

Wrapper

Project team

Foreword

Preface

Executive Summary

Chapter I

Chapter II

Chapter III

Chapter IV

Chapter V

Chapter VI

Meeting Proceedings

Photos

NATIONAL AGRICULTURE DEVELOPMENT PROJECT – DISTRICT AGRICULTURE PLAN

PROJECT TEAM

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

**Dr. R. Venkatram, Professor
and Principal Coordinator (NADP)**

**District Level
Coordination** : **Dr.K.Mahendran
Associate Professor
Dept.of Agricultural and Rural
Management
TNAU, Coimbatore-3**

**Dr.Raja
Professor and Head
Krishi Vigyan Kendra
Sandhiyur, Salem Dt.**

**Dr. R. Jagadhambal
Assistant Professor
Krishi Vigyan Kendra
Sandhiyur, Salem Dt.**

**Mr.A.Harirajakrishnan
Joint Director of Agriculture
Namakkal**

**Mr. T. Somasundaram
DD of Agriculture – GOI Schemes
O/o Joint Director of Agriculture
Namakkal**

**Mr. S. Durai
DD of Agriculture
PA (Agri) to Collector
Namakkal**

**Mr. K. Ramachandran
Agricultural Officer - GOI Schemes
O/o Joint Director of Agriculture
Namakkal**



Tamil Nadu Agricultural University

Prof. C.RAMASAMY
Vice-Chancellor

COIMBATORE-641 003
TAMIL NADU
INDIA.

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



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)

Table of Contents

S.No.	Contents	Page
1.	EXECUTIVE SUMMARY	i - v
2.	Chapter I INTRODUCTION	1
3.	Chapter II GENERAL DESCRIPTION OF THE DISTRICT	5
4.	Chapter III SWOT ANALYSIS OF THE DISTRICT	25
5.	Chapter IV DEVELOPMENT OF AGRICULTURAL SECTOR	31
6.	Chapter V ALLIED AGRICULTURAL SECTORS	46
7.	Chapter VI DISTRICT PLAN	53

List of Tables

Table No.	Title	Page No
2.1	Average Maximum and Minimum Temperature Experienced during Different Months	
2.2	Taluk wise Mean Annual Rainfall in Namakkal District (mm)	
2.3	Revenue Administrative Divisions in Namakkal District	
2.4	Details of the Local Bodies in Namakkal District	
2.5	Population Details of Namakkal District	
2.6	Taluk wise Population Details of Namakkal District (2001)	
2.7	Educational Infrastructure Available in Namakkal District	
2.8	Details of Wells and Tube wells in Namakkal District	
2.9	Details of Canals in Namakkal District	
2.10	Canals and its Ayacut Areas in Namakkal District (in hectare)	
2.11	Details of Tanks in Namakkal District	
2.12	Block wise Classification of Groundwater Potential in Namakkal District	
2.13	Revenue Administrative Divisions of Namakkal District	
2.14	Season wise Rainfall Data - 2001 – 2007	
2.15	Block wise Soil Type Details	
2.16	Area under Different Soils in Namakkal District	
2.17	Land Use Pattern in Namakkal District	
2.18	Land Holding Pattern in Namakkal District	
2.19	Net area Irrigated in Namakkal District (2007)	
2.20	Gross area Irrigated in Namakkal District (2007)	
2.21	Block wise Criticality of Ground water potential	
3.1	Selected Indicators of Agricultural Development for Namakkal District	
3.2	Rank of Namakkal District in terms of agricultural development among other Districts of Tamil Nadu during 1990-91 to 2005-06	
4.1	Seasons of Cultivation in different Irrigation Environments Namakkal District (2007)	
4.2	Cropping Pattern Followed in Namakkal District	

List of Tables contd...

4.3	Average Productivity of Crops in Namakkal District (2007)	
4.4	Average Yield Gap in Major Crops (2007)	
4.5	Major Technological Gaps in Major Crops (2007)	
4.6	Consumption of Major Nutrients (2007)	
4.7	Year wise Fertilizer Consumption in Namakkal District	
4.8	Year wise pesticide consumption in Namakkal District	
4.9	Consumption of PP Chemicals in Namakkal District	
4.10	Administrative Setup of the Department of Agriculture	
4.11	Integrated cereal development programme	
4.12	Intensive cotton development programme	
4.13	National pulses development programme	
4.14	Sugarcane development programme	
4.15	Oil seed production programme	
4.16	Coir board assisted scheme	
5.1	Breedable population of Animals in Namakkal District (2007)	
5.2	Average Productivity of Milk Animals (2007)	
5.3	Department of Agricultural Engineering - Details of ongoing schemes	
6.1	Proposed Sector-wise budget outlay	
6.2	Department of Agriculture – Budget Abstract	
6.3	Department of Agriculture – Special Projects	
6.4	Instruments/Equipments for Seed Testing Lab	
6.5	Increasing The Production of Paddy in Namakkal District	
6.6	Increasing The Production of Millets in Namakkal District	
6.7	Increasing the Production of Groundnut (Irrigated) in Namakkal District	
6.8	Increasing the Production of Groundnut (Rainfed) in Namakkal District	
6.9	Increasing the Production of Sunflower in Namakkal District	
6.10	Increasing the Production of Cotton in Namakkal District	
6.11	Increasing the Production of Maize in Namakkal District	
6.12	Increasing the Production of Coconut in Namakkal District	

List of Tables contd...

6.13	Strengthening of District Information Centre	
6.14	Strengthening of Farmers Training Centre	
6.15	Budget Abstract – Department of Horticulture	
6.16	Area, Production and Productivity of Major Vegetable Crops in Namakkal District (2007)	
6.17	Area, Production and Productivity of Major Plantation Crops in Namakkal District (2007)	
6.18	Area, Production and Productivity of Fruits in Namakkal District	
6.19	Increasing Production of Vegetable and Plantation Crops	
6.20	Increasing Production of Banana in Namakkal District	
6.21	Extension Support to Increase the Production of Horticulture Crops	
6.22	Improving Production Practices for Pepper in Kolli Hills	
6.23	Budget Outlay – Namakkal District – Animal Husbandry Sector – 2008-2012	
6.24	Budget Outlay – Namakkal District – Fisheries Sector – 2008-2012	
6.25	Budget abstract – Department of Agricultural Engineering	
6.26	Agricultural Mechanisation	
6.27	Soil and water management	
6.28	Budget Abstract –Agricultural Marketing and Agri – Business	
6.29	Estimates of marketed surplus of various commodities	
6.30	Agricultural Marketing and Agri – Business - Budget Proposal	
6.31	Sericulture - Project Proposals Under NADP 2008-09 to 2011-2012	

List of Figures

No	Figures	Page No.
1.	Map of Namakkal District	6

EXECUTIVE SUMMARY

The Namakkal district agriculture plan aims at projecting the requirements for development of agriculture and allied sectors of the district keeping in view the natural resources and technological possibilities in the district. The plan thus, presents 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.

A series of sensitization workshops were conducted to sensitize the various line department officials to identify and prioritize the developmental needs of Namakkal district pertaining to agriculture and allied sectors. Based on the baseline information and proposals, draft action plan was prepared and this was presented in the District Collector's Meeting held on 13.05.2008 under the chairmanship of Namakkal 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. The District Agriculture Plan was then finalised.

Namakkal District comes under the North Western Agro climatic zone (excluding Tiruchengode Taluk) of Tamil Nadu. It is situated in the dividing portion of two watersheds between Cauvery and the Vellar System. Namakkal District experiences semi-arid tropical climate wherein four distinct seasons viz., South west monsoon (June – Sep.), North East monsoon (Oct – Dec.), winter season (Jan. – Feb.) and summer season (April – May) are experienced. The average annual rainfall of the district is 776 mm. Nearly 80 percent of the total rainfall is received during the SWM and NEM season. Among these two seasons SWM receives 40 per cent of rainfall and NEM 40.6 per cent.

The district is highly urbanised with about 37 per cent of the population living in urban areas. The population density is also very high in the urban areas compared to most of the other districts in Tamil Nadu state. Tiruchengode taluk is the largest among the four taluks with total households of 121424 followed by the Namakkal, Rasipuram and Paramathi-Velur taluk.

The source of Irrigation is wells, canals and tanks. The well irrigation is the main source of irrigation covering 71272 ha. An area of 8868 ha is covered by Canal irrigation. Other sources of irrigations like lift irrigation and odai are 6512 Ha. The groundwater potential of the district is very poor. Most of the Blocks come under category of dark and grey. Only Kollihills and Tiruchengode Blocks are classified as white category. The soils found in the district are red loam, lateritic soil, black soil, sandy coastal alluvial, red sandy soil and pockets of clay loam.

The district is endowed with a very good base of agro industries. The poultry and allied industries, sago manufacturing industries, coconut shell powder industries and the textile industries are well known for their integration and efficiency.

Forest contributes to nearly 13 per cent to the geographical mainly by the Kollili hills and parts of the Western Ghats that cut across the district. Land put to non agricultural uses are the next highest (11 per cent). About 52 per cent of the total geographical area was sown with some agricultural crops at least once in a year. The gross cropped area forms 61 per cent of the total area with a cropping intensity of 128 per cent.

There are about 1.5 lakh farmers holding a total area of 1.95 lakh hectares. Nearly 31 per cent of the farmers in the district hold only 6.29 per cent of the land and 75 per cent of the farmers hold less than 2 hectares. About 15 per cent of the farmers hold 2 to 4 hectares of land indicating the predominance of small and medium holdings in the district.

The cropping pattern followed in Namakkal district for the past three years from 2004 to 2007 indicates that the major crops grown are fodder crops, groundnut, tapioca, sugarcane, cholam and paddy. There is a general decline of area under paddy and cholam and there is an increase in the area under sugarcane, tapioca and fodder crops over the years. The shift in area towards annual and long duration crops perhaps might be due to the increased water and labour scarcity faced by the farmers in the district where the average rainfall was consistently lower in these years. The share of rainfed area in the total area is very high for all these crops except for paddy.

In the wet lands, sugar cane, banana and betel vine are the annual crops grown and paddy and gingelly are the rotation crops in double crop sequence. In the garden land, tapioca, sugarcane are grown in single crop sequence and in the double crop sequence, paddy and cholam with groundnut, gingelly, cotton and pulses are grown. In dry land situation groundnut, fodder cholam, sun flower, pulses, and cholam are grown.

Paddy has the highest yield gap followed by millets, cotton, pulses, oilseeds and sugarcane. Department wise strategies and the related interventions are devised to counter and reduce the gap.

Nearly 50 per cent of the total fertilizer use was contributed by Nitrogen followed by Potash (27 per cent) and Phosphorus (24 per cent). Totally twenty three thousand MT was consumed in the district during the year 2007. There is also an increase in consumption of both dust and liquid pesticides in the district during the period.

The Composite Index of Agricultural Development of Namakkal District was worked out and the analysis showed that Namakkal district which was classified as 'developing' in agricultural development during 1990-91 and 1995-96 and in the remaining two periods till 2006, the district was classified as 'developed'. In terms of overall agricultural development its rank among the 29 districts of Tamil Nadu varied

from 6 to 17 during the 1990-91 to 2005-06. Except in the case of livestock, in all other components the district's performance in the period of study is satisfactory. For example, livestock ranks are between 1 and 2 in all the 4 periods considered. Similarly in crop area variables also it occupied ranks between 3rd and 17th ranks.

The agricultural strengths of the district are the presence of five irrigation canals in the district creating a distinct irrigation potential in the nearby areas facilitating cultivation of irrigated crops like paddy, sugar cane, banana and betel vine. The district is also endowed with wide range of climatic conditions favourable for cultivation of different crops. The hilly range in Kolli hills provides a huge potential for development of horticulture. The farmers in the district are predominantly small and have a strong positive attitude in implementation of the government schemes. Rural based industries like poultry, poultry feed, rice mills and sago processing factories are well developed and networked for provision of suitable options to the farmers for marketing and further processing. High concentration and scientific management of poultry population and vertical and horizontal integration of poultry industry are strengths of the district.

The predictable weaknesses are the presence of larger area under rainfed conditions, greater dependence on ground water, small and fragmented land holdings, labour scarcity due to presence of other industries like textiles and lorries and absence of Krishi Vigyan Kendra.

Ample opportunities exist for promotion of maize cultivation in the district as it serves as the major ingredient for poultry feed manufacturing industries prevailing in large numbers in the district. Also there is a good scope for setting up new agro processing industries and for promoting new technologies in Sago processing. To save and use water in a better way, the district topography is highly suitable for watershed development and can provide a good opportunity. The betel vine produced in the district is well known for its quality and efforts can be made to register under Geographic Indication and develop suitable strategies for popularising it. There is a large area under

Korai crop in the district. Industries for processing the crop may be promoted. Banana is grown in many parts of the district and there is a good potential to establish an exclusive market for banana and processing possibilities can be explored. There is a good opportunity to promote egg processing and egg exports from the district

Eight line departments of Namakkal district namely, Agriculture, Horticulture, Agricultural Marketing and Agribusiness, Agricultural Engineering, Animal Husbandry and Dairy Development, Fisheries and Sericulture participated in preparing the overall development plan for Agriculture in the district. Various issues were identified department wise and prioritized for preparation of specific proposals for four years from 2008 to 2012. The total budget outlay for the proposed projects worked out to Rs. 66.01 crores. The proposed budget requirement for the Department of Horticulture was 18.55 crores Agriculture Rs. 17.61 crores, Animal Husbandry 15.50 crores and Department of Agricultural Engineering was Rs.11.15 crores. The Agriculture department proposed projects for strengthening the production of paddy, millets, ground nut, maize, cotton, sun flower and coconut apart from proposals for strengthening the infrastructure. Five special projects with one time grant requirement was also proposed. Coconut nursery, parasite breeding stations, bio control production centre and seed processing are the special proposals.

Horticulture department proposed projects on increasing the production of vegetables, plantation crops, banana and pepper.

The proposed budget requirement for the Department of Agricultural Engineering was Rs.11.15 crores and the proposals were on distribution of crop based package of Agri. Machinery on cluster basis, popularization of Agricultural Mechanization through conventional Machinery / Equipments, innovative water harvesting structures, soil conservation works and water management works.

The Seed Testing Laboratory is proposed by the Directorate of Seed Certification at an approximate cost of Rs.6.00 lakhs.

The Department of Fisheries proposed projects to increase the fish production by concentrating on the components like seed production, fish culture, infrastructure development, capacity building, research and development.

The Department of Animal Husbandry proposed projects on poultry, dairy development and TANUVAS proposed components on various research requirements.

Budget Abstract

(Rs. in Lakhs)

Sl.No.	Department	2008-09	2009-2010	2010-2011	2011-2012	Total
1	Agriculture	462.55	420.07	424.6	424.6	1731.82
2	Horticulture	399.18	399.07	483.35	573.05	1854.65
3	Animal Husbandry	841.8	237.79	237.02	233.77	1550.38
4	Fisheries	35.45	35.45	17.95	10.45	99.3
5	Agriculture Engineering	263.71	279.81	279.65	292.07	1115.24
6	Agriculture marketing	27.7	24.92	27.73	29.64	109.99
7	Sericulture	20	24	30	36	110
8	Special Projects	29	--	--	--	29
	Total	2079.39	1421.11	1500.3	1599.58	6600.38

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 Tamil Nadu Veterinary and Animal Sciences University attended the workshop. Also several meetings were held in Chennai for the National Agriculture Development Programme under the Chairmanship of Agriculture Production Commissioner and Secretary to Government of Tamil Nadu.

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

Preparation of Draft Action Plan and Presentation in District Collectors Meeting

Based on the baseline information and proposals, draft action plan was prepared and this was presented in the District Collectors Meeting held on 13.05.2008 under the chairmanship of Namakkal District Collector. This meeting was attended by the scientists from TNAU, officials from line departments and the representatives of local bodies. Wide coverage was given in the media also.

Finalisation

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

CHAPTER - II

GENERAL DESCRIPTION OF THE DISTRICT

2.1 Location and Physiography

Namakkal District is situated at 11° 00' and 12° 00' of the North latitude and 77° 40' and 78° 05' of the East longitude. The altitude of the district is 300 metres above MSL. Namakkal District comes under the North Western Agro climatic zone (excluding Tiruchengode Taluk) of Tamil Nadu. It is situated in the dividing portion of two watersheds between Cauvery and the Vellar System with the Taluks of Attur, Rasipuram and Namakkal on the East and Salem, Omalur and Mettur on the West. Tiruchengode taluk alone is placed under Western Agro-climatic zone.

Besides above two zones, Kollihills in Namakkal and few isolated hills and ridges scattered over Namakkal, Rasipuram and Tiruchengode along with the Valleys and rolling topography contributes to the characteristic physiography of the district. Kollihills the Garden of Namakkal district comprising of 14 village panchayats called 'Nadu' is having an area of 371.03 sq. km at an altitude of 1300 mts. above MSL.

The Northern portion of Namakkal is mountainous and the Southern areas are plains. The plain area of the district can be divided into 3 elevating stages. The lower elevation (below 150 m) has Namakkal and Paramathy taluks which are being benefited by Cauvery river. The mid elevation (150-300 m above M.S.L.) occupies the major area in all Taluks. The high elevation area (between 300-600 m) spreads over mainly in Rasipuram and Namakkal Taluks. The chief rivers running through the district are Cauvery Aaru, Karipottamaru and Thirumanimuthar. The Cauvery flows South and South west along the border.

The famous Cauvery river flows along the Western and Southern boundaries of the district at an elevation of 150 m. It benefits most of the cultivated lands in Paramathy and Mohanur Block. Its tributaries are Sarabanga and Tirumanimuthar.

Fig. 1 Namakkal District Map

Natural Resources

2.2 Climate

Namakkal District experiences semi-arid tropical climate wherein four distinct seasons viz., South west monsoon (June – Sep.), North East monsoon (Oct – Dec.), winter season (Jan. – Feb.) and summer season (April – May) are experienced. The maximum temperature ranges from 28 to 40° C and the minimum from 14° to 26° C. During January and February lowest temperatures are recorded while maximum temperature during April - May. The rainfall during this period is minimum when compared to other periods.

The summer period starts from March and ends by May. This is the period that the temperature is usually high in the district. During this period rains, isolated thunder showers accompanied by gale winds are observed. About 19 per cent of the total annual rainfall is received during this period, which helps to take sowing of rainfed crops well in advance. If the summer showers fail, the district normally experiences water scarcity for drinking.

The hot climate subsides when the South West monsoon sets in, usually during June. 40 per cent of annual rainfall is recorded during this period. Farmers are able to raise Paddy nurseries with the help of these rains. The remaining unsown rainfed areas are also brought under cultivation during this period. North East monsoon which prevails from October to December gives 40.50 per cent of annual Rainfall. This helps the farmer to take up second crop under rainfed condition. The cold weather generally commences in December after the cessation of North east monsoon rains. The minimum temperature of 15-16° C recorded during December to February generally affects the pollination in cereals particularly Rice.

2.3 Temperature

The range of maximum and minimum temperature experienced in the district is as follows:

Table 2.1 Average Maximum and Minimum Temperature Experienced during Different Months

Month	Maximum	Minimum
April – May, July, August	37.0° C	24.5° C
Sept, Oct. November	31.8° C	22.3° C
December and January	30.5° C	19.0° C

Source: Records of Office of the Assistant Director of Statistics, Namakkal

2.4 Relative humidity

In general, the district records higher relative humidity due to the surroundings of hill areas. Relative humidity variation between day and night are higher resulting in higher probability of pest and disease incidences.

2.5 Wind

From October to March, wind blows generally from North Easterly and Easterly directions. South westerly and westerly winds predominate from May to September. The wind speed is least in October to February, while it is higher from July to September.

2.6 Sunshine hours

The sunshine hours are generally long during February to May ranging from 8.4 hours to 9.5 hours per day. During August, September and October it ranges from 6.3 to 6.8 hours per day.

2.7 Rainfall

The average annual rainfall of the district is 776 mm. Nearly 80 percent of the total rainfall is received during the SWM and NEM season. Among these two seasons SWM receives 40 per cent of rainfall and NEM 40.60 per cent. Summer season records 19.10 per cent of the total rainfall. The winter season receive only 0.30 per cent of the total rainfall. Among the months September and October receives more rainfall (125.8 and 124.7 mm respectively) followed by November (95.0 mm) and August (92.5mm).

Since rainfall distribution is bi-modal in nature and the quantity of rainfall received during the SWM and NEM is sufficient for raising rainfed crops, two crops are recommended per year.

Table 2.2 Taluk wise Mean Annual Rainfall in Namakkal District

Sl. No.	Taluk	Mean annual rainfall	South west monsoon (Jun-Sep)		North east Monsoon (Oct-Dec.)		Winter (Jan-Feb.)		Summer (Mar-May)	
		mm	mm	%	mm	%	mm	%	mm	%
1	Namakkal	986	406.6	41.2	376.2	38.2	7.2	0.7	196.0	19.9
2	Paramathy	527	176.2	33.5	262.1	49.7	1.0	0.2	87.7	16.6
3	Tiruchengode	939.6	347.4	37	399.8	42.6	1.2	0.1	191.2	20.3
4	Rasipuram	651.6	310.9	47.8	221.6	34	0.9	0.1	118.2	18.1
	Mean	776	310.3	40	314.9	40.6	2.6	0.3	148.2	19.1

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

2.8 Revenue Administrative Divisions

Table 2.3 Revenue Administrative Divisions in Namakkal District

S.No.	Details	Numbers
1.	Revenue Divisions	2
2.	Revenue Taluks	4
3.	Revenue Firkas	30
4.	Revenue Villages	391

Source: Records of Office of the Assistant Director of Statistics, Namakkal

There are two revenue divisions, four taluks, thirty firkas and 391 revenue villages in Namakkal district.

2.9 Local Bodies

Table 2.4 Details of the Local Bodies in Namakkal District

S.No.	Details	Numbers
1.	Corporations	2
2.	Municipalities	5
3.	Panchayat Unions	15
4.	Town Panchayats	19
5.	Village Panchayats	331

Source: Records of Office of the Assistant Director of Statistics, Namakkal

There are two municipal corporations Namakkal and Tiruchengode, five municipalities, 15 panchayat unions, 19 town panchayats and 331 village panchayats in Namakkal district.

2.10 Population Details of Namakkal District (2001)

Table 2.5 Population Details of Namakkal District

Sl No	Class	Total Households	Total Population	Male Population	Female Population	Area	Population Density
1	Rural	255827	948230	482365	465865	3149.13	301.11
2	Urban	138551	545232	277186	268046	254.87	2139.26
3	Total	394378	1493462	759551	733911	3404.00	438.74

Source: Records of Office of the Assistant Director of Statistics, Namakkal

The above table indicates the population census (2001) of Namakkal district. It could be seen from the table that the district is highly urbanised with about 37 per cent of the population living in urban areas. The population density is also very high in the urban areas compared to most of the other districts in Tamil Nadu state.

2.11 Taluk wise Population Details of Namakkal District

Table 2.6 Taluk wise Population Details of Namakkal District (2001)

Sl.No.	Taluk Name	Total Households	Total Population	Male Population	Female Population
1	Namakkal	121424	459296	232447	226849
2	Rasipuram	82471	317571	161944	155627
3	Tiruchengode	139501	529686	271238	258448
4	Paramathi-Velur	50982	186909	93922	92987

Source: Records of Office of the Assistant Director of Statistics, Namakkal

The above table indicates the taluk wise population details of Namakkal district. Tiruchengode taluk is the largest among the four taluks with total households of 121424 followed by the Namakkal, Rasipuram and Paramathi-Velur taluk.

2.12 Infrastructure

2.13 Roads

The district is well served by road networks. Two national highways NH-7 and NH-47 pass through all the taluk headquarters. Other towns and most of the villages are connected by motorable roads.

2.14 Education

Table 2.7 Educational Infrastructure Available in Namakkal District

S.No.	Details	Numbers
1.	Universities	Nil
2.	Arts and Science Colleges	9
3.	Medical Colleges	Nil
4.	Engineering Colleges	9
5.	Veterinary College	1

Source: Records of Office of the Assistant Director of Statistics, Namakkal

Namakkal district is well known for its educational infrastructure in the state especially for schools and colleges. There is a veterinary college in the district and nine private sector Engineering colleges.

2.15 Irrigation

The source of Irrigation is wells, canals and tanks. The well irrigation is the main source of irrigation covering 71272 ha. An area of 8868 ha is covered by Canal Irrigation. Other sources of irrigations like lift irrigation and odai are 6512 Ha.

2.16 Wells

Table 2.8 Details of Wells and Tube wells in Namakkal District

S.No.	Taluk	Wells	Tube wells	Net Area irrigated in ha.
1	Namakkal	34594	2963	29903
2	Paramathy	13817	2168	8267
3	Tiruchengode	14503	2429	15871
4	Rasipuram	17911	630	17231
Total		80825	8190	71272

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

There are nearly eighty thousand wells and eight thousand bore wells in Namakkal district. Among the taluks, Namakkal taluk seems to have exploited most of the ground water potential compared to the other three taluks and the net area irrigated is also the highest in this taluk.

2.17 Canals

Table 2.9 Details of Canals in Namakkal District

S. No.	Taluks	Length
1	Tiruchengode - 1	19 KM
2	Paramathy - 2	56 KM
Total		75 KM

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

Only two taluks have the lined canals running across its territories and the total canal length is about 75 Kms.

2.18 Canals and its Ayacut Areas in Namakkal District

Table 2.10 Canals and its Ayacut Areas in Namakkal District (in hectare)

S. No	Canals	Pallipalayam	Mohanur	Paramathy	Kabilar malai	Total
1	Mettur Canal	4530.8 (11 Villages)	-	-	-	4530.8
2	Raja Vaikkal	-	735.4 (3 Villages)	253.3 (2 Villages)	1600 (9 villages)	2588.7
3	Mohanur Vaikkal	-	653.77 (6 Villages)	-	-	653.77 (6 Villages)
4	Kumarapalayam Poyyeri vaikkals	-	1081.21 (5 Villages)	13.73 (7 Villages)	-	1094.94
Total		4530.8 (11 Villages)	2470.38 (14 Villages)	267.03 (9 Villages)	1600 (9 Villages)	8868.21

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

There are four canals present in the district covering 43 villages with an area of 8868.21 hectares. The four canals pass through three taluks and four blocks. Among the canal ayacut area, the area covered by the Mettur canal is the largest and Mohanur Vaikal is the smallest.

2.19 Tanks

Table 2.11 Details of Tanks in Namakkal District

S. No.	Taluk	PWD Tanks	Panchayat Tank	Total
1	Namakkal	43	50	93
2	Paramathy	7	6	13
3	Tiruchengode	18	59	77
4	Rasipuram	15	18	33
	Total	83	133	216

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

There are totally 216 tanks in the district owned by the PWD and the Panchayats. Panchayats own 133 tanks and PWD owns 83 tanks. Largest number (93) of tanks is located in the Namakkal taluk followed by the Tiruchengode taluk. The number of panchayat tanks is more in Tiruchengode taluk compared to the other taluks in the district.

2.20 Groundwater position

The groundwater potential of the district is very poor. Most of the Blocks come under category of Dark and Grey. Only Kollihills and Tiruchengode Blocks are classified as white category. The Block wise Groundwater potential is given below.

2.21 Ground Water Potential

Table 2.12 Block wise Classification of Groundwater Potential in Namakkal District

S.No.	Name of the Block	Classification
1	Namakkal	Grey
2	Puduchatram	Dark
3	Sendamangalam	Dark
4	Erumapatty	Dark
5	Mohanur	Dark
6	Kollihills	White
7	Paramathy	Dark
8	Kabilarmalai	Dark
9	Tiruchengode	White
10	Pallipalayam	Dark
11	Elachipalayam	Dark
12	Mallasamudram	Dark
13	Rasipuram	Dark
14	Vennandur	Dark
15	Namagiripet	Dark

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

2.22 Administrative Divisions

The following table indicates the administrative divisions of Namakkal district.

Table 2.13 Revenue Administrative Divisions of Namakkal District

Name of the District	Name of the Taluk	Name of the Block
Namakkal	Namakkal	Namakkal Puduchatram Sendamangalam Erumapatty Mohanur Kollihills
	Rasipuram	Rasipuram Namagiripet Vennandhur
	Tiruchengode	Tiruchengode Pallipalayam Elachipalayam Mallasamudram
	Paramathy-Velur	Paramathy Kabilamalai

Source: Records of Office of the Assistant Director of Statistics, Namakkal

Namakkal district comprises of four taluks and fifteen blocks. Each taluk serve as an agricultural division for all administrative purposes. Among the taluks, Namakkal taluk is the largest in terms of geographical area with six blocks in its fold followed by the Tiruchengode taluk with four blocks. Paramathy Velur taluk is the smallest in terms of geographical coverage.

2.23 Season wise Rainfall

Table 2.14 Season wise Rainfall Data - 2001 – 2007

(in mm)

Months	Normal Rainfall	2001	2002	2003	2004	2005	2006	2007
Jan	0.8	0	0	0	0.2	0	8.3	0
Feb	1.8	0	1.9	6.8	0	7.3	0	0
Winter	2.6	0	1.9	6.8	0	7.3	8.3	0
Mar	7.6	2.5	0.6	22.8	0	24.7	23.5	1.4
Apr	54.6	89.9	9.9	18.8	36.6	128.4	38.1	61.9
May	86.0	90.6	85.6	52.1	233.3	89.3	60.2	44.4
Summer	148.2	183.0	96.1	93.7	269.9	242.4	121.8	107.7
Jun	41.0	12.6	53.2	52.3	21.4	14.1	31.7	18.5
Jul	46.6	105.9	1.8	51.3	41.9	48.2	3.4	33.8
Aug	101.7	66.7	41.8	103.5	9.7	108.3	63.4	120.7
Sep	121.0	165.7	64.7	36.7	100.9	73.0	157.7	59.4
SW Monsoon	310.3	350.9	161.5	243.8	173.9	243.6	256.2	232.4
Oct	157.8	125.9	201.0	228.6	147.2	264.0	191.1	161.4
Nov	116.4	81.6	47.3	50.4	48.5	235.7	114.1	41.5
Dec	40.7	22.6	1.4	6.5	0	102.0	4.4	128.6
NE Monsoon	314.9	230.1	249.7	285.5	195.7	601.7	309.6	331.5
Total	776.0	764.0	509.2	629.8	639.7	1095	695.9	671.6

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

It could be seen from the above table that North East monsoon is the major source of rain for the Namakkal district over the years coinciding with the months of October, November, December followed by the South West monsoon, Summer and Winter rainfalls. The total annual rainfall ranges from 509 mm in the year 2002 to 764 mm in 2001. It could also be seen that the district has been receiving rainfall far below the

average annual rainfall for the last seven years except for the year 2005 where it was unusually higher at 1095 mm. Majority of rainfed cultivation therefore depends mainly on the NE monsoon in the district.

2.24 Soil Type

The soils of the district can be classified under 6 categories. The block wise distribution of soil is as follows.

Table 2.15 Block wise Soil Type Details

Sl.No.	Type of Soil	Blocks in District
1.	Red loam	Namakkal, Elachipalayam, Puduchatram, Mallasamudram, Rasipuram, Tiruchengode, Paramathy and Parts of Pallipalayam.
2.	Lateritic soil	Kollihills
3.	Black soil	Erumapatty, Kabilarmalai, Mohanur, Namagiripet and Parts of Pallipalayam.
4.	Sandy coastal alluvial	Kabilarmalai
5.	Red sandy soil	Puduchatram
6.	Clay loam	Sendamanalam, Vennandhur, Erumapatty

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

It could be seen from the table that majority of the area in the district is covered by red loamy soil followed by the black soil and clay loam. The red loamy soils are suitable for cultivation of crops under both rainfed and irrigated conditions. The lateritic soils which are little acidic in nature is found in the Kolli hills region of the district. The soil is suitable for cultivation of some fruit crops and plantation crops like Cardamom in the higher reaches. Sandy coastal alluvial soil is found adjoining the river and canal irrigated areas in the Kabilarmalai block. The red sandy soil dominates the Puduchatram block.

Table 2.16 Area under Different Soils in Namakkal District**(in hectares)**

Soil Description	Area (ha)
Moderately shallow, fine loamy, mixed, Alfisols	32048.96
Shallow, loamy, mixed, Inceptisols	27831.43
Moderately deep, clayey skeletal, mixed, Alfisols	21284.31
Moderately shallow, fine, mixed, Alfisols	19018.95
Very deep, fine loamy, mixed, Alfisols	18339.95
Deep, fine, mixed, Alfisols	16467.64
Shallow, clayey skeletal, mixed, Alfisols	16332.24
Very deep, fine loamy, mixed, Inceptisols	13036.31
Moderately shallow, coarse loamy, mixed, Entisols	11765.28
Moderately shallow, fine, mixed, Inceptisols	11708.62
Moderately deep, fine, mixed, Inceptisols	10891.03
Deep, fine, montmorillonitic, Vertisols	10547.79
Moderately deep, fine, mixed, Alfisols	10276.07
Moderately shallow, loamy skeletal, mixed, Entisols	9055.05
Moderately shallow, clayey skeletal, mixed, Inceptisols	8440.51
Very deep, fine loamy, mixed, Ultisols	7554.98
Deep, fine loamy, mixed, Inceptisols	7169.40
Very shallow, loamy, mixed, Entisols	6958.79
Very shallow, loamy skeletal, mixed, Inceptisols	6853.16
Moderately deep, fine loamy, mixed, Alfisols	6745.95
Shallow, loamy skeletal, mixed, Inceptisols	6194.50
Very deep, fine silty, mixed, Entisols	5804.84
Shallow, sandy skeletal, mixed, Inceptisols	4780.20
Moderately deep, fine loamy, mixed, Inceptisols	4642.08
Shallow, loamy, mixed, Alfisols	4541.46
Moderately deep, loamy skeletal, mixed, Inceptisols	4101.47
Shallow, loamy skeletal, mixed, Alfisols	3417.79

Table 2.16 Contd....

Soil Description	(in hectares) Area (ha)
Moderately deep, fine, montmorillonitic, Inceptisols	2964.98
Very deep, fine, montmorillonitic, Vertisols	2881.32
Deep, coarse loamy, mixed, Ultisols	2677.85
Deep, fine, mixed, Inceptisols	2018.08
Shallow, clayey skeletal, mixed, Inceptisols	1679.78
Very deep, fine, mixed, Alfisols	1167.86
Moderately shallow, coarse loamy, mixed, Inceptisols	1127.86
Shallow, loamy, mixed, Entisols	711.70
Deep, fine, mixed, Mollisols	364.49
Deep, coarse loamy, mixed, Inceptisols	331.66
Moderately shallow, loamy skeletal, mixed, Inceptisols	179.62
Moderately shallow, fine, montmorillonitic, Inceptisols	72.04
Deep, coarse loamy, mixed, Alfisols	22.79

2.26 Land Use Pattern**Table 2.17 Land Use Pattern in Namakkal District**

Sl.No.	Land Classification	Area in ha	% to the Total
1.	Forest	43909	13.06
2.	Uncultivable waste	24743	7.36
3.	Land put to Non-Agricultural use	38302	11.39
4.	Cultivable waste	4781	1.42
5.	Permanent pastures / grazing lands	6684	1.99
6.	Land under miscellaneous tree crops	3854	1.15
7.	Current fallow	28375	8.44
8.	Other fallow	9143	2.72
9.	Net area sown	176544	52.49
10.	Area sown more than once	29145	8.67
11.	Gross cropped area	205689	61.16
12.	Geographical areas	336335	
13.	Cropping intensity	128%	

Source: Season and Crop Report (2007)

The information on land use pattern pertains to the year 2007. It could be seen from the above table that the forest contributes to nearly 13 per cent to the geographical area which is far below the state average of 17 per cent. The forest area is contributed mainly by the Kolli hills and parts of the Western Ghats that cut across the district. Land put to nonagricultural uses are the next highest (11 per cent) and is higher compared to many other districts in the state primarily because of the higher levels of industrial activity and urbanized nature of the district. Poultry and its ancillary industries like feed manufacturing, presence of large number of sago industries contribute to the non agricultural use of the land. About 52 per cent of the total geographical area was sown with some agricultural crops at least once in a year. The gross cropped area forms 61 per cent of the total area with a cropping intensity of 128 per cent.

2.27 Land Holding Pattern of the farmers (2006)

Table 2.18 Land Holding Pattern in Namakkal District

S.No.	Size of Holding	No.	% to the Total	Area	% to the Total
1.	0.0-0.5	45469	30.53	12255.15	6.29
2.	0.5-1.0	36674	24.62	26515.96	13.61
3.	1.0-2.0	37173	24.96	53175.46	27.30
4.	2.0-3.0	15432	10.36	36951.61	18.97
5.	3.0-4.0	6856	4.60	23404.69	12.01
6.	4.0-5.0	3440	2.31	15395.74	7.90
7.	5.0-7.5	2816	1.89	16929.05	8.69
8.	7.5-10.0	763	0.51	5962.12	3.06
9.	10.0-20.0	295	0.20	3507.49	1.80
10.	20.0 & above	22	0.01	703.43	0.36
	Total	148940		194801	

Source: Records of Office of the Assistant Director of Statistics, Namakkal

There are about 1.5 lakh farmers holding a total area of 1.95 lakh hectares. It could be seen from the table that nearly 31 per cent of the farmers in the district hold only 6.29 per cent of the land and 75 per cent of the farmers hold less than 2 hectares. About 15 per cent of the farmers hold 2 to 4 hectares of land indicating the predominance of small and medium holdings in the district.

2.28 Source of Irrigation

Namakkal District is not endowed with any major irrigation system. River Cauvery passes through this district facilitating canal and lift irrigation. The other main source of irrigation is well irrigation, which constitutes about 93 per cent of the total area under irrigation. The total irrigated area in the district is 65668.82 ha which forms about 31 per cent of the gross cultivated area. The area under irrigation is furnished below.

2.29 Net area Irrigated

Table 2.19 Net area Irrigated in Namakkal District (2007)

Nature of Source	No	Nansai Ha	Punsai Ha	Net Irrigated Area	% to the total
Canals	3	4958.72	300.00	5258.72	8.01
Tanks	259	397.52	0	397.52	0.61
Bore Wells	5071	1426.82	9363.49	10790.31	16.43
Open Wells	73709	2503.59	42193.49	44697.08	68.06
Others		106.37	4418.82	4525.19	6.89
Total	79042	9393.02	56275.8	65668.82	

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

It could be seen from the above table that the open wells constituted the major source of irrigation (68 per cent) followed by the bore wells (16 per cent) and canals (8 per cent). The garden lands constituted the major area under irrigation with open and bore wells as the major source whereas canals were the major source of irrigation for the wetlands. Similar trend was observed in the gross irrigated area also with canals contributing to higher number of cultivations within a year.

2.30 Gross Irrigated Area

Table 2.20 Gross area Irrigated in Namakkal District (2007)

Nature of Source	No.	Nansai Ha.	Punsai Ha.	Gross Irrigated Area
Canals	3	6154.85	300.00	6454.85
Tanks	259	523.75	0	523.75
Bore Wells	5071	1880.46	11744.41	13624.87
Open Wells	73709	2737.23	53712.70	56449.93
Others		183.27	5362.67	5545.94
Total	79042	11479.56	71119.78	82599.34

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

2.31 Ground Water Potential

Table 2.21 Block wise Criticality of Ground Water Potential

Over Exploited (100%)	Critical (85-100%)	Semi Critical (60-85%)	Safe (< 85%)
Erumapatty Mallasamudram Namagiripet Namakkal Pallipalayam Puduchatram Rasipuram Sendamangalam Vennandur	Paramathy	Kabilarmalai Mohanur Tiruchengode	Elachipalayam Kollihills

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

Nine out of the fifteen blocks in the district are classified under the overexploited category of ground water potential. Three blocks namely Kabilarmalai, Mohanur and Tiruchengode are classified under Semi-critical potential. It could be understood from the table that most of the ground water potential in the district is over exploited and water management practices assume greater importance in this regard.

CHAPTER – III

SWOT ANALYSIS OF THE DISTRICT

3.1 SWOT Analysis

SWOT analysis is a tool that is used here to identify and demarcate the internal and external factors that would have a significant impact on the over all developmental perspectives of the district.

Strengths

- The district is well connected with good roads. NH 7 and NH 47 pass through the district and all the villages in the district have good tar topped roads.
- There are five irrigation canals passing through the district creating a distinct irrigation potential in the nearby areas facilitating cultivation of irrigated crops like paddy, sugar cane, banana and betel vine.
- The district possesses wide range of climatic conditions favourable for cultivation of different crops.
- The district has a hilly range in Kolli hills where there is a huge potential for development of horticulture.
- The farmers in the district are predominantly small and have a strong positive attitude in implementation of the government schemes as experienced.
- Rural based industries like poultry, poultry feed, rice mills and sago processing factories are well developed and networked for provision of suitable options to the farmers for marketing and further processing.
- Existence of Committed voluntary Agencies/Non Governmental Agencies.
- Availability of adequate number of skilled labour.

- Existence of twelve Regulated Markets.
- The district has a very high crossbred dairy population
- The compound growth rate of milk production in the district is 7.5% and the productivity is 6.36% which is quite high compared to the other districts
- High concentration and Scientific management of poultry population
- Poultry industry is both vertically and horizontally integrated

Weakness

- The rainfall is uneven and unpredictable
- Larger share of rain fed area
- The land holding are small and fragmented and the farmers are resource poor
- Greater dependence of ground water resulting in depletion of groundwater potential
- Existence of other industries like textiles, lorry body building etc, create labour shortage during peak agricultural seasons
- There is no government industrial estate in the district.
- Absence of Krishi Vigyan Kendra in the district
- Unscientific management of dairy and shortage of fodder
- Poor quality milk products
- Lack of regular surveillance in poultry
- High demand for desi birds and eggs

Opportunities

- There is a good scope for promotion of maize cultivation in the district as it serves as the major ingredient for poultry feed manufacturing industries prevailing in large numbers in the district.
- There is a good scope for setting up new agro processing industries and for promoting new technologies in Sago processing.
- The district topography is highly suitable for water shed development and provides a good opportunity as the district is highly water starved and the farmers are highly committed
- The betel vine produced in the district is well known for its quality and efforts can be made to register under Geographic Indication and develop suitable strategies for popularising it.
- There is a large area under Korai crop in the district. Industries for processing the crop may be promoted.
- Banana is grown in many parts of the district and there is a good potential to establish a exclusive market for banana and processing possibilities can be explored.
- There is a good opportunity to promote egg processing and egg exports from the district.

Threats

- Wide presence of absentee landlordism
- Profitability of agriculture in comparison to the other livelihood activities
- Conversion of Agricultural land for residential and industrial purpose.
- Inability of small farmer to compete
- New emerging diseases in poultry

3.2 Composite Index of Agricultural Development of Namakkal 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% 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 ($i = 1,2,3 \dots m$, $d = 1,2,3 \dots n$). First this value of development indicators for each district is to be standardized. When the observed values are related positively to the development (as in the case of cropping intensity), the standardization is achieved by employing the formula

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

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

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

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

The data base for the current study on Namakkal district is taken from various government publications like Season and Crops Report and Economic Appraisal of Tamil Nadu for four year periods 1990-91, 1995-96, 2000-01 and 2005-06. In all, 25 indicators of agricultural development as given in Table 5.1 were used for estimating the composite index of development for the district. The 25 indicators were grouped into six different ‘components’: i) Crop-Area-Variables (10) ii) Irrigation (7) iii) Livestock (3) iv) Fisheries (1) v) Fertilizer (3) and vi) Cultivators and Labourers (2).

The analysis showed that Namakkal district was classified as ‘developing’ in agricultural development during 90-91 and 1995-96 and the remaining two periods it was classified as ‘developed’. In terms of overall agricultural development its rank among the 29 districts of Tamil Nadu varied from 6 to 17 during the 1990-91 to 2005-06. As far as the individual components of agricultural development are concerned, its ranks in the above periods are summarized in Table 5.2. The table shows that except in livestock, in all other components its performance in the period of study is satisfactory. For example, in livestock ranks are between 1 and 2 in all the 4 periods. Similarly in crop area variables also occupied ranks between 3rd and 17th ranks.

Table 3.1 Selected Indicators of Agricultural Development for Namakkal District

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

Table 3.2 Rank of Namakkal 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	17	20	2	-	-	15	14
	1995-96	14	16	2	26	25	17	17
	2000-01	3	8	1	26	28	16	6
	2005-06	9	20	1	26	27	9	13

CHAPTER – IV

DEVELOPMENT OF AGRICULTURE SECTOR

The contribution of agriculture and allied sectors in the district are very crucial for the overall development as the district heavily depends on them for creation of additional income and employment generation. Further the farmers of the district are highly committed and early adopters of new technologies introduced. In this chapter, an attempt is made to capture the agricultural scenario and examine the ongoing schemes for dovetailing the necessary interventions. The interventions were evolved and prioritised through participatory planning exercise at the district level with the official machinery and the elected members of the local bodies. The interventions are listed department wise at the end of the chapter.

4.1 Seasons of Cultivation

The following three tables indicate the cropping scheme adopted in the three environments of wetland, garden land and dry land in Namakkal district.

**Table 4.1 Seasons of Cultivation in different Irrigation Environments
Namakkal District (2007)**

Wet land

Sl. No.	Crop	Month of Sowing
1.	Single crop sequence	
	Sugarcane	December - January
	Betel vine	June - July
	Banana	January - February
2.	Double crop sequence	
	Paddy	July - August
	Gingelly	February

Garden land

Sl. No.	Crop	Month of Sowing
1.	Single crop sequence	
	Tapioca	December
	Sugarcane	January - February
2.	Double crop sequence :	
	Paddy	August - September
	Cholam (or) Groundnut	February
	Cholam (or) Cotton	
	Cholam (or) Pulses	
	Cholam (or) Gingelly	

Dry land

Sl.No.	Crop	Month of Sowing
1.	a. Groundnut	May - June
2.	b. Fodder Cholam (or) Sunflower	August - September
3.	a. Groundnut	May - June
4.	b. Pulses	August - September
5.	a. Groundnut (or) Cholam	June
6.	b. Horse Gram	October

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

4.2 Cropping Pattern Followed

The table below depicts the cropping pattern followed in Namakkal district for the past three years from 2004 to 2007. It could be seen from the table that the major crops grown in terms of area are fodder crops, groundnut, tapioca, sugarcane, cholam and paddy in that order. A comparison of the last two years cropping pattern reveals distinct pattern of changes in area under these major crops. There is a general decline of area under paddy and cholam and there is an increase in the area under sugarcane, tapioca and fodder crops. The shift in area is towards annual and long duration crops perhaps that might be due to the increased water and labour scarcity faced by the farmers in the district where the average rainfall was consistently lower in these years. The category fodder crops included the fodder cholam, the area under which has enormously increased in the district over the years. It could also be observed from the table that the share of rainfed area in the total area is very high for all these crops except in the case of paddy.

Table 4.2 Cropping Pattern Followed in Namakkal District**(in hectares)**

SNo	Crops	2004-05				2005 - 06				2006 - 07			
		Irrigated Area	Rainfed Area	Total Area	% to Total	Irrigated Area	Rainfed Area	Total Area	% to Total	Irrigated Area	Rainfed Area	Total Area	% to Total
1	Paddy	9042	Nil	9042	4.77	18833	Nil	18833	10.24	15222	Nil	15222	8.36
2	Cholam	11372	13261	24633	13.00	11638	17641	29279	15.92	3380	13027	16407	9.01
3	Cumbu	8	337	345	0.18	90	299	389	0.21	81	460	541	0.30
4	Ragi	14	118	132	0.07	6	254	260	0.14	30	163	193	0.11
5	Maize	1386	589	1975	1.04	764	1475	2239	1.22	202	39	241	0.13
6	Red gram	Nil	1307	1307	0.69	409	423	832	0.45	97	511	608	0.33
7	Black gram	1245	2273	3518	1.86	526	320	846	0.46	106	702	808	0.44
8	Green gram	324	8241	8565	4.52	1148	3120	4268	2.32	111	2081	2192	1.20
9	Areca nut	188	Nil	188	0.10	135	5	140	0.08	254	2	256	0.14
10	Turmeric	1399	Nil	1399	0.74	2115	Nil	2115	1.15	2120	Nil	2120	1.16
11	Sugarcane	9494	Nil	9494	5.01	13280	Nil	13280	7.22	21057	Nil	21057	11.57
12	Banana	902	Nil	902	0.48	2005	Nil	2005	1.09	2432	Nil	2432	1.34
13	Sapota	494	Nil	494	0.26	393	47	440	0.24	375	35	410	0.23
14	Tapioca	5526	12542	18068	9.53	9557	12768	22325	12.14	13094	12426	25520	14.02
15	Onion	2789	Nil	2789	1.47	2707	Nil	2707	1.47	2295	Nil	2295	1.26
16	Cotton	2455	1033	3488	1.84	2572	568	3140	1.71	2923	237	3160	1.74
17	Groundnut	3837	40055	43892	23.16	6201	36144	42345	23.02	3910	38285	42195	23.17
18	Sunflower	142	228	370	0.20	297	258	555	0.30	420	138	558	0.31
19	Betel leaf	303	Nil	303	0.16	352	Nil	352	0.19	340	Nil	340	0.19
20	Fodder Crops	1490	55658	57148	30.15	5635	30725	36360	19.77	3435	41242	44677	24.54
21	Korai	1485	Nil	1485	0.78	1209	Nil	1209	0.66	841	Nil	841	0.46

Source: Various Issues of the Season and Crop Report.

4.3 Productivity of Crops

Table 4.3 Average Productivity of Crops in Namakkal District (2007)

Sl.No.	Name of the crop	Yield in Kgs/ac (Rainfed/Dry)	Yield in Kgs/ac (Irrigated)
1	Paddy	0	4100
2	Millet	1934	2552
3	Pulses	732	896
4	Cotton	2000	3000
5	Sugarcane	0	16600
6	Oilseeds	1300	1859

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

The above table indicates the average productivity of major crops in Namakkal district. It could be seen from the table that there exists a wide gap in productivity between the rainfed and irrigated crops in the district.

4.4 Extent of Average Yield Gap

Table 4.4 Average Yield Gap in Major Crops (2007)

Sl.No.	Crop	Yield gap
1.	Paddy	1000 Kg
2.	Millet	400 Kg
3.	Pulses	100 Kg
4.	Cotton	500 Kg
5.	Sugarcane	10 tonnes
6.	Oilseeds	100 Kg

Source: Records of Office of Joint Director of Agriculture, Namakkal

The table indicates the average yield gap that exists in the district for the major crops. It could be seen from the table that paddy has the highest gap followed by millets, cotton, pulses, oilseeds and sugarcane. Department wise strategies and the related interventions are given later in the report for enhancing the productivity of these crops.

4.5 Technological Gap

Table 4.5 Major Technological Gaps in Major Crops (2007)

Sl. No.	Crop	Technological gaps
1.	Paddy	High yielding varieties, SRI Technology IPM, INM, Irrigation Management
2.	Millet	Hybrid seeds
3.	Pulses	INM, IPM
4.	Cotton	Bt seeds, Hybrid seeds, INM, IPM, Irrigation Management
5.	Sugarcane	Irrigation Management, High Yielding varieties, INM
6.	Oilseeds	Hybrid seeds, INM, IPM, Irrigation Management

The above table identifies the technological gaps that bring down the production and productivity levels of major crops in the district. All these identified technology gaps are taken in to consideration for proposing suitable strategies and interventions in a project format. The components of the proposed project are enclosed in the Annexure I.

4.6 Current Input use Level for Major Crops

a. Consumption of major nutrients / crop wise (2007)

Table 4.6 Consumption of Major Nutrients (2007)

Sl. No.	Name of the Crop	Area in (Ha)	Total Consumption (MT)			Total (Tons)
			N	P	K	
1.	Paddy	26506	2610	1550	1590	5750
2.	Millet	111179	2580	1020	780	4380
3.	Pulses	24346	322	580	0	902
4.	Cotton	4197	378	180	180	738
5.	Sugarcane	19294	4167	1375	1625	7167
6.	Oilseeds	55112	685	565	1785	3035
7.	Others	5210	580	380	320	1280
Total		245844	11322	5650	6280	23252

The average per hectare consumption of major nutrients by different crops in Namakkal district is presented in the above table. It could be seen from the table that nearly 50% of the total fertilizer use was contributed by Nitrogen followed by Potash (27%) and Phosphorus (24%). Totally twenty three thousand MT was consumed in the district during the year 2007.

The following table presents the consumption of fertilizers for the past six years in Namakkal district. There is nearly a 60 percent increase in the total consumption of fertilizers in Namakkal district in six years time from 2001 to 2007. The proportionate increase was highest in the case of Nitrogen followed by Phosphorus and Potash.

b. Year wise Fertilizer Consumption in Namakkal District

Table 4.7 Year wise Fertilizer Consumption in Namakkal District

Year	Consumption of nutrients			Total (Tons)
	N	P	K	
2001-02	7340	3850	5525	14509
2002-03	6294	2696	2697	11957
2003-04	8265	3865	3972	16102
2004-05	9774	5235	5806	20815
2005-06	13120	6139	7570	26824
2006-07	11322	5650	6280	23252

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

c. Year wise Pesticide Consumption in Namakkal District

Table 4.8 Year wise Pesticide Consumption in Namakkal District

Year	Consumption of pesticide	
	Dust (tons)	Liquid (lt)
2001-02	30.950	15080
2002-03	73.500	6360
2003-04	135.650	11175
2004-05	103.942	16559
2005-06	189.073	17122
2006-07	115.22	23208

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

The above table indicates the consumption of pesticides in Namakkal district for the past six years from 2001 to 2007. It could be seen from the table that there is an increase in consumption of both dust and liquid pesticides in the district during the period.

d. Break up of Consumption of Plant Protection Chemicals (2007)

Table 4.9 Consumption of PP Chemicals in Namakkal District

Sl. No.	Details	Consumption
1	Dust in MTs	115.22
2	Liquid in Litres	23208
3	Bio-Pesticides	
	1) Neem derivatives (Azadirachtin)	6067.5
	2) B.T. (Gallariae & Kurstaki)	41
4	Bio Control Agents	
	1. Trichogramma (C.C.)	14261
	2. Trichoderma (Kgs.)	1809.1
	3. N.P.V. (L.E.) (Lit)	88.65
	4. Chrysopa (Nos.)	0
5	Pseudomonas (Kgs)	2750.5

The above table indicates the consumption of plant protection chemicals in Namakkal district during the year 2007. It could be seen from the table that the liquid chemicals are the most popular among the farmers followed by the bio pesticides, bio-control agents and Pseudomonas. Dust chemicals were used to a very less extent in the district.

4.7 Administrative Setup of the Department of Agriculture

In Namakkal District, fifteen Assistant Directors of Agriculture are functioning at Panchayat Union from 1.1.2008. The details are given below.

Table 4.10 Administrative Setup of the Department of Agriculture

SI No.	Name of the Taluk	Name of the ADA office	No. of Villages covered
1	Namakkal	Namakkal	36
		Puduchatram	33
		Sendamangalam	24
		Erumapatti	40
		Mohanur	30
		Kollihills	16
2	Paramathi	Paramathi	26
		Kabilarimalai	30
3	Tiruchengodu	Tiruchengodu	41
		Pallipalayam	17
		Mallasamudram	28
		Elachipalayam	33
4	Rasipuram	Rasipuram	25
		Vennandur	31
		Namagiripettai	40

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

One Agricultural Officer, Deputy Agricultural Officer, Assistant Seed Officer, Assistant Agricultural Officers and Depot Manager are working in the Assistant Director of Agriculture office at block level. In Agricultural Extension Centre, the Seed materials like Paddy, Millets Pulses, Cotton, Oil Seeds and Micro Nutrients, Bio – Fertilizers, Bio Pesticides, and Gypsum are distributed to the farmer by general sales and also at subsidised rates. The Assistant Director of Agriculture is the overall administrator for the Block and he is responsible for implementing schemes and entire field activities.

4.8 Existing Development Schemes in Namakkal District

The currently implemented development programmes in the Namakkal district are listed below.

I. Agricultural Schemes**Table 4.11 Integrated Cereal Development Programme**

Sl. No	Name of the Component	Unit	Eligible subsidy (Rupees)
1	Distribution of Certified Paddy Seeds	Kg.	2
2	Distribution of Certified Millet Seeds	Kg.	4
3	Hybrid Rice Demonstration	1 Ac.	1000
4	Distribution of Bio-Fertiliser	18 Pockets/Ha.	50%
5	Distribution of Gypsum	Ha.	500
6	Distribution of M.N. Mixtures	Ha.	50%
7	Crop Production Technology Demonstration	Ha.	2500
8	Farmers Training	Nos.	5000
9	IPM Demonstration	Nos.	6000

Table 4.12 Intensive Cotton Development Programme

Sl. No.	Name of the Component	Unit	Eligible subsidy (Rupees)
1	Distribution of Certified Cotton Seeds	Kg.	10
2	Farmers Training	Nos.	10000
3	Pest Surveillance	Nos.	2500
4	IPM Demonstration cum Training	Nos.	85000
5	Distribution of Pheromone Traps	Nos.	500
6	Supply of Bio Agents	Nos.	300
7	Supply of normally operated sprayer	Nos.	700
8	Supply of Power operated Sprayer	Nos.	1500
9	Distribution of Sprinkler	Unit	12500
10	Distribution of Drip Irrigation	Unit	25000

Table 4.13 National Pulses Development Programme

Sl. No.	Name of the Component	Unit	Eligible subsidy (Rupees)
1	Foundation seed Village subsidy	Qtl.	500
2	Certified Seed Village Subsidy	Qtl.	500
3	Compact Block Demonstration	Ha.	1500
4	IPM Demonstration	Nos.	15000
5	Rhizobium Distribution	Ha.	50
6	M.N. Mixture Distribution	Ha.	200
7	Distribution of Manually Operated Sprayer	Nos.	800
8	Distribution of Power Operated Sprayer	Nos.	2000
9	Distribution of Seed Treating Chemical	Ha.	100
10	Distribution of Sprinkler		
	a. SF, MF, SC/ST, Women Farmers	Unit	15000
	b. Other Farmers	Unit	10000
11	Distribution of Gypsum	Ha.	112.75
12	Distribution of NPV	Ha.	250

Table 4.14 Sugarcane Development Programme

Sl. No.	Name of the Component	Unit	Eligible subsidy (Rupees)
1	Field Demonstration	0.5 Ha.	5000
2	Farmers Training	Nos.	5000
3	Release of Sugarcane Parasite	Ha.	20
4	Ferrous Sulphate Distribution	Ha.	25%

4.15 Oil seed Production Programme

Sl. No.	Name of the Component	Unit	Eligible subsidy (Rupees)
1	Seed Village - Foundation Seed Procurement	Qtl.	500
2	Distribution of Certified Seeds	Qtl.	800
3	Seed Village - Certified Seed Procurement	Qtl.	500
4	Compact Block Demonstration	Ha.	2000
5	Distribution of Seed Treating Chemicals	Ha.	100
6	Distribution of Sprinkler		
	a. SF, MF, SC/ST, Women Farmer	Unit	15000
	b. Other Farmers	Unit	10000
7	IPM Demonstration	Ha.	1500
8	Farmers Training	Nos.	15000
9	Distribution of Hand Operated Sprayer	Nos.	800
10	Distribution of Power Operated Sprayer	Nos.	2000
11	Rhizobium Distribution	Ha.	50
12	Gypsum Distribution	Ha.	500
13	M.N. Mixture Distribution	Ha.	200
14	Farm Implements :		
	a. Bullock drawn implements	Nos.	2000
	b. Tractor Drawn implements	Nos.	10000

Table 4.16 Coir Board Assisted Scheme

Sl. No.	Name of the Component	Unit	Eligible subsidy (Rupees)
1	Cut and Removal of Diseased Coconut Trees	Nos.	250
2	Demonstration Plot	Ha.	17500

4.9 Agricultural Sector Interventions

The developmental issues were discussed at different levels of participation and most suitable interventions for the identified priority areas of various departments was finalised as the outcome of the planning process.

I. Agriculture

Paddy Irrigated

1. One time grant to TANWABE / FIG to take certified seed production and distribution @ Rs.50000/- per group
2. Incentive for seed production to Self Help Groups @ Rs.3 / kg. - TANWABE Groups
3. Seed distribution subsidy for the seeds produced by Self Help Groups @ Rs.5 / kg.
4. Seed Minikit of new HYV @ Rs.100/- minikit
5. Hybrid Rice seed distribution subsidy – 75 per cent cost or Rs.100/- whichever is less
6. Distribution of Green Manure seeds at 75 per cent subsidy of Rs.15/kg.
7. Distribution of Soil Health Card @ Rs100/- per card (Soil + Water testing)
8. Assistance to start vermin-compost production unit @ Rs.10000 per unit (Self Help Group women farmers)
9. Distribution of Micro Nutrient Mixture @ Rs.500 / Ha or 50% subsidy
10. Gypsum 500 kg/ ha @ Rs.500/Ha.
11. Farmers Field School @17000/ No.
12. Massive Rat control campaign in village @ Rs.5000/village
13. Publicity & Training @ Rs.10000/- per district
14. Promotion of SRI
15. Distribution of Marker, Conoweeder and other items

Millets (both rain fed and irrigated)

1. HYV Seeds distribution @50 per cent Subsidy limited to Rs.8/Kg
2. Technology Demonstration including minor millets Subsidy @ Rs.2000/Ha
3. Distribution of Bio fertilizer @ 50 per cent subsidy limited to Rs.3/pocket

Ground Nut Irrigated

1. Seed production Subsidy @ Rs. 10/ Kg
2. Seed Distribution @50 per cent Subsidy limited to Rs 12/ Kg
3. Pipes carrying water from source to field @ 50 per cent subsidy limited to Rs.15000/
4. Bio fertilizer distribution subsidy@ Rs.3 / No.
5. Distribution of Gypsum Subsidy @ 50 per cent cost + TC limited to Rs. 750 / Ha.
6. MN Mixture Distribution @50 per cent cost limited to Rs. 500 / Ha.
7. Farmers Field School Rs. 22680/ No
8. Tarpaulins Subsidy @Rs.5000/No.
9. Farmers Training 50 farmers /Training 2 days Rs.20000/training
10. Publicity / POL/ Hiring of Vehicle @ Rs.100000/- per year/District for district
11. Purchase and distribution of Breeder seeds @Rs.50/Kg
12. Seed village scheme - Seed distribution @50 per cent cost limited to Rs.20/Kg.

Groundnut Rainfed

1. Seed production Subsidy @ Rs. 10/ Kg
2. Seed Distribution @50 per cent Subsidy limited to Rs 12/ Kg
3. Pipes carrying water from source to field @ 50 per cent subsidy limited to Rs.15000/
4. Bio fertilizer distribution subsidy@ Rs.3 / No.
5. Distribution of Gypsum Subsidy @ 50 per cent cost + TC limited to Rs. 750 / Ha.
6. MN Mixture Distribution @50 per cent cost limited to Rs. 500 / Ha.
7. Farmers Field School Rs. 22680/ No

8. Tarpaulins Subsidy @Rs.5000/No.
9. Farmers Training 50 farmers /Training 2 days Rs.20000/training
10. Publicity / POL/ Hiring of Vehicle @ Rs.100000/- per year/District for district
11. Purchase and distribution of Breeder seeds @Rs.50/Kg
12. Seed village scheme. - Seed distribution @50 per cent cost limited to Rs.20/Kg.

Sunflower

1. Seed Distribution @50 per cent Subsidy limited to Rs 12/ Kg
2. Distribution of Gypsum Subsidy @ 50 per cent cost + TC limited to Rs. 750 / Ha.
3. MN Mixture Distribution @50 per cent cost limited to Rs. 500 / Ha.
4. Tarpaulins Subsidy @Rs.5000/No.

Cotton

1. Hybrid seed Distribution @50 per cent limited toRs150/Kg
2. Technology Demonstration (1Ha) @Rs5000/Ha
3. Hybrid Seed Minikit Rs.400/kit
4. Distribution of BT Cotton Seed Pockets @Rs 375/ Pockets
5. FFS To TANWABE/FIG Groups Rs 17000/ No
6. Distribution of Micronutrient Mixture 50 per cent or Rs 500 /Ha

Maize

1. Hybrid seed distribution @50 per cent subsidy limited to Rs.75/Kg

Coconut

1. Seedling Distribution 50 per cent or Rs.7.50.
2. Micronutrient Distribution Rs.15
3. Demonstration Rs.17500/Ha
4. Pheromone Trap Red Palm weevil Rs200/No

Seed Testing Lab

1. Establishment of Seed Testing Laboratory at Namakkal at a cost of Rs.6.00 lakhs

District Information Centre

1. Strengthening of District Information Centre, Providing Lap Top ,Printer, LCD, Scanner, Digital Camera, Copier etc
2. Formation of FIG @ Rs.12500/ group for training and office automation, ID card, District level meeting etc
3. Establishment of Agri-clinic.& Agri Business by unemployed agri-graduates 25% subsidy @ Rs.3.0 lakh each
4. Exposure visit Inter state @ 30 farmers/Tour, 10 days @ Rs.600/day/farmer (Rs.1.8 Lakh)
5. Exposure visit Inter state @ 30 farmers/Tour, 5 days @ Rs.300/day/farmer (Rs.0.75 Lakh)
6. District level exhibition/ Kisan mela @ Rs.2.0 Lakh/ District
7. Publicity & Propaganda, Printing of Lit., Display boards, conduct of press tour, Technology transfer through TV, Radio & other mass media @Rs.2.0 Lakh / district
8. Video Conferencing facilities to District HQ @Rs.15.0 Lakh/ District

Farmer Training Centre

1. Farmers Training through FTC @40 farmers (2Days)/year Rs.20000/training
2. Strengthening of FTC@2.5lakh

II. Horticulture

1. Net house structure
2. Nursery/ vegetable production
3. Pandal for vegetable production
4. Package for plant protection
5. Plastic crates (Banana, Vegetables)
6. Bore well with casing pipe
7. Banana bunch cover
8. Banana sucker treatment kit
9. Humic acid / Effective E.M.
10. Support System for crops – Banana
11. Erection of Net for production of disease free Tapioca planting material
12. Sales outlet cum information centre
13. District level farmers workshop
14. Inter state exposure visit (5days)
15. 10 Ha Mega demo plot for the district
16. Enterprising farmers associations
17. Support for Betel vine growers as P.P kit.
18. Model fertigation plot for vegetables
19. Aluminum Ladder for S.T. farmer in Kolli hills
20. Pepper-plant protection kit for S.T. farmers in kolli hills

CHAPTER - V

ALLIED AGRICULTURAL SECTORS

The district is well known for the poultry sector development in the state and the Government of Tamil Nadu had established a Veterinary college at Namakkal to promote animal husbandry in the district. There is a presence of white and black cattle in the district in considerable number as the district thrives on diversified cropping pattern to face off the challenges of scarce rainfall and depleted ground water resources. It could also be seen that the district has got one of the highest area under fodder crops especially fodder cholam which caters to the animal population.

5.1 Animal Husbandry in Namakkal District

Table 5.1 Breedable Population of Animals in Namakkal District (2007)

S.No	Breed	Numbers	Percent to section total
1.	Exotic Crossbreed	86601	51.67
2.	Indigenous Native pure	20865	30.50
3.	Breedable Total White Cattle	1074466	
4.	Buffalo – Black Cattle	101903	
5.	Grand Total Breedable Cattle	209369	

Source: Records of Office of the Assistant Director of Animal Husbandry, Namakkal

Total Artificial Insemination: 1,37,000 Nos. (2007-2008)

Table 5.2 Average Productivity of Milch Animals (2007)

S.No.	Type of Animals	Yield/Day/Animal (litres)
1.	Buffalo	4.5
2.	Cross Bred Cows	6.5
3.	Indigenous Cattle	2.8

Source: Records of Office of the Assistant Director of Animal Husbandry, Namakkal

Area under Green Fodder cultivation

Land Area Permanent Pastures and		
Other grossing Lands	-	6969 hectares
1. Requirement of Green Fodder/annum	-	22,15,091 Metric Ton
2. Requirement of Dry Fodder	-	5,90,691 Metric Ton

Table 5.3 Department of Agricultural Engineering - Details of Ongoing Schemes

Sl. No.	Name of the Scheme / Components	Budget allocation in 2007 – 08 (Rs in lakhs)
a. Land Development Scheme		
1	Land levelling by bulldozers	Hiring scheme
2	Tractor Ploughing	Hiring scheme
3	Combine Harvester	Hiring scheme
b. Minor Irrigation Scheme		
1	Long Hole Equipments	Hiring scheme
2	Rock Blasting Unit	Hiring scheme
c. Integrated Tribal Development Programme (ITDP)		
1	Contour Stone Wall	16.50
2	Loose Rock Checkdam	2.50
	Total	19.00
d. Rainwater Harvesting and Runoff Management		
1	Minor Check dam	69.10
2	Major Check dam	
3	Percolation Pond	
4	Rejuvenation of wells	
5	Farm Ponds	
e. NABARD - RIDF assisted Rainwater Harvesting Structures		
	Community based works :	67.00
1	Medium Check dam	
2	Major Check dam	
3	Percolation Pond	

Table 5.3 Contd...

Sl. No.	Name of the Scheme / Components	Budget allocation in 2007 – 08 (Rs in lakhs)
	Individual based works :	
1	Farm Ponds	
2	Rejuvenation of wells	
	Agricultural Mechanisation :	
	a) Distribution of Agrl. Machinery / Implements @ subsidised rates	
1	Tractor up to 35 hp.	
2	Power tillers	
3	Rotovators	
4	Cultivators	
	b) Training to farm youth on farm machinery	0.75
	c) Demonstration of agrl. Machinery / implements	0.87
	Replacement of Old pumpsets (Subsidy scheme) :	
	a) Special Component (SC & ST)	4.94
	b) Others	58.49
	Total	63.43
	Micro Irrigation Scheme	
	National Agrl. Development Programme :	
	a) Distribution of Agrl. Machinery / Implements	15.75
	b) Farm Ponds	1.00
	Total	16.75

5.3 Allied Sector Interventions

I. Animal Husbandry

Cattle and Buffalo - Feed and Fodder Development

1. Popularizing chaff cutter at 50 per cent of total cost of Rs 20,000
2. Fodder production by SHGs @ 10 acre/yr

3. Establishment of 6 x 6 x 4 feet silo to ensile sugarcane tops
4. Popularization of fodder harvesting machine among farmers
5. Popularizing mineral mixture to improve livestock production @ 1kg/month for one year in one block
6. Mobile veterinary clinics @ 1/taluk
7. Establishment of ADIU along with mobile veterinary diagnostic laboratory
8. Identification and traceability of breedable bovine population

Sheep & Goat

1. Quality ram / buck production centre for distribution of quality germplasm by SHGs Semi- intensive goat farming to supply germplasm by SHGs
2. Supply of rams and bucks to SHG / farmers @ 2 / block
3. Intensive System of sheep / goat rearing at the rate one per block
4. Control of parasitic disease through treatment to enhance vaccine response

Poultry

1. Supply of ELISA kits to PDDL to establish 'NAI Free' poultry farms
2. Health care to Desi birds
3. Renovation of existing Veterinary Dispensaries

Dairy Development

1. Programmed breeding indigenous cattle & buffalo to increase conception rate
2. Buffalo calf development programme (2000 calves / year)
3. Supply of mineral mixture to the milch animals at subsidised cost (50%)
4. Supply of by-pass protein feed to the milch animals
5. Portable milking machines for farmers

6. Chaff cutters for elite farmers (small type) @Rs.20,000 AS 100% grant
7. Bulk milk cooler
8. Walk-in coolers
9. Revival of dormant MPCs
10. Fodder development activities (500 acres in 100 IDF villages in each for 2 years & 1850 acres in farmers field)
11. Manufacturing facilities for milk khoa
12. Manufacturing facilities for ice cream
13. Milk weighing machine for milk producers co-op. Societies
14. P.C.based automatic milk collection stations to IDF Villages Milk Producers Cooperative Societies
15. Quality assurance lab strengthening
16. Farmers study tour @ rs.5000/- per farmer
17. Orientation training / workshop for milk producers at society level

TANUVAS

1. Strengthening of infrastructure for sheep at VC&RI, Namakkal farm to distribute germplasm
2. Strengthening of infrastructure for goat at VC&RI, Namakkal farm to distribute germplasm
3. Establishment of model livestock villages for educating farmers
4. Training programmes and village level campaign on livestock farming
5. Strengthening of training equipment for technology dissemination at KVK
6. Study tour of farmers to livestock and poultry research station (TANUVAS) @ 50 persons/batch
7. Establishment of Value added symbiotic & conventional Dairy food (Milk tablet) manufacturing unit cum instructional dairy plant at VC&RI Namakkal

II. Fisheries

1. Fish Seed Production - Private participation with 50 per cent subsidy
2. Expansion of fish culture
 - a. Supply of fish seeds with 50 per cent subsidy
 - b. Private fish farming with 50 per cent subsidy
3. Infrastructure development in harvest and post harvest sector
 - a. Supply of fishing implements with 90 subsidy
 - b. Supply of insulated ice boxes (50 kg capacity) 90 per cent subsidy
 - c. Supply of mopeds with insulated ice boxes (50 per cent) subsidy
 - d. Setting up of modern fish stall
 - e. Capacity building through training (Fisheries Dept and TANUVAS)
 - f. Farmers training @ Rs 1000/unit – 1 member
4. Research and Development (TANUVAS)
 - a. Breeding of ornamental fishes (100 per cent grant)
 - b. Establishment of fish culture and post harvest technology demonstration unit
 - c. River ranching of native fish varieties
 - d. Establishment of aqua feed and nutrition research station (10 tonnes per month)

III. Agricultural Engineering

Agricultural Mechanization

1. Supplying agricultural machinery / implements to the individual farmers at subsidized rates.

The machinery / implements include

- Mini combine harvester (TNAU model)
- Power weeder with attachments

- Power thrasher
- Paddy transplanter
- Post hole digger
- Maize Husker Sheller
- Coconut De-husker
- Groundnut decorticator
- Chisel plough
- Power tiller
- Rotovator
- Cultivator
- Disk plough
- Gender Friendly Equipments like manual weeder
- Promoting the concept of mechanized villages for groundnut crop

Soil and Water Management

1. Providing innovative water harvesting structures at 90 per cent subsidy, in the individual landholdings Lined farm ponds with mobile sprinkler
2. Providing other water harvesting structures
 - i. Unlined farm ponds in individual land holdings @ 90 per cent subsidy;
 - ii. Check dams across Govt. owned streams @ 100 per cent subsidy.
3. Providing Soil Conservation structures in individual holdings @ 90 per cent subsidy - Compartmental bunding
4. Providing Water Management infrastructure @ 90 per cent subsidy in individual landholdings
 - i. PVC Pipe Laying
 - ii. Ground level Reservoirs

IV. Agricultural Marketing and Agribusiness

1. Commodity Group Formation

- a. Maize
- b. Ground Nut
- c. Green Gram
- d. Sun Flower
- e. Gingelly
- f. Pineapple

2. Market INTELLIGENCE Dissemination

- a. Block level meeting
- b. Leaflets & pamphlets Distribution
- c. Forecast Board at Uzhavar Sandai
- d. Village meetings

3. Facilitation of Contract Farming (50 Farmers)

- a. Maize
- b. Sunflower

4. Trainings on (25 persons)

- a. Warehousing , storage and Grading
- b. Market Intelligence, Commodity Markets
- c. Post Harvest
- d. GAP, Food Safety

5. Exposure visit to markets out side state

6. Exposure visit to markets with in the State

7. Arrangement of Buyer-Seller Meetings

8. Strengthening of Market Extension Centres LCD with internet and Computer, Laptop, Screen
9. Strengthening village Shandies, farmers Shandies through-electronic weigh machines collection and grading centres
10. Market Finance (for traders)-(Loan facilities) Facilitation.
11. Market price surveillance
12. Publicity on Regulated Markets, Ulavar Shandai and all other programmes
13. Export promotion - Turmeric
14. Minimizing post harvest losses
 - a. Plastic Crates purchase
15. Value addition
 - a. Training for Grading & Packing
 - b. Demonstrations
16. Market Infrastructure activities
17. Supply of Tarpaulins
18. Visit to National Market
19. Purchase of Market Intelligence Material

V. Sericulture

1. Drip Irrigation
2. Mulberry Seedlings
3. Fertilizer Distribution
4. Insecticides / pesticides Disinfectants
5. Training, Tour, etc

CHAPTER - VI
DISTRICT PLAN

Eight line departments of Namakkal district namely, Agriculture, Horticulture, Agricultural Marketing and Agribusiness, Agricultural Engineering, Animal Husbandry and Dairy Development, Fisheries and Sericulture participated in preparing the overall development plan for Agriculture in the district. Various issues were identified department wise and prioritized for preparation of specific proposals for four years from 2008 to 2012. The total budget outlay for the proposed projects worked out to Rs. 66.00 crores. The Department wise requirement is presented in the following pages. The proposed budget requirement for the Department of Agricultural Engineering was Rs.11.15 crores followed by Horticulture Rs.18.55 crores, Agriculture Rs.17.61 crores and Animal Husbandry Rs.15.50 crores. The budget break up details is provided at the end of the proposals of each department.

District Agriculture Plan – Namakkal District

Table 6.1 Proposed Department-Wise Budget Outlay

(Rs. in lakhs)

Sl.No	Department	2008-09	2009-2010	2010-2011	2011-2012	Total
1	Agriculture	462.55	420.07	424.60	424.60	1731.82
2	Horticulture	399.18	399.07	483.35	573.05	1854.65
3	Animal Husbandry	841.80	237.79	237.02	233.77	1550.38
4	Fisheries	35.45	35.45	17.95	10.45	99.30
5	Agriculture Engineering	263.71	279.81	279.65	292.07	1115.24
6	Agriculture marketing	27.70	24.92	27.73	29.64	109.99
7	Sericulture	20.00	24.00	30.00	36.00	110.00
8	Special Projects	29.00	--	--	--	29.00
	Total	2079.39	1421.11	1500.30	1599.58	6600.38

Table 6.2 Department of Agriculture – Budget Abstract**(Rs.in lakhs)**

S. No.	Projects	2008-09	2009-2010	2010-11	2011-12	Total
1.	Increasing the Production of Paddy in Namakkal district	160.15	150.15	170.30	170.30	650.90
2.	Increasing the Production of Millets in Namakkal district	7.50	7.50	7.50	7.50	30.00
3.	Increasing the Production of Groundnut (irrigated) in Namakkal district	95.02	95.02	100.02	100.02	390.08
4.	Increasing the Production of Groundnut (rain fed) in Namakkal district	24.50	24.50	24.50	24.50	98.00
5.	Increasing the production of sunflower in Namakkal district	6.80	6.80	6.80	6.80	27.20
6.	Increasing the Production of Cotton in Namakkal district	7.95	7.95	7.95	7.95	31.80
7.	Increasing the Production of Maize in Namakkal district	37.50	37.50	56.25	56.25	187.50
8.	DAP 2% Spray for Pulses	4.00	0.00	0.00	0.00	40
9.	Increasing the Production of Coconut in Namakkal district	19.63	19.63	19.63	19.63	78.52
10.	Strengthening of District Information Centre	83.00	63.02	23.65	23.65	193.32
11.	Strengthening of Farmers Training Centre	10.50	8.00	8.00	8.00	34.50
12.	Seed Testing Laboratory	6.00	---	---	---	6.00
	Total	462.55	420.07	424.60	424.60	1731.82
	Special Projects	29.00	---	---	---	29.00
	Grand Total	491.55	420.07	424.6	424.6	1760.82

Total budget required for four years is Rs. 17.32 crores and for Special Projects the budget required is 0.29 crores making a total of Rs.17.61 crores for Agriculture.

BUDGET ABSTRACT**Table 6.3 Department of Agriculture – Special Projects****(Rs. in lakhs)**

S.No.	Special Projects	Budget (2008-09)
1.	Establishment of Coconut Nursery in Paramathy block	8.00
2.	Modernization of Existing Seed Processing Units	10.00
3.	Strengthening of Sugarcane Parasite Breeding Station at Mohanur	3.00
4.	Strengthening of Coconut Parasite Breeding Station at Paramathy Velur	3.00
5.	Strengthening of Bio Control Agents Production Centre in Namakkal	5.00
	Total	29.00

6.1.1 Increasing the Production of Paddy**i) Background**

In Namakkal District, Paddy is cultivated in both Kar and Samba Seasons. The total Paddy area is around 26500 ha. In Kar season, 5% of the total area under paddy is cultivated and the balance of 95% Paddy is cultivated in Samba. The Mettur East Bank Canal irrigation is also available in Pallipalayam Block of Namakkal District. The area under this Canal comes to around 4250 Ha. The average production of Paddy in this district is 4100 Kgs of rice.

ii) Project Rationale**Scope for Increasing the Area under Paddy**

In Namakkal District around 22000 ha is now cultivated under well irrigated garden lands. Around 4250 ha are cultivated under Mettur East Bank Canal System. The farmers are well experienced in cultivating Paddy. The present direct procurement by Tamil Nadu Civil Supplies Corporation at the rate of Rs. 8.25 per Kg. is profitable to the

farmers. The Paddy straw is also valuable to the farmers as cattle feed and also has good market value. There is a scope for better water management practices in Paddy cultivation in the District. The major cultivating season happens to be in Samba which coincides with the North-East monsoon for the preparation of field as well as nursery raising.

iii) Project Strategies

- In Paddy, the System of Rice Intensification (SRI) can be popularized to increase the area.
- Introduction and popularization of High Yielding varieties of Paddy in this district.
- TANWABE and Farmers Interest Groups can be motivated to produce C seeds by giving assistance as subsidy.
- Distribution of new High Yielding varieties of seed mini-kits also helps to increase the area under new varieties.
- Distribution of Green Manure Seeds also facilitates the farmers to reduce the fertilizer cost.
- Distributions of micro nutrient mixtures, gypsum will also increase the productivity and production.
- Farmers Field Schools are not only reducing the Plant Protection cost and also helps the farmers in organic farm production
- Rat control also reduces the post harvest loss to paddy growing farmers.

iv) Project Goal

The proposed components in this project aim to increase the area and productivity under Paddy by 15 per cent to 20 per cent.

v) Project Components

To achieve the project goal the following components are proposed for this district in Paddy cultivation.

1)	One time grant to TANWABE and Farmers Interest Groups to take up C seed production and distribution
2)	Incentive for Seed production to Self-help Groups and TANWABE Groups
3)	Seed distribution subsidy for the seeds produced by Self-help Groups
4)	Seed mini-kits of new High Yielding Varieties
5)	Hybrid Rice seeds distribution subsidy
6)	Distribution of Green Manure Seeds under subsidy
7)	Distribution of Soil Health Cards
8)	Assistance to start Vermi-Compost Production Units for Self-help Groups of women farmers
9)	Distribution of Micro Nutrient Mixtures Gypsum under subsidy
10)	Conduct of Farmers Field Schools in Paddy growing villages
11)	Massive Rat Control Campaigns in villages
12)	Publicity and Training to Paddy growing farmers
13)	Promotion of System of Rice Intensification (SRI)
14)	Demonstration of System of Rice Intensification (SRI)
15)	Bio-fertilizer under subsidy
16)	Distribution of Power Tillers, Power Thrashers under subsidy.

vi) Project Cost and Financing

The budget requirement for the year 2008-09 is Rs.160 lakhs and the total budget requirement for four years from 2008-2012 is Rs.650.90 lakhs. The detailed component wise budget is given at Table 6.5.

vii) Project Implementation Chart

S. No.	Component	Month of Operation
1)	Selection of Self-help Groups / Farmers Interest Groups / TANWABE	April – May
2)	Soil sample collection and analysis	April – May
3)	Distribution of Green Manure Seeds	May
4)	Assistance to start Vermi Compost Production	Through out the year
5)	Publicity and Training	April, May, June
6)	Distribution of Bio Fertilizer seeds	May
7)	Selection of SRI demonstration plot	May, June
8)	Village Campaigns	May, June, July
9)	Seeds, MNS, Gypsum, inputs distribution	June, July
10)	Farmers Field School	July to December
11)	Rat Campaign	December, January

viii) Reporting

Monthly report of the progress made will be sent to the concerned JDA. Annual consolidated report of the progress will be submitted to the concerned JDA.

6.1.2 Increasing the Production of Millets**i) Background**

In Namakkal District, Millets like Fodder Cholam is cultivated approximately in an area of 95000 ha, mostly under rainfed condition. Other than Fodder Cholam, no other Millet is cultivated in this District. The productivity of millet in this district is around 1934 Kg / ha and 2552 Kg/ha. in rainfed and irrigated conditions respectively. Rainfed cholam is cultivated mainly in July-August season and the irrigated cholam in December-January. Rainfed cholam crop is cultivated without much care by the farmers as it is raised only for fodder purpose.

ii) Project Rationale**Scope for increasing the Area and Productivity under Millets**

In Namakkal District, there is a good scope for cultivation of both grain and fodder cholam. In this district, there are a large number of poultry units and the Cholam grains can be utilized for poultry feed manufacturing. There is a good scope for marketing of millet produce for cattle feed purpose. The soil is also very suitable for the cultivation of millets in this District.

iii) Project Strategies

- To increase the area and productivity by distributing High Yielding Hybrid seeds at 50 per cent subsidy.
- To popularize the new technologies in the farmers field technology demonstrations including minor millets to be laid in the farmers holdings.
- Bio fertilizers and Micro Nutrient Mixtures can be given to the farmers under subsidized cost.

iv) Project Goal

The proposed components in this project aim to increase the area and productivity under millet by 15 per cent to 20 per cent.

v) Project Components

To achieve the above goal the following components are proposed for this district in cholam cultivation.

- 1) Distribution of Hybrid seeds, High Yielding Variety seeds at 50 per cent subsidy.
- 2) Laying of Technology Demonstration Plots including Minor Millets under subsidy
- 3) Distribution of Micro Nutrient Mixtures Bio fertilizer under 50 per cent subsidy

vi) Project Cost and Financing

The budget requirement for the year 2008-09 is Rs.7.50 lakhs and the total budget requirement for four years from 2008-2012 is Rs.30.00 lakhs. The detailed component wise budget is given at Table 6.5.

vii) Project Implementation Chart

S. No.	Component	Month of Operation
1)	Village Campaigns and training to farmers	May, June
2)	Distribution of Hybrid seeds, High Yielding Variety seeds at subsidy rate	June, July
3)	Selection of beneficiaries and laying of Demonstration plots	June, July and December, January
4)	Distribution of Micro Nutrient Mixtures and Bio Fertilizers	June, July and December, January

viii) Reporting

Monthly report of the progress made will be sent to the concerned JDA. Annual consolidated report of the progress will be submitted to the concerned JDA.

6.1.3 Increasing the Production of Groundnut (Irrigated)**i) Background**

In Namakkal District, Groundnut is cultivated under Irrigated condition during December, January to April. The source of irrigation is mainly well. The area under irrigated Groundnut is reducing year by year because of non-availability of farm labourers as well as less profit. The area of irrigated groundnut in this District is 8000 ha. The present productivity level of irrigated Groundnut is 2156 Kgs/ha. There is scope for increasing the yield in Groundnut Irrigated.

ii) Project Rationale

There is a good scope for increasing the area and productivity of Irrigated Groundnut. The soil in Namakkal District is highly suitable for the cultivation of irrigated Groundnut. The farmers are also well experienced in cultivation and marketing aspects. The climate is also suitable for drying and oil milling.

iii) Project Strategies

- Introduction of seeds of High Yielding New Varieties by producing and distributing to farmers under subsidy
- The inputs like gypsum, Micro Nutrient Mixtures and Bio fertilizers can be distributed under subsidy
- Pipes carrying water from source to field under subsidy
- Farmers training
- Farmers Field Schools can be conducted at village level

iv) Project Goal

The proposed components in this project aim to increase the productivity under Groundnut irrigated crop by 20 per cent.

v) Project Components

To achieve the set goals the following components are proposed for this district in Groundnut irrigated crop.

1)	Purchase and distribution of Breeder seeds.
2)	Production and distribution of certified seeds under subsidy
3)	Distribution of Bio fertilizer, Gypsum and Micro Nutrient Mixtures under subsidy
4)	Distribution of pipes to carry water from source to field under subsidy
5)	Conducting farmers training, Farmers Field School
6)	Distribution of Tarpaulines under subsidy
7)	Implementation of Seed Village Scheme under 50% subsidy

vi) Project Cost and Financing

The budget requirement for the year 2008-09 is Rs.95.02 lakhs and the total budget requirement for four years from 2008-2012 is Rs.390.08 lakhs. The detailed component wise budget is given at Table 6.5.

vii) Project Implementation Chart

S.No.	Component	Month of Operation
1)	Purchase and distribution of Breeder seeds	November, December
2)	Selection of seed farm ryot for quality seed production	November, December
3)	Distribution of C seeds	November, December
4)	Distribution of Gypsum, Micro Nutrient Mixtures Bio fertilizer	December, January
5)	Village Campaigns and farmers training	November, December
6)	Farmers Field School	December to April
7)	Distribution of Tar Paulines	March, April

viii) Reporting

Monthly report of the progress made will be sent to the concerned. Annual consolidated report of the progress will be submitted to the concerned.

6.1.4 Increasing the Production of Groundnut (RAINFED)**i) Background**

In Namakkal District Rainfed Groundnut is cultivated in an area of around 45000 ha during the months of June, July. The soil is highly suitable for cultivation of rainfed groundnut. The South-West monsoon most of the time is irregular leading to poor yield and loss to the farmers. The average productivity is 1600 Kgs/Ha.

ii) Project Rationale**Scope for increasing the Productivity under Rainfed Groundnut**

Major area under rainfed Groundnut is covered by older varieties. Farmers are well experienced in Groundnut cultivation under rainfed areas and suitable marketing infrastructure is available in the form of Regulated Market Committees.

iii) Project Strategies

- To improve the productivity under Rainfed Groundnut, new High Yielding Varieties seeds are to be distributed to farmers under subsidized cost.
- Breeder seeds to be purchased and distributed to Rainfed Groundnut cultivators for production of certified seeds and the same to be redistributed to Rainfed Groundnut farmers for further multiplication under subsidy.
- Inputs like Micro Nutrient Mixtures Bio fertilizers, Gypsum to be given to the farmers at subsidized cost.
- Post harvest loss is more in Rainfed Groundnut because the harvest coincides with the North-East monsoon.
- Tarpaulins will help the farmers to protect the produce during rainy season.

iv) Project Goal

The proposed components in this project aim to increase the area and productivity under Groundnut Rainfed crop.

v) Project Components

To achieve the set goals the following components are proposed for this district in Groundnut Rainfed crop cultivation.

1)	Production and distribution of Certified seeds under subsidy
2)	Distribution of Bio fertilizer, Gypsum and Micro Nutrient Mixtures under subsidy
3)	Distribution of Tarpaulines under subsidy

vi) Project Cost and Financing

The budget requirement for the year 2008-09 is Rs.24.50 lakhs and the total budget requirement for four years from 2008-2012 is Rs.98.00 lakhs. The detailed component wise budget is given at Table 6.5.

vii) Project Implementation Chart

S.No.	Component	Month of Operation
1)	Village Campaign, farmers Training	May, June
2)	Distribution of High Yielding Varieties C seeds	May, June
3)	Distribution of Micro Nutrient Mixtures, Gypsum, Bio Fertilizer	June, July
4)	Distribution of Tar Pauline	August, September

viii) Reporting

Monthly report of the progress made will be sent to the concerned JDA. Annual consolidated report of the progress will be submitted to the concerned JDA.

6.1.5 Increasing the Production of Sunflower

i) Background

In Namakkal District, Sunflower is cultivated mainly in irrigated condition during December and January. Currently the area under this crop is 2060 ha. The farmers in this district are less aware of cultivation practices for Sunflower.

ii) Project Rationale**Scope for increasing the area and productivity under Sunflower**

Farmers do not have much experience in Sunflower cultivation. After harvesting of Samba Paddy fields, if well water is available, sunflower can be raised in this District in larger area. Wide publicity and campaigns are required to motivate the farmers to cultivate Sunflower under irrigated condition. Procurement Centers are to be opened to help the farmers for marketing the Sunflower in time. The farmers now prefer mainly private Hybrid seeds, which are costlier. If subsidy is provided for private Hybrid seeds also, the farmers will come forward to cultivate more area under Sunflower.

iii) Project Strategies

- Sunflower cultivating farmers mainly prefer private Hybrid seeds through private seed selling centres. 50 per cent subsidy can be given for private Hybrid seeds distributed through licensed private seed selling points.
- Technology demonstration plots can be laid in all the areas so as to popularize this crop.
- Hybrid seed mini-kits also to be distributed to farmers under free of cost.

iv) Project Goal

The proposed components in this project aim to increase the area and productivity under Sunflower cultivation.

v) Project Components

To achieve the above goal, the following components are proposed for this district in Sunflower cultivation.

1)	Hybrid seed distribution at 50 per cent subsidy
2)	Laying of technology demonstration in 1 ha. plot at 100 per cent subsidy
3)	Distribution of Hybrid seed mini-kits free of cost

vi) Project Cost and Financing

The budget requirement for the year 2008-09 is Rs.6.80 lakhs and the total budget requirement for four years from 2008-2012 is Rs. 27.20 lakhs. The detailed component wise budget is given at Table 6.5.

vii) Project implementation Chart

S. No.	Component	Month of Operation
1)	Village campaigns and farmers training	November, December
2)	Distribution of Hybrid seed mini-kits	November, December
3)	Distribution of Hybrid seed at subsidized cost	November, December
4)	Laying of technology demonstration plots	December, January

iii) Reporting

Monthly report of the progress made will be sent to the concerned. Annual consolidated report of the progress will be submitted to the concerned.

6.1.6 Increasing the Production of Cotton

i) Background

Cotton is cultivated in this district during summer as well as winter seasons. 75 per cent of the cotton area falls in winter and the rest 25 per cent in summer season. The area under cotton is approximately 3000 ha in the district. Major area under cotton is covered by Surabi variety. Bt Cotton is cultivated to a limited extent.

ii) Project Rationale

There is a good scope for increasing the area and productivity of Cotton crop.

The district has suitable soil and climatic conditions for the cultivation of cotton. The farmers are also well experienced in cotton cultivation. The farmers are not cultivating Bt- cotton during winter season.

iii) Project Strategy

Area under Bt-cotton can be increased by distributing Bt cotton seeds packets. The cotton farmers are to be given awareness training in pest management through Farmers Field schools by TANWABE/ Farmers interest Groups.

iv) Project Goal

The proposed components under this project aim to increase the area and productivity in Cotton in the district.

v) Project Component

To achieve the said goal, the following components are proposed for this district in cotton cultivation.

1. Distribution of Bt-cotton seed packets under subsidized rate.
2. Conducting of training by field school through TANWABE and Farmers Interest Groups.
3. Distribution of MN Mixture under subsidized rate

vi) Project Cost and Financing

The budget requirement for the year 2008-09 is Rs.7.95 lakhs and the total budget requirement for four years from 2008-2012 is Rs.31.80 lakhs. The detailed component wise budget is given at Table 6.5.

vii) Implementation Chart

S. No.	Components	Month of Operation
1	Village campaigns, Farmers Training	June , July and December- January
2	Distribution of Bt cotton seeds packets and high yielding variety seeds in subsidized rate	June , July and December- January
3	Distribution of Micro Nutrient Mixtures under subsidy	June , July and December- January

viii) Reporting

1. Monthly reports and progress made will be sent to the concerned JDA
2. Annual consolidation report and progress made will be sent to the concerned JDA.

6.1.7 Increasing the Production of Maize**i) Background**

In Namakkal district, Maize is cultivated only under irrigated conditions during December and January. The area under Maize is increasing over the years. The farmers prefer private hybrid seeds. There are large number of poultry units and poultry feed production units functioning in the district. The farmers are taking maize cultivation in the same field after Paddy harvest in summer depending upon the water availability. The farmers are not using drip irrigation for maize cultivation.

ii) Project Rationale

There is a good scope for increasing the area and productivity of maize crop.

1. Namakkal district possess suitable soil and climate condition for the cultivation of maize.
2. This district has large number of poultry farms as well as poultry feed production units. There is bright scope for consuming the entire yield of the maize.

iii) Project Strategy

Distribution of Hybrid seeds under subsidy rate to reduce the cost of production for the maize cultivating farmers.

iv) Project Goal

The proposed components under this project are expected to increase the area and productivity of maize crop.

v) Project Components

1. To achieve the said goal, distribution of Hybrid seeds at 50 per cent subsidy to the farmers.
2. Farmers can be trained to produce Hybrid maize seeds in their village and to exchange among the fellow farmers.

vi) Project Cost and Financing

The budget requirement for the year 2008-09 is Rs.37.50 lakhs and the total budget requirement for four years from 2008-2012 is Rs.187.50 lakhs. The detailed component wise budget is given at Table 6.5.

vii) Implementation Chart

Sl.No.	Components	Month of Operation
1	Distribution of Hybrid seeds at subsidized cost	November- December

viii) Reporting

1. Monthly reports and progress made will be sent to the JDA concerned
2. Annual consolidation report and progress made will be submitted to the JDA concerned.

6.1.8 Increasing the Area and Production of Coconut

i) Background

In Namakkal district, the area under Coconut is nearly 3500 ha. The soil, climate and water available is highly suitable to increase the area under coconut. The productivity level of 80 to 100 nuts per tree is comparatively lower than the average. There is a good scope to increase the area as well as the production under coconut in Namakkal district.

ii) Project Rationale

There is a good scope for increasing the area and productivity under coconut. Namakkal district is having average temperature, good soil and suitable cultivation of coconut. The farmers lack awareness in some of the technologies. There is no Government Coconut seedlings production nursery in this district and also there are no private commercial nurseries available in the district.

iii) Project Strategy

1. A separate coconut nursery has to be established by the Agriculture department to cater to the needs of the farmers.
2. Coconut seedling can be distributed under 50 per cent Subsidy
3. M.N. Mixture and Pheromone trap are to be given in subsidized rates.
4. Large scale demonstration to be laid in farmers holding.

iv) Project Goal

The proposed components under this project would increase the extension activities related to the coconut crop resulting in enhanced income to the farming community.

v) Project Component

1. Establishing of Coconut nursery both department and private.
2. Distribution of seed under 50% subsidies.
3. Distribution of M.N. Mixture, Pheromone trap under subsidy.
4. Laying of demonstration plot in farmers' holdings in village levels.

vi) Project Cost and Financing

The budget requirement for the year 2008-09 is Rs.19.63 lakhs and the total budget requirement for four years from 2008-2012 is Rs.78.50 lakhs. The detailed component wise budget is given at Table 6.5.

vii) Implementation Chart

SI No.	Components	Month of Operation
1	Seedling to be produced	December – January
2	Seedling to be distributed	June – January
3	Distribution of Pheromone trap and MN Mixture	Through out the year

viii) Reporting

1. Monthly reports and progress made will be sent to the concerned JDA
2. Annual consolidation report and progress made will be submitted to the concerned JDA.

6.1.9 Strengthening of District Information Centre**i) Background**

The extension activities are to be strengthened for reaching the farmers with right information on technologies and markets in right time to realize the full advantage of the official machinery for effective implementation of the government schemes. At present at block levels as well as at the district level, manpower is far lesser than the originally allotted positions and the extension material available is not sufficient to cater to the needs of the farmers. The district level and block level information centres have to be strengthened for attaining the objective of effective information dissemination.

ii) Project Rationale

There is a good scope for improving the extension activities of the District information centre.

1. Man power available with the Department is not sufficient to meet the farmers to continuously visit the fields to know the field problems.
2. In shorter time information like subsidies on technology, availability of inputs is to be reached to the farmers so that farmers can avail the facility according to the needs.
3. The present extension activities equipment is not sufficient.
4. At present there is no commodity wise farmers trainings/Exposure visits inter district/ within the district.

iii) Project Strategy

1. The district level information centre has to be strengthened by providing information infrastructure like laptop, printer, LCD, scanner, digital camera, video conferencing facility and exhibition centre.
2. Farmers' interest group (FIG) of training will be given.
3. More numbers of exposure visits Inter state/ within the state/Inter district are to be provided.
4. District level, Block level Kissan Mela has to be conducted.
4. At district headquarters video conferencing facilities is to be arranged by linking the Agricultural University/ Research Stations.

iv) Project Goal

The proposed components under this project aim to improve the quality of the extension activities offered to the farming community.

v) Project Components

To achieve the above said goal, following components are proposed for Namakkal district and the block headquarters.

1. Strengthening district level information centre, block information centre, Providing laptop, LCD, scanner, camera.
2. Formation of FIG at village level needs training and automation.
3. Exposure visits
4. Arranging for District level exhibition/ Kissan Mela.
5. Printed literature, display board, conducting press tour, technical training through TV/Radio and other mass media have to be carried out.
6. Video conference hall facility to be set up at district headquarters.

vi) Project Cost and Financing

The budget requirement for the year 2008-09 is Rs.83.00 lakhs and the total budget requirement for four years from 2008-2012 is Rs.193.32 lakhs. The detailed component wise budget is given at Table 6.1.

vii) Implementation Chart

Sl.No.	Components	Month of Operation
1	All Extension activities have to be carried out through out the year.	Jan to Dec.

viii) Reporting

1. Monthly reports and progress made will be sent to the concerned JDA.
2. Annual consolidation report and progress made will be submitted to the concerned JDA.

6.1.10 Strengthening Farmers Training Centre in Namakkal

i) Background

Farmers Training centre was established around 40 years to help farming community. At village level farmers' convenor groups were formed and farmers were enrolled as members. The Farmers training centers provide training to members not only in agriculture but also in allied activities. At present, number of training programmes, incentives given to the farmers is not sufficient to conduct training programmes effectively and there are no latest extension materials available at farmers training centers headquarters.

ii) Project Rationale

The number of farmers groups can be increased by at least one in each revenue village.

1. The present number of trainings is not sufficient to the convenors as well as members of the FTC
2. There are no audio/ video equipments available to give training to the farmers.
3. The fund allotment to conduct training programmes is not sufficient.
4. There is no provision for exposure visits interstate/ within the state, and within the district.
5. At present there is no district level exhibition centre at FTC office.

iii) Project Strategy

1. The training can be offered for 2 days with a financial allocation of Rs. 20,000/ training.
2. Strengthening of FTC at district level

iv) Project Goal

The department aims to give effective and useful training to the farmers.

v) Project Components

To achieve the said goal, the following components are extremely necessary.

1. Formation of district level exhibition.
2. Exposure visits, interstate/within in the state/within the district.
3. Strengthening of FTC office by providing with LCD, Scanner, Copier, Digital camera.

vi) Project Cost and Financing

The budget requirement for the year 2008-09 is Rs.10.50 lakhs and the total budget requirement for four years from 2008-2012 is Rs.34.50 lakhs. The detailed component wise budget is given at Table 6.1 .

vii) Implementation Chart

S.No.	Components	Month of Operation
1	To actively implement the extension services throughout the area	All throughout the year

viii) Reporting

1. Monthly reports and progress made will be sent to the concerned JDA
2. Annual consolidation report and progress made will be submitted to the concerned Joint Director of Agriculture.

6.1.11 SPECIAL PROJECT**Establishment of Coconut Nursery in Paramathy****i) Background**

In Namakkal District, the area under Coconut is 3500 ha cultivated in boundaries of garden land and as a compact cultivation in Mohanur, Paramathy and Kabilarmalai blocks. Coconut is a remunerative oilseed crop both for tender table purpose as well as oil extraction. The garden land farmers are getting a nominal additional income out of the coconut trees regularly. Absence of Landlords and the non-availability of labourers in

the rural area leading farmers to cultivate more area under Coconut. Establishment of Coconut garden does not require much investment. The consumption of tender coconut for table purpose and coconut oil is increasing year by year and the average income out of a tree per annum is around Rs. 300 to Rs.400. In an acre the plant population is around 70 trees. So, the annual net income will be around Rs.20000 excluding the cost of maintenance.

ii) Project Rationale

There is a good scope for increasing the area under coconut in this district. The soil and the water are highly suitable for Coconut cultivation. Inter cultivation of fruit crops, fodder crops and pulses also generate income to the farmers and cater the needs of livestock for the fodder. The Department of Agriculture is responsible to provide quality coconut seedlings to the needy farmers. The Coconut Development Board also encourages expansion of area under Coconut by providing various subsidies to the farmers.

It is necessary to start a Coconut nursery in this district. Generally all other major Coconut cultivating districts have the department nurseries and produce quality seedlings and distribute to the farmers. In this district, a small quantity of seedlings are being lifted from Salem district nursery and distributed to the farmers which is not sufficient against the demand. Also the quality of seedling cannot be assured by private coconut nurseries. So farmers believe that the department seedlings are true to type seedlings. Hence there are ample reasons for starting a coconut nursery in the district.

iii) Project Strategy

1.495 ha area of Govt. land in Paramathy Block was already handed over to the Agricultural Department to start a Coconut Nursery by issue a suitable Govt. Order. A bore well was also sunk and fitted with an electrical Motor in the above land. So far, the nursery was not permitted to start production by the Govt. Hence the available infrastructure can be further utilized to start the coconut nursery under the National Agricultural Development Programme.

iv) Project Goal

There are 15 Agrl Extension Centers functioning in this District of which Kolli Hills is the only block which is not suitable for cultivation of Coconut. In the remaining 14 Blocks, there is much scope for planting Coconut both as compact plantation as well as in boundaries. The existing Coconut trees also of old varieties and due to age factor, the yield is below average. The farmers are also willing to take up new Coconut planting by removing the older trees. In each block annually around 10000 seedlings can be given to the needy farmers. The district requirement per annum is nearly 1.4 lakhs seedlings. Apart from planting tall seedlings the Department of Agriculture is now recommending the T x D variety also. In this proposed nursery 1.0 Lakh tall seedlings and 40000 T x D seedlings can be produced per year. Thereby, 2000 acres of Coconut area can be covered each year. The Copra production can also to be increased by 1400 MT per year. The economic condition of the farmers also can be improved and the labour scarcity in rural area can also be managed by planting Coconut.

v) Project Components

In the proposed Coconut nursery, the following components are required

- 1) Mother nut storing shed
- 2) Shade curing shed
- 3) Labour shed
- 4) Overhead tank with Micro Irrigation System

The required genuine quality true to type Mother Nuts can be procured from other districts with the help of departmental officials. The procured nuts should be stored in shade. After grading the mother nuts, it should be kept in a dark shade for uniform sprouting. The labourers shed also essential to run the nursery in smooth manner.

vi) Project Cost and Finance

Establishment of Mother nut storing shed	Rs. 1.00 Lakh
Establishment of shade curing shed	Rs. 1.00 Lakh
Establishment of labour shed	Rs. 1.00 Lakh
Construction of overhead tank	Rs. 3.00 Lakhs
Laying of pipe lines and Drip Systems	Rs. 2.00 Lakhs

Hence, an amount of Rs. 8.00 Lakhs can be provided under National Agricultural Development Programme.

vii) Implementation of the Project

The nursery will be manned by staff of the Agricultural Department. The mother nuts will be procured from selected Mother Farms, before the month of September. The procured mother nuts will be stored in the shade shed for uniform sprouting up to the month of November. Field preparation, raised bed preparation, shade curing will be completed before December. The planting will be taken up during January. Irrigation, weeding operations are to be done periodically up to June. The seedlings will be ready for distribution from July to December, so as to enable the farmers to take up planting during South-West and North-East Season.

6.1.12 Modernization of Existing Seed Processing Units**i) Background**

In Namakkal District, Paddy is cultivated in about 25000 ha under well and tank irrigation. The major season for Paddy cultivation is Samba. Cultivation of Paddy depends upon the rainfall of the district. If the rain during the year is lesser, the area under cultivation of Paddy is also reduced. The Department of Agriculture is distributing around 20 per cent of high yielding certified seeds required. The balance 80 per cent is covered mostly by the self-owned seeds of the farmers. The present concept under seed

coverage is that the Department, Co-operative, Self Help Groups should cover 50 per cent and the private farmers exchange should cover another 50 per cent thereby the high yielding high productive variety can be popularized in 100 per cent of the area in an year. In this circumstance, quality Certified seed production is essential.

ii) Project Rationale

At present in Namakkal District there are two mini Seed Processing Units. One is located in Namakkal Agricultural Extension Centre and another in Rasipuram Agricultural Extension Centre. The capacity of this Unit is less than 1 MT per day. The Department of Agriculture is now producing around 300 MT of Certified seeds from private farmers holding. A portion of the seeds are being processed in the available two mini Seed Processing Units. The remaining quantity of unprocessed seeds is now being sent to Seed Processing Unit at Bhavani and Seed Processing Unit at Mettur for processing and tagging. It increases the transport cost and consumes lot of time. Seed producing farmers are getting delayed payment because of this. If the proposed mini Seed Processing Units are modernized and the processing capacity is increased, processing of seeds and the payment to the farmers can be quickened. The TANWA, SHGs, private seed producers, seed village farmers also can utilize these mini Seed Processing Units for processing their seeds. Thereby, huge quantity of certified seeds can be produced within this district itself.

iii) Project Goal

In coming years, the Department of Agriculture is planning to cover around 30000 ha under Paddy cultivation in the district. Hybrid Paddy seed is also becoming popular among the farmers. The Department of Agriculture is programming to distribute 5.5 MT of Hybrid seeds under System of Rice Intensification (SRI) Scheme by covering 2250 acres during 2008-09. TANWA, SHGs, FIGs and Seed Village farmers are being motivated to start the seed production activities during the coming years. The produced seeds are to be processed either by Department Seed Processing Unit or by private Seed Processing Units. At present, there is no private Seed Processing unit in this District. It

is time to upgrade the existing two mini Seed Processing Units and increase the processing capacity and thereby help the SHGs and private seed producers for processing their seeds. In this district, the cultivation season is only Samba and the harvesting will start by the end of March and completed in April. The next sowing season will start by July to August depending upon the monsoon. So, the seed processing and germination testing, tagging are to be done within two to three months i.e. May-June. Hence the capacity of the Government Seed Processing Unit is to be necessarily increased.

iv) Project Components

The existing mini Seed Processing Unit is installed with old machineries and equipments and because of this the quality of seed processing is not up to expectation and specification. Moreover the capacity of processing is less than 1 MT / day. The processing quantity per annum is now around 150 MT only. The rest of the 150 to 200 MT is now taken up for processing in Mettur Dam and Bhavani Seed Processing Units which leads to more transport expenditure and time consumption. So it is necessary to add new capacity to the existing Seed Processing Units at Namakkal as well as in Rasipuram.

v) Installation of Machineries

The required machineries like electrical motor, blower and winnower are to be installed with technical guidance from Certification Department.

vi) Project Cost and Finance

The proposed modernization of Seed Processing Units require about Rs. 5.00 Lakhs for the installation of modern machines and equipments. In this district there are two mini Seed Processing Units are to be modernized. So the total cost required is Rs. 10.00 Lakhs.

6.1.13 Strengthening of Sugarcane Parasite Breeding Station at Mohanur

i) Background

In Namakkal District, the area under Sugarcane is around 18000 ha. There are two Sugar Mills functioning in this District, one Co-op Sugar Mill in Mohanur and another private sugar mill named Ponni Sugars in Tiruchengode Taluk. The Sugarcane is infected very commonly by early shoot borer and Inter node Borer which leads to considerable yield loss to Sugarcane farmers. The chemical control is not advisable. The Department of Agriculture is advocating the cane growers to control the above pests by biological control through release of Sugarcane Parasites. At present the existing Sugarcane Parasite Production Centre is functioning in small scale producing 1600 cc per annum that can actually cover only 700 ha. The quantity produced at present is not sufficient to meet the demand of the farmers. Hence more production is necessary to control the early shoot borer as well as Inter node borer effectively.

ii) Project Rationale

The proposed Sugarcane Parasite Breeding Station is expected to produce minimum 30000 cc to cover 2500 ha in an year, for which recommended equipments and machineries especially Air Conditioning / Air Coolers are required. The technical requirements will be obtained from the Tamil Nadu Agricultural University to strengthen the Parasite Breeder Centre.

iii) Project Goal

The existing production of 16000 cc is not sufficient to cover the affected areas in this district under Sugarcane crop. At least 30000 cc should be produced to cover 2500 ha in forthcoming years to meet the demand of the farmers. The Department of Agriculture is also educating the Sugarcane farmers to release more Sugarcane parasites to control early shoot borer and inter node borer.

iv) Project Components

The Project has the following components.

- 1) Installation of Air Conditioners / Air Cooling Equipments
- 2) Installation of equipments as per the advice of the Tamil Nadu Agricultural University.

v) Project Cost and Finance

The project requires Rs. 3.00 Lakhs for strengthening the existing Centre by installation of A/c / Air Cooling equipments and other machineries and equipments.

6.1.14 Strengthening of Coconut Parasite Breeding Station at Paramathy Velur**i) Background**

The area under Coconut in Namakkal District is around 2700 ha. The cultivation of Coconut is increasing year by year. The occurrence of Black Headed Caterpillar in Coconut especially in summer is regular and severe. The farmers are advised to release parasites to control the Black Headed Caterpillar in Coconut. The present level of production is 1650000 cc covering an area of 550 ha only. Therefore the demand especially in summer is more and the Department is not in a position to meet the demand. The Department of Agriculture is advising the farmers to adopt IPM practices to control the pest and diseases.

ii) Project Component

This Project requires the following components

- 1) Installation of Air Conditioning / Air Cooling machineries
- 2) Installation of other tools and equipments as per the technical guidance of the Tamil Nadu Agricultural University.

iii) Project Cost and Finance

To strengthen the existing Parasite Production Centre, an amount of Rs. 3.00 Lakhs is required to enable the Centre to produce 50.00 lakhs cc to cover 1500 ha of parasites.

6.1.15 Strengthening of Bio control agents Production Centre in Namakkal

i) Background

In Namakkal district, there is a Bio Control Agent Production Centre functioning at Agricultural Extension Centre, Namakkal. In this Centre, T. Viridi, Pseudomonous, N.P. Virus are produced and distributed to demonstration fields under subsidy schemes. The Department of Agriculture is recommending Bio Control Agents to farmers to minimize the cost of Plant Protection and reduce the use of chemical pesticides leading pollution problems. The present level of production is not sufficient to cater the need of the farmers in this district.

ii) Project Rationale

The existing production of T. Viridi, Pseudomonous, N. P. Virus is distributed to farmers only for demonstration purpose under subsidized schemes. The other farmers are not able to get their requirement in needy times. So the production of existing unit has to be increased by four times to meet the requirements of the farmers as well as to increase the usage of Bio Control Agents in the place of Chemical Control.

iii) Project Components

The proposed Bio Control Lab requires the following machineries and equipments to increase the capacity of the production.

Name of the Equipment	Approximate Cost
Centrifuge (High speed)	15000
Microscope (Triangular with accessories)	40000
Vertical Autoclave 22" x 36 " (Radial Lock Model)	45000
Shaker - Rotary shaker (Variable speed model)	55000
Distillation Unit 4 litre / hour	5000
Air Conditioners 2 Ton Split model	40000

Vacuum Cleaner	7500
Mixing machine (50 Kg capacity) (Stainless steel tank model)	55000
Mixi (Heavy duty)	6500
Pedal sealing machine 12" size	12000
Top landing Electronic Balance (100 kgs. capacity)	14000
Colony Counter digital	7500
Heamocyto meter	4000
Mini generator	55000
Bio Agents farmers Information centre including furniture and other items	113500
Miscellaneous	25000
Total	500000

iv) Project Cost and Finance

The strengthening of existing Bio Control Production Centre requires nearly 5.00 Lakhs of fund from National Agricultural Development Programme. This unit is highly useful to the farming community to supply needy Bio Control Agents in time not only to minimize the cost of control of pest and disease but also to preserve the Ecology in rural areas.

6.1.16 Establishment of Seed Testing Laboratory at Namakkal

i) Background

Seed the living embryo is considered as the basic and cheapest input in modern agriculture in enhancing and stabilizing the productivity. The cost of seed usually is usually negligible when compared to total production cost. Yet seed can affect the yield potential of a crop more than any other input factor. The cost of seed is one with high physical purity, germinability, vigour, genetic purity and free of pest diseases. The main aim of seed testing is to obtain accurate and reproducible results. The seed testing laboratory is a part of the institution in carrying out the seed production and certification

program to meet the increasing demand of farming community, Seed growers, seed producers, seed dealers of Tamil Nadu and for easy accessibility to the poor farming community for the purpose of enhancing Agricultural production in the district.

ii) Project Rationale

The Seed Testing laboratory is an important institution in carrying out the seed production and seed certification program. The accuracy and reproducibility in the analysis results is of paramount importance to the producer, processor, certification and seed law enforcement officials. At present the certified seed samples from Seed Certification wing, Official seed samples from Seed Quality Control wing and Service samples from Seed Producers. Seed dealers and farmers are being sent to Dharmapuri district for analysis. Establishment of Seed testing laboratory at Namakkal district will help the farming community, seed dealers and producers in getting the results in time and in getting quality seeds at the sowing period and curtailing the sale of substandard seeds to the farmers well ahead of sowing so that agricultural production of the district is enhanced.

A considerable quantum of quality seeds are being distributed through licensed seed selling points. The labelled seeds distribution is dominating. Under these circumstances, ensuring the quality of the seed lots before its usage by the farming community is very much essential. The quality of such seed lots can be ensured only by testing these seed lots in the Seed Testing Laboratories for its seed standards. The seed testing of these seed lots which are not covered under the preview of Seed Certification and that are covered to some extent under seed quality control program can be ensured only by inculcating the practice of sending service samples by seed producers, seed dealers and farmers by establishing Seed Testing Laboratory in the district. Accordingly, a Seed Testing Laboratory is proposed to be established in Namakkal district.

iii) Project Strategy

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

iv) Project Goal

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

v) Project Components

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

1. Mixing and Dividing Equipments

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

2. Moisture Testing Equipment

For making rapid moisture determination and to provide quick moisture percentage on seed lots. Digital moisture meter is to be purchased.

3. Weighing Equipments

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

4. Purity Analysis Equipment

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

5. Germination Equipment

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

6. Storage Equipment

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

7. Computers with Accessories

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

8. General

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

vi) Project Cost and Finance: Annexure V

The Seed Testing Laboratory that is to be established will be at an approximate cost of Rs.6.00 lakhs.

vii) Implementation Chart of the Project

The staff pattern as proposed in the restructuring shall be accommodated. The recurring expenditure towards pay and allowances for the staffs proposed as per restructure proposal and the recurring expenditure towards other items shall be borne by the State Government. The equipments for Seed Testing Laboratory are expected to be purchased during 2008-09.

viii) Monitoring and Evaluation

Implementation of the proposed project shall be evaluated by the Department of Seed Certification.

6.1.12 Establishment of Seed Testing Laboratory

i) Introduction

“The Agriculture of any country will be as strong as its seed programme. If the seed programs are weak the agriculture is weak and if the agriculture is weak the nation is weak” (Rao, 1989).

National Agricultural Development Programme (NADP) aims in bringing about quantifiable changes in production and productivity of various components of Agriculture and allied structure in a holistic manner. The purchase of equipments for New Seed

Testing Laboratories is not covered under the components under NADP (a to p) and hence the purchase of Equipments for the Namakkal Seed Testing Laboratory is proposed under component (q) innovative schemes.

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

Quality control programs are pointless unless they involve seed testing. Conversely, a seed testing laboratory has little value unless it is a part of a seed certification program, a seed law enforcement program or a production and marketing activity.

Seed tests can provide information on pure seed, other crop seed and weed seed (by percentage and number per unit weight of different species), inert matter, normal and abnormal seedlings, fresh or hard seed, dead seed and moisture content.

The main aim of seed testing is to obtain accurate and reproducible results. The seed testing laboratory is an institution in carrying out the seed production and certification program.

To meet the increasing demand of farming community, seed growers, seed producers, seed dealers of the district and far easy accessibility to the poor farming community for the purpose of enhancing Agricultural production in the district, it is necessary to have a new Seed Testing Laboratory at Namakkal district.

ii) Objectives of Seed Testing

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

iii) Role of Seed Testing Laboratories in Seed Quality Control

On analysis of the past data on productivity and quantity of seeds distributed to farming community it is well understood the SEED is very important among all other factors which influences agricultural production considerably.

While encouraging distribution of Quality seeds, regulation of seeds distributed to farmers is also very much required to safe guard the interests of the farmers and to keep up the agricultural production.

iv) Seed Quality Control Activities

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

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

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

v) Need for Establishing Seed Testing Laboratory

At present the certified seed samples from Seed Certification wing, Official seed samples from Seed Quality Control wing and Service samples from Seed Producers, Seed dealers and farmers are being sent to Dharmapuri district for analysis. This process results in the delay of results due to transportation of the seed from the place of sampling to the laboratory. To overcome this problem and render timely supply of quality seeds to the farming community, seed producers and seed dealers it is necessary to establish Seed Testing Laboratory at Namakkal district.

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

vi) Seed Distribution

A considerable quantum of quality seeds are being distributed through licensed seed selling points. The labeled seeds distribution is dominating. Under these circumstances, ensuring the quality of the seed lots before its usage by the farming

community is very much essential. The quality of such seed lots can be ensured only by testing these seed lots in the Seed Testing Laboratories for its seed standards. The seed testing of these seed lots which are not covered under the preview of Seed Certification and that are covered to some extent under seed quality control program can be ensured only by inculcating the practice of sending service samples by seed producers, seed dealers and farmers. In the present scenario, where Seed Testing Laboratory is not available in the district the seed producers, seed dealers and farmers find it very difficult to send the seed samples for analysis. Hence, facilitating the seed producers, seed dealers and farmers by establishing Seed Testing Laboratory in the district will be of much use. Accordingly, a Seed Testing Laboratory is proposed to be established in Namakkal district.

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

vii) Activities Proposed

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

Requirement of Equipments for Establishing Seed Testing Laboratory

1. Mixing and Dividing Equipments

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

2. Moisture Testing Equipment

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

3. Weighing Equipments

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

4. Purity Analysis Equipment

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

5. Germination Equipment

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

6. Storage Equipment

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

7. General

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

8. Computers with Accessories

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

viii) Cost Aspects

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

Table 6.4 Instruments/Equipments for Seed Testing Lab

Sl.No.	Name of the Instrument/Equipment	Approx. Qty required for One lab	Approx.cost Per unit rupees	Aprox. cost for One lab. Rupees
1	Weighing Balance-Top Loading	1	5000	5000
2	Illuminated purity Work board	1	4000	4000
3	Electronic Weighing balance (0.1 mg)	1	30000	30000
4	Soil type divider	1	7500	7500
5	Digital moisture meter with stabiliser	1	17500	17500
6	Germination trays	200	175	35000
7	Petri dishes	50	300	15000

Table 6.4 Contd....

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

(Rupees Six lakhs only)

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

ix) Operation and Maintenance Cost of running the Laboratory

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

x) Benefits

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

xi) Expected Date of Completion

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

xii) Monitoring and Evaluation

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

Table 6.5. Increasing The Production of Paddy in Namakkal District

District Name :NAMAkkal			Crop Name : PADDY						Type : IRRIGATED				
Sl. No.	Year		2008-09		2009-2010		2010-11		2011-12		Total (Rs. in lakhs)		
	Projected Area (Ha)		27000		28000		28000		29000				
	Projected Productivity (Kg /Ha)		6		6.25		6.45		6.6				
	Components	Physi cal Unit	Unit Cost	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
1	One time grant to TANWABE / FIG to take certified seed production and distribution @ Rs.50000/- per group	No of Groups	0.50	20	10.00	0	0.00	0	0.00	0	0.00	20	10.00
2	Incentive for seed production to Self Help Groups @ Rs.3 / kg. - TANWABE Groups	MT	0.03	300	9.00	300	9.00	300	9.00	300	9.00	1200	36.00
3	Seed distribution subsidy for the seeds produced by Self Help Groups @ Rs.5 / kg.	MT	0.05	300	15.00	300	15.00	300	15.00	300	15.00	1200	60.00

Table 6.5 Contd....

Sl. No.	Year			2008-09		2009-2010		2010-11		2011-12		Total (Rs. in lakhs)	
	Projected Area (Ha)			27000		28000		28000		29000			
	Projected Productivity (Kg /Ha)			6		6.25		6.45		6.6			
	Components	Physical Unit	Unit Cost	No of Units	Total Cost	No of Units	Total Cost	No of Units	Total Cost	No of Units	Total Cost	No of Units	Total Cost
4	Seed Minikit of new HYV @ Rs.100/- minikit	Nos	0.001	1000	1.00	1000	1.00	1000	1.00	1000	1.00	4000	4.00
5	Hybrid Rice seed distribution subsidy - 75% cost or Rs.100/- whichever is less	MT	0.1	8	0.80	8	0.80	1.2	1.20	12	1.20	40	4.00
6	Distribution of Green Manure seeds at 75% subsidy of Rs.15/kg.	MT	0.15	25	3.75	25	3.75	40	6.00	40	6.00	130	19.50
7	Distribution of Soil Health Card @ Rs100/- per card (Soil + Water testing)	Nos	0.001	5000	5.00	5000	5.00	5000	5.00	5000	5.00	20000	20.00

Table 6.5 Contd....

Sl. No.	Year			2008-09		2009-2010		2010-11		2011-12		Total (Rs. in lakhs)	
	Projected Area (Ha)			27000		28000		28000		29000			
	Projected Productivity (Kg /Ha)			6		6.25		6.45		6.6			
	Components	Physical Unit	Unit Cost	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
8	Assistance to start vermicompost production unit @ Rs.10000 per unit (Self Help Group women farmers)	Nos	0.1	90	9.00	90	9.00	90	9.00	90	9.00	360	36.00
9	Distribution of Micro Nutrient Mixture @ Rs.500 / Ha.or 50% subsidy	Ha	0.005	2000	10.00	2000	10.00	3000	15.00	3000	15.00	10000	50.00
10	Gypsum 500 kg/ha @ Rs.500/Ha.	Ha	0.005	2000	10.00	2000	10.00	3000	15.00	3000	15.00	10000	50.00
11	Farmers Field School @17000/ No.	Nos	0.17	30	5.10	30	5.10	30	5.10	30	5.10	120	20.40

Table 6.5 Contd....

Sl. No.	Year			2008-09		2009-2010		2010-11		2011-12		Total (Rs. in lakhs)	
	Projected Area (Ha)			27000		28000		28000		29000			
	Projected Productivity (Kg /Ha)			6		6.25		6.45		6.6			
	Components	Physical Unit	Unit Cost	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
12	Massive Rat control campaign in village @ Rs.5000/village	Nos	0.05	150	7.50	150	7.50	150	7.50	150	7.50	600	30.00
13	Publicity & Training @ Rs.10000/- per district	Nos	1.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	20.0	20.0
14	Promotion of SRIDistribution of Marker, Conoweeder and other items@ Rs.2500 / Ha.	L.Ha	0.025	500	12.50	500	12.50	800	20.00	800	20.00	2600	65.00
15	Power Tiller with accessories @ Rs.75,000 each or 50% subsidy	Nos	0.75	30	22.50	30	22.50	30	22.50	30	22.50	120	90.00

Table 6.5 Contd....

Sl. No.	Year			2008-09		2009-2010		2010-11		2011-12		Total (Rs. in lakhs)	
	Projected Area (Ha)			27000		28000		28000		29000			
	Projected Productivity (Kg /Ha)			6		6.25		6.45		6.6			
	Components	Physical Unit	Unit Cost	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
16	Power Thrasher @ Rs.50000/-.	Nos	0.5	20	10.00	20	10.00	20	10.00	20	10.00	80	40.00
17	Demonstration on SRI / Hybrid Rice @ 1 demonstration / 100 Ha.	Nos	0.03	250	7.50	250	7.50	250	7.50	250	7.50	1000	30.00
18	Village campaigns - Kharif / Rabi @ Rs.1000/- per campaign	Nos	0.01	150	1.50	150	1.50	150	1.50	150	1.50	600	6.00
19	Tarpaulin @ Rs.5000/- Nos.	No.	0.05	200	10.00	200	10.00	200	10.00	200	10.00	800	40.00
20	Biofertiliser @ 50% subsidy @ Rs.3 per No.	L.Nos	3	1	3.00	1	3.00	1	3.00	1	3.00	4	12.00
21	Publicity / POL & Hiring of Vehicle @ Rs.100000/- per district	Nos	1	2	2.00	2	2.00	2	2.00	2	2.00	8	8.00
	TOTAL				160.15		150.15		170.30		170.30		650.90

Table 6.6. Increasing The Production of Millets in Namakkal District**(Rupees in Lakhs)**

DISTRICT NAME : NAMAkkAL				Millets						TYPE : BOTH IRRIGATED & RAINFED			
Sl. No.	Year			2008-2009		2009-2010		2010-2011		2011-2012		Total (Rs. in lakhs)	
	Projected Area (L Ha)			1.02		1.03		1.04		1.05			
	Projected Productivity (Kg / Ha)			1.60		1.70		1.80		2.00			
	Components	Unit	Unit Cost	No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost	Total No. of Units	Total Cost
1	HVY Seeds distribution @50% Subsidy limited to Rs.8/Kg	MT	0.08	25	2	25	2	25	2	25	2	100	8
2	Technology Demonstration including minor millets Subsidy @ Rs.2000/Ha	Ha	0.02	200	4	200	4	200	4	200	4	800	16
3	Distribution of Bio fertilizer @ 50% subsidy limited to Rs.3/pocket	L.Nos	3	0.5	1.5	0.5	1.5	0.5	1.5	0.5	1.5	2	6
	TOTAL		3.1		7.5		7.5		7.5		7.5		30

Table 6.7. Increasing the Production of Groundnut (Irrigated) in Namakkal District**(Rupees in Lakhs)**

DISTRICT NAME : NAMAkkAL				CROP : GROUNDNUT				TYPE :IRRIGATED					
Sl. No.				2008-2009		2009-2010		2010-2011		2011-2012		Total	
	Projected Area (L Ha)			0.3		0.3		0.3		0.3			
	Projected Productivity (MT / Ha)			3.100		3.200		3.300		3.500			
	Components	Unit	Unit	No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total Cost	Total No.of Units	Total Cost
1	Seed production Subsidy @ Rs. 10/ Kg	MT	0.1	200	20	200	20	200	20	200	20	800	80
2	Seed Distribution @50% Subsidy limited to Rs 12/ Kg	MT	0.12	100	12	100	12	100	12	100	12	400	48
3	Pipes carrying water from source to field @ 50% subsidy limited to Rs.15000/	No.	0.15	100	15	100	15	100	15	100	15	400	60
4	Bio fertilizer distribution subsidy@ Rs.3 / No.	L. No.	3	0.6	1.8	0.6	1.8	0.6	1.8	0.6	1.8	2.4	7.2
5	Distribution of Gypsum Subsidy @ 50% cost + TC limited to Rs.750/ha	Ha	0.0075	2000	15	2000	15	2000	15	2000	15	8000	60

Table 6.7 Contd....

(Rupees in Lakhs)

Sl. No.	Year			2008-2009		2009-2010		2010-2011		2011-2012		Total	
	Components	Unit	Unit Cost	No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total	Total No.of Units	Total Cost
6	M.N.Mixture Distribution @50% cost limited to Rs. 500 / Ha.	Ha	0.005	900	4.5	900	4.5	900	4.5	900	4.5	3600	18
7	Farmers Field School Rs. 22680/ No	No.	0.2268	12	2.7216	12	2.7216	12	2.7216	12	2.7216	48	10.886
8	Tarpaulins Subsidy @Rs.5000/No.	No	0.05	100	5	100	5	100	5	100	5	400	20
9	Farmers Training 50 farmers /Training 2 days Rs.20000/training	No	0.2	30	6	30	6	30	6	30	6	120	24
10	Publicity / POL/ Hiring of Vehicle @ Rs.100000/- per year/District for district		1		2		2		2		2	0	8
11	Purchase and distribution of of Breeder seeds @Rs.50/Kg	MT	0.5	2	1	2	1	2	1	2	1	8	4
14	Seed village scheme. - Seed distribution @50% cost limited to Rs.20/Kg.	MT	0.2	50	10	50	10	75	15	75	15	250	50
	TOTAL				95.022		95.0216		100.022		100.022		390.09

Table 6.8. Increasing the Production of Groundnut (Rainfed) in Namakkal District

(Rupees in Lakhs)

DISTRICT NAME : NAMAkkAL				CROP : GROUNDNUT				TYPE :RAINFED					
Sl. No.				2008-2009		2009-2010		2010-2011		2011-2012		Total	
	Projected Area (L Ha)			0.525		0.53		0.53		0.53			
	Projected Productivity (MT / Ha)			1.850		1.900		1.950		2.0			
	Components	Unit	Unit Cost	No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total Cost	Total No.of Units	Total Cost
1	Seed Distribution @50% Subsidy limited to Rs 12/ Kg	Mt	0.12	100	12	100	12	100	12	100	12	400	48
2	Distribution of Gypsum Subsidy @ 50% cost + TC limited to Rs. 750 / Ha.	Ha	0.0075	600	4.5	600	4.5	600	4.5	600	4.5	2400	18
3	M.N.Mixture Distribution @50% cost limited to Rs. 500 / Ha.	Ha	0.005	600	3	600	3	600	3	600	3	2400	12
8	Tarpaulins Subsidy @Rs.5000/No.	No	0.05	100	5	100	5	100	5	100	5	400	20
	TOTAL				24.50		24.50		24.50		24.50		98.00

Table 6.9. Increasing the Production of Sunflower in Namakkal District

(Rupees in Lakhs)

DISTRICT NAME : NAMAkkAL				CROP : SUNFLOWER				TYPE :IRRIGATED					
Sl.NO				2008-2009		2009-2010		2010-2011		2011-2012		Total	
	Projected Area (L Ha)			0.3		0.3		0.3		0.3			
	Projected Productivity (MT / Ha)			3.100		3.200		3.300		3.500			
	Components	Unit	Unit Cost	No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total Cost	Total No.of Units	Total Cost
1	Hyb.seed Distribution @50% limited to Rs150/Kg	MT	1.5	2	3	2	3	2	3	2	3	8	12
2	Technology Demonstration (1Ha) @Rs5000/Ha	Ha	0.05	60	3	60	3	60	3	60	3	240	12
3	Hyb. Seed Minikit Rs.400/kit	No.	0.004	200	0.8	200	0.8	200	0.8	200	0.8	800	3.2
	Total				6.80		6.80		6.80		6.80		27.20

Table 6.10. Increasing the Production of Cotton in Namakkal District

(Rupees in Lakhs)

DISTRICT NAME : NAMAKKAL				CROP : COTTON				TYPE : IRRIGATED					
Sl. No.				2008-2009		2009-2010		2010-2011		2011-2012		Total	
	Projected Area (L Ha)			0.025		0.025		0.025		0.025			
	Projected Productivity (MT / Ha)												
	Components	Unit	Unit Cost	No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total Cost	Total No.of Units	Total Cost
1	Distribution of BT Cotton Seed Packets @Rs 375/ Pockets	Nos	0.00375	1000	3.75	1000	3.75	1000	3.75	1000	3.75	4000	15
2	FFS to Tanwabe/FIG Groups Rs 17000/ No	Nos	0.17	10	1.7	10	1.7	10	1.7	10	1.7	40	6.8
3	Distribution of Micronutrient Mixture 50% or Rs 500 /Ha	Ha	0.005	500	2.5	500	2.5	500	2.5	500	2.5	2000	10
	Total				7.95		7.95		7.95		7.95		31.8

Table 6.11. Increasing the Production of Maize in Namakkal District**(Rupees in Lakhs)**

DISTRICT NAME : NAMAkkAL				CROP : MAIZE				TYPE : IRRIGATED					
Sl. No.				2008-2009		2009-2010		2010-2011		2011-2012		Total	
	Projected Area (L Ha)			0.16		0.17		0.18		0.2			
	Projected Productivity (MT / Ha)			6.5		7.0		7.5		8.0			
	Components	Unit	Unit Cost	No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total Cost	Total No.of Units	Total Cost
1	Hybrid seed distribution @50% subsidy limited to Rs.75/Kg	MT	0.75	50	37.5	50	37.5	75	56.25	75	56.25	250	187.5
	Total				37.5		37.5		56.25		56.25		187.5

Table 6.12. Increasing the Production of Coconut in Namakkal District

(Rupees in Lakhs)

DISTRICT NAME : NAMAkkAL				CROP : COCONUT				TYPE : IRRIGATED					
Sl. No.				2008-2009		2009-2010		2010-2011		2011-2012		Total	
	Projected Area (L Ha)			0.025		0.025		0.025		0.025			
	Projected Productivity (MT / Ha)												
	Components	Unit	Unit Cost	No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total Cost	No.of Units	Total Cost	Total No.of Units	Total Cost
1	Seedling Distribution 50% or Rs.7.50.	1000Nos	0.075	20	1.5	20	1.5	20	1.5	20	1.5	80	6.00
2	Micronutrient Distribution Rs.15	1000Nos	0.15	20	3	20	3	20	3	20	3	80	12.00
3	Demonstration Rs.17500/Ha	Ha	0.175	75	13.13	75	13.13	75	13.13	75	13.13	300	52.52
4	Pheromone Trap Red Palm weevil Rs200/No	No	0.002	1000	2	1000	2	1000	2	1000	2	4000	8.00
	Total				19.63		19.63		19.63		19.63		78.52

Table 6.13. Strengthening of District Information Centre

(Rupees in Lakhs)

Sl. No.	Components	Unit	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	Total No.of Units	Total Cost
1	Strengthening of District Information Centre, Providing Lap Top , Printer, LCD, Scanner, Digital Camera, Copier etc	L.Rs.	5	1	5.0							1	5.0
2	Formation of FIG @ Rs.12500/ group for training and office automation, ID card, District level meeting etc	L.Rs.	0.125	75	9.375	75	9.375					150	18.75
3	Establishment of Agriclinic.& Agri Business by unemployed agri graduates 25% subsidy @ Rs.3.0 lakh each	No	3	10	30	10	30					20	60
4	Exposure visit Inter state @ 30 farmers tour, 10 days @ Rs.600/day/farmer (Rs.1.8 Lakh)	L.Rs	1.8	3	5.4	3	5.4	3	5.4	3	5.4	12	21.6

Table 6.13. Contd....

(Rupees in Lakhs)

Sl. No.	Components	Unit	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	Total No.of Units	Total Cost
5	Exposure visit Inter state @ 30 farmers tour, 5 days @ Rs.300/day/farmer (Rs.0.75 Lakh)	L.Rs	0.75	3	2.25	3	2.25	3	2.25	3	2.25	12	9
6	District level exhibition/ kisan mela @ Rs.2.0 Lakh/ District	L.Rs	2	2	4	2	4	2	4	2	4	8	16
7	Publicity & Propaganda, Printing of Lit., Display boards, conduct of press tour, Technology transfer through TV, Radio & other mass media @ Rs.2.0 Lakh / district	L.Rs	2	6	12	6	12	6	12	6	12	24	48
8	Video Conferencing facilities to District HQ @Rs.15.0 Lakh/ District	L.Rs	15	1	15							1	15
	Total				83.00		63.025		23.65		23.65		193.32

Table 6.14. Strengthening of Farmers Training Centre**(Rupees in Lakhs)**

District Name : Namakkal				Extension Activities									
Sl. No.	Components	Unit	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	Total No.of Units	Total Cost
1	Farmers Training through FTC @40 farmers (2Days)/year Rs.20000/training	L.Rs.	0.2	40	8.0	40	8	40	8	40	8	160	32.0
2	Strengthening of FTC@2.5lakh	L.Rs.	2.5	1	2.5							1	2.5
	Total				10.50		8.00		8.00		8.00		34.50

DEPARTMENT OF HORTICULTURE**6.15. Budget Abstract****(Rs. in lakhs)**

S.No.	Projects	2008-09	2009-2010	2010-11	2011-12	Total
1.	Increasing the Production of Vegetables and Plantation crops	44.60	57.725	60.35	75.05	237.725
2.	Increasing the Production of Banana in Namakkal district	122.50	183.75	245.00	306.25	857.50
3.	Extension Support to Increase the Production of Horticulture crops	194.075	114.60	130.00	138.75	577.425
4.	Improving the Production Practices for Pepper in Kolli hills	38.00	43.00	48.00	53.00	182.00
	Total	399.18	399.07	483.35	573.05	1854.65

6.2 HORTICULTURE

6.2.1 Increasing Production of Vegetable and Plantation Crops

i) Back ground

The area, production and productivity of major vegetable crops and plantation crops in Namakkal district are given below.

Table 6.16 Area, Production and Productivity of Major Vegetable Crops in Namakkal District (2007)

S.No	Crop	Area (ha)	Production (in MT)	Productivity (MT / ha)
1	Tapioca	20000	512400	25.620
2.	Onion	2600	29120	11.200
3	Tomato	750	14190	18.920
4	Brinjal	510	8270	16.220
5	Bhendi	330	4950	15.000
6	Greens	240	2910	12.130
7	Gourds	170	2550	15.000
8	Others	100	1400	14.000
	Total	24700	575790	

Table 6.17 Area, Production and Productivity of Major Plantation Crops in Namakkal District (2007)

S.No	Crop	Area (ha)	Production (in MT)	Productivity (MT / ha)
1	Betelvine	830	18260	22.000
2	Arecanut	200	545	2.730
3	Coffee	900	675	0.750
	Total	1930	19480	

The major vegetables grown in the district are Tapioca, Onion, Tomato, Bhendi, Brinjal, followed by Greens and Gourds. Tapioca is grown in an average area of 20000

ha with an average productivity of 25 tonnes/ha. The area under vegetables is highly influenced by the prevailing market prices and hence there is a wide fluctuation within a year and the productivity of Vegetables is comparatively lower than the attainable average yield. As the area under vegetable crops is influenced by internal factors like prices, the production increase can be achieved by improving the productivity levels of vegetables. The suggested components in the project focus on improving the productivity of vegetables.

ii) Project Rationale

There is a good scope for increasing the production of Vegetables.

1. The average temperature of Namakkal District is highly suitable for vegetable cultivation.
2. The Farmers are well experienced in vegetable cultivation.
3. Farmers are experienced in marketing. They sell vegetables to the near by districts and also nearby state Kerala in lieu of better price for their vegetables.
4. For easy selling of vegetables Uzhavar shandhai are located around 20-25 kilometers away from all the places.
5. In Namakkal District, 2212 farmers are provided with ID cards for selling their Vegetables in Uzavar shandhai.
6. Even though sometimes water scarcity occurs, farmers can use drip system with subsidy assistance of 50 per cent from the department under Micro Irrigation System scheme.
7. During March – June, the price of vegetables is higher because the production is low when compared to the normal months. This is mainly due to less availability of water in the wells and also high temperature prevailing during those months.

iii) Project Strategy

Net house structure for nursery will help to produce healthy, pest and disease free, good quality, well rooted seedlings for better establishment in the main field. Net house structure and Pandal installation will help vegetable production during the lean months i.e., March – June.

The biggest problem in Tapioca production is cassava mosaic virus. In order to overcome the incidence of mosaic disease, disease free sets are to be supplied to the Tapioca growers from the TNAU / CTCRI Trivandrum. Fertilizer management in vegetables is critical for improving the productivity in vegetables. To ensure proper usage of fertilizers, the fertigation technology is to be popularized by giving 100% subsidy for vegetable fertigation demonstration plots in farmers holdings. Vegetables are directly consumable produce. For getting chemical free vegetable and Betel leaves and to ensure the environmental, soil wealth and health care of the consumers, effective use of organic pesticides and fertilizers is required.

Majority (about 90 per cent) of the farmers cultivating Betel vine are tenant farmers and their economic status is very low. Betel vine cultivation is highly expensive than other crops. Wages to the agricultural labourers for all operations occupies the major share of cost of cultivation. Next to wages, plant protection cost is high. To help the farmers to reduce the cost of cultivation, farmers can be supplied with plant protection kits.

iv) Project Goals

The proposed components under this project aim to increase the area and productivity of vegetables and betel vine by 15 – 20 per cent.

v) Project Components

To achieve the set goals the following components are proposed for this district in vegetable crops and betel vine.

1. Net house structure for nursery and vegetable production.
2. Erection of pandal for vegetable production.
3. Package for plant protection i.e. non hazardous in nature.
4. Use of Humic Acid / E.M.
5. Erection of net for production of disease free Tapioca planting materials under seed farm conditions.
6. Model fertigation plot for vegetable production.

vi) Project Cost and Finance

The budget requirement for the year 2008-09 is Rs.44.60 lakhs and the total budget requirement for four years from 2008-2012 is Rs. 237.73 lakhs.

vii) Reporting

1. Monthly report of the progress made will be sent to the concerned DDH.
2. Annual consolidated report of the progress will be submitted to the concerned DDH.

6.2.2 Increasing Production of Banana in Namakkal District

i) Background

The normal rainfall of Namakkal district is 776 mm. The temperature prevailing is 30-40°C and the water source available in areas situated at the banks of cauvery river facilitates the cultivation of fruit crops especially Banana.

The area production and productivity of major fruit crops in Namakkal district are given below.

Table 6.18 Area, Production and Productivity of Fruits in Namakkal District

S. No	Name	Area (ha)	Production (in ton)	Productivity (ton / Ha)
1	Mango	1700	7055	4.150
2.	Banana	1650	58360	35.530
3	Sapota	750	18750	25.000
4	Pineapple	660	21180	32.10
5	Acid lime	440	6600	15.000
6	Guava	370	7400	20.000
7	Jack	340	3280	9.650
8	Aonla	105	1575	15.000
	Total	6015	124200	

Banana being the major fruit crop grown in Namakkal district, any increase in its productivity will enable the farmers to achieve an additional income. New technologies can definitely augment the attainable yield levels and increase the possibilities of export of banana. The project focuses on improving the banana quality and production.

ii) Project Rationale

The parts of the district namely Mohanur, Pallipalayam, Paramathi, Kabilarmalai, Namagiripettai and Senthamangalam blocks are the major Banana growing areas. The water availability and temperature prevailing in these blocks enables successful banana cultivation. Marketing is also available to liquidate the produce either by local consumption or by selling it in the Uzhavar sandhai situated in and around 20-30 km away. The transportation to neighboring district and states is also easier because the availability of vehicle facilities is plenty in and around the location.

iii) Project Strategy

Provision of support system at the time of bearing will reduce the production loss to the farmers due to heavy winds at time especially during May to August and during the North East monsoon torrential rainy days.

The thrips damage and fruit rot reduces the quality and price of Banana which drastically affects the income of the farmer. The bunch cover is one such technology which will reduce this problem in total and also skin of the fruit is very smooth and gives attractive colour to the Fruits.

Being a produce directly consumed by the consumers, the effective usage of organic based pesticides, fertilizers can be introduced.

Farmers have to invest heavily on sucker treatment that is very important in Banana cultivation. Hence 75 per cent subsidy is recommended in the form of treatment kits.

In Banana cultivation major portion of the cost is assigned for purchase of staking poles. To overcome this 75 per cent subsidy can be given to the banana growers for the purchase of poles as back ended subsidy.

iv) Project Goals

The proposed components will ensure increased production and income to the Banana growing farmers to the tune of 20-25 per cent as against the present level.

v) Project Components

The following components are proposed under this project.

1. Providing support system to banana crops.
2. Use of Humic Acid / E.M.
3. Use of Banana bunch cover

vi) Project Cost and Finance

The budget requirement for the year 2008-09 is Rs.122.50 lakhs and the total budget requirement for four years from 2008-2012 is Rs.857.50 lakhs.

vii) Reporting

1. Monthly report of the progress made will be sent to the concerned DDH.
2. Annual progressive report will be sent to the concerned DDH.

6.2.3 Extension Support to increase the Production of Horticulture Crops**i) Background**

Namakkal a new district bifurcated from Salem District was created on 1.1.97 and comprises of 15 blocks. Under restructuring of Agriculture and allied Departments, the extension personnel to the horticulture sector has increased to nearly 100 per cent.

Each district is headed by a Deputy Director of Horticulture and each block is headed by an Assistant Director of Horticulture and Horticultural officers. Assistant Agricultural officers in the blocks form a Block Technical Team to implement the projects pertaining to Horticulture.

The personnel now in the Horticulture Department are basically new to the Department by virtue of restructuring who hitherto were working in the Department of Agriculture. They need orientation and exposure to horticulture crops.

There are no separate infrastructure facilities available at present in blocks for Horticulture promotion. Also there is no specific Horticultural sale outlets and information centers as on date to distribute quality seed materials, seedlings etc.

The suggested components will ensure better technical support to the farming community thus help in increased production of horticultural crops. Further farmers will also be enlightened with the new technologies in horticulture by way of interstate study tours / crop specific seminar / workshops etc.

ii) Project Rationale

- Quality seeds, seedlings are to be distributed to the farming community
- Orientation of latest know-how to the extension personnel as well as farmers through workshops, seminars, demonstrations, exposure visits etc.,
- The new methods of marketing of the produce, containers, packages are to be improved / introduced.
- Already existing farmers associations may be updated to the level of agri-clinics by providing necessary infra-structure facilities that will enable a better liaison between farming community and the extension wing.

iii) Project Strategy

- Sales outlet cum information centre will enhance the better contact between extension personnel and the farming community.
- The farmers can be educated on the latest marketing messages, trends of commodities and thus the farming community will be able to gain a sizable marketing advantage by selling at right price and in appropriate places.
- Mega Demonstrations (10 ha in size) may be organized by the extension personnel for dissemination of all the technologies in a specific location.
- Digging of bore-wells will enable the availability of water for smaller sized vegetable gardens.
- Exposure visit to farms, Farmers workshop on crop specific nature will help in effective dissemination of technologies.

iv) Project Goals

The increased personnel involvement in horticultural technology dissemination will pave way for increased area and production under horticultural crops to the tune of 10-15 per cent.

v) Project Components

The following components are enlisted to boost the extension as one time grant.

1. Sales outlet cum Information centre
2. 10 ha mega Demonstration plot
3. Workshop (Crop specific)
4. Interstate study tour of Farmers
5. Exposure visit of Farmers / Extension personnel
6. Encouraging the farmers association to liaise between Government and Farming community.
7. Supply of plastic crates to transport the vegetable produce safely and for easily handling

vi) Project Cost and Finance

The budget requirement for the year 2008-09 is Rs.194.08 lakhs and the total budget requirement for four years from 2008-2012 is Rs.577.43 lakhs. The detailed component wise budget is given at the end of this chapter.

vii) Reporting

1. Periodical monthly progress report.
2. Annual consolidated progressive report.

SPECIAL PROJECT

6.2.4 Improving Production Practices for Pepper in Kolli hills

i) Background

Namakkal district is having a hilly tract called Kolli hills which is a separate block having an elevation of 1100 metres above M.S.L. 95 per cent of the farmers are hill tribals belonging to Scheduled Tribe category with low educational qualifications and very poor living standards.

In Kolli hills, Tapioca, Jack, Pineapple, Acidlime, Pepper, Clove, Coffee are mainly grown as rainfed. Silver oak is grown as standard and shade crop to Pepper and Coffee. Paddy is the only irrigated crop utilizing stream water running in to the valley. Pepper plays an important role in tribal farming and Pepper cultivation is also one of the main source of income for tribal farmers. Pepper is grown normally in an area of 650 Ha in the area.

ii) Project Rationale

The incumbent farmers being below the poverty line and with low literacy, the special projects are the alternative measures to uplift their standard of living.

Introduction of the latest equipments for plucking pepper spikes will not only reduce the cost of production and result in better quality pepper but also will help in timely picking, overcoming the labour shortage. The use of controlled, organic based plant protection measures is also important to ensure a sustained productivity and production in Pepper.

iii) Project Strategy

The supply of Aluminium make ladders to the pepper growers will help them in easy harvest with utmost safety to the produce with less time consumption. The supply of Plant Protection kits at subsidy to the tribals will also help to reduce the cost of cultivation. The components can be distributed at 100% subsidy considering their poor economic status.

iv) Project Goals

- The harvest of pepper is made easier.
- The loss due to poor practices in harvest and quick wilt disease can be reduced.
- The yield may also increase by 20 to 25 per cent
- The cost of harvesting pepper spikes will be reduced by 40-50 per cent.
- Reduced time for harvesting.

v) Project Components

The following components are proposed under this project

1. Supply of Aluminium ladder
2. Supply of Plant Protection Kits.

vi) Project Cost and Finance

The budget requirement for the year 2008-09 is Rs.38.00 lakhs and the total budget requirement for four years from 2008-20012 is Rs.182.00 lakhs.

vii) Reporting

- Monthly progress report to DDH.
- Annual consolidated progressive report to DDH.

Table 6.19. Increasing Production of Vegetable and Plantation Crops**(Rs. in Lakhs)**

Sl. No	Component / Activities	Subsidy pattern	Unit Cost	2008-09		2009-2010		2010-2011		2011-2012	
				Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
1	Net House (a) Nursery + Vegetable Production	50%	Rs.1.0lakh / 300 Sq.m	10	5.00	10	5.00	10	5.00	10	5.00
2.	Pandal for Vegetable Production	50%	Rs.1.0lakh / 300 Sq.m	3.2	1.60	4	2.00	4	2.00	4	2.00
3	Package for plant protection	50%	Rs.3000/- Ha	250	3.75	300	4.50	350	5.25	400	6.00
4	Humic Acid / E.M	50%	Rs. 400/ lit	250	0.50	300	0.60	300	0.60	400	0.80
5	Erection of net for production of disease free Tapioca seed materials	100%	Rs.1.0lakh / 300 Sq.m	20	20.00	30	30.00	30	30.00	40	40.00
6	Model Fertigation plot for vegetable cultivation	100%	Rs.10000/ 0.2 Ha	25	2.50	25	2.50	25	2.50	25	2.50
7	Support to Betelvine growers (a) Supply of P.P.Kits	75%	Rs.5000/20 cents	300	11.25	350	13.125	400	15.00	500	18.75
	Total				44.60		57.725		60.35		75.05

Total Budget required for four years – Rs. 237.725 lakhs

Table 6.20. Increasing Production of Banana in Namakkal District**(Rs. in Lakhs)**

Sl.No	Component / Activities	Subsidy pattern	Unit Cost	2008-09		2009-2010		2010-2011		2011-2012	
				Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
1	Banana Bunch Cover	50%	Rs. 10 / cover	100000	5.00	15000	7.50	20000	10.00	20000	10.00
2.	Supporting System for Banana	75%	Rs.1.5lakh / Ha	100	112.50	150	168.75	200	225.00	250	281.25
3	Banana sucker treatment kit	75%	Rs.5000/ 0.4 Ha.	200	5.00	300	7.50	400	10.00	500	15.00
	Total				122.50		183.75		245.00		306.25

Total budget required for four years – Rs. 857.50 lakhs

Table 6.21. Extension Support to Increase the Production of Horticulture Crops**Finance Rs. in lakhs**

Sl.No	Component / Activities	Subsidy pattern	Unit Cost	2008-09		2009-2010		2010-2011		2011-2012	
				Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
1	Sales outlet cum information centre	100%	Rs.2.6 Lakhs (one time grant)	15	39.00	15	43.00	15	48.00	15	48.00
	(a) Rent @ 5000 / month for 12 months – Rs.60,000 (b) Rs.2.0 lakh for Infrastructure like computer/Internet etc.										
2.	District level Farmers workshop (one day)	100%	Rs.400 / day	300 Nos.	1.20	400	1.60	500	2.00	500	2.00
3	Interstate exposure visit (5 days)	100%	Rs.5000/- Farmer	150	7.50	150	7.50	200	10.00	200	10.00
4	10 Ha. mega Demonstration plot	100%	Rs. 25/ lakh/ Demo	1	25.00	-	-	-	-	-	-
5	Enterprising Farmers Association	100%	Rs.25lakhs /Assoc.	3	75.00	-	-	-	-	-	-
6	Plastic crates	50%	Rs.250/ No.	1100	1.375	2000	2.50	2000	2.50	3000	3.75
7	Bore well with casing pipe	50%	Rs.1.5 Lakhs/No.	60	45.00	80	60.00	90	67.50	100	75.00
	Total				194.075		114.60		130.00		138.75

Total budget required for four years – Rs. 577.425 lakhs

Table 6.22. Improving Production Practices for Pepper in Kolli Hills**(Rs. in lakhs)**

Sl.No	Component / Activities	Subsidy pattern	Unit Cost	2008-09		2009-2010		2010-2011		2011-2012	
				Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
1	Supply of Aluminium ladder	100%	Rs. 6000 / No.	50	3.00	50	3.00	50	3.00	50	3.00
2.	Supply of P.P.kits	100%	Rs.1000/ 100 wines	3500	35.00	4000	40.00	4500	45.00	5000	50.00
	Total				38.00		43.00		48.00		53.00

Total budget required for four years – Rs. 182.00 lakhs

Table 6.23. Budget Outlay - Namakkal District – Animal Husbandry Sector – 2008-2012

S. No.	Scheme Components	Unit Cost	2008-2009		2009-2010		2010-2011		2011-2012		Grand Total	
			Unit	Cost	Unit	Cost	Unit	Cost	Unit	Cost	Unit	Cost
	Cattle and Buffalo											
	FEED AND FODDER DEVELOPMENT											
1	Popularizing chaff cutter at 50% of total cost of Rs.20,000 1/B1/yr for SHG / elite farmers (DAH)	0.1	15	1.5	15	1.5	15	1.5	15	1.5	60	6
2	Fodder production by SHGs 10 acre/B1/yr (DAH)	0.235	150	35.25	150	35.25	150	35.25	150	35.25	600	141
3	Establishment of 6x6x4 feed silo to ensile sugarcane tops at 75% of total cost of Rs.15,000 (DAH)	0.112	15	1.68	0	0	0	0	0	0	15	1.68
4	Popularization of fodder harvesting machine among farmers	0.25	15	3.75	0	0	0	0	0	0	15	3.75
5	Popularizing mineral mixture to improve livestock production 1kg/ month for one year in one block	0.006	7000	42	7000	42	7000	42	7000	42	28000	168
6	Mobile veterinary clinics (DAH)	5.832	4	23.33	0	0	0	0	0	0	4	23.33
7	Establishment of ADIU along with mobile veterinary diagnostic laboratory (DAH)	24.5	1	24.5	0	0	0	0	0	0	1	24.5
8	Identification and traceability of breedable bovine population (DAH)	0.0002	9800	19.6	0	0	0	0	0	0	9800	19.6

Table 6.23. Contd....

S. No.	Scheme Components	Unit Cost	2008-2009		2009-2010		2010-2011		2011-2012		Grand Total	
			Unit	Cost	Unit	Cost	Unit	Cost	Unit	Cost	Unit	Cost
	Sheep & Goat											
1	Quality ram / buck production centre for distribution of quality germ plasm by SHGs 2 /B1/ (DAH)	0.5	30	15	0	0	0	0	0	0	30	15
2	Semi-intensive goat farming to supply Germ plasm by SHGs Rs.25/ block (DAH)	0.25	105	26.25	90	22.5	90	22.5	90	22.5	375	93.75
3	Supply of rams and bucks to SHG / farmers 2/ block (DAH)	0.04	30	1.2	0	0	0	0	0	0	30	1.2
4	Prime lamb/kid production in intensive system the rate one per block (DAH)	0.42	15	6.3	0	0	0	0	0	0	15	6.3
5	Control of parasitic disease through treatment to enhance vaccine response (DAH)	0	0	6.7275	0	6.7275	0	6.7275	0	6.7275	0	26.91
	Poultry											
1	Supply of ELISA kits to PDDL to establish NAI free poultry farms (DAH)	0	0	67.5	0	0	0	0	0	0	0	67.5
2	Health care to Desi birds (DAH)	0.00001	250000	2.5	250000	2.5	250000	2.5	250000	2.5	100000	10
	Others											
1	Renovation of existing VDs (DAH)	5	35	175	0	0	0	0	0	0	35	175
	DAH - TOTAL			452.11		110.47		110.47		110.47		783.52

Table 6.23. Contd....

S. No.	Scheme Components	Unit Cost	2008-2009		2009-2010		2010-2011		2011-2012		Grand Total	
			Unit	Cost	Unit	Cost	Unit	Cost	Unit	Cost	Unit	Cost
9	Revival of dormant MPCs (DDD)	1	4	4	4	4	4	4	3	3	15	15
10	Fodder development activities (500 acres in 100 IDF villages in each for 2 years and 1850 acres in farmers field (DDD)	0.235	25	5.875	25	5.875	25	5.875	25	5.875	100	23.5
11	Manufacturing facilities for milk khoa (DDD)	0.77	1	0.77	1	0.77	0	0	0	0	2	1.54
12	Manufacturing facilities for ice cream (DDD)	1.12	1	1.12	0	0	0	0	0	0	1	1.12
13	Milk weighing machine for milk producers Co-op. societies (DDD)	0.17	45	7.65	40	6.8	40	6.8	40	6.8	165	28.05
14	P.C. based automatic milk collection stations to IDF villages milk producers co-operatives societies (DDD)	1.75	3	5.25	3	5.25	3	5.25	2	3.5	11	19.25
15	Quality Assurance lab strengthening (DDD)	10	1	10	0	0	0	0	0	0	1	10
16	Farmers study tour Rs.5,000/0 per farmer (DDD)	0.05	40	2	40	2	40	2	30	1.5	150	7.5
17	Orientation training / workshop for milk producers at society level (DDD)	0.2	4	0.8	4	0.8	4	0.8	4	0.8	12	3.2
	DDD - Total			186.39		114.02		113.25		110		523.66

Table 6.23. Contd....

S. No.	Scheme Components	Unit Cost	2008-2009		2009-2010		2010-2011		2011-2012		Grand Total	
1	Strengthening of infrastructure for sheep at VC&RI Namakkal farm to distribute germ plasm(TANUVAS)	50	1	50	0	0	0	0	0	0	1	50
2	Strengthening of infrastructure for goat at V.C.&R.I Namakkal farm to distribute germ plasm (TANUVAS)	25	1	25	0	0	0	0	0	0	1	25
3	Establishment of model livestock villages for educating farmers (TANUVAS)	9	1	9	1	9	1	9	1	9	4	36
4	Training programmes and village level campaign on livestock farming (TANUVAS)	0.3	11	3.3	11	3.3	11	3.3	11	3.3	44	13.2
5	Strengthening of training equipment for techno dissemination at KVK (TANUVAS)	15	1	15	0	0	0	0	0	0	1	15
6	Study tour of farmers to livestock and Poultry research station (TANUVAS) 50 persons / batch	0.25	4	1	4	1	4	1	4	1	16	4
7	Establishment of Value added symbiotic & conventional Dairy food (Milk tablet) manufacturing unit cum instructional dairy plant at V.C.&R.I Namakkal (TANUVAS)	100	1	100	0	0	0	0	0	0	1	100
	TANUVAS TOTAL			203.3		13.3		13.3		13.3		243.2
	Grand Total			841.80		237.79		237.02		233.77		1550.38

A. Large Ruminants

a. Feed and Fodder Development

Abstract

Fodder deficiency is wide spread and in this drought prone Namakkal district it is about 45 percent. In spite of deficient fodder, the farmers do not utilize the alternative fodder resources effectively and do not attempt to increase the efficiency of nutrient utilization from available fodder. This project aims to reduce the pressure on green fodder requirement by utilizing the sugarcane tops, develop micro-level fodder units and increase the efficiency of nutrient utilization in the consumed feed and fodder. The project proposes to commercialize fodder production by involving the SHG, adoption of the technology of SCT ensiling and feeding and increase the efficiency of nutrient utilization by popularizing chaff cutters, supplementing mineral mixture and supplementing By-pass protein feed to milch animals. The project also proposes to supply fodder harvesting machine at 50% subsidized cost to the farmers to avoid labour problems in harvesting the fodder in right time and lowering of its nutritive value. The project will be implemented by the Department of Animal Husbandry, the Department of Dairy Development and the Tamil Nadu Veterinary and Animal Sciences University at a total cost of Rs. 406.47 lakhs in four years.

Budget

(Rs. in lakhs)

Project	Total amount
1. Popularizing chaff cutter @ 1/B/yr for SHGs/elite farmers at 50 % subsidy in total cost of Rs 20,000 (DAH)	6.00
2. Fodder production by SHGs @ 10 acre/B/yr at 100% subsidy (DAH)	141.00
3. Establishment of 6 x 6 x 4 feet silo to ensile sugarcane tops at 75 % subsidy in total cost of Rs 15,000 (DAH)	1.68

4. Popularizing mineral mixture to improve livestock production @ 1kg/month at 100% subsidy (DAH)	168.00
5. Popularization fodder harvesting machine among farmers at 50% subsidy in total cost of Rs.0.25 lakh each (DAH)	3.75
6. Supply of mineral mixture to the milch animals at 50% subsidized cost @ 18 kg/ year animal (DDD)	27.50
7. Supply of by-pass protein feed to the milch animals (360kgs/ year/animal @ 50% subsidised cost of Rs.9/- per kg.) (DDD)	33.00
8. Chaff cutters for elite farmers (small type) @ Rs.20,000 as 100% grant (DDD)	2.00
9. Fodder development activities in farmers field at 100% grant (DDD)	23.50
Total	406.43

Background / Problem Focus

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

Project Rationale

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

Project Strategy

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

Project Goal

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

Project Components

- Popularizing chaff cutters by providing to SHG/Elite farmers at 50% of the total cost of Rs.0.20 lakh each. A total of 60 chaffers will be distributed at the rate of one per block per year to the total cost of Rs.6.00 lakhs.
- Encouraging fodder production in irrigated condition by SHG at the rate of 10 acre per block per year with 100% subsidy on the total cost of Rs.0.20 lakh per acre. The SHG resorting to fodder production will be given training at the cost of Rs.3.500. This component will be implemented in 600 acres at the total cost of Rs.141.0 lakhs.

Project Cost and Financing

Unit Cost of Fodder Production/ acre

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

II.	Fodder Cultivation of Fodder (Co-3) per Acre	
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

	Financial Requirement Per Self Help Group	Rs. in lakhs
1	Cost of training per SHG	0.035
2	Cost of fodder cultivation	0.20
	Total Requirement per SHG	0.235

-
- The sugarcane farmers will be encouraged to ensile the Post- harvested green sugarcane tops to supplement their animals during summer. For digging the 6x6x4 cubic feed silo, 75 per cent subsidy on the total cost of Rs.0.15 lakh will be provided. A total of 15 sugarcane farmers will be involved this project in one year at the total cost of Rs.1.68 lakhs.
 - To popularize mineral mixture supplementation 12kg mineral mixture per year at the rate of 1kgper month will be supplied to a total of 28,000 cows in four years with 100 per cent subsidy. The total cost for this proposal is Rs.168.00 lakhs.
 - The fodder harvesting machine will be supplied to 15 farmers at 50 per cent of the cost of Rs.25,000 each. The total cost is Rs.3.75 lakhs. These programmes will be implemented by the Department of Animal Husbandry.
 - The Department of Dairy Department will distribute the mineral mixture to 5500 continuous milk pourers at the rate of 18kg for Rs. 500 for 4 years. The total cost will be Rs.27.50 lakhs.
 - The Department of Dairy Development will distribute by – pass protein feed to high yielding milch animals (360kg/animal/year) at 50 per cent subsidized cost of Rs 9/kg. A total of 1000 animals will be covered in 4 years at the total cost of Rs.33.00 lakhs.
 - The department of Dairy Development will arrange to cultivate fodder in irrigated condition in 100 acres of land of private farmers. The cost will be Rs. 0.235 lakh per acre as 100 per cent subsidy. The total cost will be Rs.23.52 lakh.
 - The Department of Dairy Development will supply a total of 10 Chaff cutters (Small type) @ Rs.0.20 lakh each as 100 per cent grant to the continuous milk pourers in 4 years. The total cost will be Rs.2.00 lakhs

(Rs. in lakhs)

Project	2008-2009	2009-2010	2010-2011	2011-2012	Total amount
1. Popularizing chaff cutter @ 1/BI/yr for SHGs/elite farmers at 50% of total cost of Rs 20,000, 15 units/ year for 4 years (DAH)	1.50	1.50	1.50	1.50	6.00
2. Fodder production by SHGs @ 10 acre/BI/yr @ Rs. 0.235 lakh/ acre for 150 acres/year for 4 years (DAH)	35.25	35.25	35.25	35.25	141.00
3. Establishment of 6 x 6 x 4 feet silo to ensile sugarcane tops at 75% of total cost of Rs 15,000 for 15 units (DAH)	1.68	0	0	0	1.68
4. Popularizing mineral mixture to improve livestock production @ 1kg/month/animal, Rs.600/- per animal for 7000 animals per year for 4 years (DAH)	42.00	42.00	42.00	42.00	168.00
5. Popularization fodder harvesting machine among farmers at 50% of total cost, Rs.0.25 lakh / unit for 15 units (DAH)	3.75	0	0	0	3.75
6. Supply of mineral mixture to the milch animals at 50% subsidized cost @ 18 kg/ year / animal, Rs. 500/- per animal for 5500 animals (DDD)	6.875	6.875	6.875	6.875	27.50
7. Supply of by-pass protein feed to the milch animals (360kgs/ year/animal @ 50% subsidized cost of Rs.9/- per kg.) @ Rs. 3300 per animal for 250 animals / year for 4 years – (DDD)	8.25	8.25	8.25	8.25	33.00
8. Chaff cutters for elite farmers (small type) @ Rs.20,000 / unit for 10 units as 100% grant (DDD)	0.80	0.40	0.40	0.40	2.00
9. Fodder development activities in farmers field @ Rs. 0.235 lakh / acre for 25 acres/year in 4 years (DDD)	5.875	5.875	5.875	5.875	23.50
Total	105.98	100.15	100.15	100.15	406.43

Implementation Chart of the Project

Project	2008-2009	2009-2010	2010-2011	2011-2012
1. Popularizing chaff cutter @ 1/Bi/yr for SHGs/elite farmers at 50 per cent of total cost of Rs 20,000 (DAH)	✓	✓	✓	✓
2. Fodder production by SHGs @ 10 acre/Bi/yr (DAH)	✓	✓	✓	✓
3. Establishment of 6 x 6 x 4 feet silo to ensile sugarcane tops at 75 per cent of total cost of Rs 15,000 (DAH)	✓		✓	✓
4. Popularizing mineral mixture to improve livestock production @ 1kg/month (DAH)	✓	✓	✓	✓
5. Popularization fodder harvesting machine among farmers at 50 per cent of total cost of Rs.0.25 lakh each (DAH)	✓			
6. supply of mineral mixture to the milch animals at 50 per cent subsidized cost @ 18 kg/ year animal (DDD)	✓	✓	✓	✓
7. supply of by-pass protein feed to the milch animals (360kgs/ year/animal @ 50 per cent subsidized cost of Rs.9/- per kg.) (DDD)	✓	✓	✓	✓
8. chaff cutters for elite farmers (small type) @ Rs.20,000 as 100 per cent grant (DDD)	✓	✓	✓	✓
9. Fodder development activities in farmers field (DDD)	✓	✓	✓	✓

Reporting

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

b. Genetic Upgradation

Abstract

The population of buffalo is dwindling in this district due to reproductive Problems and long inter calving period as farmers often fail to identify the animals in heat. This causes heavy economic loss. The buffalo calves are also neglected resulting in malnutrition, stunted growth and attainment of late maturity. This project aims to demonstrate 100 per cent conception rate through programmed breeding in buffaloes and indigenous cows, popularize supplemental feed strategy to buffalo calves to attain early sexual maturity apart from maintaining data base on breedable bovines in this district. The Project proposes to demonstrate heat synchronization in buffaloes, followed by AI, popularize concentrate feed supplementing strategy to buffalo calves of both sexes and maintain data base on breedable bovines for future planning. The project will be implemented by both the Department of Dairy Development and Department of Animal Husbandry at a total cost of Rs.293.60 lakhs in four years.

Budget

(Rs. in lakhs)

Project	Total amount
1. Identification and traceability of breedable bovine population (DAH)	19.60
2. Programmed breeding of indigenous cattle & buffalo to increase conception rate (DDD)	126.00
3. Buffalo calf development programme (200 calves / year) (DDD)	148.00
Total	293.60

Background / Problem Focus

- The population of buffaloes is in decreasing trend in spite of their ability to convert crop residues into high quality milk. As buffaloes are silent heaters the farmers are unable to detect the heat and this results in very long inter calving period and loss of revenue.
- The buffalo calves of both sexes are highly neglected and very often affected with parasites and malnutrition resulting in stunted growth and late sexual maturity.

Project Rationale

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

Project Strategy

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

Project Goal

- To improve the conception rate and reduce inter-calving period in buffaloes.
- To demonstrate improvement in economic traits on account of proper nutrition to buffalo calves.

Project Components

- All the breedable bovines that are brought for insemination will be tagged and the cow Index card (data base) for each tagged bovine will be maintained. A total of 98000 lakh breedable bovines will be thus identified and included in data base in one year. The project will be continued even after the completion of NADP. The cost per animal will be Rs.12 to cover the cost of Tag and Rs.8 for the issue of Blue Index card. The total cost will be Rs.19.60 lakhs. This component will be implemented both by the Department of Animal Husbandry and Department of Dairy Development.
- The Indigenous cattle and buffaloes totalling 18000 to cover about 10% of population at the rate of 4500 per year will be subjected to heat synchronization and subsequent A.I to achieve 100 per cent conception rate. At the unit cost of Rs.700/- per animal a total of Rs.126.00 lakhs will be utilized in 4 years.
- In the Buffalo calves development programme at the rate of 250 calves per year a total of 1000 calves of either sex will be supplied with supplemental concentrate feed upto 32 months age at 100 per cent subsidy. The total cost will be Rs.148.00 lakh. These components will be implemented by the Department of Dairy Development.

Project Cost and Financing

(Rs. in lakhs)

Project	2008-2009	2009-2010	2010-2011	2011-2012	Total amount
1. Identification and traceability of breedable bovine population @ Rs. 20 / animal for 98000 animals (DAH)	19.60	0	0	0	19.60
2. Programmed breeding of indigenous cattle and buffalo to increase conception rate @ Rs. 700/animal for 18000 animals (DDD)	31.50	31.50	31.50	31.50	126.00
3. Buffalo calf development programme @ 14800 / calf for 1000 calves (DDD)	37.00	37.00	37.00	37.00	148.00
Total	88.10	68.50	68.50	68.50	293.60

Implementation Chart of the Project

Project	2008-2009	2009-2010	2010-2011	2011-2012
1. Identification and traceability of breedable bovine population (DAH)	✓			
2. Programmed breeding of indigenous cattle & buffalo to increase conception rate (DDD)	✓	✓	✓	✓
3. Buffalo calf development programme (200 calves / year) (DDD)	✓	✓	✓	✓

Reporting

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

c. Improvement in Livestock Health Services**Abstract**

Disease outbreak and parasitic infestation are the major causes for economic loss in livestock sector. Providing health cover to animals in remote areas, insufficient facilities for providing off-campus health cover and quick disease diagnosis are the major impediments in providing foolproof health cover to livestock. This project aims to achieve fool proof and timely disease diagnosis and treatment even in inaccessible remote areas, better surveillance of disease outbreak etc. The project purposes to give major emphasis in controlling parasite diseases, establishment of Mobile Veterinary Clinic for off – campus treatment in remote areas, Animal Disease Investigation Unit with Mobile Veterinary Diagnostic Laboratory and renovation of existing Veterinary dispensaries to provide better on-campus treatment. The total cost of this proposal is Rs.249.75 lakhs in 4 years and will be implemented by the Department of Animal Husbandry.

Budget**(Rs. in lakhs)**

Project	Total amount
1. Control of parasitic diseases through treatment 2. To enhance vaccine response (DAH)	26.91
3. Mobile veterinary clinics (DAH)	23.33
4. Renovation of existing Veterinary Dispensaries (DAH)	175.00
5. Establishment of ADIU along with mobile veterinary diagnostic laboratory (DAH)	24.50
Total	249.74

Background / Problem Focus

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

Project Rationale

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

Project Strategy

- Providing foolproof off-campus Veterinary facilities through mobile veterinary clinics
- Establishing one Animal Disease Investigating unit with Mobile Veterinary Diagnostic Laboratory
- Renovation of existing Veterinary dispensaries to provide on-campus quality Veterinary service to Livestock

Project Goal

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

Project Components

- Control of parasitic diseases through treatment to increase vaccine response. The cost will be Rs.1.00 per small ruminant and Rs.3/- per calf. Four dewormings will be carried out annually at the cost of Rs.6.73 lakhs in each year.
- Establishment of mobile veterinary clinics having equipments like surgical kit, Obstetrical kit, Binocular microscopes, Liquid Nitrogen container, Thermos flask and a Bolero jeep. For each unit diesel worth of Rs 45000 will be provided. The total cost will be Rs.5.832 to each unit and the total cost will be Rs.23.33 lakhs. The staff for this will be sourced from the available manpower in the department.
- Establishment of Animal disease investigating unit with Mobile Veterinary Diagnostic Laboratory containing diagnostic equipments, refrigerator, centrifuge, microscope and other equipments to conduct post-mortem examinations fitted in a vehicle the total cost will be Rs.24.50 lakhs.

- Renovation of existing 35 Veterinary dispensaries with basic facilities like fencing, bore wells water troughs and minor repair works at the cost of Rs 5.00 lakhs for each dispensary at a total cost of Rs 175.00 lakhs.

Project Cost and Financing

(Rs. in lakhs)

Project	2008-2009	2009-2010	2010-2011	2011-2012	Total amount
1. Control of parasitic diseases through treatment to enhance vaccine response @ Re.1/ sheep or goat and Rs. 3 / calf below 1 year, 104855 calves, 146217 sheep and 388832 goats (DAH)	6.73	6.73	6.73	6.73	26.91
2. Mobile veterinary clinics @ Rs.5.832 lakhs/unit (Jeep – Rs. 4.75 lakhs, Equipments – Rs.0.30 lakh, LN2 container large and small – Rs. 0.35 lakh, Recurring Expenditure - Rs. 0.43 lakh) for 4 units (DAH)	23.33	0	0	0	23.33
3. Renovation of existing Veterinary Dispensaries like fencing, water troughs, bore-wells, minor repair works etc. @ Rs.5.00 lakhs / institution @ for 35 dispensaries (DAH)	175.00	0	0	0	175.00
4. Establishment of ADIU along with mobile veterinary diagnostic laboratory @ Rs.24.50 lakhs (Furniture and equipment – Rs.9.00 lakhs, Office equipments – Rs. 1.00 lakh, Glassware and chemicals – Rs. 1.00 lakh, Vehicle – Rs. 11.00 lakhs, Microscope – Rs. 0.50 lakh, Centrifuge – Rs. 0.15 lakh, refrigeration Rs. 0.25 lakh, Post mortem kits – Rs. 0.10 lakh, recurring cost Rs. 1.50 lakhs for Petroleum, oil and lubricants, maintenance and purchase of stationeries etc.(DAH)	24.50	0	0	0	24.50
Total	229.56	6.73	6.73	6.73	249.74

Implementing Chart of the Project

Project	2008-2009	2009-2010	2010-2011	2011-2012
1. Control of parasitic diseases through treatment to enhance vaccine response (DAH)	✓	✓	✓	✓
2. Mobile veterinary clinics (DAH)	✓			
3. Renovation of existing Veterinary Dispensaries (DAH)	✓			
4. Establishment of ADIU along with mobile veterinary diagnostic laboratory (DA)	✓			

Reporting

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

d. Improvement of Infrastructure for Milk Procurement**Abstract**

Current practice of laborious, time consuming and unhygienic hand milking of high yielders, measuring the procured milk instead of weighment, non-functional and dormant milk societies are the major contributing factors for low milk procurement in Co-operative milk societies. This project aims at increasing the milk procurement in Co-operatives, avoid unhygienic milk handling by milkmen, introduction of transparency in milk weighment and automation in milk Co-operative societies. The project proposes to provide portable milking machine to continuous milk pourers to the milk co-operatives at 100 per cent subsidy. A total of 100 machines will be supplied to the milk pourers 4 years. For milk weighment electronic balances will be provided to 165 milk Co-operatives with 100 per cent subsidy. P.C. based Automatic Milk collection Station will be installed in 11 milk Co-operatives. Total 15 dormant milk Co-operatives will be revived by providing basic essential infrastructure. The Project will be implement by the Department of Dairy Development at total cost of Rs.80.30 lakhs.

Budget**(Rs. in lakhs)**

Project	Total amount
1. Portable milking machines for farmers (DDD)	18.00
2. Milk weighing machine for milk producers co-operative societies (DDD)	28.05
3. P.C.based automatic milk collection stations to IDF villages milk producers cooperative societies (DDD)	19.25
4. Revival of dormant MPCS (DDD)	15.00
Total	80.30

Background / Problem focus

- Hand milking is time consuming, laborious and unhygienic, More over availability of skilled milk men is also problem now a days. With more and more number of high yielding cows, the number of milking also has to be increased which Necessitate continuous engagement of milk man.
- The milk pricing depends on total solid content and hence any problem in milk weighment badly affects the return to farmers.
- Less transparency at milk collection centres and problem in maintaining summary of milk supplied on daily, monthly and yearly basis affects the confidence of milk pourers.
- Non-functional, dormant but potential milk societies for want of certain basic infrastructure forces the farmers to depend on private vendors resulting in exploitation.

Project Rationale

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

Project Strategy

- Popularizing machine milking by providing portable milking machine to a total of 100 milk pourers in 4 years period with 100 per cent subsidy.
- Providing electronic milk weighing machines to a total of 165 Co-operative milk societies procuring more than 500 litres milk per day.
- Providing P.C. based Automatic Milk collection Station facility to a total of 11 milk producers Co-operative societies procuring more than 1000 litres per day.
- Revival of a total of 15 hitherto dormant but potential milk societies by providing basic and essential milk procuring infrastructure.

Project Goals

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

Project Components

- Supply of Portable simple milking machine costing Rs.0.18 lakh each to 100 milk pourers at 100 per cent subsidy.
- Supply of electronic milk weighing machines costing Rs.0.17 lakh each to 16 Co-operative milk societies.
- Installation of PC based AMS having integrated milk weighing system, Electronic milk testing, Personal Computer with printer and battery with a capacity to analyze 120 – 150 milk samples per hour costing Rs.19.25 lakh to each of 11 Co-operative milk societies.
- Reviving 15 dormant but potential milk societies each at the cost of Rs.15.00 lakhs.

Project Cost and Financing**(Rs. in lakhs)**

Project	2008-2009	2009-2010	2010-2011	2011-2012	Total Amount
1. Portable milking machines for farmers @ Rs. 0.18 lakh/unit for 25 units per year for 4 years (DDD)	4.50	4.50	4.50	4.50	18.00
2. Milk weighing machine for milk producers co-op.societies @ Rs. 0.17 lakh/unit for 165 units in 4 years (DDD)	7.65	6.80	6.80	6.80	28.05
3. P.C. based automatic milk collection stations to IDF villages milk producers cooperative societies @ Rs. 1.75 lakhs/unit for 11 units in 4 years (DDD)	5.25	5.25	5.25	3.50	19.25
4. Revival of dormant MPCs @ Rs. 1.00 lakh/unit for 15 units in 4 years (DDD)	4.00	4.00	4.00	3.00	15.00
Total	21.40	20.55	20.55	17.80	80.30

Implementation Chart of the Project

Project	2008-2009	2009-2010	2010-2011	2011-2012
1. Portable milking machines for farmers (DDD)	✓	✓	✓	✓
2. Milk weighing machine for milk producers co-operative societies (DDD)	✓	✓	✓	✓
3. P.C.based automatic milk collection stations to IDF villages milk producers cooperative societies (DDD)	✓	✓	✓	✓
4. Revival of dormant MPCs (DDD)	✓	✓	✓	✓

Reporting

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

e. Strengthening the Infrastructure for Milk Processing**Abstract**

The unhygienic handling of milk by the milk men and unclean milk production by few milk pourers due to lack of awareness introduces bacterial contamination in fluid milk. Further the odd hour milking and more time taken for transporting the contaminated milk to processing unit increases the bacterial load in milk and escalate the processing cost. This project aims to check the bacterial load in procured fluid milk at the milk collection centres and processed packed milk at retail ends. It further aims at converting the excess fluid milk to value added products. This project proposes to improve the infrastructure facilities both at Co-operative milk societies and District Co-operative Milk Producers Federation Dairy to achieve the above aims. The proposal includes establishing 5000 litres capacity bulk milk cooler at villages, walk-in cooler at retail end, facility to manufacture ice-cream and milk khoa. The project also proposes strengthening of the quality assurance laboratory at Namakkal at a total cost of Rs.10.00 lakhs. The total cost of the project is Rs.172.66 lakhs. The Department of Dairy Development will implement this project. The project also proposes to establish value added symbiotic convenience dairy food (Milk Tablet) preparing unit cum Instructional Dairy at the Veterinary College and Research Institute, Namakkal. The Tamil Nadu Veterinary and Animal Sciences University will implement this project at the cost of Rs.100.00 lakhs.

Budget**(Rs. in lakhs)**

Project	Total amount
1. Bulk milk cooler (DDD)	30.00
2. Walk-in coolers (DDD)	30.00
3. Manufacturing facilities for milk khoa (DDD)	1.54
4. Manufacturing facilities for ice cream (DDD)	1.12
5. Strengthening of quality assurance laboratory (DDD)	10.00
6. Establishment of value added symbiotic conventional Dairy Food (Milk Tablet) manufacturing unit cum Instructional Dairy at V.C.&R.I, Namakkal (TANUVAS)	100.00
Total	172.66

Background / Problem Focus

- The District of Namakkal Producers 2.41 lakh tonnes of milk annually through Co-operative Societies spread over the district.
- The milk procured from Co-operative Societies has to be chilled within half an hour of milking to check further multiplication of bacterial load. More over customary odd hour milking in late evening by the farmers necessitate storing of procured milk at the milk co-operatives before transportation next day.
- It is also necessary to convert the excess fluid milk into products including milk Tablets which are in demand.
- To educate the students and other entrepreneurs to start small level milk processing units at micro level, an Instructional Dairy plant is absolutely necessary.
- The quality of the processed milk and products has to be assessed regularly
- The ever increasing fuel cost and processing increases the production cost of milk and milk products.

Project Rationale

In the District of Namakkal about 2.41 lakh tonnes of milk are collected annually in rural areas. By establishing milk coolers the fluid milk could be chilled and stored at milk collection centres and the walk -in -coolers will store the processed and packed milk. These measures will keep the bacterial load at minimum and reduce the processing cost. Further utilization of solar energy for milk processing will reduce the cost of process of milk. Preparing the milk Tablets by fortifying the milk with necessary minerals etc., will help the consumers to prepare ready to drink milk and avoid preserving milk even by village level consumer. The Instructional Dairy Unit will educate the small level entrepreneurs and students to start dairy processing units at micro level.

Project Strategy

- Establishing bulk milk coolers along the rural operating milk routes to maintain quality of fluid milk.
- Locating walk–in-coolers at retail ends in urban areas to maintain quality of packed milk.
- Establishing Milk khoa and ice cream manufacturing facilities at the District Co-operative milk producers union Dairy to utilize excess fluid milk.
- Strengthening the quality assurance laboratory at Salem to provide assessment of quality of the milk and milk products.
- Establishing milk Tablet preparing unit and Instructional Dairy Unit.

Project Goal

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

Project Components

- Establishing one number of 5000 lt capacity bulk milk cooler in one of the milk collection centres of milk co-operative at the total cost of Rs.30.00 lakhs.
- Establishing a Walk – in – Cooler in urban retail end at the total cost of Rs.30.00 lakhs.
- Establishing two Milk Khoa manufacturing units at the total cost of 1.54lakh in 2 years period at the District Co-operative Milk Producers Union Dairy.
- Establishing one ice cream manufacturing units at the total cost of Rs. 1.12 lakh in 1 year period at the District Co-operative Milk Producers Union Dairy. .
- Strengthening quality assurance laboratory at total cost of Rs.10.00 lakhs.

Quality Assurance Lab

Sl. No.	Name of the equipment	Amount in lakhs
1.	Incubator	0.35
2.	Hot air oven	0.35
3.	Water bath	0.35
4.	Autoclave	0.30
5.	Microscope	0.50
6.	Laminar air flow	0.50
7.	Refrigerator	0.35
8.	Air conditioner	0.35
9.	Analytical Balance	2.00
10.	Water Distillation Plant	0.35
11.	Glass ware	0.50
12.	Chemicals & Bacteriological media	0.50
13.	Furniture and work tables	0.50
14.	Colony counter	0.10
15.	PH, TDS meter	1.00
16.	Civil work	2.00
	Total	10.00

- Establishing milk Tablet preparing unit cum Instructional Dairy Unit at the cost of Rs.100.00 lakhs.

Project Cost and Financing**(Rs. in lakhs)**

Project	2008-2009	2009-2010	2010-2011	2011-2012	Total amount
1. Bulk milk cooler @ Rs. 30 lakhs per unit (DDD)	30.00	0	0	0	30.00
2. Walk-in coolers @ Rs. 30 lakhs per unit (DDD)	30.00	0	0	0	30.00
3. Manufacturing facilities for milk khoa @ Rs.0.77 lakhs per unit for two units (DDD)	0.77	0.77	0	0	1.54
4. Manufacturing facilities for ice cream @ Rs. 1.12 lakh / unit (DDD)	1.12	0	0	0	1.12
5. Strengthening of quality assurance laboratory @ Rs. 10 lakhs (DDD)	10.00	0	0	0	10.00
6. Establishing value added milk tablet manufacturing unit cum Instructional Dairy Plant @ Rs. 100 lakhs per unit (TANUVAS)	100.00	0	0	0	100.00
Total	171.89	0.77	0	0	172.66

Implementing Chart of the Project

Project	2008-2009	2009-2010	2010-2011	2011-2012
1. Bulk milk cooler (DDD)	✓			
2. Walk-in coolers (DDD)	✓			
3. Manufacturing facilities for milk khoa (DDD)	✓	✓		
4. Manufacturing facilities for ice cream (DDD)	✓			
5. Strengthening of quality assurance laboratory (DDD)	✓			
6. Establishing value added milk tablet manufacturing unit cum Instructional Dairy Plant (TANUVAS)	✓			

Reporting

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

B. Small Ruminants

a. Establishment of Quality Germ plasm Production Centres

Abstract

Inbreeding and non-availability of quality germ plasm are the major reasons for low productivity in small ruminants. The Government farms which are the major sources of germ plasm input do not cope up with the demand. The Project aims at establishing germ plasm production centres by SHG for distribution to other needy farmers at nominal rates. The project proposes to encourage the SHG / Elite farmers to start a total of 30 ram / buck production centres by providing 50% subsidy in Namakkal district in 1 year. The total cost is Rs.1.2 lakhs. The Project also proposes to supply quality rams / bucks to 30 organized farms at the rate of 2 animals per block at 100% subsidy which will be rotated for every 2 years @ cost of Rs.4000 / animal. The total cost is Rs.15.0 lakhs. The Department of Animal Husbandry will implement the above projects at the total cost of Rs.16.20 lakhs. The project proposes to strengthen the infrastructure for sheep and also for goat production at VC&RI Namakkal Farm at a total cost of Rs. 75.00 lakhs. This project will be implemented by the Tamil Nadu Veterinary and Animal Sciences University.

Budget

(Rs. in lakhs)

Project	Total amount
1. Quality ram / buck production centre for distribution of quality germ plasm by SHGs @ 2/B1 (DAH)	15.00
2. Supply of rams / bucks to SHGs / Elite farmers @ 2/B1 (DAH)	1.20
3. Strengthening of infrastructure for sheep at VR&RI Namakkal Farm to distribute germ plasm (TANUVAS)	50.00
4. Strengthening of infrastructure for Goat at VR&RI Namakkal to distribute germ plasm (TANUVAS)	25.00
Total	91.20

Background / Problem Focus

The district of Namakkal possesses 1.46 lakh sheep and 3.89 lakh goats. However the economic traits in the small ruminants are poor due to heavy inbreeding and poor nutrition resulting in decreased meat production.

Project Rationale

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

Project Strategy

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

Project Goal

- To supply quality germ plasm to needy farmers.
- To avoid inbreeding.
- To increase meat production.

Project Components

- Providing 50 per cent subsidy in the total cost of Rs.1.00 lakh to start 20+1 Quality ram / buck production centre by SHG /Elite farmers / tribes at the rate of 2 units per block.

Unit cost for quality ram / buck production centre include :

	Rs. in lakhs
Cost of animals (20+1)	: 0.53
Land Development	: 0.06
Renovation of Civil structure	: 0.10
Minor irrigation	: 0.05
Equipments	: 0.04
Fodder Production	: 0.10
PM facility	: 0.04
Working Capital	: 0.08
Total	: 1.00

- Supply of Rams / Bucks at 100 per cent subsidy to SHG / Elite farmers / Tribes having sheep or goat farm at the rate of 2 per block. The cost of each animal is Rs. 4,000 and a total of 30 animals will be supplied in one year of the project at the total cost of Rs.1.20 lakhs.
- The Sheep Unit at VC&RI Namakkal Farm will be strengthened by including 1000 female and 50 male animals.

(Rs. in lakhs)

Particulars	Cost
Purchase of 1000 female animals @ Rs.3000/-	30.00
Purchase of 50 male animals @ Rs.4000/-	2.00
Animal sheds & buildings	5.00
Land development, Fencing, Irrigation, Water, Electricity, Pastures	5.00
Field Survey for selection of animals	2.00
Miscellaneous items	4.00
Recurring expenses	2.00
Total	50.00

- The Goat unit at VC&RI Namakkal Farm will be strengthened by including 500 Does and 25 Bucks.

(Rs. in lakhs)

Particulars	Cost
Cost of Animal	
a. Bucks (25) @ Rs.3000/-	0.75
b. Does (500) @ Rs.2500/-	12.50
Land Development	
a. Fencing	1.00
b. Wasteland and pasture development	1.50
Renovation of civil structure	2.50
Post mortem facility and laboratory	1.00
Minor irrigation structures	
Deepening of bore well, Submersible pumps, pipelines & renovation of overhead tank etc.,	1.05
Equipment	
Feed troughs & water pails	0.21
Chaff cutter	0.25
Animal Handling facility, Veterinary equipments	0.50
Cost of fodder cultivation	2.00
Working Capital	
a. Salary of Manager	0.84
b. Feeding for one cycle	0.72
c. Veterinary aid & labour	0.30
Total	25.12

Project Cost and Financing**(Rs. in lakhs)**

Project	2008-2009	2009-2010	2010-2011	2011-2012	Total amount
1. Quality ram / buck production centre for distribution of quality germ plasm by SHGs @ 50% subsidy i.e. Rs. 0.5 lakh per unit for 30 units (DAH)	15.00	0	0	0	15.00
2. Supply of rams / bucks to SHGs / Elite farmers @ Rs. 0.04 lakh/ animal for 30 animals (DAH)	1.20	0	0	0	1.20
3. Strengthening of infrastructure for sheep unit at VR&RI Namakkal Farm to distribute germ plasm @ Rs. 50.00 lakhs (TANUVAS)	50.00	0	0	0	50.00
4. Strengthening of infrastructure for Goat unit at VR&RI Namakkal to distribute germ plasm @ Rs. 25.00 lakhs (TANUVAS)	25.00	0	0	0	25.00
Total	91.20	0	0	0	91.20

Implementing Chart of the Project

Project	2008-2009	2009-2010	2010-2011	2011-2012
1. Quality ram / buck production centre for distribution of quality germ plasm by SHGs @ 2/BI (DAH)	✓			
2. Supply of rams / bucks to SHGs / Elite farmers @ 2/BI (DAH)	✓			
3. Strengthening of infrastructure for sheep at VR&RI Namakkal Farm to distribute germ plasm (TANUVAS)	✓			
4. Strengthening of infrastructure for Goat at VR&RI Namakkal to distribute germ plasm (TANUVAS)	✓			

Reporting

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

b. Popularization of Scientific Small Ruminant Farming Systems

Abstract

The District of Namakkal possesses 5.35 lakh heads of sheep and goat which are maintained only on extensive system. In this system of management, the animals get good nutrition only for 3-4 months in a year and later, particularly during summer, the farmers resort to distress sale for want of fodder. The growth rate, dressing percentage and meat quality in these animals will be poor and fetch poor return. The semi intensive and Intensive systems of management have been evolved as an alternate to extensive system in which the animals get year round nutrition, good growth rate, dressing percentage, meat quality etc. This project aims to educate the farmers and popularize the semi-intensive and intensive management systems. The SHG/Tribes/Elite farmers who opt for semi intensive system of management for 20+1 unit will be given subsidy of Rs.0.25 lakh in the total cost of Rs.0.50 lakh per unit by waiving the margin money and bank loan while availing the bankable schemes. A total of 375 units (20+1) will be established in 4 years at the total cost of Rs.93.75 lakhs. The project also proposes to popularize the prime lamb/kid production under intensive system of management by providing 50 per cent subsidy in the total cost of Rs.6.30 lakh to SHG / Tribes / Elite farmers. A total of 20 units will be established in four years. Each unit will have 0+40 ram lambs / he kids units in 2 batches of 0+20 each. The Department of Animal Husbandry will implement these projects at the total cost of Rs.100.05 lakhs in one year.

Budget**(Rs. in lakhs)**

Project	Total amount
1. Semi- intensive goat farming to supply germ plasm by SHGs @ 25 / block (DAH)	93.75
2. Intensive system of Prime lamb / Kid production (0+40 in 2 batches of 0+20 each)unit at 50% of total cost Of Rs 0.42lakh (DAH)	6.30
Total	100.05

Background / Problem Focus

The small ruminants in this district are maintained on Extensive system in which the animals receive good nutrition only for 3-4 months of monsoon and later due to poor nutrition, their production goes down. Farmers resort to distress sale of their stock. This necessitates popularizing alternate systems of small ruminant production.

Project Rationale

By switching over to Semi intensive or Intensive systems of management with scientific interventions the animals receive year – round good nutrition and maintain good production potential with better cost benefit ratio. In these systems the available crop residues could also be effectively utilized.

Project Strategy

- **Semi Intensive System**

The SHG / Tribes will be encouraged to start semi intensive small ruminant farming. The margin money and bank loan to start the farm will be covered under subsidy from this project while availing bankable schemes.

For 20+1 unit the total cost will be Rs.0.50 lakh of which margin money and bank loan will be Rs.0.125 and 0.125 lakh respectively. The beneficiaries at the rate of 25 per block will be covered and thus a total of 375 farms will be started in 4 years at the cost of Rs.93.75 lakhs.

- **Intensive System**

Weaned ram lamb / male kids will be intensively managed for 180 days and finished for meat purpose in prime ram lamb / prime he kid production system. The number of units (0+40 in two batches of 0+20) will be one per block with 50% subsidy in the total unit cost of Rs.0.84 lakh. The total cost of this project is Rs.6.30 lakh for 1 year.

Project Goal

To popularize scientific and proven alternate management systems like semi intensive and intensive systems in small ruminants production with improved cost benefit ratio.

Project Component

- Providing Rs.0.25 lakh as subsidy in the bank loan (0.125 lakh) and Margin money (0.125 lakh) while availing bankable schemes to start 20+1 unit under semi-intensive system to SHG/Tribes.
- Providing 50 per cent incentive in the total unit cost of Rs.0.84 lakh to start Prime ram lamb / He kid production centre in intensive management system (0+40 unit in 2 batches of 0+20) each batch will be grown for 6 months.

Unit cost for 0+40 lambs / kids		Rs. in lakhs
Cost of 20x2 batch lambs / kids	:	0.32
Housing 20 x 15sq.ft x Rs. 80	:	0.24
Equipments	:	0.04
Manual Chaffer (150-200kg /hr)	:	0.10
Feed cost (0.150 kg x180dx40xRs.8)	:	0.05
Fodder cultivation in 0.25 ac	:	0.05
Miscellaneous	:	0.04
Total	:	0.84

Project Cost and Financing**(Rs. in lakhs)**

Project	2008-2009	2009-2010	2010-2011	2011-2012	Total amount
1. Semi- intensive goat farming to supply germ plasm by SHGs @ Rs. 0.25 lakh for 375 units (DAH)	26.25	22.50	22.50	22.50	93.75
2. Prime ram lamb / He Kid production (0+40) unit @ Rs. 0.42 lakh / unit for 15 units (DAH)	6.30	0	0	0	6.30
Total	32.55	22.50	22.50	22.50	100.05

Implementation Chart of the Project

Project	2008-2009	2009-2010	2010-2011	2011-2012
1. Semi- intensive goat farming to supply germ plasm by SHGs @ 25 / block (DAH)	✓	✓	✓	✓
2. Prime ram lamb / He Kid production (0+40) unit (DAH)	✓			

Reporting

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

C. Poultry**a. Supply of ELISA Kits to PDDL to establish 'NAI free' Poultry Farms****Abstract**

The Poultry Disease Diagnostic Laboratory at Namakkal 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 lakh 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 lakh. The project outlay is Rs. 67.50 lakhs. In addition the project proposes to provide regular health cover to the already existing 10.0 lakhs desi birds to create disease-free environment at the cost of Rs.10.0 lakhs. The Department of Animal Husbandry will implemented the project at the total cost Rs.77.50 lakhs.

Budget

(Rs. in lakhs)

Project	Total amount
1. Supply of ELISA Kits to PDDL to establish NAI-Free poultry farms (DAH)	67.50
2. Health Care to Desi birds (DAH)	10.00
Total	77.50

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, Namakkal 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 lakh 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 lakh. The total project outlay is Rs. 67.50 lakhs. In addition the existing desi birds have to be given health cover to create disease-free environment in this district.

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, Namakkal 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 (Erode, Namakkal and Salem) 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).In a 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, Namakkal will be 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 lakh 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 lakh is needed for the purchase of ELISA kits and additional cost of Rs. 0.30 lakh 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 fee 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 lakh 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 Goal

- Strengthening of PDDL, Namakkal for 'NAI Free Establishment Certification.
- To provide fool proof health cover to the existing desi birds to establish disease-free environment.

Project Components

- Strengthening of PDDL, Namakkal for 'NAI Free Establishment Certification' by import of ELISA kits for screening of pooled sera samples for A.I. @ cost of Rs.67.50 lakhs which include 336 Elisa kits for Rs.67.20 lakhs and other consumables Rs.0.30 lakh.
- Providing fool proof health cover to 10.0 lakhs desi birds @ cost of Rs. 10.00 lakhs.

Project Cost and Financing

(Rs. in lakhs)

Project	2008-2009	2009-2010	2010-2011	2011-2012	Total amount
1. Supply of ELISA Kits to PDDL to establish NAI-Free poultry farms @ Rs. 0.2 lakh /kit for 336 Elisa kits and other consumables – Rs. 0.3 lakhs (DAH)	67.50	0	0	0	67.50
2. Health Care to Desi birds @ Re 1 per bird for 2,50,000 birds/year for 4 years (DAH)	2.50	2.50	2.50	2.50	10.00
Total	70.00	2.50	2.50	2.50	77.50

Implementation Chart of the Project

Project	2008-2009	2009-2010	2010-2011	2011-2012
1. Supply of ELISA Kits to PDDL to establish NAI-Free poultry farms.(DAH)	✓			
2. Health Care to Desi birds (DAH)	✓	✓	✓	✓

Reporting

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

D. Strengthening the Infrastructure to Promote Extension Services

Abstract

Extension services are the linkages between Researchers and Farmers for transfer of technologies. In order to document the transferable technologies and transferring the same in a farmer – friendly mode the existing out-dated technology transfer aids be replaced with updated modern gadgets. The Project proposes to adopt one village each year to establish it as Model Livestock Village which will act as an open –air laboratory for other farmers to visit and learn. The model village will be developed to have self – sufficiency in fodder production and adopt new scientific technologies in farming systems. The Livestock in this village will have optimum and commendable Productive and Reproductive traits with zero disease outbreak. The entire household possessing Livestock will be trained on livestock farming. The project also proposes to strengthen the existing audio visual aids in the training centre with modern, updated gadgets to articulate the message effectively to farmers. The model Livestock villages establishment and strengthening of training equipments to facilitate effective capacity building programmes will be taken up in all the four years. The Tamil Nadu Veterinary and Animal Sciences University will implement this project through its KVK located at Namakkal with total cost of Rs.51.00 lakhs for 4 years.

Budget

(Rs. in lakhs)

Project	Total amount
1. Establishment of model livestock village to educate farmers (TANUVAS)	36.00
2. Strengthening of Training equipments for Technology dissemination at KVK, Namakkal (TANUVAS)	15.00
Total	51.00

Background / Problem Focus

Extension services are the tools for Technology transfer in time to improve the socio economic condition of farmers. For better services, the extension unit need better audio visual aids, and demonstration units to provide conducive atmosphere for the farmers to learn.

Project Rationale

Documentation and remoulding of the Technologies in farmers friendly mode and transferring the same to farmers in an acceptable way requires modern electronic infrastructure.

Project Strategy

- Establishing Model Livestock Village for demonstration to farmers will act as an open laboratory for farmers to learn. The village will have self sufficiency in fodder, High yielding animals, integrated farming system, Livestock information centre etc.
- Strengthening the training equipments in the existing KVK with modern updated electronic gadgets.

Project Goal

- To document transferable Technologies and transfer in farmers – friendly mode for adoption.
- To provide conducive learning atmosphere to farmers in Training hall.

Project Components

- One village in each year will be adopted and developed into model livestock village which will have the followings:
 - Micro level fodder units

- Existing cows will be managed to have optimum productive and reproductive trails
 - Intensive scientific rearing of sheep and goat units
 - Genetic up gradation of ND goats with Artificial insemination with Boer semen
 - Integrated Livestock farming systems
 - Clean milk production
 - Farming systems with other Poultry species
 - Technology backed Backyard Poultry
- Strengthening of Training equipments for conducting capacity building and Technology dissemination programmes at KVK Namakkal with Slide Projector, Projection screen, Digital camera, Lap Top, LCD Projector, DVD Player, Vehicle mounted with Television and other audio visual aids for conducting off-campus training and village level campaigns, Shamina, Handi Cam, Photo Copier, Fax and Chairs to trainees.

Project Cost and Financing

(Rs. in lakhs)

Project	2008-2009	2009-2010	2010-2011	2011-2012	Total amount
1. Establishment of model livestock village to educate farmers @ Rs. 9 lakhs/village for 4 villages in 4 years (TANUVAS)	9.00	9.00	9.00	9.00	36.00
2. Strengthening of Training equipments for Technology dissemination at KVK, Namakkal @ Rs. 15 lakhs (TANUVAS)	15.00	0	0	0	15.00
Total	24.00	9.00	9.00	9.00	51.00

Implementation Chart of the Project

Project	2008- 2009	2009- 2010	2010- 2011	2011- 2012
1. Establishment of model livestock village to educate farmers (TANUVAS)	✓	✓	✓	✓
2. Strengthening of Training equipments for Technology dissemination at KVK, Namakkal (TANUVAS)	✓			

Reporting

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

E. Capacity Building and Technology Transfer Programmes**Abstract**

Extension services provide the much needed information resource and develop the skill of Livestock growers to adopt newer technologies. Capacity building is a continuous process having the components of Training, Village level meetings, Demonstrations, Learning by seeing etc. The project aims to update the livestock growers with recent scientific interventions and develop their skill to adopt them. This project proposes to conduct year – round off-campus and on-campus training programmes, village level campaigns on scientific system of Livestock farming, conducting skill development programmes to technical staff, workshops and exposure visit. All the programmes proposed will be implemented for 4 years at a total cost of Rs.27.90 lakh. While all the trainings to farmers and study tour to Research Stations will be conducted by the Tamil Nadu Veterinary and Animal Sciences University through its KVK at Namakkal developmental programmes, study tour for milk pourers of Co-operative societies and workshop for milk producers at society level will be implemented by the Department of Dairy Development.

Budget**(Rs. in lakhs)**

Project	Total amount
1. Training programmes and village level campaign on livestock (TANUVAS)	13.20
2. Study tour of farmers to livestock and poultry research station @ 50 persons/batch with the cost of Rs. 0.25 lakh/batch (TANUVAS)	4.00
3. Farmers study tour @ Rs.5000/- per farmer (DDD)	7.50
4. Orientation training / workshop for milk producers at society level (DDD)	3.20
Total	27.90

Background / Project Focus

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

Project Rationale

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

Project Strategy

- Conducting off -campus and on -campus Training programmes and village level campaigns on scientific system of Livestock farming.
- Conducting farmers study tour to expose them to various organized farms and Research Stations.
- Providing orientation Training / Workshop for milk pourers at society level.

Project Goal

- To update the Livestock growers with recent scientific interventions.
- To provide a platform to Livestock growers for interaction with Researchers to update their skills.
- To Transfer viable Technologies for adoption to increase Livestock Production.

Project Components

- Conducting 32 Training programmes and 12 village level campaigns on livestock Production to farmers at a total cost of 13.20 lakhs.
- Conducting exposure visit to Research Stations in 4 batches of 50 farmers in each batch / year at a total cost of Rs. 4.00 lakhs.
- Conducting study tour to 40 continuous milk pourers annually to organized dairy farms and Dairies at a total cost of Rs.7.50 lakhs.
- Conducting 4 workshops annually for 4 years to milk pourers at society level at a total cost of Rs.3.20 lakhs.

Project Cost and Financing

(Rs. in lakhs)

Project	2008 - 2009	2009- 2010	2010- 2011	2011- 2012	Total amount
1. Training programmes and village level campaign on livestock @ Rs. 3.30 lakhs per year for conducting 8 training programmes and 3 village level campaigns for 4 years (TANUVAS)	3.30	3.30	3.30	3.30	13.20
2. Study tour of farmers to livestock and poultry research station @ 50 persons/batch with the cost of Rs 0.25 lakh/batch for 4 batches/year for 4 years (TANUVAS)	1.00	1.00	1.00	1.00	4.00

3. Farmers study tour @ Rs.5000/- per farmer for 150 farmers in 4 years (DDD)	2.00	2.00	2.00	1.50	7.50
4. Orientation training / workshop for milk producers at society level @ Rs. 0.20 lakh/ training for 4 trainings/year for 4 years (DDD)	0.80	0.80	0.80	0.80	3.20
Total	7.10	7.10	7.10	6.60	27.90

Implementation Chart of the Project

Project	2008 - 2009	2009- 2010	2010- 2011	2011- 2012
1. Training programmes and village level campaign on livestock (TANUVAS)	✓	✓	✓	✓
2. Study tour of farmers to livestock and poultry research station @ 50 persons/batch with the cost of Rs 0.25 lakh/batch (TANUVAS)	✓	✓	✓	✓
3. Farmers study tour @ Rs.5000/- per farmer (DDD)	✓	✓	✓	✓
4. Orientation training / workshop for milk producers at society level (DDD)	✓	✓	✓	✓

Reporting

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

Table 6.24. Budget Outlay - Namakkal District – Fisheries Sector - 2008-2012**(Rs.in lakh)**

Sl. No.	Components	Implementing Agency	Unit cost	Total units	2008-09		2009-10		2010-11		2011-12		Total cost
					Units	Cost	Units	Cost	Units	Cost	Units	Cost	
1	Fish Seed Production												
	a. Private participation with 50% subsidy	Fisheries Department	7.50	2 Ha	1	7.50	1	7.50					15.00
2	Expansion of fish culture												
	a. Supply of fish seeds with 50% subsidy	Fisheries Department	0.005	4000 Ha	1000	5.00	1000	5.00	1000	5.00	1000	5.00	20.00
	b. Private fish farming with 50% subsidy	Fisheries Department	1.00	8 Ha	2	2.00	2	2.00	2	2.00	2	2.00	8.00
3	Infrastructure development in harvest and post harvest sector	Fisheries Department											
	a. Supply of fishing implements with 90% subsidy	Fisheries Department	0.18	150.00	50	9.00	50	9.00	50	9.00			27.00
	b. Supply of insulated ice boxes (50kg capacity) 90% subsidy	Fisheries Department	0.018	100.00	25	0.45	25	0.45	25	0.45	25	0.45	1.80
	c. Supply of mopeds with insulated ice boxes (50% subsidy)	TAFCOFED	0.15	50.00	10	1.50	10	1.50	10	1.50	20	3.00	7.50

Table 6. 24. Contd.....

(Rs.in lakh)

Sl. No.	Components	Implementing Agency	Unit cost	Total units	2008-09		2009-10		2010-11		2011-12		Total cost
					Units	Cost	Units	Cost	Units	Cost	Units	Cost	
	d. Setting up of modern fish stall	Fisheries Department	10.00	2.00	1	10.00	1	10.00					20.00
	Fisheries - Total					35.45		35.45		17.95		10.45	99.30
4	Capacity building through training (TANUVAS)												
	a. Farmers training @ Rs. 1000 / Unit 1 member	TANUVAS	0.01	200	50.00	0.50	50	0.50	50	0.50	50	0.50	2.00
5	Research and Development (TANUVAS)												
	a. Breeding of ornamental fishes (100% grant)	TANUVAS	10.00	1	1.00	10.00							10.00
	b. Establishment of fish culture and post harvest technology demonstration unit	TANUVAS	30.00	1	1.00	30.00							30.00
	c. River ranching of native fish varieties	TANUVAS	10.00	1	1.00	10.00							10.00
	d. Establishment of aqua feed and nutrition research station (10 tonnes per month)	TANUVAS	10.00	1	1.00	10.00							10.00
	TANUVAS - Total					60.50		0.50		0.50		0.50	62.00
	Grand Total					95.95		35.95		18.45		10.95	161.30

V. Project**I) Fish Seed Production****a) Private participation with 50 per cent subsidy****Abstract**

To produce 10.00 lakhs fingerlings by extending 90 per cent subsidy to fish farmers.

Budget : Rs. 15.00 lakhs @ 50 per cent subsidy

Background / Problem Focus

A total of 2 ha farm will be supported at a cost of 15.00 lakhs.

Project Rationale

To supply quality and required fish seeds to the farmer.

Project Strategy

To identify farmers for the promotion of seed production.

Project Goals

To meet out the demand of fish seed among farmers.

Project Components

Identification of farmer and Construction of seed farm.

Project Cost : Rs. 15.00 lakhs @ 50 per cent subsidy

Unit cost	7.50 lakhs * 50 per cent subsidy for 2 ha for fish seed production
No. of units	2.0 ha
Total cost	7.50 x 2= 15.00 lakhs

Implementation Chart of the Project

Sl. No.	Particulars	2008-2012			
		I Qtr	II Qtr	III Qtr	IV Qtr
1.	Production & supply of fish seeds	√	√		

2. Expansion of Fish Culture**a. Supply of Fish Seeds by providing 50 per cent subsidy assistance to Fish Farmers****Abstract**

To expand fish culture in 4000 ha of water bodies additionally.

Budget : Rs. 20.00 lakhs

Background / Problem Focus

It is proposed to cover 4000 ha of water bodies additionally to bring under fish culture by extending subsidy assistance for stocking fingerlings.

Project Rationale

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

Project Strategy

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

Project Goals

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

Project Components

To stock fingerlings in 4000 ha water bodies at 1000 ha / year

Project Cost and Financing : Rs. 20.00 lakhs @ 50 per cent subsidy

Unit cost	0.005 lakhs * 50 per cent subsidy for 4000 ha for fish seed production
No. of units	4000 ha
Total cost	0.005lakhs for 4000 ha at 50 per cent subsidy= 20.00 lakhs

Implementation Chart of the Project

Sl. No.	Particulars	2008-2012			
		I Qtr	II Qtr	III Qtr	IV Qtr
1.	Production & supply of fish seeds	√	√	√	√

b) Private Fish Farming with 50 per cent Subsidy

Abstract

To create 8 ha of farm ponds through private participation.

Budget : Rs. 8.00 lakhs @ Rs. 50 per cent subsidy

Background / Problem Focus

Expansion of fish culture by providing subsidy of 50 per cent.

Project Rationale

To encourage private participation by extending subsidy for construction of farm ponds.

Project Strategy

The construction cost for 1 ha of farm pond is 2 lakhs and 1 lakhs subsidy will be provided for 1 ha farm pond construction.

Project Goals

To encourage private participation for enhancing fish production.

Project Cost and Financing : Rs. 8.00 lakhs @ 50 per cent subsidy

Unit cost	1 lakh * 50 per cent subsidy for 8 ha for fish seed production
No. of units	8 ha
Total cost	1 lakh for 8ha at 50 per cent subsidy= 8.00 lakhs

Implementation Chart of the Project

Sl. No.	Particulars	2008-2012			
		I Qtr	II Qtr	III Qtr	IV Qtr
1.	Construction of fish pond	√	√	√	√

3) Infrastructure Development in Harvest and Post Harvest Sector**a) Supply of Fishing Implements with 90 per cent subsidy****Abstract**

Fishermen will be provided with FRP coracle & nets for effective fishing.

Budget : Rs. 27.00 lakhs @ 90 per cent subsidy

Background / Problem Focus

To provide farming implements such as FRP coracles & nets.

Project Rationale

To enhance fish production through capture fisheries

Project Strategy

To provide 150 units of fishing implements.

Project Goals

To intervene fishing in natural water bodies.

Project Components

Supply of FRP coracles & nets.

Project Cost and Financing

Unit cost	0.18 lakh
No. of units	150
Total cost	27.00 lakhs

Implementation Chart of the Project

Sl.No.	Particulars	2008-2012			
		I Qtr	II Qtr	III Qtr	IV Qtr
1.	Purchase & supply of FRP coracles & nets	√	√	√	

b) Supply of Insulated Ice Boxes (50 kg capacity, 90 per cent subsidy)**Abstract**

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

Budget : Rs. 1.80 lakhs

Background / Problem Focus

For transporting and progressing fish hygienically.

Project Rationale

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

Project Strategy

Making available insulated 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 30 units of insulated with ice box at 50 per cent subsidy.

Project Cost and Financing

Unit cost	0.018 lakh
No. of units	100
Total cost	1.80 lakhs

Implementation Chart of the Project

Sl.No.	Particulars	2008-2012			
		I Qtr	II Qtr	III Qtr	IV Qtr
1.	Purchase & supply of FRP coracles & nets	√	√	√	√

c) Supply of Mopeds with Insulated Ice Boxes (50 per cent subsidy)**Abstract**

The mopeds with insulated 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 moped with insulated could help make available of the fish produce in time with quality retention.

Project Strategy

Making available moped with insulated 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 moped with insulated with ice box at 50 per cent subsidy

Project Cost and Financing

Unit cost	0.15 lakh
No. of units	50
Total cost	7.50 lakhs

Implementation Chart of the Project

Sl. No.	Particulars	2008-2012			
		I Qtr	II Qtr	III Qtr	IV Qtr
1.	Purchase & supply of mopeds with ice box	√	√	√	√

d) 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. 20.00 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

Unit cost	10 lakh * construction of a modern stall with refrigeration facilities
No. of units	02
Total cost	20 lakhs

Implementation Chart of the Project

Sl.No.	Particulars	2008-2012			
		I Qtr	II Qtr	III Qtr	IV Qtr
1.	Setting up of modern fish stalls	√	√		

4) Capacity Building through Training (Fisheries Dept. and TANUVAS)**a) Farmers training @ Rs. 1000 / unit 1 member****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 to improve the socio economic conditions of farmers the training programme is to be conducted

Budget : Rs.50.00 lakhs

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).

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

Unit cost	0.01 lakh * includes training fees, extension materials with field visits
No. of units	200
Total cost	2.0 lakhs

Implementation of Client of the Project

Sl.No.	Particulars	2008-2012			
		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	√	√	√	√

5) Research and Development (TANUVAS)

a) Breeding of Ornamental Fishes (100 per cent grant)

Abstract

Ninety five per cent of our ornamental fish export is based on wild collection. Majority of the indigenous ornamental fish trade in India is from the North Eastern states and the rest is from Southern states which are the hot spots of fish bio diversity in India. This capture based export is not sustainable, hence to sustain the growth of the industry it is absolutely necessary to shift the focus from capture to culture based development. Moreover most of the fish species grown for their ornamental importance can be bred in India successfully.

Background/Problem Focus

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

India's share in ornamental fish trade is estimated to be Rs 158.23 lakhs which is only 0.008 per cent of the global trade. The major part of the export trade is based on wild collection. There is very good domestic market too, which is mainly based on domestically bred exotic species. The overall domestic trade in this field cross 10 crores and is growing at the rate of 20 per cent Annually. The earning potential of this sector has hardly been understood and the same is not being exploited in a technology driven manner. Considering the relatively simple technique involved, this activity has the potential to create substantial job opportunities, besides helping export earnings.

Project Rationale

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

Project Strategy

- i. Breeding of live bearing ornamental fishes such as molly, guppy, plat and swordtail fish and egg laying ornamental fishes like gold fish, koi carp, fighter, gourami and oscar fish.
- ii. Production of healthy young ones
- iii. Development of good quality broodstock
- iv. Selling of ornamental fishes

Project Goals

- i. To breed ornamental fishes and selling to the public
- ii. To increase the family income and to improve the socio economic status of the farmers, women self help groups and to create employment through aquaculture by quality broodstock supply.

Project Components

Work Shed, Cement tanks, Glass tanks, Heater, Filter, Other aquarium accessories.

Budget

Project Cost and Financing : Rs. 10.00 lakhs

S.No.	Particulars	Rupees (in Lakhs)
1	Construction of hatchery shed 100 m2 x 1200	1.20
2	Construction of cement tanks	0.25
3	Air blower	0.20
4	Generator	1.00
5	Filter	1.00
6	Breeders	0.50
7	Bore well, pump, pipe lines	2.00
8	Lab instruments(glass wares and chemical)	1.00
9	Feed, fertilizer, manure	0.50
10	Miscellaneous	2.35
	Total	10.00

Implementation of the Project

Sl.No.	Particulars	2008-09	2009-10	2010-11	2011-12
1.	Construction of hatchery shed and construction of tanks	√			
2.	Installation of accessories	√			
3.	Breeding and production of fishes	√			

b) Establishment of Fish Culture and Post Harvest Technology Demonstration Unit**Abstract**

For conducting training programmes for fishermen on advanced techniques in fishing methods. This programme will also to develop skill on harvest and post harvest management

Budget : Rs. 30.00 lakhs

Background / Problem Focus

The marine fisher folk population in Tamil Nadu is about 9.0 lakhs and out of which 2.62 lakhs were active fisher folk. There are 591 marine fishing village and nearly 362 marine fish landing centres in the state.

Project Rationale

Presently, the fishermen of Tamilnadu coast are carrying out fishing operations based on their own experiences and most of the technical aspect of carrying out right fishing methods are not being known / practiced in order to get more catch in a sustained manner. However, the fishermen are aware of some of these aspects and it needs future stress for adoption. To improve the knowledge and skill on advanced techniques on fish harvest and post harvest management, this training programme is to be conducted.

Project Strategy

The training programmes imparting knowledge on use of advanced fishing equipments and post harvest management techniques.

Project Goals

To improve the knowledge and skills of fishermen on advanced techniques on harvest and post harvest management

Project Components

- a) Advanced fishing methods
- b) Post harvest management

Project Cost and Financing

Total Cost : 30 lakhs

Sl.No.	Particulars	Rupees (in Lakhs)
1	Establishment of demonstration fish farm	5.00
2.	Model fish seed hatchery	10.00
3.	Provision of lab and training hall facility	10.00
4.	Model fish processing unit	5.00
	Total	30.00

Implementation of Chart of the Project

Sl.No.	Particulars	2008-09	2009-10	2010-11	2011-12
1.	Establishment of demonstration fish farm	√			
2.	Model fish seed hatchery	√			
3.	Provision of lab and training hall facility	√			
4.	Model fish processing unit	√			

c) River Ranching of Native Fish Varieties

Abstract

To increase the fish productivity of riverine region, it is proposed to ranch fish seeds in riverine region. The total cost of this project will be 40.00 lakhs.

Budget : Rs. 10.00 lakhs

Project Cost and Financing

Unit cost	10 lakh *hatchery establishment, collection of endemic species & sea ranching
No. of units	1
Total cost	10.0 lakhs

Implementation Chart of the Project

Sl. No.	Particulars	2008-09	2009-10	2010-11	2011-12
1.	Construction of ponds and hatcheries	√	√		
2.	Creation of laboratory facilities for breeding the fishes		√		
3.	Production of native fish species and rearing		√	√	√
4.	Ranching of seeds in rivers		√	√	√

c) Establishment of Aqua Feed and Nutrition Research Station (10 tonnes per month)

Abstract

Feed forms 60 per cent of the total cost of production in aquaculture. Development of suitable feed providing better average daily growth, reduced days of culture with good food conversion ratio is inevitable. In today's scenario most of the aqua feeds are imported from other countries only. Hence to develop a low cost efficient feed according to the local needs and the behavioral feeding habits of the cultured fish species is essential to reduce the cost of production of the cultured fish.

Budget : Rs. 10.00 lakhs

Project Cost and Financing

Unit cost	10 lakh *establishment of a feed mill with installation of pulveriser, mixer, pelletiser & drier with packaging facility
No. of units	1
Total cost	10.0 lakhs

Implementation Chart of the Project

Sl.No.	Particulars	2008-09	2009-10	2010-11	2011-12
1.	Tender & quotation	√			
2.	Construction of feed mill with equipments like pulveriser, mixer, pelletiser & hot air driers	√			

Table 6.25 Budget Abstract – Department of Agricultural Engineering

(Rs. in lakhs)

S. No.	Components	2008 - 09	2009 - 10	2010 - 11	2011 - 12	Total
1	Introduction of newly developed agricultural machinery	31.3	39.98	36.7	42.65	150.63
2	Popularization of Agricultural Mechanization through conventional Machinery / Equipments	50.26	50.93	50.9	58.27	210.36
3	Innovative water harvesting structures	67.5	70.2	70.2	67.5	275.4
4	Water Harvesting Structures	59.3	63.35	65.15	65.6	253.4
5	Soil Conservation Works	25.65	25.65	27	28.35	106.65
6	Water Management Works	29.7	29.7	29.7	29.7	118.8
	Total	263.71	279.81	279.65	292.07	1115.24

Total budget required for four years from 2008 – 2012 is Rs.1115.24 lakhs.

6.5 Agricultural Engineering

6.5.1 Promotion of Awareness and Adoption of Agricultural Mechanisation

i) Background

Agricultural operations, at present, mainly depend on manual labour. Agricultural labourers currently tend to shift to various other jobs / works which pay more than agriculture, thereby leading to an acute shortage of agricultural labourers, particularly in Namakkal District, wherein diversified options like poultry, lorry body building, other industries are available readily. For instance, in Namakkal district, 285 rice mills, 25 spinning mills, 70 oil centres, 176 sago factories, 135 poultry feed factories, more than 150 lorry body building work shops with a number of subsidiary industries of auto body works and many number of such other industries attract the farm labour by offering more wages. Handloom and power loom weaving are also predominant in the district.

Moreover, agricultural operations done using manual labour take more time and effort, cost more recurrently, are less efficient and likely to get deferred for want of labourers in time. These problems relating to agricultural labourers need to be focused on and suitable interventions need to be advocated.

ii) Project Rationale

By resorting to suitable interventions like introduction of newly developed agricultural machinery / implements and popularizing the existing machinery / implements by way of supplying them to the farming community at subsidized rates, more agriculturists can be made to understand the benefits / merits of using the machinery / implements thereby leading to the continuous adoption of mechanized farming in the long run. This will largely help in overcoming the problem of labour shortage and also in timely agricultural operations and in the reduction of the recurrent cost of agricultural operations to a major extent. This will indirectly result in the enhancement in the farmers' income.

iii) Project Strategy

This project of supplying agricultural machinery / implements to the farming community at subsidized rates is programmed to be implemented in the following ways.

- Collecting applications from the needy farmers (after due motivation) for their requirement of machinery / implement, manufactured by the company of their choice
- Arrangements with the approved manufacturing companies / dealers for the supply of machinery / implement and release of subsidy
- Arranging for MOU between the supplier and the Executive Engineer (AE), for warranty and after sales service
- Coordinating with the bankers to arrange for loans to meet the beneficiaries' contribution portion

The district consists of 22 commercial banks with 103 branches. Besides, 25 branches of Salem District Central Cooperative Bank with its 168 affiliated Primary Agricultural Cooperative Banks and the 7 Primary Cooperative Agricultural and Rural Development Banks. This may, of course, require the concerted effort by the Agricultural Engineering Department, the Bankers and the District Administration.

iv) Project Goals

1. To create an awareness among the farmers towards the adoption of machinery.
2. To motivate the farmers by way of providing them subsidies.

On achieving this, the efficiency of agricultural operations will be substantially be increased leading to the enhancement in the farm income.

v) Project Components

On a broad categorization, there are two components in this project, viz., Supply of agricultural machinery / implements to the individual farmers at subsidized rates.

The machinery / implements include

- Mini combine harvester (TNAU model)
- Power weeder with attachments
- Power thrasher
- Paddy transplanter
- Post hole digger
- Maize Husker Sheller
- Coconut De-husker
- Groundnut decorticator
- Chisel plough
- Power tiller
- Gender Friendly Equipments like manual weeder, etc.

vi) Promoting the Concept of Mechanized Villages

- Distribution of crop based package of agricultural machinery on cluster basis in the 2 adopted villages for groundnut crop.

vii) Implementation Chart of the Project

The project is programmed to be implemented in a staggered manner over a span of 4 years commencing from 2008-2009. Year wise, component wise detailed programme is furnished in the annexure. The implementation of the project shall involve the implementing agency, viz. Agricultural Engineering Department, the District Administration, the manufacturers of the machinery, banking institutions and local bodies.

viii) Project Cost and Finance

The budget requirement for the year 2008-09 is Rs.263.29 lakhs and the total budget requirement for four years from 2008-2012 is Rs.1137.84 lakhs.

ix) Reporting

The monitoring and evaluation of the project shall be handled by the competent agency to be prescribed by the Government.

6.5.2 Improving the Efficiency of Soil and Water Management Practices**i) Background**

Some decades ago, the rainfall was plenty and the overall groundwater position was satisfactory to cater to the needs of the cultivated area and also of the people at large. In 1989, the average rainfall was 1067.80 mm and in 1995, it was 1241.50 mm. In 2007, it was only 671.70mm and the 10 years average rainfall works out to 776.0 mm. only. Of late, due to undue exploitation of the groundwater both by the farming community, industries and the general public as well, and due to the decreasing rainfall, the groundwater position is bothering the farming community in particular. In order to conserve whatever rainfall that be, this Project intends to promote water harvesting structures, soil conservation measures and water management works.

ii) Problem Focus

Namakkal District has very low irrigation potential and over-exploitation of groundwater need to be focused on and suitable soil and water management interventions need to be advocated with immediate concern in order to efficiently manage the water resources and reap the fruits in the long run.

iii) Project Rationale

By resorting to suitable interventions like introduction of innovative water harvesting structures like farm ponds both lined and unlined, check dams, soil conservation works like compartmental bunding, water management works like PVC

pipe laying and ground level reservoirs, etc., we can aim at conserving the rainfall, recharging the groundwater, conserving the fertile top soil by minimizing the erosion caused by the runoff, minimizing the conveyance losses, etc. there by ultimately increasing the productivity of the farm per unit of available water.

iv) Project Strategy

This project of Soil and Water Management is programmed to be implemented in the following ways.

1. Identifying the needy and feasible areas taking into consideration, the felt needs of the farmers Coordinating with the direct and indirect beneficiaries of the proposed works and also with the local bodies
2. Arranging for the collection of the beneficiaries' contribution portion
3. Executing the works in cooperation with the local beneficiaries
4. Handing over the works to the local beneficiaries / local bodies

v) Project Goals

1. To create awareness among the farmers towards the need for conserving soil and water
2. To motivate the farmers by way of constructing the soil and water management devices with subsidy
3. With this, to achieve the ambitious goal of harnessing the entire rainwater and use it for groundwater recharge and also arresting the soil erosion completely
4. On achieving this, the productivity of the farm per unit of the rainfall is envisaged to be substantially increased leading to the enhancement in the farm income.

vi) Project Components

On a broad categorization, there are four components in this project, viz., providing innovative water harvesting structures at 90% subsidy, in the individual landholdings.

1. Lined farm ponds with mobile sprinkler
2. Providing other water harvesting structures
 - a. Unlined farm ponds in individual land holdings @ 90 per cent subsidy;
 - b. Check dams across Govt. owned streams @ 100 per cent subsidy.
3. Providing Soil Conservation structures in individual holdings @ 90 per cent subsidy
 - a. Compartmental bunding
4. Providing Water Management infrastructure @ 90 per cent subsidy in individual landholdings
 - a. PVC Pipe Laying
 - b. Ground level Reservoirs

vii) Implementation Chart of the Project

The project is programmed to be implemented in a staggered manner over a span of 4 years commencing from 2008-2009. Year wise, component wise detailed programme is furnished in the annexure.

The implementation of the project shall involve the implementing agency, viz. Agricultural Engineering Department, the Farmers' Forums, the individual beneficiaries and the local bodies.

viii) Project Cost and Financing

The budget requirement for the year 2008-09 is Rs.198.50 lakhs and the total budget requirement for four years from 2008-2012 is Rs.822.50 lakhs.

ix) Monitoring and Evaluation

This may, of course, require the concerted effort by the Agricultural Engineering Department, the Farmers' Forums and the Local bodies.

x) Reporting

The monitoring and evaluation of the project shall be handled by the competent agency to be prescribed by the Government.

Table 6.26 Agricultural Mechanisation

Sl. No	Project Component	Unit Cost	Subsidy %	2008 - 09			2009 - 10			2010 - 11			2011 - 12			Total		
				Nos.	Cost	Subsidy	Nos.	Cost	Subsidy	Nos.	Cost	Subsidy	Nos.	Cost	Subsidy	Nos.	Cost	Subsidy
I	Introduction of Newly Developed Agricultural Machinery / Implements																	
1	Mini combine harvester TNAU Model	2.5	50%				1	2.5	1.25							1	2.5	1.25
2	Power weeder with attachments (all models)	1	50%	12	12	6	13	13	6.5	15	15	7.5	16	16	8	56	56	28
3	Power Thrasher	1	50%	4	4	2	4	4	2	4	4	2	4	4	2	16	16	8
4	Paddy Transplanter	1.4	50%	10	14	7	10	14	7	10	14	7	10	14	7	40	56	28
5	Post hole digger	0.85	50%	1	0.85	0.43	1	0.85	0.43	1	0.85	0.43	1	0.85	0.43	4	3.4	1.72
6	Maize Husker Sheller	0.9	50%	21	18.9	9.45	20	18	9	25	22.5	11.25	34	30.6	15.3	100	90	45
7	Coconut De-husker	0.6	50%	5	3	1.5	5	3	1.5	5	3	1.5	5	3	1.5	20	12	6
8	Groundnut decorticator	0.35	50%	24	8.4	4.2	36	12.6	6.3	36	12.6	6.3	44	15.4	7.7	140	49	24.5
9	Chisel Plough	0.12	50%	4	0.48	0.24	4	0.48	0.24	4	0.48	0.24	4	0.48	0.24	16	1.92	0.96
10	Gender Friendly Equipments	0.08	75%	8	0.64	0.48	8	0.64	0.48	8	0.64	0.48	8	0.64	0.48	32	2.56	1.92
	Total			89	62.27	31.3	102	69.07	34.7	108	73.07	36.7	126	84.97	42.65	425	289.38	145.35

Promoting the Concept of Mechanized Villages (Contd...)

Sl. No	Project Component	Unit Cost	Subsidy %	2008 - 09			2009 - 10			2010 - 11			2011 - 12			Total		
				Nos.	Cost	Subsidy	Nos.	Cost	Subsidy	Nos.	Cost	Subsidy	Nos.	Cost	Subsidy	Nos.	Cost	Subsidy
1	Distribution of crop based package of Agrl. Machinery on cluster basis in the adopted villages																	
	Groundnut	3.52	75%				2	7.04	5.28							2	7.04	5.28
	Stream I Total				62.27	31.30		76.11	39.98		73.07	36.7		84.97	42.65		296.42	150.65

Agricultural Mechanization (Contd...)

Sl. No	Project Component	Unit Cost	Subsidy %	2008 - 09			2009 - 10			2010 - 11			2011 - 12			Total		
				Nos.	Cost	Subsidy	Nos.	Cost	Subsidy	Nos.	Cost	Subsidy	Nos.	Cost	Subsidy	Nos.	Cost	Subsidy
1	Popularization of Agricultural Mechanization through Conventional Machinery / Equipments																	
a	Power Tiller	1.16	25%	48	55.68	13.92	57	66.12	16.53	52	60.32	15.08	64	74.24	18.56	221	256.36	64.09
b	Rotovator	0.90	25%	134	120.60	30.15	123	110.70	27.68	131	117.90	29.48	143	128.70	32.18	531	477.90	119.48
c	Cultivator	0.16	25%	89	14.24	3.56	109	17.44	4.36	104	16.64	4.16	114	18.24	4.56	416	66.56	16.64
d	Disc Plough	0.35	25%	30	10.50	2.63	27	9.45	2.36	25	8.75	2.19	34	11.90	2.98	116	40.60	10.15
	Total			301	201.02	50.26	316	203.71	50.93	312	203.61	50.90	355	233.08	58.27	1284	841.42	210.36

Table 6.27 Soil and Water Management

(Rs.in lakhs)

Sl. No	Project Component	Unit Cost	Subsidy %	2008 - 09			2009 - 10			2010 - 11			2011 - 12			Total		
				Nos.	Cost	Subsidy	Nos.	Cost	Subsidy	Nos.	Cost	Subsidy	Nos.	Cost	Subsidy	Nos.	Cost	Subsidy
	Stream - I																	
I	Innovative Water Harvesting Structures																	
1	Lined Farm Pond with mobile sprinkler	3.00	90%	25	75.00	67.50	26	78.00	70.20	26	78.00	70.20	25	75.00	67.50	102	306	275.40
	Stream – II																	
1	Water Harvesting Structures																	
a	Farm Pond - Unlined	0.50	90%	54	27.00	24.30	63	31.50	28.35	67	33.50	30.15	68	34.00	30.60	252	126.00	113.40
b	Check dam - Medium	0.75	100 %	20	15.00	15.00	20	15.00	15.00	20	15.00	15.00	20	15.00	15.00	80	60.00	60.00
c	Check dam - Major	1.00	100 %	20	20.00	20.00	20	20.00	20.00	20	20.00	20.00	20	20.00	20.00	80	80.00	80.00
	Total			94	62.00	59.30	103	66.50	63.35	107	68.50	65.15	108	69.00	65.60	412	266.00	253.40
2	Soil Conservation Works																	
a	Compartmental Bunding (ha.)	0.03	90%	950	28.50	25.65	950	28.50	25.65	1000	30.00	27.00	1050	31.50	28.35	3950	118.50	106.65
	Total																	
3	Water Management Works																	
a	PVC Pipe Laying (ha.)	0.15	90%	60	9.00	8.10	60	9.00	8.10	60	9.00	8.10	60	9.00	8.10	240	36.00	32.40
b	Ground level Reservoir (nos.)	0.80	90%	30	24.00	21.60	30	24.00	21.60	30	24.00	21.60	30	24.00	21.60	120	96.00	86.40
	Total				33.00	29.70		33.00	29.70		33.00	29.70		33.00	29.70		132.00	118.80
	Grand Total																	754.35

Total Budget Requirement for Agricultural Engineering Department: 754.35 lakhs

Table 6.28 Budget Abstract –Agricultural Marketing and Agribusiness**(Rs. in lakhs)**

S. No.	Component	2008-09	2009-10	2010-11	2011-12	Total
1	Commodity group formation	4.6	5.3	6	6.3	22.2
2	Market intelligence Dissemination	6.1	2.31	2.52	2.73	13.66
3	Facilitation of Contract Farming	1.4	1.6	1.8	1.9	6.7
4	Trainings	4	4.35	4.8	5.2	18.35
5	Exposure visit to markets	1.95	2.2	2.6	3	9.75
6	Arrangement of Buyer-Seller Meets	2.5	2.5	2.6	2.8	10.4
7	Strengthening of Market Extension Centre for Capacity Building and Dissemination Of Marketing Information	1.25	-	-	-	1.25
8	Market Finance Facilitation for traders	0.5	0.5	0.5	0.5	2
9	Market price surveillance	0.5	0.5	0.5	0.5	2
10	Publicity on Regulated Markets, Ulavar Sandhai and all other programmes	1	1.5	2	2	6.5
11	Export Promotion - Turmeric	0.5	0.6	0.7	0.8	2.6
12	Minimizing Post harvest losses	0.1	0.11	0.12	0.13	0.46
13	Value addition	0.55	0.66	0.77	0.88	2.86
14	Market Infrastructure activities	0.2	0.22	0.25	0.3	0.97
15	Visit to National Market	2.5	2.5	2.5	2.5	10
16	Purchase of Market Intelligence Material	0.05	0.07	0.07	0.1	0.29
	Total	27.7	24.92	27.73	29.64	109.99

6.6 Agricultural Marketing and Agribusiness Department

6.6.1 Strengthening of Agricultural Marketing and Agribusiness Department in Tamil Nadu

i) Background

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 centres. Unorganized small players (handling less than 0.5 tons/day) process more than 75 percent of the industry output. The Government is taking efforts to achieve the 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.

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 methods 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 up to 30 percent, necessary provisions are made in the Agricultural Industrial Policy to ensure remunerative price to the produce, encourage food processing sector and export to earn foreign exchange by increasing the food processing from the present level of one percent to 10 percent out of the total production, increasing value addition from 7 percent to 30 percent. Under this policy, all assistance which are provided to other industries have to be extended to agro based industries, agricultural machineries and industries manufacturing micro irrigation equipments.

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

ii) Agribusiness and the National Development Goals

The Planning Commission's Mid-Term Appraisal (MTA) of the Tenth Plan indicated that achieving higher growth rates would depend on reversing the decline in growth of the agricultural sector and 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 sectors 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 of constraints identified in the Plan have not been overcome. These constraints include a 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 lack of linkages with farmers and industry. The strong relationship between agriculture and rural poverty means that current plans reveals, policy and sector performance are unable to address the needs of rural poor.

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

iii) Problem Focus

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. Large number of wholesalers and retailers handle the trade in food grains. Apart from traders, processors also play an important role as they also enter in the market as bulk buyers and sellers.

Agricultural development continues to remain the most important objective of State planning and policy. The experience of agricultural development in the state has shown that the existing systems of delivery of agricultural inputs and marketing of agricultural output have not been efficient in availing the benefits of technology by all the

sections of farmers. The timely, quality and cost effective delivery of adequate inputs still remains a dream despite the marketing attempts of the corporate sector and the developmental programmes of the state. Also, the farmers are not able to sell their surplus produce remuneratively. There is plenty of distress sales among farmers both in agriculturally developed as well as in the 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, with the exception of few commodities. In fact, in some commodities like tomato in some regions in State, producers end up making net losses while the traders at the same time 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 the 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 sectors 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 generally produce more than 35 percent of State's total grain, and over half of total fruits and vegetables despite being resource constrained. The marginal holdings have higher cropping intensity as compared to 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 the 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.

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

Farmers fail to link among themselves through effective producer organizations that would enable 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 organizations to address their specific technology and knowledge needs that would enable them to innovate into high value production systems.

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

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

Service Providers: Most agencies fail to link with each other, particularly during the implementation of national programmes. 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 work in the field of enterprise development and their presence in the agribusiness sector is rather marginal. Through service providers from the private sectors are emerging they 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 essential. This new way, and the related business practices that go with it, implies overcoming significant coordination failures. This requires appropriate institutional mechanisms that currently do not exist within current policy setting.

iv) 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 decades 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.

v) 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.

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 strengthening linkages through investments and existing physical infrastructure.

vi) Project Goals

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

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 through the adoption of improved business practices leading to higher value addition and higher income of farmers, farm workers and entrepreneurs, particularly women amongst them.

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

vii) Project Components

1. Establishment/ organization of commodity groups for marketing in the state with financial assistance from NADP
2. Facilitation of Contract Farming between farmers and bulk buyers in the state with financial assistance from NADP
3. Dissemination of Market intelligence
4. Arrangement of Buyers - Sellers Meet
5. Organizing the exposure visits to important markets within the state and outside the state by commodity groups / farmers and extension functionaries.
6. Strengthening of market extension centre at each district/ block level for capacity building and dissemination of market information.
7. Strengthening of selected village shandies with financial assistance from NADP

8. Capacity building of farmer's skill
9. Price surveillance
10. Regulated Market/ Uzhavar Shandies/ Publicity and
11. Market Infrastructure

viii) Project Finance and Cost

The total budget of the Department of Agricultural Marketing and Agribusiness for the year 2008-09 is Rs. 27.70 lakhs and for all the four years from 2008 to 2012 is Rs.109.99 lakhs.

6.6.2 Establishment/ Organization of Commodity Groups for Marketing

i) Background

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. 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 a period of five years.

ii) Project Strategy

Formation of commodity groups for facilitating group marketing in Namakkal district.

iii) Project Goals

Organizing group marketing of major agricultural commodities for realizing better prices through establishment of 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 into groups and
4. Periodical meeting with groups and coordinating the activities

v) Project Cost and Financing

Arranging / organising Commodity Groups involves several rounds of meeting with large number of farmers to begin with and finally arriving at about required number of farmers for group cultivation of marketing. To organize the groups, an amount of Rs.20000/- is provided per group. The project cost for the year 2008-09 is Rs. 4.60 lakhs and the total budget for four years is Rs.22.20 lakhs.

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

6.6.3 Dissemination of Market Intelligence**i) 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 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 on 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 absolutely 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 this project is on the dissemination of market intelligence provided by the Domestic and Export Market Intelligence Cell, Centre for Agricultural and Rural Development Studies, Tamil Nadu Agricultural University, Coimbatore and other agencies.

ii) Project Strategy

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

iii) Project Components

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

iv) Project Cost and Financing

In this project, it is proposed to disseminate Market intelligence of agricultural commodities to all the Stake holders through different mass media. To facilitate the market dissemination activities in Namakkal district, a budget of Rs.6.10 lakhs is required for the year 2008-09. The total budget required for all the four years from 2008 – 2012 is Rs.13.66 lakhs.

v) Implementation Chart of the Project

Implementation chart of the project is given in Annexure 1.

vi) Reporting

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

6.6.3 Facilitation of Contract Farming between Farmers and Bulk Buyers**i) Rationale**

Apart from linking the farmers to consumers through farmers organizations, another initiative for reducing transaction cost is the establishment of direct channel between farmer-processor and 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 making smaller demands on scarce capital resources and imposing 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 the 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 main 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 Contract Farming.

Marketing tie-ups between farmers and processors or bulk purchasers have special significance for small farmers, vested with small marketed surplus and no staying power. Such arrangements are being encouraged to help in reducing price risks of farmers and also expanding 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 on a large scale in Tamil Nadu. The lessons learnt in the 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 of contract farming, between the traders and producers is proposed.

ii) Project Strategy

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

iii) Project Components

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

3. Organising the willing farmers into groups
4. Arranging the groups to have contract and agreement with select large scale buyers, banks and crop insurance firms and
5. Periodical watching of contracts and conflict management.

iv) Project Cost and Financing

To facilitate the contract farming activities in Namakkal district, a budget of Rs.1.40 lakhs is required for the year 2008-09. The total budget required for all the four years from 2008 – 2012 is Rs.6.70 lakhs.

v) Implementation Chart of the Project

Implementation chart of the project is given in Annexure.

vi) Reporting

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

6.6.4 Capacity Building of Farmer's Skill

i) 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 reached the intended target groups adequately. 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 increased 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. 1129.01 Lakhs.

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

ii) Project Strategy

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

iii) Project Components

Organising training to farmers / commodity groups on Warehousing and storage, Grading, Market intelligence, Post Harvest Management of selected commodities and awareness programme is to 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 13965 trainings under Capacity Building of Farmers Skill titles for marketing of agricultural commodities in Namakkal district over a period of five years. The trainings will require a budget of Rs.4.00 lakhs for the year 2008-09 and the total budget required for four years from 2008 to 2012 is Rs.18.35 lakhs.

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

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

i) Rationale

The goal of 4 per cent growth in agriculture can only be achieved by increasing productivity per unit of land. Considering the costs and constraints of resources such as water, nutrients and energy, the genetic enhancement of productivity should be coupled with input use efficiency. This can be made possible only by creation and utilization of new and improved technology. Since new technology creation and development is a slow process, for attaining the desired 4% growth during the XI Plan period, we have to rely more on known and proven technology. Agricultural 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 to 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 a period of five years.

ii) Project Strategy

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

iii) Project Goals

Organizing the exposure visit to important markets 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 a period of five years from NADP funding.

iv) Project Components

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

v) Project Cost and Financing

Visit to 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 for knowing the consumer's preference. It is easy to know the marketing of the commodity through observation and participation in the well developed markets. Farmers will be selected to visit different market places within the State where the new opportunities for marketing of commodities exist. The details are presented in Annexure. To facilitate the exposure visit activities in Namakkal district, a budget of Rs.1.95 lakhs is required for the year 2008-09. The total budget required for all the four years from 2008-012 is Rs.9.75 lakhs.

vi) Reporting

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

6.6.6 Arrangement of Buyers - Sellers Meet

i) 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 at depressed level and often to specific buyers who have provided credit.

There is limited market for all goods 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 varied among the farmers, regions, and markets.

Several alternatives are available within each market for the farmers. However 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 an increasing pressure on all segments of the agricultural 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 a platform in linking agribusiness community namely farmers, traders, commission agents, agricultural processed food organizations, millers, machinery manufacturers in an egalitarian exchange of ideas and materials.

It could be 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 by display of agricultural commodities through exhibitions, the meet covers all the latest market related interventions and provides a need based solutions to farmers through direct contact with experts.

ii) Project Cost and Financing

To facilitate the arrangement of buyer-seller activities in Namakkal district, a budget of Rs.2.50 lakhs is required for the year 2008-09. The total budget required for all the four years from 2008- 20012 is Rs.10.40 lakhs.

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

i) 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 for strengthening of market extension centre at each district/ block level with LCD projectors and lap top computers including internet facilities.

ii) Project Strategy

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

iii) Project Goals

Strengthening of market extension centre at each district/ block level for capacity building and dissemination of marketing information in Namakkal district over a period of five years.

iv) Project Components

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

v) Project Cost and Financing

In this project it is proposed to strengthen market extension centre in Namakkal district over a period of five years. The details are presented in Annexure. To facilitate the strengthening the market extension centre activities in Namakkal district, a budget of Rs.1.25 lakhs is required for the year 2008-09. The total budget required for all the four years from 2008 – 2012 is Rs.1.25 lakhs.

vi) Reporting

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

6.6.8 Establishment of Price Surveillance Mechanism

In this project, it is proposed to strengthen Village Shandies in Tamil Nadu over a period of five years. This will require Rs.2.00 lakhs for a period of four years. The details are presented in Annexure. To facilitate the price surveillance activities in Namakkal district, a budget of Rs.0.50 lakhs is required for the year 2008-09. The total budget required for all the four years from 2008 – 2012 is Rs.2.00 lakhs.

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).

6.6.9 Strengthening of Regulated Market and Uzhavar Shandies Publicity

In this project it is proposed to strengthen Village Shandies in Tamil Nadu over a period of five years. This will require resources of RS.644.00 Lakhs for a period of five years. The details are presented in Annexure I & II.

i) Project Finance and Cost

To facilitate the publicity activities in Namakkal district, a budget of Rs.1.00 lakhs is required for the year 2008-09. The total budget required for all the four years from 2008 – 2012 is Rs.6.50 lakhs.

ii) 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
2. Secretaries of Marketing committees and Periodical inspection will be undertaken by the Deputy Director (Agricultural Marketing and Agri Business).

6.6.10 Strengthening of Selected Market Infrastructure

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 the following table which reflect the need for improvement in the market infrastructure in coming years.

**Table 6.29. Estimates of Marketed Surpluses of Various Commodities
(in percent)**

Sl.No	Commodity	Marketed surplus ratio
1	Rice	51.9
2	Wheat	53.8
3	Jowar	39.7
4	Bajra	45.4
5	Maize	46.2
6	Other Coarse Cereals	57.1
7	Pulses	53.9
8	Food grains	
9	Oilseeds	79.6
10	Sugarcane	92.9
11	Fruits and Vegetables**	88.2
12	Cotton	100.0
13	Fish	100.0
14	Milk	60.0
15	Mutton and Goat Meat	100.0
16	Beef and Buffalo Meat	100.0
17	Meat (Total)	100.0
18	Eggs	88.2

Agricultural Statistics at a Glance 2001, Agricultural Statistics Division,
Directorate of Economics and Statistics, Ministry of Agriculture, New Delhi.

ii) Project Components

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

iii) Project Cost and Financing

In this project, it is proposed to strengthen Village Shandies in Namakkal district over a period of five years. The details are presented in Annexure. To facilitate the market infrastructure activities in Namakkal district, a budget of Rs.0.20 lakhs is required for the year 2008-09. The total budget required for all the four years from 2008 – 2012 is Rs.0.97 lakhs.

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

v) Implementation

Department of Agricultural Marketing and Agribusiness, Government of Tamil Nadu will be the implementing agency for proposed project.

vi) Project Performance Monitoring System

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

vii) Sustainability

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

Table 6.30. Agricultural Marketing and Agribusiness – Budget Proposal**(Rs. in lakhs)**

Sl. No.	Details of the intervention	Unit Cost	2009		2010		2011		2012	
			Physical	Financial	Physical	Financial	Physical	Financial	Physical	Financial
1	Commodity group formation									
	Maize	0.20	5	1.00	5	1.1	5	1.20	5	1.30
	Ground Nut		10	2.00	10	2.20	10	2.40	10	2.60
	Green Gram		2	0.40	2	0.50	2	0.60	2	0.60
	Sun Flower		2	0.40	2	0.50	2	0.60	2	0.60
	Gingelly		2	0.40	2	0.50	2	0.60	2	0.60
	Pineapple		2	0.40	2	0.50	2	0.60	2	0.60
2	Market intelligence Dissemination									
	Block level meeting	0.20	5	1.00	5	1.10	5	1.20	5	1.30
	Leaflets & pamphlets Distribution		5000	0.10	5000	0.11	5000	0.12	5000	0.13
	Forecast Board at Uzhavar Sandai	1.00	4	4.00	--	--	--	--	--	--
	Village meetings	0.02	50	1.00	50	1.10	50	1.20	50	1.30
3	Facilitation of Contract Farming (50 Farmers)									
	Maize	0.20	5	1.00	5	1.10	5	1.20	5	1.30
	Sunflower	0.20	2	0.40	2	0.50	2	0.60	2	0.60
4	Trainings on (25 persons)									
	(I) Warehousing , storage	0.10	5	0.50	5	0.55	5	0.60	5	0.70
	(iii) Market Intelligence, Commodity Markets		20	2.00	20	2.20	20	2.40	20	2.60
	(iii) Post Harvest		10	1.00	10	1.10	10	1.20	10	1.30
	(iv) GAP, Food Safety		5	0.50	5	0.50	5	0.60	5	0.60
5	Exposure visit to markets out side state	0.60	2	1.20	2	1.40	2	1.60	2	1.80
	Exposure visit to markets within the State	0.15	5	0.75	5	0.80	5	1.00	5	1.20

Table 6.30. Contd....

(Rs. in lakhs)

Sl. No.	Details of the intervention	Unit Cost	2009		2010		2011		2012	
			Physical	Financial	Physical	Financial	Physical	Financial	Physical	Financial
6	Arrangement of Buyer-Seller Meets	0.25	10	2.50	10	2.50	10	2.60	10	2.80
7	Strengthening of Market Extension Centres LCD with internet and Computer, Laptop, Screen	1.25	1	1.25	--	--	--	--	--	--
8	Market Finance (for traders)-(Loan facilities) Facilitation.	0.10	5	0.50	5	0.50	5	0.50	5	0.50
9	Market price surveillance	0.50	--	0.50	--	0.50	--	0.50	--	0.50
10	Publicity on Regulated Markets, Ulavar Shandai and all other programmes		--	1.00	--	1.50	--	2.00	--	2.00
11	Export promotion - Turmeric	0.25	2	0.50	2	0.60	2	0.70	2	0.80
12	Minimizing post harvest losses									
	Plastic Crates purchase	0.002	50	0.10	50	0.11	50	0.12	50	0.13
13	Value addition									
14	Training for Grading & Packing	0.05	10	0.50	10	0.60	10	0.70	10	0.80
	Demonstrations	0.025	2	0.050	2	0.06	2	0.07	2	0.08
15	Market Infrastructure activities									
	Supply of Tarpaulins	0.02	10	0.20	10	0.22	10	0.25	10	0.30
16	Visit to National Market		--	2.50	--	2.50	--	2.50	--	2.50
17	Purchase of Market Intelligence Mat-		--	0.05	--	0.07	--	0.07	--	0.10
	Total			27.7		24.92		27.73		29.64

Total budget required for four years – Rs. 109.99 lakhs

6.7 DEPARTMENT OF SERICULTURE

Table 6.31. Project Proposals under NADP 2008-09 to 2011-2012

(Rs. in lakhs)

Sl. No.	Scheme Components	2008-2009			2009-2010			2010-2011			2011-2012		
		Projected Area 1100 acre			Projected Area 2300 acre			Projected Area 3500 acre			Projected Area 4500 acre		
		Projected Cocoon 660 kgs Lakhs			Projected Cocoon 138 kgs Lakhs			Projected Cocoon 227 kgs Lakhs			Projected Cocoon 293 kgs Lakhs		
		No. Units	Unit Cost	Total cost	No. Units	Unit Cost	Total cost	No. Units	Unit Cost.	Total cost	No. Units	Unit Cost	Total cost
1.	Drip Irrigation (2.5 acre)	50	11200	5.60	60	11200	6.72	75	11200	8.40	90	11200	10.08
2.	Mulberry Seedlings	50	5000	2.50	60	5000	3.00	75	5000	3.75	90	5000	4.50
3.	Fertilizer	50	15000	7.50	60	15000	9.00	75	15000	11.25	90	15000	13.50
4.	Insecticides / pesticides Disinfectants	50	5000	2.50	60	5000	3.00	75	5000	3.75	90	5000	4.50
5.	Training, Tour, etc	50	3800	1.90	60	3800	2.28	75	3800	2.85	90	3800	3.42
	Total	50	0.40	20.00	60	0.40	24.00	75	0.40	30.00	90	0.40	36.00

Total budget required for four years– Rs. 110.00 lakhs

PROCEEDINGS OF CONSULTATION MEETING OF NADP,

No.B/3/11250/2007

Date : 16.05.2008

A meeting under National Agricultural Development Programme (NADP) for seeking guidance and suggestions for preparation of projects under agriculture and allied sectors for increasing agricultural production and income of farmers of Namakkal district was held on 13.5.08 under the chairmanship of the District Collector in-charge in his office. Officials of agriculture and other line department and chairman of panchayat unions concerned participated in the meeting.

Welcoming those present, the Joint Director of Agriculture gave a detailed account of the objectives of operationalising the NADP. The details of various components of the project under each department were furnished to the concerned officials. If the participants felt that incorporating some more components will help in better achievements under NADP in the district, the participants were asked to render their valuable suggestions for the same.

The District Collector in-charge informed that part of this plan is implemented in Coimbatore, Salem, Namakkal, Dharmapuri, Krishnagiri, Dindigul, Perambalur, Villupuram and Ramanathapuram districts and in the remaining 19 districts, it will be implemented in five selected blocks in each district.

During 2007-08, government has issued orders for implementing the following components.

1. Precision farming
2. Establishment of agriclinics and soil testing lab
3. Promoting mechanization in agriculture
4. Establishing automatic weather stations at block level.

5. Finding out natural resources and soil testing at village level.
6. Dryland improvement plan
7. Natural (organic) farming
8. Electronically Linking Agricultural University, Agricultural Research Stations and KVKs with all the blocks.
9. Rs.50 Crore integrated improvement project for dryland agriculture
10. Cyber linking all the Agricultural Research and Extension Activities with State Secretariat and Departmental Head Offices.

All the above 10 components will be implemented with the allotment made for the year 2007-08.

The meeting was informed that for increasing the production and income of the farming community of Namakkal district detailed project proposals in respect Agricultural, Agricultural Engineering, Horticulture, Agricultural Marketing and Agribusiness, Seed Certificates sectors is to be prepared for the years 2008-09 to 2009-12 and sent to Government for approval.

This district level plan will be implemented by the concerned line departments. At village and block level, peoples' representatives will recommend appropriate interventions so that the NADP for our district's implemented successfully for the benefit of farming community.

Dr.K.Mahendran, Associate Professor, Tamil Nadu Agricultural University informed the meeting that the special agricultural projects for establishing coconut nursery in Paramathi, modernizing seed purification equipments, modernizing the sugarcane parasite breeding stations on Mohanur and Paramathi, and establishment of biocontrol agents production centre will help to reduce the usage of plant protection chemicals and plant protection costs in the district.

The meeting was also informed that through horticultural department, it has been proposed to increase production of vegetables and other horticultural crops notably banana and supply of aluminum ladders and plant protection equipments under pepper cultivation scheme in Kolli hills.

Through Agricultural Marketing Department formation of commodity groups, imparting training to 25 individuals per training, inter and intra state study tours for studying marketing activities, strengthening market extension centres with LCD, computers, lap top and web sites have also been proposed.

Under seed certification it is proposed to establish seed testing laboratory at Namakkal. Under fisheries sector, fish fingerlings production, private participation in fish culture extension, fishing, improving fish culture infrastructure modern fish sale stalls, improving skill in fish culture through training programmes are proposed to be undertaken.

For effective implementation of NADP in the district chairman of panchayat unions were requested to render their valuable suggestions by the District Collector in-charge. The chairman of Erumappatti panchayat union said that in Erumappatti, Pudukhattram, Mallasamudran and Elachipalayam, Vennandur and other areas water resources are meager and rainfall is very poor and so the government should give subsidy for sinking deep bore wells and improving the water resources. He pleaded that farmers who worked hard should get fair price for their produce without interference of merchants and intermediary agents.

Chairman of Tiruchengodu panchayat union said that farm ponds should be increased in size to augment groundwater. Encroachments around lakes and ponds should be removed and allotment of pattas for house construction in irrigation ayacuts should be banned. In this area, the effluent from leather market gets mixed with the lake water in Aamappatti village and to prevent this effluent purification arrangements may be made

under this project. The subsidy for drip irrigation should be enhanced 90%. The frequency of farmers visits to regulated markets is dwindling mainly because of price differentials of the same commodity in different markets. To prevent this, on uniform price for commodities all over the state needs to be fixed on priority basis. Steps should be taken to control Eriophyd mites. Ponds and lakes should be formed and excess water from rivers should be redirected with in the district.

Introduction of new varieties of sugarcane, monitoring of fertilizer prices, adequate fertilizer stocks in primary agricultural cooperative societies were stressed by the chairman of Kabilar malai panchayat union.

He also requested that project of Animal Husbandry and Sericulture sectors may be sent to Tamil Nadu Agricultural University or Joint Director of Agriculture for incorporating the same in the District Agriculture Plan..

(Sd) K. Govindaraj
Collector i/c,

To
The Director
CARDS
Tamil Nadu Agricultural University
Coimbatore

Copy to Agricultural All Department Heads, Namakkal

Annexure II



Joint Director of Agriculture Mr. Hari Rajakrishnan Welcoming the Participants. Collector in-charge Mr.Govindaraju, TNAU Faculty Dr.K.Mahendran and PA(Agri) to Collector in the DAP Preparation Discussion Meeting



TNAU Faculty Dr.K.Mahendran explains the Components of the Namakkal District Agriculture Plan in the Discussion Meeting on 13.05.2008.



A Section of the Panchayat Union Presidents who Attended the Namakkal District Agriculture Plan Preparation Discussion Meeting on 13.05.2008.



A View of the Panchayat Union Presidents and the Line Department Officials attending the Namakkal District Agriculture Plan Preparation Discussion o Meeting on 13.05.2008

**NADP Sensitization Workshop and Discussion on District Agriculture Plan -
Namakkal District held on 13.5.2008**



Joint Director of Agriculture Mr. Hari Rajakrishnan Welcoming the Participants. Collector in-charge Mr.Govindaraju, TNAU Faculty Dr.K.Mahendran and PA(Agri) to Collector in the DAP Preparation Discussion Meeting



TNAU Faculty Dr.K.Mahendran explains the Components of the Namakkal District Agriculture Plan in the Discussion Meeting on 13.05.2008.



A Section of the Panchayat Union Presidents who Attended the Namakkal District Agriculture Plan Preparation Discussion Meeting on 13.05.2008.



A View of the Panchayat Union Presidents and the Line Department Officials attending the Namakkal District Agriculture Plan Preparation Discussion o Meeting on 13.05.2008