 1000 per member Research and Development	TANUVAS	0.01	100.00	20.00	0.20	20.00	0.20	30.00	0.30	30.00	0.30	1.00
5	a. Seed production and river ranching of native fish varieties	TANUVAS	20.00	1.00	1.00	20.00							20.00
	TANUVAS - Total		**20.01**	**101.00**	**21.00**	**20.20**	**20.00**	**0.20**	**30.00**	**0.30**	**30.00**	**0.30**	**21.00**
	Grand Total		160.24	3007.50	2303.50	154.20	322.00	136.20	322.00	134.80	60.00	2.80	**428.00**

1) Fish Seed Production

a) Repair and renovation of Old fish farm (0.50)ha & Pungar fish farm (2)

Abstract

The Government fish seed located in Bhavanisagar are all in repair condition and the full potential is not being utilized. The farms are in depilated condition due to non-availability of funds for last 15 years. The seed produced through the fish seed farms is not sufficient to stock all the water bodies. Increase the fish seed production by strengthening of Government fish seed farms at Bhavanisagar by repair and renovation and by creating additional nursery space. Supply of quality fish seeds under subsidized cost to fish farmers to increase fish production. Stocking of long seasonal tanks and short seasonal ponds with quality fish seeds in subsidized rate.

Budget : Rs. 300.00 lakhs

Background / Problem focus

Fish seed production and rearing is being taken up in the Government Fish farm. The area available under seed production is under repairs. There is very less private participation in seed production and fish farming.

Project Rationale

In order to improve fish production the existing fish farms need to be repaired and renovated.

Project Strategy

Repairing work of seed area will be carried out. After repairing the seed will be stocked at 25 lakhs fingerlings per Annaum.

Project Goals

a) To carry out the repairing works

b) To stock the seeds for rearing

c) To supply the quality of fish seeds.

Project components

The total area of the Government fish farms located in is 30.2 Ha. The area available for fish seed production is 9.68 Ha and out of this all the area are under repair condition. Hence, 78700 m2 Area of rearing space needs to repaired and renovated to enhance the seed production and meet the demand of fish seed in the district.

S.No.	Farm	Total Area (Ha)	Rearing space (Ha)	Area under repair condition (Ha)
1	National Fish Seed Farm	10.00	7.18	7.158
2	Old Fish Farm	0.60	0.50	0.50
3	Pungar Fish Farm	19.60	2.00	2.00
Total		**30.2**	**9.68**	**9.68**

Project cost and financing

Unit cost	:	120 lakhs
Excavation of nursery ponds	:	40 lakhs
Repair and renovation	:	40 lakhs
Stone pitching and plastering	:	40 lakhs
Total	**:**	**120 lakhs**
Total cost	**:**	**Rs.120 lakhs x 2.5 = 300 lakhs**.

Implementation chart of the project

The Development of Fisheries will be carried out the project as per the plan of action.

Reporting

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

b. Creation of additional nursery space fish farms (2).

Abstract

At present only 5 lakh fingerlings are reared and supplied. The total fish seed requirement is 50.00 lakhs. Hence additional nursery facilities are required to cater to the needs.

Budget : Rs.50.00 lakhs

Background/Problem focus

The Erode District does not have water facility throughout the year hence only short term fish culture can be carried out. No self sufficiency in fish seed production.

At present only 5.0lakhs fingerlings are reared and supplied by the fish seed rearing centre

Project Rationale

To overcome this problem, proposal for additional fish seed rearing centre at Erode is inevitable. In the unutilized area of available farm, we can create additional rearing space by constructing new nurseries.

Project strategy

- To strengthen the Government Fish Seed Farm at Erode.
- To increase the seed production to fill the requirements of the district.
- To increase the fish production to the optimum level.

Project goals

- To create additional facility for seed production
- To make use of the vacant space for fish seed production unit
- To attain fish seed production - 5.00 lakhs against the requirement of 60.00 lakhs.
- To fulfill the present gap of fingerlings requirement is 55.00 lakhs at present level.

Project components

Fish seed production hatcheries and nurseries-seed production

Project cost and financing

The cost towards construction of additional nurseries in vacant space of existing Anaipatti Fish Seed Farm is as follows: -

Unit cost	:	Rs.50.00 lakhs
No. of units	:	1No.

Civil woks

Sl. No.	Name of the work	Cost Estimate Rs.in lakhs
1)	10mx6mx1.2m 20 nurseries at Rs.82126.75x40	16.40
2)	2mx1.5m conditioning pond at Rs.11507x6	7.00
3)	Provision of pipe line.	**2.30**
4)	6.2mx8m. of one store room and a laboratory	5.90
5)	Electrical appliances	1.75
6)	One over head tank 45,000 Lt. capacity	3.00
7)	15m depth & 10m dia. of open well	7.00
8)	10 HP Motor with accessories	6.65
	Grand Total	50.00

Implementation chart of the project (2008-09)

S.No.	Particulars	1Qtrs	II Qtrs	III Qtrs	IV Qtrs
1.	Construction of additional nursery in Anaipatti Fish Seed Farm	√	√	√	√

Reporting

The project will be implemented by the Department of Fisheries.

2. Expansion of fish culture

1. Supply fish seeds with 50% subsidy

Abstract

The fish production in the existing farms needs to be increased in order to meet the demand of inland fishes and hence quality fish seeds could be supplied to the fish farmers with 50% subsidy.

Budget : Rs. 4.50 lakhs

Background / Problem focus

There is a vast potential available in increasing inland fish production through supply of quality fish seeds. At present fish seeds produced not at all enough to meet the demand. Therefore, fish seeds in needs supply at 50% subsidy to increase fish production.

Project Rationale

To supply quality fish seeds to meet the requirement of the district with 50% subsidy.

Project Strategy

To increase the inland fish production in this district quality fish seeds should be provided to the fish farms under subsidized rate.

Project Goals

To supply quality fish seeds at 50% subsidy.

To increase inland fish production in the district.

Project components

50% subsidy for fish seeds.

Project cost and financing

Cost of fingerlings per Unit : Rs.0.01 lakhs

Total number units : 900 ha

Total cost 900 x 0.01 (@50% subsidy) : 4..50 lakhs

Implementation chart of the project

S.No.	Particulars	1 Qtrs	II Qtrs	III Qtrs	IV Qtrs
1.	Supply of quality fish seeds	√	√	√	√

Reporting

The progress will be reported periodically.

3. Infrastructure development in harvest and post harvest sector

1. Supply of fishing implements with 50% subsidy

Abstract

It is proposed to extend 50% subsidy assistance to the fishermen for the purchase of fishing implements like coracle and nets.

Budget : Rs. 5.00 lakhs

Background / Problem focus

To provide gillnets to the fishermen at 50% subsidy

Project Rationale

To enhance fish production through capture fisheries.

Project Strategy

To help the fishermen for efficient fishing.

Project Goals

To increase fishing in natural water bodies by providing fishing implements.

Project components

Distribution of fishing implements

Project cost and financing

No. of units : 100
Unit cost : 0.05 lakh(purchase of coracle and nets)
Total cost(100 units x 0.0.5) : Rs. 5 .00 lakhs :

Implementation chart of the project

The project will be implemented in four years period (2008-12)

S.No.	Particulars	1 Qtrs	II Qtrs	III Qtrs	IV Qtrs
1.	Purchase and supply of coracle and nets	√	√	√	√

Reporting

The project will be implemented by the Dept. of fisheries.

2. Development of landing centre

Abstract

At present Erode district as no good landing centre for the sale of fishes caught from the seasonal and irrigation tanks. Therefore, it is essential to create fish landing centres with all necessary facilities in order to get higher income to the fish farmers.

Budget : Rs. 30.00 lakhs

Project Rationale

To increase the sale of freshwater fishes caught from seasonal and irrigational tanks of this district.

Project Strategy

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

Project Goals

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

Project components

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

Project cost and financing

Project cost : Rs. 10.00 lakhs
Unit cost : Rs. 10.00 lakhs

S. No.	Particulars	Cost
1	Auction hall	7.50
2	cold storage	2.00
3	Electronic balance, ice crusher etc	0.50
Total		**10.00**

Implementation chart of the project

S.N	Particulars	2008-09	2009-10	2010-11	2011-12
1.	Preliminary official procedures for floating tenders	√			
2.	Construction of auction hall and cold storage		√	√	

Reporting

Quarterly progress will be reported to the monitoring agency by the implementing agency.

3. Supply of mopeds with insulated ice boxes (50% subsidy)

Abstract

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

Budget : Rs. 7.50 lakhs

Background / Problem focus

For transporting and progressing fish hygienically.

Project Rationale

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

Project Strategy

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

Project goals

To promote and sale of fish of high quality with hygiene

Project components

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

Project cost and financing

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

Implementation chart of the project

S.No	Particulars	2008-09	2009-10	2010-11	2011-12
1.	Supply of moped with ice box	√	√	√	
2.	FRP coracle and nets	√			
3.	Distribution		√	√	√

Reporting

Progress of the project will be reported periodically.

4. Setting up of modern fish stall

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

Budget : Rs. 10.00 lakhs

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

Project rationale

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

Project strategy

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

Project Goals

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

Project components

To essential market infrastructure like electricity, water, drainage and civic amenities in most of the retail fish markets are inadequate.

Project cost and financing

Rs. 10.00 lakhs - 1 Unit.

Sl. No.	Details	Unit cost Rs. in lakhs	No. of units	Total Rs. in lakhs
1.	Building (1250 sq. ft.) with provision for 5 stalls with electricity, water supply and drainage	5.00	1	5.00
2.	Office room (500 sq. ft.)	2.00	1	2.00
3.	Ice boxes	0.05	20	1.00
4.	Weighing balance	0.05	20	1.00
5.	Dressing table, knives, crates, price display board etc.	0.05	20	1.00
Total				**10.00**

Implementation chart of the project

The modern fish stall will be established as follows:

Sl.No.	Particulars	2008-09
1.	Construction of fish stall Purchase of ice boxes, crates, electronic balance, tables etc.	√

Reporting

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

4) Capacity building through training

1. Farmers training

Abstract

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

Budget : Rs. 1.00lakhs

Background / Problem focus

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

Project Rationale

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

Project Strategy

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

Project goals

- To conduct 60 training programmes on freshwater fish culture
- To conduct follow up studies.

Project components

- Composite fish culture
- Ornamental fish culture
- Integrated fish farming
- Cat fish culture
- Economies and Marketing

Project cost and financing

Total cost : 1.00 lakhs
Number of trainees : 100
Unit cost : Rs . 0.010

S.No.	Particulars	App. Budget
1)	Providing Stipend to the trainees	Rs. 500
2)	Extension materials	Rs. 350
3)	Miscellaneous	Rs. 150
Total		**Rs. 1000**
100 x 1000		**Rs. 100000**

Implementation of client of the project

Sl.No.	Particulars	2008-09			
		I Qtr	II Qtr	III Qtr	IV Qtr
1.	Identification of villages	√	√	√	√
2.	Selection of participants	√	√	√	√
3.	Conducting training programmes	√	√	√	√
4.	Evaluation of training programmes	√	√	√	√

Reporting

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

5. Seed production and river ranching of native fish varieties

Abstract

River ranching fish seeds will increase the productivity of the rivers with fishery resources. It has been proposed to rach fish seeds in riverine regions of Erode district with an estimated cost of Rs.10.0 Lakhs.

Budget : 20.00 lakhs

Background / Problem focus

Ranching of common fish species of riverine origin is expected to enhance the stock and save the endemic fish species. Since there is depletion of stock, fish species such as labeos, puntius, rasboras, native catfish, aaral, murrel , glossogobius and similar fish species have to be grown in captivity , bred and ranched into the rivers to enhance the stock.

Project Rationale

- Restocking of riverine fish species
- Replenishment of running water bodies
- Conservation of riverine fishes
- Assisting the fishermen for livelihood

Project Strategy

- Identification of riverine systems
- Identification of depleted riverine fish species
- Breeding in captivity
- Ranching of the seeds in the riverine systems

Project Goals

To restock the river water bodies with native fish species

Project components

Native, endemic and river fish species ranching and replenishment

Project cost and financing

S.No.	Particulars	App. Budget
1	Construction of hatchery	Rs. 8.00
2	Nursery tanks	Rs. 7.00
3	Creation of water source and pipeline	Rs. 3.00
4	Purchase of nets, feed ,fertilizer, etc	Rs.2.00
Total		**Rs. 20.00**

Implementation of the project

Sl.No.	Particulars	2008-09
1.	Construction of hatchery	√
2.	Nursery tanks	√
3.	Creation of water source and pipeline	√
4.	Purchase of nets, feed ,fertilizer, etc	√

Reporting

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

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NADP Sensitization Workshop and Discussion on District Agriculture Plan - Erode District held on 24.05.2008

District Collector presides the meeting

Professor and Head, ARS, Bhavanisagar – Welcomes the gathering

Joint Director of Agriculture speaks on projects of Agriculture Department

Felicitations

Feedback from participants

Feedback from participants