NATIONAL AGRICULTURAL DEVELOPMENT PROGRAMME (NADP)

DISTRICT AGRICULTURE PLAN

SIVAGANGAI DISTRICT

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

2008

NATIONAL AGRICULTURE DEVELOPMENT PROJECT –

DISTRICT AGRICULTURE PLAN

PROJECT TEAM

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FOREWORD

Date .....

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

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

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

(C. RAM AS AMY)

Coimbatore
June 30, 2008

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Dr. K. Palanisami
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PREFACE

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

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

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

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

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

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

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

Date: 30.06.2008

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

EXECUTIVE SUMMARY

The GDP of agriculture increased annually at more than 3 per cent during the 1980s.Since the Ninth Five-Year Plan (1996 to 2001-02), India has been targeting a growth rate of more than 4 per cent in agriculture, but the actual achievement has been much below the target. Concerned by the slow growth in the Agriculture and allied sectors, the National Development Council (NDC), in its meeting held on 29th May, 2007 resolved that a special Additional Central Assistance Scheme (RKVY) be launched. The NDC 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. The NDC reaffirmed its commitment to achieve four per cent annual growth in the agricultural sector during the 11^{th} plan.

The Main Objectives of the Scheme are:

- To incentivise the states so as to increase public investment in Agriculture and allied sectors.
- To provide flexibility and autonomy to states in the process of planning and executing Agriculture and allied sector schemes.
- To ensure the preparation of agriculture plans for the districts and the states based on agro-climatic conditions, availability of technology and natural resources.
- To ensure that the local needs/crops/priorities are better reflected in the agricultural plans of the states.
- To achieve the goal of reducing the yield gaps in important crops, through focused interventions.
- To maximize returns to the farmers in Agriculture and allied sectors.
- To bring about quantifiable changes in the production and productivity of various components of Agriculture and allied sectors by addressing them in a holistic manner.

The district of Sivagangai, extending over an area of 4468.11 Sq. Km, is situated in the southeastern portion of the state. It is bounded on the north by a small portion of Tiruchirappalli and Pudukottai districts, on the east by the district of Pudukottai and Ramanathapuram, on the south by the district of Ramanathapuram and Virudhunagar and

on the west by Madurai district. The administrative headquarters is located at Sivagangai town. The district lies between 9°43’ and 10°2’ north latitude and 77°47’ and 78°49’ east Longitude.

The Sivagangai district comprises of six taluks namely, 1. Sivagangai, 2. Manamadurai, 3. Ilayankudi, 4. Devakottai, 5. Karaikudi and 6. Thirupathur. Ilayankudi taluk consists of the highest number of 56 villages. There are 12 blocks and 487 Villages in the district. As regards, the hierarchy of administrative arrangement, there are three municipalities, 11 town panchayats and 437 village panchayats in the district.

The hot and dry climate of the district is highly suitable for dryland crops. Agriculture in the district depends on monsoon rains; hence probability of success is limited. The average rainfall of the District is below 800 mm. Therefore, successful crop production depends heavily on the success / failure of monsoon thus making agricultural production riskier in many parts of the district. There are opportunities to develop cold storage units to increase agricultural exports. There are ample opportunities to promote new crop varieties and new technologies such as precision farming and System of Rice Intensification as the farmers are now educated on these aspects and willing to adopt the new varieties and technologies. Rising number of industries and reduction in the area of agricultural lands is an alarming factor.

The NADP aims to address the development works of all the line departments and introduce relevant interventions to give a boost to the production and productivity of all development sectors.

In the case of agricultural crops the interventions like production and distribution of improved and hybrid seed varieties, improved crop husbandry practices including Integrated Nutrient Management, Integrated Pest Management, use of new and improved agricultural implements will be introduced. Precision Farming, support system for crops like banana, establishment of banana fibre industry will be undertaken under Horticulture. Genetic Upgradation, Scientific methods of fodder production and improvement in animal health care under Animal Husbandry, diversification of fishing

methods and refrigeration facilities for transport and storage under Fisheries sector will be undertaken. In the field of Agricultural Engineering, introduction of newly developed agricultural implements/machinery, modern water management and harvesting techniques and soil conservation methods will be introduced. A boost to Agricultural Marketing and Agri Business sector will be given thorough formation of commodity groups, dissemination of market intelligence, and development of market infrastructure. The Public Works Department will concentrate on Rehabilitation of system and non system tanks to augment water supply for irrigation purposes. Farm forestry activities will be expanded.

Across all the sectors, the Capacity Building of farmers and other stakeholders will be increased through organization of training programmes and exposure visits.

The total budget requirements for four years for all the sectors is estimated to be Rs. 35913.03 lakhs as detailed in the Table below.

NADP Budget Abstract - 2008-2012

(Rs.in lakhs)

S. No	Departments	2008-09	2009-2010	2010-2011	2011-2012	Total
1.	Agriculture	3199.36	3531.53	3461.53	2971.53	13163.95
2.	Horticulture	144.42	153.38	201.73	198.53	698.06
3.	Animal Husbandry	755.512	86.70	86.70	85.09	1014.002
4.	Fisheries	18.75	8.75	8.75	8.75	45.00
5.	Agricultural Engineering	851.505	894.205	922.305	890.905	3558.92
6.	Agricultural Marketing	20.07	147.49	77.28	60.32	305.16
7	Public Works Department	3127.72	5890.80	3599.09	4505.76	17123.37
8.	Forestry	4.57	0.00	0.00	0.00	4.57
	Total	**8121.91**	**10712.86**	**8357.39**	**8720.89**	**35913.03**

CHAPTER - I

INTRODUCTION

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

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

Methodology Adopted for Preparation of District Agriculture Plan

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

Major Areas of Focus

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

(b) Agriculture mechanization;

(c) Activities related to enhancement of soil health;

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

(e) Integrated Pest Management schemes;

(f) Strengthening of Market Infrastructure and marketing development;

(g) Strengthening of Infrastructure to promote Extension Services;

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

(i) Animal husbandry and fisheries development activities;

(j) Study tours of farmers;

(k) Organic and bio-fertilizers;

(l) Innovative schemes.

Collection of Data

The preparation of district level plan involved basically collection of base line and bench mark details. So a template is developed to collect these particulars from the different districts (29 districts) of Tamil Nadu. In order to dovetail the ongoing schemes,

with the action plans, the current ongoing agriculture programs were listed with their physical and financial performance and finally converged as the plan under National Agriculture Development Programme.

Formulation of District Planning Unit

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

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

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

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

Sensitization Workshop

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

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

Preparation of Draft Action Plan and Presentation in District Collectors Meeting

Based on the baseline information and proposals, draft action plan was prepared and this was presented in the District Collectors Meeting held on 13.05.08 under the chairmanship of District Collector. This meeting was attended by the scientists from TNAU, officials from line departments and the representatives of local bodies. Wide coverage was given in the media also.

Finalization

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

CHAPTER – II

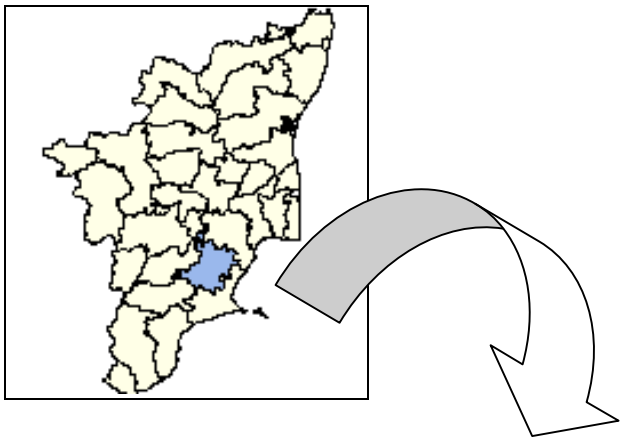
GENERAL DESCRIPTION OF THE DISTRICT

Introduction

The district of Sivagangai was carved out as a separate district in the year 1985 as a result of trifurcation of Ramanathapuram district of Tamilnadu State. According to the state notification, six taluks viz. Tiruppattur, Karaikudi, Devakottai, Sivagangai, Manamadurai and Ilayankudi were separated from Ramanathapuram district and formed into a new district. Of these six taluks, Manamadurai and Ilayankudi were earlier sub-taluks which were upgraded into fullfledged taluks in the year 1981. At the time of creation of this district, it was named as Pasumpon Muthuramalingam, but it changed to Pasumpon Thevar Thirumagan. Again, this district's name was changed as Sivagangai recently. The district is comprised of six taluks, the names of which are mentioned above. As stated earlier, this district was a part of undivided Ramanathapuram, its historical past is one and the same as of its parent district. Ramanathapuram district which originally had an area of 12606 Sq. Km has been trifurcated into Ramanathapuram, Virudhunagar and Sivagangai districts.

The Sivagangai district comprises of six taluks namely, 1. Sivagangai, 2. Manamadurai, 3. Ilayankudi, 4. Devakottai, 5. Karaikudi and 6. Thirupathur. Ilayankudi taluk consists of 56 villages, the highest number, when compared to other taluks, 12 blocks and 487 Villages. As regards to the hierarchy of administrative arrangement, there are three municipalities, 11 town panchayats and 437 village panchayats in the district.

1. Tamil Nadu Map showing Sivagangai District



2 Sivagangai District Map

2.2 General Statistics

The number of revenue based classification of the district is presented in the following Table 2.1.

Table: 2.1 Revenue Divisions of Sivagangai District

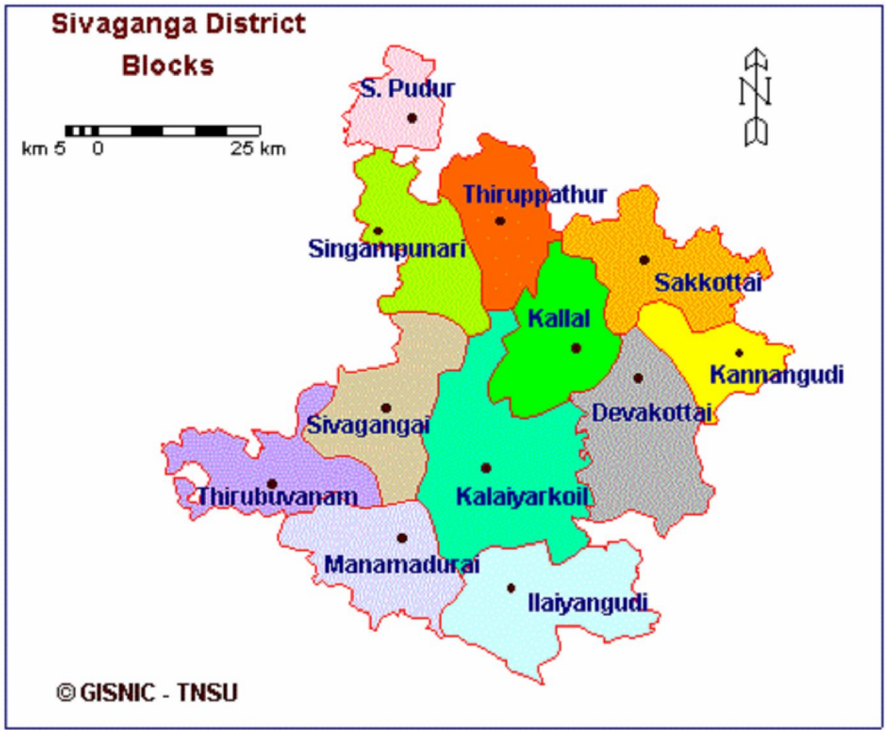
Revenue Divisions	2
Taluks	6
Blocks	12
Corporation & Municipalities	3
Town Panchayats	12
Revenue Villages	521
Panchayat Villages	431

The details of the name of the taluks with the district and area are shown in the following Table 2.2

Table: 2.2 Area under different Taluks of Sivagangai District

Sl.No.	Name of Taluks	Area in Sq. Km.
1.	Sivagangai	1007.42
2.	Manamadurai	658.52
3.	Ilayankudi	449.01
4.	Devakottai	428.62
5.	Karaikudi	1191.93
6.	Thiruppathur	732.61
	District Total	**4468.11**

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



2.3 Crops Cultivated in the District

The principal crop of Sivaganga district is paddy. The other crops that are grown are millets, cereals, pulses, sugarcane, and groundnut. The local varieties of paddy Nutipathu and Kuliparichan are drought tolerant.

2.4 High Yielding Varieties

Important crops grown in the district are Paddy, Pulses, Groundnut and Cotton. The prevailing high yielding varieties are listed in the Table 2.3

Table: 2.3 Crops and High yielding and Hybrid Varieties of Sivagangai District

Sl. No	Name of the Crop	Name of the High Yielding variety	Special Characteristics
1	Paddy	ADT.36,ADT.39,ADT.43, ADT.45, IR20, BPT 5024	High Yield
2.	Maize	Arjun,COH (M) 5	High Yield
3.	Pulses	VBN.2, VBN.3 Black Gram	High Yield
4.	Groundnut	VRI.2	High Yield
5.	Cotton	SVPR.2	High Yield

2.5 District at a Glance

a) Location and Geographical units

The district of Sivagangai, extending over an area of 4468.11 Sq. Km, is situated in the southeastern portion of the state. It is bounded on the north by a small portion of Tiruchirappalli and Pudukottai districts, on the east by the district of Pudukottai and Ramanathapuram, on the south by the district of Ramanathapuram & Virudhunagar and on the west by Madurai district. The administrative headquarters is located at Sivagangai town. The district lies between 9.43’ and 10.2’ north latitude and 77.47’ and 78.49’ east Longitude.

Geographical Location	From	To
Latitude	9°43' N	10°2' N
Longitude	77°47' E	78°49' E

2.6 Demographic Profile

a) Population

As per Ministry of Home Affairs, Directorate of Census Operations - Tamil Nadu, Census - 2001,Sivaganga had a population of 11,50,753. Males constitute 49per cent of the population and females 51 per cent. Density Persons/ Sq.Km of Sivagangai is 274.70. Sivaganga has an average literacy rate of 72.18 per cent, which is higher than the national average of 59.50 per cent: male literacy stands at 83.14 per cent, and female literacy is at 61.74 per cent. In Sivagangai, 11.50 per cent of the population is under six years of age.

Male	5,65,594		Rural	8,26,427
Female	5,85,159		Urban	3,24,326
Total	11,50,753		Total	11,50,753

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

b) Working Population

The working population in the district is presented in the following Table 2.4

Table: 2.4 Working Population of Sivagangai District

Male Workers	3,18,036	Cultivators	1,85,828
Female Workers	1,06,012	Agricultural Labourers	1,22,894
Total Workers	4,24,048	Household Industry Labourers	85,492
Rural Workers	3,08,722	Other Workers	29,834
Urban Workers	1,15,326	Total Workers	4,24,048
Total Workers	4,24,048		

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

2.7 Topography and Agro Climatic Characteristics

a) Meteorological Information

Generally, the region has a spell of hot climate.

b) Temperature

Temperature is low during the month of January and the lowest mean daily temperature is 19.8^{o}C. The hottest month in the district is July during which period the maximum temperature is 33.83^{o}C.

c) Humidity

Mean humidity varies from 65 per cent in July to 77 per cent in November. The monthly average rainfall in the district was 75.73 mm. The months of October, November and December receive a rainfall that is more than the three annual average rainfalls. The details of the season wise rainfall distribution in the district is furnished in Table 2.5.

d) Rainfall (2005-06)

Monsoon	Normal (in mm)	Actual (in mm)
North - East	390.8	336.2
South - West	300.0	238.7

Table 2.5 The Season wise Rainfall Distribution in Sivagangai District (in mm)

Season	70 years average (1910-1979)	10 years average (1996-2005)	2001	2002	2003	2004	2005
Winter (Jan-Feb)	45.9	34.5	14.3	124.3	1.0	-	34.4
Summer (March-May)	135.8	135.5	114.1	188.3	106.0	206.2	223.7
South-west monsoon (June-Sep)	309.3	290.5	279.1	156.2	327.9	367.3	263.3
North-East Monsoon (Oct-Dec)	413.7	454.0	407.2	420.8	250.7	499.2	786.7
Total	**904.7**	**914.5**	**814.7**	**889.6**	**687.6**	**1072.7**	**1308.1**

2.8 Land Use Pattern and Land Holdings - 2005-06

The total cultivated area of the district is 1, 08,512 hectares. The net sown area and the area sown more than once are as follows:

Total Cultivated Area (in Ha)	1,08,512
Net Area Sown	1,08,787
Area Sown More than once	275

2.9 Area and Production of Principal Crops - 2005-06

Rice occupies a major area of 77246 hectares. The area and production of different crops are listed in the Table 2.6. District area coverage as per G' Figures is given in table 2.7.

Table: 2.6 Area and Production of Different Crops - 2005-06

Crops	Area (in Ha)	Production (in Tonnes)
Rice	77,246	2,54,239
Sugarcane (Gur)	5,035	2,28,724
Groundnut	5,757	6,860
Pulses	1,462	2,424
Millets & Other Cereals	5,757	6,860

2.10 Agricultural Land Holdings

Holding	:	2, 90,083
Area (Hec)	:	2, 00,331
Average Size of Holding	:	1- 2 Ha
Important Food Crops	:	Paddy, Millets, Pulses
Important oil seeds	:	Ground nut, Gingili, coconut, sunflower
Important Non Food Crops	:	Sugarcane, Cotton

2.11 Irrigation Sources

Agriculture in this district mainly depends upon seasonal rainfall as there is no cannal irrigation. The main source of irrigation is Vaigai river though there are many rivers namely pambar, kottakkaraiyar, Thenar, Manimuthar, Palar, Saruganiyar, Uppar and Kunddar in this district. Even in Vaigai River the flow of water is normal only during rainy season, 75 per cent of the people in this district are dependent on Agriculture. But, severe droughts which occurred during the past three years, highly affected the economy of the farming community. The main crops grown in this district are paddy (80000-85000 Ha) Groundnut; Sugarcane, Vegetables and cotton under both irrigated and rain fed condition. The Gross Area Irrigated is 104752 Ha and Net Area Irrigated is 82121 Ha.

2.12 Rivers Flowing in the District

Six important rivers are flowing in the district. But the rivers are not perennial in nature. The district is highly dependent on monsoon rains. The important rivers are Vaigai, Pambar, Kottagudi, Thennar, Uppargundar and Sarugani.

2.13 Soil Types of the Area

There are three types of soil in this area namely red Soil, black soil and alluvial soils. There are cultivable waste lands. They are deep to very deep soils and ideal for growing horticultural crops and very deep rooted perennial crops. The soils are well drained both internally and externally. They don’t possess the problems of alkalinity, calcareousness and salinity.

These soils are deficient in micro nutrients like zinc, copper, boron etc., The ratio between iron and manganese are narrow and have very poor exchangeable base reserves. Surface crusting and surface droughtness are the major problems that are associated with these soils because of the low organic matter content, low exchangeable bases and the sandy texture of the soils. The details are furnished in Table 2.8.

Table 2.7 District Area Coverage as per 'G" Figures

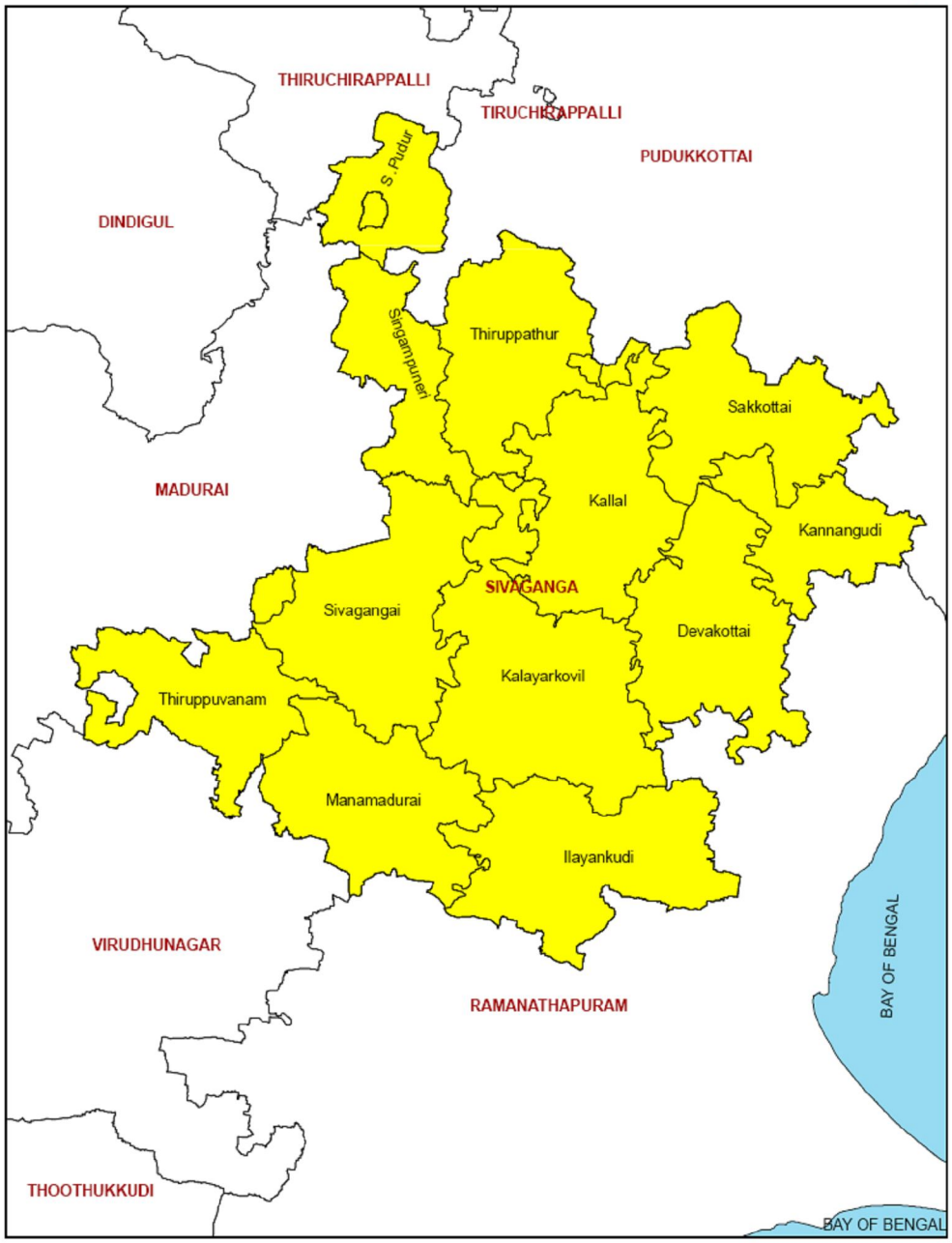
(Area in hectares)

S.No	Details	2005-06 'G ' Report	Area upto July'07
1.	**Fruits**		
	1. Mango	1447.00	1482.00
	2. Guava	298.00	301.00
	3. Sapotta	78.00	78.00
	4. Lime	22.00	22.00
	5. Banana	1115.00	1229.00
	6. Aonla	231.00	263.00
	7. Jack	63.00	63.00
	8. Pomegranate	5.00	5.00
	9. Watermelon	1.00	1.00
	Total	**3260.00**	**3444.00**
2.	**Vegetables**		
	1. Tomato	38.00	38.00
	2. Brinjal	132.00	132.00
	3. Bhendi	97.00	97.00
	4. Gourds	3.00	3.00
	5. Greens	7.00	7.00
	6. Annual Moringa	3.00	3.00
	7. Onion	74.00	74.00
	8. Others	70.00	70.00
	Total	**424.00**	**424.00**
3.	**Plantation Crops**		
	1. Cashew	5691	5692.00
	2. Betelvine	53.00	53.00
	3. Coconut	2647.00	2647.00
	4. Jatropha	143	143.00
	Total	**8534.00**	**8535.00**
4.	**Flowers** Jasmine	**23.00**	**24.00**
5.	**Spices**		
	1. Chillies	6111.00	6111.00
	2. Tamarind	511.00	520.00
	3. Turmeric	28.00	28.00
	4. Coriander	4.00	4.00
	Total	**6654.00**	**6663.00**
	Grand Total	**18895**	**19090**

Table 2.8 Sivagangai Soils and Area in Hectare

Soil Description	Area (ha)
Very deep, fine loamy, mixed, Inceptisols	61657.860
Deep, fine loamy, mixed, Inceptisols	38625.243
Deep, fine, mixed, Inceptisols	32067.596
Deep, fine loamy, mixed, Alfisols	27559.450
Moderately deep, fine, mixed, Alfisols	25707.895
Deep, fine, montmorillonitic, Vertisols	21402.954
Very deep, clayey skeletal, kaolinitic, Alfisols	20716.799
Very deep, fine loamy, mixed, Alfisols	17663.320
Moderately deep, very fine, montmorillonitic, Vertisols	14526.611
Deep, fine, mixed, Alfisols	14445.844
Moderately deep, fine loamy, mixed, Alfisols	11162.706
Moderately deep, loamy skeletal, mixed, Alfisols	8622.014
Very deep, fine, montmorillonitic, Inceptisols	8257.578
Very deep, fine, kaolinitic, Alfisols	7482.300
Moderately shallow, fine, mixed, Inceptisols	6216.391
Deep, loamy skeletal, mixed, Inceptisols	4168.855
Deep, coarse loamy, mixed, Alfisols	3876.734
Deep, coarse loamy, mixed, Inceptisols	3563.610
Moderately shallow, fine loamy, mixed, Alfisols	2892.606
Very deep, coarse loamy, mixed, Entisols	2512.906
Very deep, fine, montmorillonitic, Vertisols	2228.955
Deep, very fine, montmorillonitic, Vertisols	2054.935
Shallow, clayey, mixed, Alfisols	1662.176
Shallow, clayey, mixed, Entisols	1551.660
Deep, fine loamy, mixed, Entisols	1378.241
Very deep, coarse loamy, mixed, Alfisols	1333.919
Shallow, clayey skeletal, mixed, Inceptisols	1289.760
Deep, contrasting particle size, mixed, Inceptisols	1124.575
Moderately shallow, fine loamy, mixed, Inceptisols	1087.601
Very deep, fine loamy, mixed, Entisols	842.110
Shallow, clayey skeletal, mixed, Alfisols	694.655
Very deep, contrasting particle size, mixed, Inceptisols	370.395
Very deep, fine, mixed, Inceptisols	303.390
Very deep, coarse loamy, mixed, Inceptisols	223.141
Moderately deep, fine loamy, mixed, Inceptisols	204.597
Moderately deep, fine, mixed, Inceptisols	156.398
Moderately deep, fine loamy, mixed, Entisols	130.312
Very deep, very fine, montmorillonitic, Inceptisols	69.015

AGROCLIMATIC ZONES OF SIVAGANGAI DISTRICT



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NORTH EASTERN ZONE

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

NORTH WESTERN ZONE

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

WESTERN ZONE

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

CAUVERY DELTA ZONE

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

SOUTHERN ZONE

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

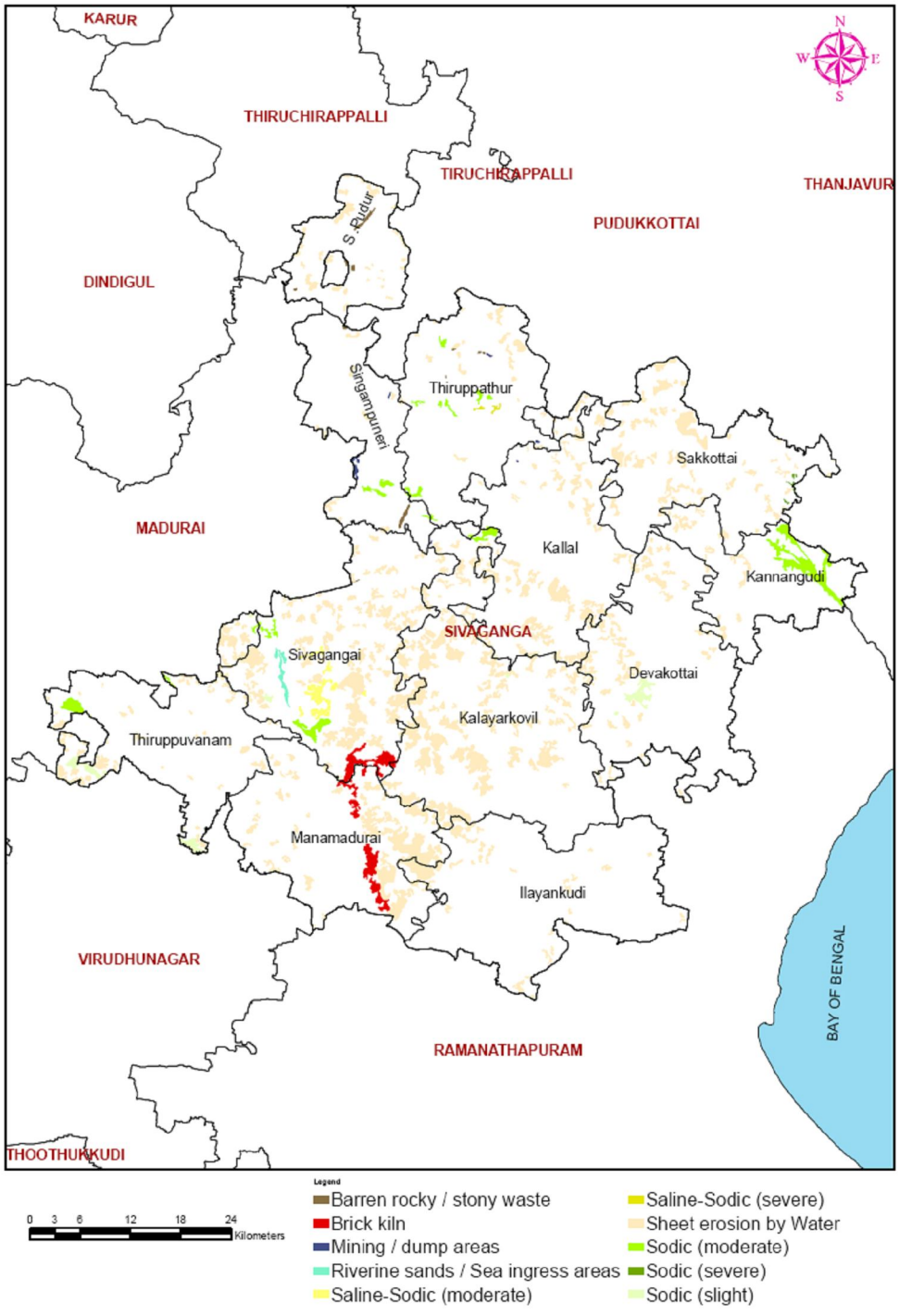
HIGH RAINFALL ZONE

Kanayakumari district.

HIGH ALTITUDE AND HILLY ZONE

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

LAND DEGRADATION MAP OF SIVAGANGAI DISTRICT



EXPLANATION OF DIFFERENT LAND DEGRADATION CATEGORIES

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

Water Erosion

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

1. Sheet erosion

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

2. Rills

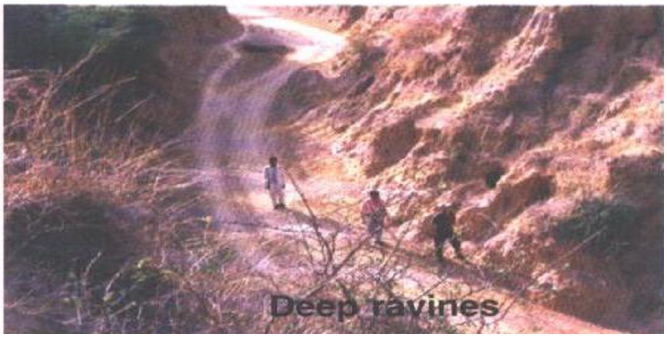
When the surface runoff goes in the form a concentric flow, a tiny water channels are formed in the field. These are small rivulets of such a size that they can be worked over with farm machinery. Rills are generally associated with the cultivated lands and are visible in the ploughed soil after first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

3. Gullies

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

4. Ravines

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



Wind Erosion

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

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

5. Sheet Erosion

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

6. Stabilized Dunes / Partially stabilized Dunes

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

Stabilized sandune

Partially stabilized sanddune

7. Un-stabilized dunes

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

Water logging

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

8. Surface Ponding

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

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

9. Sub-surface Water logging

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

10. Salinization / Alkalization

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

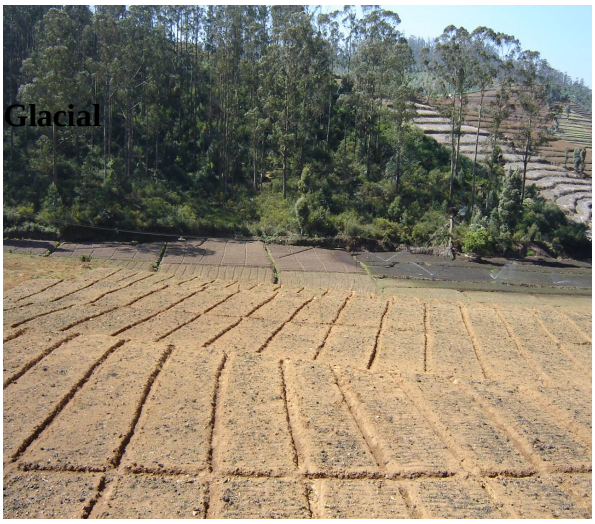
Salinity

Sodic

11. Acidification

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

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



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

12. Frost Heaving

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

13. Snow covered areas

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

Degradation due to anthropogenic factors

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

14. Industrial effluent affected areas

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

15. **Mining and dump areas**

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

16. Brick kiln areas

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

Others

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

17. Mass movement/ Mass wastage

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

18. Barren rocky / stony areas

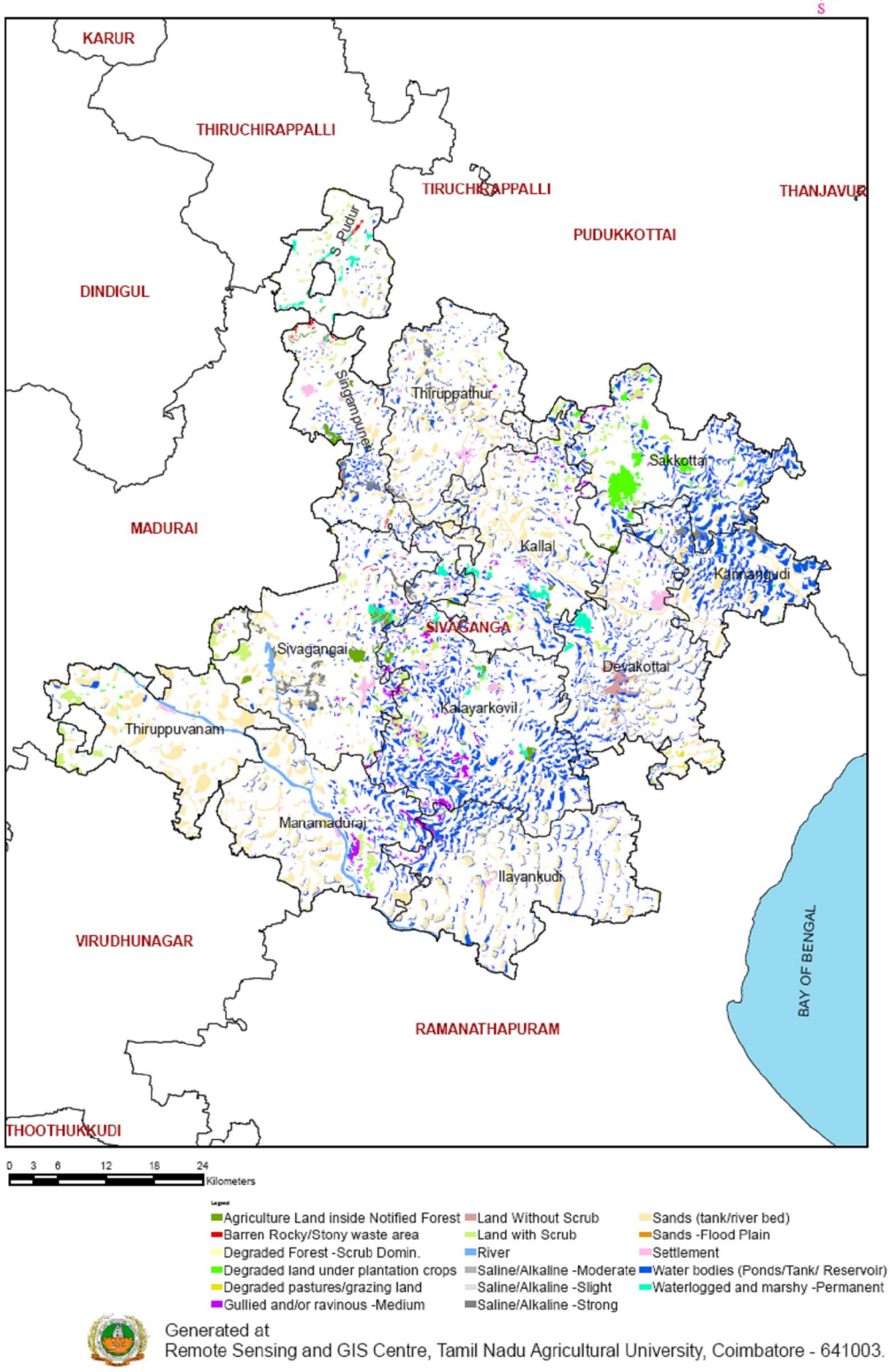
Barren / rocky / stony areas are the rock exposures of varying lithology often barren and devoid of soil and vegetal cover. They occur in hill forests as openings or as isolated exposures on plateau and plains. These can be easily delineated from other type of degraded land because of their severe nature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

19. Miscellaneous

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

Sea Ingress areas

WASTELAND MAP OF SIVAGANGAI DISTRICT



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WASTELAND CLASSIFICATION

Culturable Wastelands

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

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

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

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

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

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

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

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

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

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

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

Unculturable Wastelands

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

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

CHAPTER - III
SWOT ANALYSIS OF THE DISTRICT

Keeping in view the agriculture scenario of Sivagangai district and the guidelines of National Agriculture Development Programme / Rashtriya Krishi Vikas Yojana prepared by Govt. Of India, the District Agriculture Plan of Sivagangai district for four years period (2008-12) has been prepared. The district has vast potential for agricultural growth. The SWOT of the district is analysed as follows:

i) Strengths

- Good network of roads for surface transport
- Nearness to growth centres like Madurai, Tirunelveli and Export promotion Zone.
- Nearness to Tiruchi and Madurai Airports and Thoothukudi port.
- All villages are electrified.
- Good net work of bank branches ie, 120 Cooperative Banks and 148 Commercial Banks
- Vast reserves of various types of minerals.
- Existence of Committed voluntary Agencies/Non Governmental Agencies.
- Availability of adequate number of skilled labour.
- Lot of tourist places

ii) Weaknesses

- Predominately drought prone district
- Insufficient, uneven / poor rainfall
- Poor soil quality
- Fragmented land holdings.
- Poor rail connectivity with rest of the state
- Water and Labour scarcity prevails in All Blocks
- Rivers are seasonal.
- Low precipitation resulting in poor use of rivers for irrigation purpose.

- Greater dependence of ground water resulting in depletion of groundwater potential
- Heavy dependence on Agriculture.
- Vast stretch of wastelands in some pockets.
- Lack of adequate number of training institutions.
- Lack of motivation and entrepreneurship.
- No government industrial estate.
- Weak primary level Co-operative institutions.

iii) Opportunities

- Scope for setting up Agro processing industries.
- Scope for enlarging the area under cultivation and thereby improving the production
- Scope for enlarging the cultivation of tree crops like bamboo and casuarina
- Scope for setting up of ornamental fish rearing units
- Ample scope for setting up biogas plants on account of existence of sugar mills and large population of cattle.
- Scope for development of Horticulture, Floriculture, Sericulture, Poultry farming, dairy farms, Milk chilling plants etc.
- Scope for development of Handicrafts.
- Scope for setting up modern rice mills, oil mills, etc.
- Scope for setting up radiological and pathological laboratories in rural areas.
- Scope for formation of SHGs on account of presence of poor, downtrodden and SC/ST population and presence of money lenders.

iv) Threats

- Conversion of Agricultural land for residential and industrial purpose.
- Poor recovery in respect of Government sponsored programmes like TAHDCO, PMRY Welfare Schemes, etc., resulting in inadequate credit flow to rural areas.

3.1 Composite Index of Agricultural Development of Sivagangai 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 100per cent development and 0 representing no development at all.

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

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

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

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

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

The data base for the current study on Sivagangai district is taken from various government publications like Season and Crops Report and Economic Appraisal of Tamil Nadu for the four periods 1990-91, 1995-96, 2000-01 and 2005-06. In all, 25 indicators of agricultural development as given in Table 3.1 were used for estimating the composite index of development for the district. The 25 indicators were grouped into 6 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 Sivagangai district which was classified as 'developing' in agricultural development during 90-91 and it was classified as 'backward' in agriculture during 1995-96 and 2000-01. In the recent period it was classified as 'developed'. In terms of overall agricultural development its rank among the 29 districts of Tamil Nadu varied from 7 to 21 during the 1990-91 to 2005-06. As for as the individual components of agricultural development are concerned, its ranks in the above periods are summarized in the following Table 3.2. The table shows that performance in all the four periods is not satisfactory. For example, in crop area variables also occupied ranks between 16th and 23rd ranks and livestock variables also varies between 25th and 28th ranks in all the four periods.

Table 3.1. Selected Indicators of Agricultural Development for Sivagangai District

Component	Indicators	No. of Indicators
Crop-Area-Variables	Cropping Intensity	10
	Percent of Gross Cropped Area to Total geographical area	
	Percent Share of food grains to Gross Cropped Area	
	Percent Share of food crops to Gross Cropped Area	
	Percent Share of non food crops to Gross Cropped Area	
	Percent Share of cultivable waste to total geographical area	
	Percent Area under High Yielding Variety-Paddy	
	Percent Area under High Yielding Variety-Cholam	
	Percent Area under High Yielding Variety-Cumbu	
	Percent Area under High Yielding Variety-Ragi	
Irrigation	Irrigation Intensity	7
	Percent of Gross Irrigated Area to Gross Cropped Area	
	Percent of Net Irrigated Area to net area sown	
	Percent Area under Canal Irrigation to Gross Irrigated Area	
	Percent Area under Tank Irrigation to Gross Irrigated Area	
	Percent Area under Well Irrigation to Gross Irrigated Area	
	Per cent Area under other sources Irrigation to Gross Irrigated Area	
Livestock	Milk production (lakh tons)	2
	Egg production (lakhs)	
Fisheries	Inland + Marine fish production in tons	1

Table 3.1. Contd…

Component	Indicators	No. of Indicators
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	Percent of Cultivators to total population	2
	Percent of Agri.labourers to total workers	
	TOTAL	25

Table 3.2. Rank of Sivagangai 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	20	13	25	-	-	12	17
	1995-96	16	17	28	13	21	13	18
	2000-01	23	14	28	19	23	13	21
	2005-06	21	10	26	10	2	6	7

CHAPTER - IV

DEVELOPMENT OF AGRICULTURE SECTOR

Several States centrally sponsored and special schemes are in operation in the district. The State schemes pertain to paddy, millets, pulses, cotton and oilseeds. The centrally sponsored schemes are ISOPOM – oilseeds, pulses, maize, ICDP for cotton, Integrated Cereal Development Programme for coconut. Special schemes include National Watershed Development Programme for Rainfed Areas, National Food Security Mission for rice, 2 acre free land distribution, Tamil Nadu women in Agricultural Business enterprise, IAMWARM and TANHODA scheme for drip irrigation in coconut. The component wise achievements of the ongoing programmes for the last three years are furnished in Table 4.1

Table 4.1 Ongoing Schemes – Agriculture

(Rs. in Lakhs)

SI. No.	Scheme and Components	Achievements 2005-06		Achievements 2006-07		Achievements 2007-08	
1	**Part I Scheme**	**Phy.**	**Fin.**	**Phy.**	**Fin.**	**Phy.**	**Fin.**
	State Schemes						
1.1	Crop yield Competition	2	0.400	4	0.438	1	0.250
1.2	Procurement and Distribution of Paddy and Millet Seeds	336.12 Tonnes	39.173	500 Tonnes	45.458	300 Tonnes	37.486
1.3	Procurement and Distribution of Pulses Seeds	9.225 Tonnes	3.635	4.850 M.T	'x.448	5.060 Tonnes	4.019
1.4	Procurement and Distribution of Green manure seeds	1.0 Tonnes	0.2008	1.000 Tonnes	0.200	2.000 Tonnes	0.400
1.5	Vermi-composting Demonstration cum Training	2 units	0.077	2 units	0.077	2 units	0.077

Table 4.1 contd…

SI. No.	Scheme and Components	Achievements 2005-06		Achievements 2006-07		Achievements 2007-08	
1.6	Crop and Plant Protection		0.362		1.703		0.644
1.7	Integrated Cotton Development	2.25 Tonnes	-	3.0 Tonnes	-	10 Tonnes	
1.8	Increasing the Production of Oil seeds (IPOS)	64.76 M.T	74.884	57.305 Tonnes	12.020	4991 Tonnes	10.307
1.9	Integrated Coconut Development	6394 Tall 11754 TXD	3.683	7125 Tall 17850 TXD	3.413	9100 Tall 12200 TXD	2.507
1.10	Distribution of MN mixtures	20.23 Tonnes	-	30 Tonnes	-	71.2 Tonnes	
1.11	Distribution of Bio fertilizers	29.32 Tonnes	-	32 Tonnes		35.6 Tonnes	
	Part – II Scheme						
1.12	a) Purchase of Bagclosures	-	-	-	-	2Nos	0.080
	b) Maintenance of S.P units	-	-	-	-	INo	0.150
	c) Purchase of Crop cutting Experiments kits	-	-	48 Nos	0.9600	-	-
	Total	-	-	-	0.9600	-	0.230
	Total state schemes		**78.567**		**66.717**		**55.920**
	2 Centrally Sponsored Schemes						
2.1	**Isopom -Oil Seeds**						
a	Breeder seeds distribution	4.08Qtls	0.063	10.7Qtls.	0.1605	5.1 OQtls	0.073
b	Foundation Seeds Production	49.05	0.279	99.95qts	0.499	131.36 qts	1.313
c	Certified Seeds Production	384.17	1.932	439.87	2.199	237.29	2.334
d	Certified Seed Distribution	434.40	2.424	396.01	3.168	278.10	2.968

Table 4.1 contd…

SI. No.	Scheme and Components	Achievements 2005-06		Achievements 2006-07		Achievements 2007-08	
E	Combined nutrient spray on ground nut					35 hect	0.063
f	Pipes for carrying Water from source to fields	8 Nos	0.494	24 units	1.484	23 units	3.430
g	Block demonstration in Groundnut and Gingelly			3 Nos	0.120	18 Nos	0.677
h	Distribution of Gypsum	311.3 Ha	1.402	165 ha	2.250	130 hect	0.488
i	Distribution of Bio fertiliser	1384 hect	0.631	1505 hect	0.757	1701 hect	0.735
J	Distribution of Bio pesticides	145.1 hect	0.181	80 hect	0.207	73 hect	0.154
	CSS Schemes						
k.	Distribution of Hand operated sprayers	27 Nos	0.200	110 nos	1.557	65 Nos	0.413
l	Distribution of weedicides	2 hect	0.010	4 hect	0.019	4 hect –	0.013
m	Farmers Training			4 Nos	0.600	5 Nos	0.750
n	Distribution of Power sprayers					7 Nos	0.240
o	Demonstration of Polythene mulch					5 Nos	0.422
p	Village Campaign				0.200		
	Total				**13.221**		**14.171**
2.2	**2.2 ISOPOM- Pulses**						
a	Foundation Seed Production	2.37 qts	0.01	16.4 qts	0.082	20.38	0.114
b	Certified Seed Production	95.56	0.438	106.9 qts	0.534	74.88	0.742
c	Certified Seed distribution	72.19	0.548	6 Nos	0.120	59;24gts	0.603
d	Compact Block Demonstration	2Nos	0.0400			18 Nos	0.360

Table 4.1 contd…

SI. No.	Scheme and Components	Achievements 2005-06		Achievements 2006-07		Achievements 2007-08	
E	IPM Demonstration			1 No	0.123	1 No	0.123
f	Distribution of Biofertiliser	1746	0.395	610 hect	0.3118	309 hect	0.081
g	Distribution of Bio pesticides	145.1 hect	0.181	40 hect	0.029	1 hect	0.023
h	Distribution of NPV	45.9 hect	0.057	33 hect	0.057	6 hect	0.011
i	Distribution of PP Equipments	19 Nos	0.102	43 Nos	0.253	6 Nos	0.037
j	Pipe line for carrying water from source to fields	4 Nos	0.247	5 Nos	0.247	1 Nos	0.450
k	Farmers Training	I No	0.150	2 Nos	0.300	4 Nos	0.600
	CSS Schemes						
i	DAP spraying					12 1 hect	0.143
m	Micronutrient spray sprinklers	3 Nos	0.191			220 hect	0.174
n	AV aids for campaign	3 Nos	0.039			1 set	1.957
					0		5.739
o	Distribution of Gypsum	166 Ha	0.250	60 hect	0.300		0
p	Distribution of PP Chemicals	56 Ha	0.025	12 ha	0.099		
q	Distribution of weedicides	5 Ha	0.025	6 ha	0.029		0
r	Distribution of sprinklers			2 Nos	0.276		
s	Contingency& POL				0.090		
t	FIG &stake holders farmer				0.125		
	Total		**2.483**		3.702		5.739
	2.3 ISOPOM -Maize						
a	Distribution of certified seeds	4.50 qts	0.017	3.83qts	0.032	10.08 qts	0.102
b	Block Demonstration	2 Nos	0.080	8 Nos	0.370	91 Nos	0.360
c	IPM Demonstration		0	1 Nos	0.2268	1 No	0.200
d	POL &Staff Contigencies		0.050		0.3368		0.219
e	Seminar		0	1 Nos	0.150	2 Nos	0.300
f	Training to farmers		0	1 Nos	0.150	100 Nos	0.300
g	Publicity		0		0.030		0.25
h	Pipe line for carrying water source to fields			2 Nos	0.185	.8 Nos	0.745

Table 4.1 contd…

SI. No.	Scheme and Components	Achievements 2005-06		Achievements 2006-07		Achievements 2007-08	
I	Village campaign	75 Nos	0.375	75Nos	0.375		0
	Total		0.523		**1.805**		2.252
	CSS SCHEMES						
	2.4. Intensive Cotton Dev. Programme (ICDP)						
a	Certified Seeds Distribution	-	0	26.13	0.464	18.24 qts	0.202
b	Distribution of Power sprayer	30	0.600	30 Nos	0.600		
c	HO Sprayer	58	0.319	53 Nos	0.319		
d	Front Line démonstration	0	0			6 nos	0.229
e	Distribution of Pheromone trap	68 hect	0.113	24 hect	0.03		
f	Inter cropping with pulses	0	0	50 hect	0.065	145 hect	0.280
g	Distribution of bio fertilizer	0	0	35	0.052	0	
h	Distribution of bio pesticide	0	0	245	0.3989	0	0.652
i	Seed Treatment	-	0	10 hect	0.006	0	0
j	Contingency	-	0	-	0.896	0	0
k.	Publicity Campaign	-	0	-	-	0	0
	Total	-	3.462	-	2.773	-	**0.652**
	3.1 Integrated Cereals Development Programme						
a	Certified Seeds Distribution -Paddy	250 mt	4.999	357Nos	7.498	186.74	3.764
	Award to Gram Panchayats		0.550				
	CSS-SCHEMES						
b	IPM Demonstration	13	2.210	20 Nos	3.40	5 Nos	0.850
c	POI Contingency		1.840		0.236		0.202
	Crop demonstration SRI pattern		0				0
	Millets		0	2 Nos	0.080		
	Training to farmers /campaign		0.903 1.067	16	0.800		
	Total						4.816
4	**Innovative Schemes**						

Table 4.1 contd…

SI. No.	Scheme and Components	Achievements 2005-06		Achievements 2006-07		Achievements 2007-08	
	4.1 Farmers						
A	Group Formation		3.462	20 Nos	1.000	49 nos	2.435
B	Training to FIG					49 nos	1.960
C	Issue of ID cards						0.196
D	District level meeting of farmers					3 Nos	0.600
E	Contingency for documentation					_	0.750
	Total		**3.462**		**1.000**		**5.941**
4.2	**TANWABE Tamil Nadu Women in Agri Business enterprises**						
	Promotion of micro enterprises					20	2.000
	Training	0	0	242 Nos	2.420	0	0
	CSS- SCHEMES						
	Documentation				0.078		
	Data				0.691		
	District			38	1.100		
	Total				12.840		2.000
5	**Coconut Development Board Schemes**						
5.1	Cut and removal affected Palms	100 Nos	0.250	200 Nos	0.500	300 Nos	0.750
5.2	Demonstration I year	INo	0.175	25 Nos	4.375	7 Nos	1.225
5.3	Demonstration II	20 Nos	3.499	21	3.675	22 Nos	3.830
5.4	Organic manure	3 Nos	0.600	3 Nos	0.600	1 No	0.200
	Total		4.525		9.150		6.005

Table 4.1 contd…

SI. No.	Scheme and Components	Achievements 2005-06		Achievements 2006-07		Achievements 2007-08	
6	**Seed Village Programme**						
6-1	Paddy Seeds Distribution			23.4 Tonnes M.T.	2.130	56.48 Tonnes	3.500
6-2	Ground nut seed distribution			4.40	0	5 mt	0.500
6-3	Training				0	7 Nos	1.050
	Total		**0**		**2.130**		**5.050**
	Total Centrally sponsored Programme		**56.452**		**76.116**		**49.954**
7	**Other Special Schemes**						
1	National Watershed Programme for rainfed areas		76.000		105.742	24sheds	41.724
2	National Food security Mission(Rice)						69.451
	Special schemes						
3	2 acres free land distribution scheme						68.700
4	IAMWARM						66.742
5	RSVY		0		52.157		0
6	NABARD Assisted Watershed programme				0	3 NT	46.637
7	TANHODA-Coconut Drip Irrigation					20 h' t	2.625
8	Soil Testing laboratory. Sivaganga		5.625		12.675		55.767
	Total		81.625		164..626		351.646

Table 4.1 contd…

SI. No.	Scheme and Components	Achievements 2005-06		Achievements 2006-07		Achievements 2007-08	
	Abstract						
1	**State Schemes**		78.567		66.717		55.920
2	**Centrally Sponsored Schemes**		56.452		76.116		49.954
3	**Other special**		81.625		164.626		351.646
	Grand Total		216.644		307.459		457.520

i) Recommended Interventions

The recommended interventions for agriculture development are as follows:

- Establishment of Village Knowledge Centres(e-Choupals)
- Preparation of Land Resources Inventory and GIS Data base
- Establishment of Automatic Weather Stations and Automatic Rain gauges
- Establishment of Agri Clinics and Mini Soil Testing Units by Unemployed Graduates
- Upgradation of Existing Seed Processing Units and Block Seed Godowns
- Upgradation of Farmers Training Centre
- Establishment of Zonal Agricultural Research Station
- Maximizing the Ground Water Usage through Bore wells
- Dry land Development and Maximizing Crop Productivity
- Precision Farming in Agricultural crops
- Wastelands Development in 50 Acres Cluster Mode
- Promotion of Organic Farming and Organic Manure Production Units
- In-situ Rain Water Harvesting through Farm Ponds Clusters
- Distribution of Farm Implements and Hand Tools to Small and marginal farmers and Agricultural labourers
- Establishment of Solar Fencing for Stray animals menace
- Establishment of Prosopis Bio Fuel Units
- Promotion of Jatropha Bio-Diesel Crops Cultivation
- Establishment of Community Fodder Plots by SHGs / FIGs
- Establishment of Cold Storage Unit for Chillies
- Establishing a seed testing lab at a cost estimate of Rs.6 lakhs

CHAPTER - V

ALLIED SECTORS

5.1 Horticulture

In Sivagangai district, Horticulture crops are not occupying large areas. Predominant fruit crops in the district are mango and banana, brinjal and bhendi in vegetables, coconut under plantation crops and chillies under the spices.

To give a fillip to increase the area and productivity of horticulture crops some interventions are proposed under the District Agriculture Plan.

Following interventions are proposed to be introduced.

i. Introducing the use of plastic crates for vegetable handling and transport.
ii. Protective cultivation of vegetables in net houses.
iii. Provision of borewells with casting pipes for increasing availability of water for irrigating farms and vegetable crops.
iv. Use of soil microbes to reduce the usage of chemical fertilizers and chemical pesticides.
v. Mango Harvester to reduce damage to fruits while harvesting.
vi. Providing easy access to farmers for purchase of needed inputs through establishment of sales outlet point.
vii. Exposing farmers to new horticulture technologies through study tours, field demonstrations and formation of enterprising farmers associations.
viii. Providing cover to banana bunches to enhance their appearance and to increase market value.

- Precision Farming
- Plastics Crates for Vegetable handling and transport @ Rs. 250 / crate with 50per cent subsidy

- Banana @ Rs. 1.5 lakhs / ha @ 75per cent subsidy
- Banana Corm injector @ Rs. 300 / No. with 50per cent subsidy
- Support to senna cultivation @ Rs.15,000/ha with 50per cent subsidy
- Establishment of Banana fibre industry @ 50per cent subsidy

5.2 Animal Husbandry

I. Base Line Information Regarding Livestock and Poultry Sector

Species-wise Livestock Population of Sivagangai District (2004)

S.No.	Category	Population
1	Crossbred cattle	80561
2	Indigenous cattle	200011
3	Buffaloes	15183
4	Sheep	227672
5	Goats	234746
6	Pigs	5164
7	Rabbits	465
	Poultry	
8	Fowls	703921
9	Ducks	16910

Average Production of Livestock Commodities (2004-2007)

S.No.	Name of the Commodity	Production
1	Cow milk in 000 tonnes	79.00
2	Buffaloe milk in 000 tonnes	7.15
3	Improved egg in lakh Nos.	18.04
4	Desi egg in lakh Nos.	148.86
5	Poultry meat in tonnes	397.00
6	Mutton in tonnes	205.92
7	Chevon in tonnes	475.66

Analysis of Production and Productivity of Livestock Products (Per Animal / Bird) – (1998 – 2007)

Commodity	Annual Compound growth rate in Percent
Cow milk	8.51
Buffalo milk	-15.49
Total Milk	**5.54**
Desi egg	0.24
Improved Egg	1.64
Total Egg	-1.37
Total Meat	**7.27**

Demand and Supply of Green Fodder in Sivagangai District (2004) – (Million Tonnes Per Year)

Type of fodder	Demand	Supply	Deficit	Deficit per cent
Dry Fodder	0.923	0.370	0.553	59.9
Green Fodder	2.3532	0.1034	2.2498	95.6

- **No. of Breedable bovines (2004)**

  Cattle : 94500

  Buffaloes : 6200

- **No. of Artificial Insemination Carried Out (2007) : 29993**

Sector-wise Swoc Analysis
Dairy Sector
Strength

- Sizeable Cattle population
- Infrastructure with department of animal husbandry and Aavin. (115 insemination centers, 185 Dairy co-operative societies, a dairy with 50,000 lit.capacity and a milk chilling centre with 10,000 lit. capacity)

Weakness

- Very low buffalo population (15,183 hects)
- Shortage of green and dry fodder
- Lack of sufficient man power in the main service providing sector viz., animal husbandry department and Aavin. (out of 117 AI centers, 50 remain vacant, and in Aavin no staff in the crucial input services sector).

Opportunities

- Steady increase in demand for milk and milk products
- Adequate underground water potential which can be exploited for fodder cultivation.
- Possibility of exploiting the services of Krisi Vigyan Kendra, Kundrakudi trained Artificial inseminators for better AI coverage.
- Bankers interest in financing for dairy related enterprises. (Due to motivation by Honorable Finance Minister).

Challenges

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

Small Ruminants

Strength

- Good sheep and goat population (2.27 lakh sheep and 2.34 lakh goats)
- Vast availability of land area especially cultivable waste lands and fallow lands that can be exploited for sheep and goat grazing.

Weakness

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

Opportunities

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

Challenges

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

Poultry Sector

Strength

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

Weakness

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

Opportunities

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

Challenges

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

III. On-going Government schemes

S.No.	Name of the Scheme	Major Activities	Remarks
1	KPT (Kalnadai Pathukappu Thittam)	Vaccination, Deworming, General treatment, AI and prize distribution to selected crossbred heifer calves	Sponsored by Government of TN
2	ASCAD	Vaccination (PPR/BQ and FMD)	Free PPR, BQ and FMD vaccines are supplied to dispensaries
3	TN – IAMWARM Project	Conducting infertility camps, Night meetings and farmers training programmes	Funded by world bank. Scheme does not cover the entire district. Covers only two river basins of Kottakariyar and Manimuthar

IV. Intervention Required Areas

- ❖ Feed and fodder development
- ❖ Improvement of livestock health
- ❖ Strengthening infrastructure
- ❖ Processing facilities
- ❖ Extension facilities
- ❖ Genetic up gradation

S.No.	Name of the Scheme	Major Activities	Remarks
1	KPT (Kalnadai Pathukappu Thittam)	Vaccination, Deworming, General treatment, AI and prize distribution to selected crossbred heifer calves	Sponsored by Government of TN
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Animal Husbandry

- Scientific fodder production
- Door-to-door health covers to livestock.
- Tracing of breedable bovine population
- Strengthening the veterinary institutions with basic facilities like fencing, bore-wells, water troughs etc.
- Genetic upgradation of buffalo, small ruminants and poultry.
- Capacity building through adoption of technology – Training
- Establishment of Animal Disease intelligence Unit
- Disaster management

5.3 Fisheries Sector

I. Baseline Information

- ❖ Inland fisheries resources - 3046 Nos. (73,000 ha)
- ❖ Irrigation tanks - 4 Nos. (381.96 ha) - under fish culture by Fisheries Department - leasing
- ❖ Inland fish production - 6005 tons / year
- ❖ Fishermen population – 2132
- ❖ Fishermen Cooperative Societies - 4 Nos
- ❖ (Members – 653)
- ❖ IAMWARM project - Kottaikarayar & Manimuthar basins - improved fish culture activities in ornamental, cage culture & aquaculture in farm ponds
- ❖ Fish seed banks - 3 No. proposed in IAMWARM project - to augment seed production
- ❖ Vast scope for setting up fish retail outlet at Karaikudi

Strength

- ❖ Fishermen Cooperative Societies - 4 Nos
- ❖ IAMWARM project - Kottaikarayar & Manimuthar basins - improved fish culture activities in ornamental, cage culture & aquaculture in farm ponds
- ❖ Fish seed banks - 3 No. proposed in IAMWARM project - to augment seed production
- ❖ Vast scope for setting up fish retail outlet at Karaikudi

Weakness

- ❖ Sivagangai District is constituted by large area of dry lands
- ❖ Due to poor rainfall, all the tanks are dry in most of the time
- ❖ During North-East monsoon alone, the District receives water
- ❖ During the monsoon time only the water is stored in the tanks. But the quality fish seeds are not available at the time.

Opportunities

- More scope for enhancing inland fish culture
- Possibilities for getting better returns through systematic marketing

Challenges

- Unpredictable rains
- Short term water supply restricts maintaining water supply
- Motivating people for fish farming

II. On-going Government Development Schemes

Schemes Pertaining to Inland Fisheries Development

1. Fishermen Group Accidental Insurance – (Central scheme)
2. Fishermen savings – cum Relief scheme
3. Construction of new ponds and tanks in beneficiaries own land with proper screened inlet, outlet and shallow tube well.
4. Reclamation / Renovation of ponds / tanks
5. Freshwater fish seed hatchery
6. Training of fish farmers
7. Anna Marumalarichi Thittam – All Villages
8. IAMWARM –
9. Interior inland fish culture & marketing schemes.

III. Intervention Required Areas

- ❖ Fish seeds supply to be arranged by developing net work of seed farms.
- ❖ Proper utilization of seasonal tanks for fish culture
- ❖ Establishment of infrastructure for marketing
- ❖ Capacity building for fish farmers / entrepreneurs

5.4 Agricultural Engineering

Sivagangai district is a drought prone district with meagre rainfall. So there is need to conserve what little rain water is received, so that normal crops which are grown receive atleast some quantity of water. In view of the unremunerative nature of agriculture in the district, many farmers, most of whom are small and marginal have migrated to nearby urban areas in search of jobs. This has created acute labour problem for agricultural operations in general and timely operations in particular. Hence the need for improved labour saving agricultural implements for timely agricultural operations is schemely felt by the agricultural community in the district. Even though several ongoing schemes for farm mechanization, soil and water conservation are in operation, their impact has not been to the expected level and hence there is a need to give a new thrust to these efforts by introducing innovative schemes.

To mitigate the effect of the above mentioned problems and to increase production and productivity of crops, the following interventions are proposed.

- Introduction of newly developed agricultural machinery/ implements
- Innovative water harvesting structures
- Control of sea water intrusions
- Promoting the concept of mechanized village
- Popularisation of agricultural mechanization through conventional machinery/equipments
- Soil conservation and water management works.

5.5 Agricultural Marketing

The efforts of the farmer and cost incurred in cultivating and harvesting his crop many a time are not adequately rewarded in terms of remunerative prices because of several lacunae in the area of agricultural marketing. To improve the marketing opportunities for agricultural produce, marketing infrastructure like Uzhavar Shandais,

Post harvest management, cold storage facilities for perishables, food processing, establishment of export zones and terminal markets have been taken up. The interventions proposed under district plan are

- Commodity group formation
- Market Intelligence Dissemination
- Facilitation of Contract Farming
- Exposure Visits
- Arrangement of buyer seller meet
- Development of market infrastructure
- Strengthening of market extension centres

5.6 Forestry

Under forestry, social forestry related programmes like energy wood plantations, raising miscellaneous tree seedlings like pungam and jatropha are proposed to be taken up.

5.7 Public Works Department

Under Public Works Department, Rehabilitation of system and non system tanks are to be taken up for augmenting water supply for irrigation purposes.

5.8. Agricultural Credit

5.8.1. Credit Disbursement

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

I. Policy Innovations of Government of India:

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

II. Policy initiatives of Reserve Bank of India:

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

III. Policy and Development Initiatives of NABARD:

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

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

IV. Policy Initiatives of Government of Tamil Nadu:

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

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

Activity wise credit disbursement and projection under agricultural and allied sectors in Sivagangai district is furnished in Table 5.1.

Table 5.1. Activity Wise Credit Disbursement and Projections under Agricultural and Allied Sectors in Sivagangai District

(Rs. lakh)

Sectors	2008-09	2009-10	2010-11	2011-12
Crop loan	33244.36	34906.58	36651.91	38484.5
Term loan		0	0	0
Micro Irrigation	4626.2	4857.51	5100.39	5355.4
Land Development	1127.56	1183.94	1243.13	1305.29
Farm Mechanization	3423.82	3595.01	3774.76	3963.5
Plantation & Horticulture	2220.04	2331.04	2447.59	2569.97
Forestry & Waste land Development	1580.28	1659.29	1742.26	1829.37
Dairy Development	1018.05	1068.95	1122.4	1178.52
Poultry	192.52	202.15	212.25	222.87
Sheep/Goat/Piggery	637.04	668.89	702.34	737.45
Fisheries	60.83	63.87	67.07	70.42
Storage Godown & Market yards	215.35	226.12	237.42	249.29
Bio-gas	0	0	0	0
Sericulture	0	0	0	0
Others	446.56	468.89	492.33	516.95
Sub total - Term loan	15548.25	16325.66	17141.94	17999.03
Total Agriculture Credit (1+2)	48792.61	51232.24	53793.85	56483.53
Non Farm sector	11548.22	12125.63	12731.91	13368.51
Other Priority Sector	24848.64	26091.07	27395.63	28765.41
Grand Total	**85189.47**	**89448.94**	**93921.39**	**98617.45**

From the table it could be seen the projected flow of credit disbursement for agriculture and allied sectors during 2009-10, 2010-11 2011-2012 would be Rs. 89448.94 Rs. 93921.39 and Rs. 98617.45 lakhs respectively. The total flow of agriculture credit in terms of crop loan and term loan in 2011-12 would be Rs. 56483.53 lakhs. The flow of credit for non-farm sector and other priorty sectors in 2011-12 would be Rs. 13368.51 and Rs. 28765.41 lakhs respectively.

CHAPTER - VI

DISTRICT PLAN

6.1 Agriculture

In terms of availability of knowledge of new agricultural technology, Sivagangai district is very poor and there is urgent need for establishing Village Knowledge Centres with necessary modern gadgets and trained manpower at village level. Establishment of Agri Clinics and Mini soil testing units, Automatic Weather Stations with rain gauges are to be taken up. Upgradation of existing farmer training centre and seed processing units, precision farming in agricultural crops, dryland and waste land development, maximizing the ground water usage through borewells, promotion of organic farming and organic manure production, promotion of bio fuel crops like prosophis and jatropha, establishment of community fodder plots, establishment of cold storage unit and seed testing laboratory are also to be taken up under the district plan for agriculture.The detailed budget estimate for all the components under agriculture at a total cost of Rs.13163.95 lakhs is presented in Table 6.1, 6.2 and 6.3..

Establishment of Village Knowledge Centres (VKC)

Introduction

Sivaganga District has about 4.40 lakhs cultivators cultivating more than 45 crops. They mainly live in villages where the presence of Information and Communication Technological input is rarely available except the Television media. Thus there is a need to take the benefit of ICT to the rural areas in the grass root level for the benefit of the farming community. Establishment of "Village Knowledge Centres (VKCs)" in the villages will benefit the farmers in reaping the knowledge resource available worldwide.

i) Project Proposal

Sivaganga District comprises of 521 Revenue villages in 12 Developmental Blocks and seven Taluks. Revenue village is the basic administrative unit in respect of Land

resource. Hence it is proposed to establish 521 Village Knowledge Centres during the XI Five Year Plan period in all the Revenue villages in Sivaganga District. All available Data base of Land, Soil Status, Water potential, climatic parameters, Demographic details list of SF/MF, List of BPL families and public buildings and amenities available in the particular village / region will be put in these centres for the use of the farmers .The cropping suitability, best agricultural practices suitable for the Village/ Region will be prepared in consultation with the Agricultural Scientists and Development Departmental Officials. These centres will act as a nodal point for outward linkage of the village people with the Block/ District Head Quarters. Apart form being the Knowledge source at the village level, these centres will be a village level e – business centre involving tie up with Banking Institution, Insurance nodal centres, Agro Inputs and Produces marketing centres through the use of Computers and Telephonic facilities provided.

ii) Project Goals

- Knowledge Bank of the particular village / Region
- Resource Inventory and Management Planning tool
- Empowerment of village community
- Capacity Building of Farmers' Knowledge, Skill and Attitude
- Employment to Unemployed Computer savvy Graduates in villages
- Input / Service trading facilitation
- Market linkage through the purchasing companies

iii) Project Components

Establishment of the Village Knowledge Centre will have the following components for each village:

Telephone & Desk Top Computer with accessories like UPS, Scanner, Net Connectivity, Printer, Web camera, Dish Antenna for GDSM, LCD Projector & Bilingual Softwares	:	1 Number

Furniture and Steel Cupboard specially designed for housing the Computers and accessories	:	1 Set
Training the Village level Facilitator/ Co- Facilitators	:	1 Number
Unemployed Graduates selected to manage the Village Knowledge Centre		
Awareness Camps to educate the village community on the usage of VKC	:	6 Numbers (Bimonthly in I Year)

iv) Budget Abstract

The Component wise Budget requirement for establishment of 521 Village Knowledge Centres in Sivaganga District will be as follows:-

Table 6.1 Budget for Establishment of VKCs

(Rs. in lakhs)

Sl. No	Name of the Project Component	No.of Units proposed	Unit cost Rs.in Lakhs	Units Proposed				
				2008-09	2009-10	2010-11	2011-12	Total
1	Telephone & Desk Top Computer with accessories	521	1.00 Phy.	131 Nos.	130 Nos.	130 Nos.	130 Nos.	521 Nos.
			Fin.	131.00	130.00	130.00	130.00	521.00
2	Furniture and Steel Cupboard	521	0.10 Phy.	131 Nos.	130 Nos.	130 Nos.	130 Nos.	521 Nos.
			Fin.	13.10	13.00	13.00	13.00	52.10
3	Training the Village level Facilitator/ Co-Facilitators 5 Members x 5 days x Rs.500perday	521	0.125 Phy.	131 Nos.	130 Nos.	130 Nos.	130 Nos.	521 Nos.
			Fin.	16.37	16.25	16.25	16.25	65.12
4	Awareness Camps	3126	0.001 Phy.	786 Nos.	780 Nos.	780 Nos.	780 Nos.	3126 Nos.
			Fin.	0.78	0.78	0.78	0.78	3.12
			TOTAL	**161.15**	**160.03**	**160.03**	**160.03**	**641.24**
			Finance @ 1.226 / No.					

v) Implementation Chart

Sl.No	Activity	Stakeholders
1	Selection of suitable site for positioning VKC	DOA, Village Panchayat
2	Providing Ground level equipments, computers and accessories	DOA, ELCOT
3	Provision of Aerial support and Server support	BSNL, Public Ltd. Companies, Corporate
4	Training to Facilitators and Co-Facilitators	ITC Ltd.,/ DHAN Foundation NGO
5	Networking, Softwares and Data base	TNAU, DOA and other Departments
6	Manning, Maintenance and 24x7 Service	SHGs/ Facilitator Groups/ FIGs

Table 6.2 Proposed Activities and Budget Proposal for Agriculture – 2008-12

STREAM - I Project

(Rs. in lakhs)

Sl No	Name of the Proposal	No.of Units propo-sed	Unit Cost	Units Proposed Year-wise					Budget Abstract				
				2008-09	2009-10	2010-11	2011-12	Total	2008-09	2009-10	2010-11	2011-12	Total
1	Establishment of Village Knowledge Centres(e-Choupals)	521 Nos	1.226	131 Nos	130 Nos	130 Nos	130 Nos	521 Nos.	160.61	159.38	159.38	159.38	638.75
2	Preparation of Land Resources Inventory and GIS Data base	11 Blocks	31.00/ Block	3 Blocks	3 Blocks	3 Blocks	2 Blocks	11 Blocks	93.0	93.00	93.00	62.00	341.00
3	Establishment of Automatic Weather Stations and Automatic Rain gauges	7 Nos.	9.00/ No.	2 Nos.	2 Nos.	2 Nos.	1 No.	7 Nos.	18.0	18.00	18.00	9.00	63.00
4	Establishment of Agri. Clinics and Mini Soil Testing Units by Unemployed Graduates	20 Nos.	3.50	5 Nos.	5 Nos.	5 Nos.	5 Nos.	20 Nos.	17.5	17.50	17.50	17.50	70.00
5	Upgradation of Existing Seed Processing Units and Block Seed Godowns	14 Nos.	25.00	5 Nos.	5 Nos.	20 Nos	--.	4 Nos.	125.0	125.00	100.00	0	350.00
6	Upgradation of Farmers Training Centre	1 No.	50.00	1 No.	-	-	-	1 No.	30.0	20.00	0	0	50.00
7	Establishment of Zonal Agricultural Research Station	1 No.	300.00	1 No.	-	-	-	1 No.	50	100	100	50	300
8	Maximizing the Ground Water Usage through Bore wells	3000 Nos.	3.0 / Unit	700Nos.	800 Nos	800 Nos	700 Nos	3000 Nos.	2100	2400	2400	2100	9000

Table 6.2 contd…

(Rs. in lakhs)

Sl No	Name of the Proposal	No.of Units propo-sed	Unit Cost	Units Proposed Year-wise					Budget Abstract				
				2008-09	2009-10	2010-11	2011-12	Total	2008-09	2009-10	2010-11	2011-12	Total
9	Dry land Development and Maximizing Crop Productivity	2400 Ha	6000/ Ha	600Ha	600 Ha	600Ha	600 Ha.	2400 Ha.	36	36	36	36	144
10	Precision Farming in Agricultural crops	400 Ha	49.40/ 100 Ha	100 Ha.	100 Ha.	100Ha	100 Ha	400 Ha	49.40	49.40	49.40	49.40	197.6
11	Wastelands Development in 50 Acres Cluster Mode	40 Clusters	14.60 / No.	10 Nos.	10 Nos	10Nos.	10Nos.	40 Nos.	146.0	146.0	146.00	146.0	584.
12	Promotion of Organic Farming and Organic Manure Production Units 48 Vermi compost Production Units + 48 Nos. Municipal Compost Making Units + 48 Nos. Bio-Inputs Production Units	48 + 48 + 48 Nos.	6.75/ Block	12 Block 12 +12 +12	12 Block 12 +12 +12	12 Block 12 +12 +12	12 Block 12 +12 +12	48 Blocks	81.00	81.00	81.00	81.00	324.
13	In-situ Rain Water Harvesting through Farm Ponds Clusters	48clusters.	7.50 / No.	12 Nos	12 Nos	12 Nos	12 Nos	48 Nos	90.00	90.00	90.00	90.00	360.0
14	Distribution of Farm Implements and Hand Tools to Small and marginal farmers and Agricultural labourers	12000 Nos.	0.03 / Farmer	3000 Nos.	3000 Nos	3000 Nos	3000 Nos	12000 Nos	90.00	90.00	90.00	90.00	360.0
15	Establishment of Solar Fencing for Stray animals menace	240 Units	0.25 / Unit	60 Units	60 Units	60 Units	60 Units	240 Units	15.00	15.00	15.00	15.00	60.00

Table 6.2 contd…

(Rs. in lakhs)

Sl No	Name of the Proposal	No.of Units propo-sed	Unit Cost	Units Proposed Year-wise					Budget Abstract				
				2008-09	2009-10	2010-11	2011-12	Total	2008-09	2009-10	2010-11	2011-12	Total
16	Establishment of Prosophis Bio Fuel Units	4 Units	10.00 / Unit	1 No.	1 No.	1 No.	1 No.	20 Unit	10.00	10.00	10.00	10.00	40.00
17	Promotion of Jatropha Bio-Diesel Crops Cultivation	1000 Hec.	0.20/ Hec.	250 Hec.	250 Ha.	250 Ha.	250 Ha.	1000 Hec.	50.00	50.00	50.00	50.00	200.0
18	Establishment of Community Fodder Plots by SHGs / FIGs	100 Units	0.250/ Unit	25Nos	25 Nos.	25Nos.	25Nos.	100 Nos.	6.25	6.25	6.25	6.25	25.00
19	Establishment of Cold Storage Unit for Chillies	2 Nos.	25.00	1 No.	1 No.	-	-	2 Nos.	25.00	25.00	0	0	50.00
20	2 Percent DAP spray for pulses	300 ha	200/ ha	300 / ha	--	--	--	300 ha	0.60	---	---	---	0.60
21	Seed Testing Laboratories	1 No	6.00 Lakhs	1 No	--	--	--	1 No	6.00	--	--	--	6.00
Grand Total									**3199.36**	**3531.53**	**3461.53**	**2971.53**	**13163.95**

6.1.2 Establishment of Seed Testing Laboratory

1. 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 Sivagangai 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 Sivagangai district.

2. 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.

3. 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.

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.

4. 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 Thirunelveli 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 Sivagangai 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.

5. 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 Sivagangai 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 Sivagangai district under National Agricultural Development Programme at a financial outlay of Rs.6.00 lakhs towards provision of laboratory equipments.

6. Activities Prosposed

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.

7. 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 6.3. Cost of Equipments to Establish seed Testing Laboratory

(in Rs.)

Sl. No.	Name of the Instrument / Equipment	Approx. Qty req. for One lab	Approx.cost Per Unit	Aprox. cost for One lab.
1	Weighing Balance-Top Loading	1	5000	5000
2	Illuminated purity Work board	1	4000	4000
3	Electronic Weighing balance (0.1 mg)	1	30000	30000
4	Soil type divider	1	7500	7500
5	Digital moisture meter with stabiliser	1	17500	17500
6	Germination trays	200	175	35000
7	Petri dishes	50	300	15000
8	Thermometer	1	300	300
9	Hygrometer	1	1500	1500
10	Cabinet Germinator (Double door) along with stabliser	1	225000	225000
11	Air Conditioner (split type) along with stabilizer	2	35000	70000
12	Work Table	5	4000	20000
13	Work Chair	4	2500	10000
14	Trolley(Movable)	1	5000	5000
15	Computer with accessories	1	60000	60000
16	Germination Paper (Roll towel) in Kgs	200	165	33000
17	Filter paper (Nos)	50	35	1750
18	Seed Storage Rack	2	6000	12000
19	Telephone Connection with Broad band	1	1250	1250
20	Miscellaneous items			46200
	Total			**600000**

(Rupees Six lakhs only)

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

Operation and Maintenance Cost of the Running Laboratory

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

9. 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 Sivagangai 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.

10. Expected Date of Completion

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

11. Monitoring and Evaluation

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

6.2. Horticulture

Introduction

Vegetables are cultivated in a traditional way which exposes the crop to pest and diseases, resulting in poor growth and low productivity. A protected environment like a net house will ensure production of quality seedlings and pest disease free crops. Provision of permanent pandhal structure for vegetable cultivation, plastic crates for vegetable handling, supply of plant protection equipments, augmentation of water supply for irrigation through borewells, supply of effective microbes to increase nutrient fixation as well as biological plant protection, Mango harvester to avoid damage to fruits during harvest, establishment of sales outlet point, organizing exposure visits and enterprising farmers association, mega demonstration plots, community fencing and support for betelvine are the other interventions proposed under district plan for horticulture at an estimated cost of Rs. 698.06 lakhs for four years from 2008 to 2012.

6. 2.1. Net House Structure

1. Background / Problem Focus

In Sivagangai District Vegetables are being cultivated in nearly 400 Ha. In most cases conventional method of vegetable cultivation is followed by the farmer in raising nursery which lacks use of seeds improved varieties, agronomic practices, adoption of INM and IPM .This results in problems due to Pest and disease incidence and production of poor quality seedlings.

2. Project Rationale

These problems faced by the vegetables cultivators, necessitates creating an environment for protective cultivation of vegetables. Protective structures can be made by providing net use structures to the farming community at subsidized cost. This helps in production of pest and disease free, healthy seedlings.

3. Project Strategy

In this programme it has been planed to promote setting up of net house in selected vegetable tracts in this district. Before implementation, the beneficiaries are selected and exposed to technology of net house usage through organizing training and exposure visit , Over a span of four years it is proposed to cover 70,000 Sq metres of nursery area under net house cultivation to facilitate vegetable cultivation in 700 Ha.

4. Project Goals

- Providing of protective structures against pest of vegetables
- Production of good quality seedlings
- Increasing yield of vegetables
- Increasing income of farmers

5. Project Components

This project consists of component like

- Technical support to the farmers
- Financial assistance through subsidy

6. Project Cost

It is estimated that the total project cost is Rs. 3300/sq meter including erection charges. It is proposed to provide 50per cent subsidy for this component to an extent of 70,000 m or 700 Ha (Planted area)

7. Implementation chart

Selection of vegetable growing tract- & season

↓

Selection of beneficiaries

↓

Training and exposure visit

↓

Erection of Structure

↓

Inspection –evaluation –subsidy release

8. Reporting

The performance of project will be evaluated periodically through field functionaries and report submitted to commissioner of Horticulture as well as to TNAU.

6.2.2 Panthal for Vegetable Production

1. Problem Focus

In Sivagangai district cucurbitaceous vegetables are cultivated in 30 Ha .in different areas in scattered manner. Conventionally farmers are using sticks as supporting structure, but not in an organized manner. So the cultivators may be supplied with supporting structures at subsidized cost to serve as permanent structures which helps in producing good quality cucurbitaceous vegetables.

2. Project Rationale

The problem faced by the cultivators due to lack of permanent panthal structure for growing vegetables necessitated creating environment for supporting cucurbit cultivation Supportive structure helps in increased production of vegetable in both quality and quantity aspects.

3. Project Strategy

In this programme it has been planned to promote erection of panthal in the selected farmers' holdings to the extent of 25 Ha in the period of four years.

4. Project Goal

- Assisting farmers in erection of stone pillars or iron poles. as supporting structure for vegetable cultivation.
- Helping farmer in producing good quality vegetables.
- Assisting farmers to increase their income.

5. Project Component

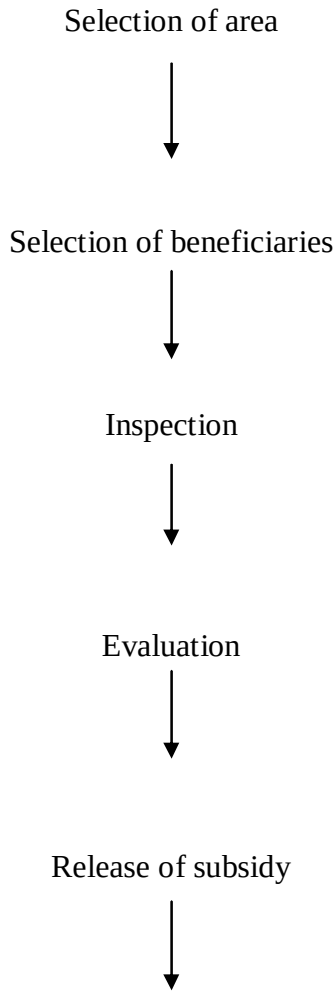
Financial support to farmers in terms of subsidy assistance for erection of Panthal for vegetable cultivation.

6. Project Cost and Financing

It is estimated that the total project cost for erecting Panthal support system will be around 1 lakh / Ha , out of which 50per cent of cost (Rs.50,000)will be provided as subsidy to the farmers.

7. Implementation Chart

This component will be implemented by the functionaries of horticultural dept as follows:



8. Reporting

This process of implementation will be periodically reported to the commissioner of Horticulture in the prescribed format.

6.2.3 Provision of pp Equipments and 6.2.4 Provision of Plastic Crate's for Handling of Vegetables

1. Problem Focus

In Sivagangai District Vegetables are being cultivated in 400 Ha. Different vegetables are infested by different Pests in different stages of their growth period .This reduces the growth and the Productive capacity of the plants which results in reduction of Vegetable production and also reduces the marketability and value of the vegetables: Also quality of vegetables deteriorates while handling and transportation in bulk form.

2. Project Rationale

To overcome pest problem in vegetable cultivation and losses in handling and transport it is essential to supply the farmers with pp equipments and plastic crates at subsidized cost.

3. Project Cost and Financing

In a span of four years it is programmed to supply 800 numbers of PP equipments with financial outlay of 12 lakhs. Similarly 3500 numbars of plastic crates have been proposed to be supplied with a financial outlay of 4.375 lakhs.

4. Project Strategy

Under the component those farmers who need pp equipment and plastic crates for handling vegetables will be identified by the field functionaries and they will be supplied at 50per cent cost.

5. Project Goals

1) Assisting farmers in timely plant protection by providing pp equipments.
2) Helping farmers to overcome pest problem
3) Helping farmers to avoid post harvest losses in transport and handling by providing plastic crates.
4) Increasing the income of farmers by production and marketing of good quality vegetables.

6. Project Component

This project includes components such as

a) Providing pp equipments

b) Supply of plastic crates to the Fruits and the vegetable growers.

7) Implementation Chart

This component will be implemented by the functionaries of horticultural dept in the following steps.

Selection of area

↓

Selection of beneficiaries

↓

Inspection

↓

Evaluation

↓

Release of subsidy

↓

6.2.5 Bore-well with Casing Pipe

1. Problem Focus

In Sivagangai district large area of cultivatable waste lands is available. This district which comes under the white area with abundant ground water. There is much scope for utilizing this ground water for raising horticultural crops. Farmers Irrigate only small holdings through conventional methods with the available Irrigation sources.

2. Project Rationale

To utilize the available land and water resources and to increase the area under fruits and vegetables. It is essential that farmers should be provided with subsidy to drill bore wells with casing pipe.

3 Project Strategies

The potential area (for cultivation of horticultural crops) with abundant groundwater) will be identified and the interested farmer will be selected. The geophysical survey will be carried by agricultural engineering department .Bore well will be dug to suitable depth to give required water yield to irrigate maximum area.

4. Project Goal

1) To increase irrigated area.
2) To increase area under horticulture crops.
3) To increase production of fruits and vegetables.

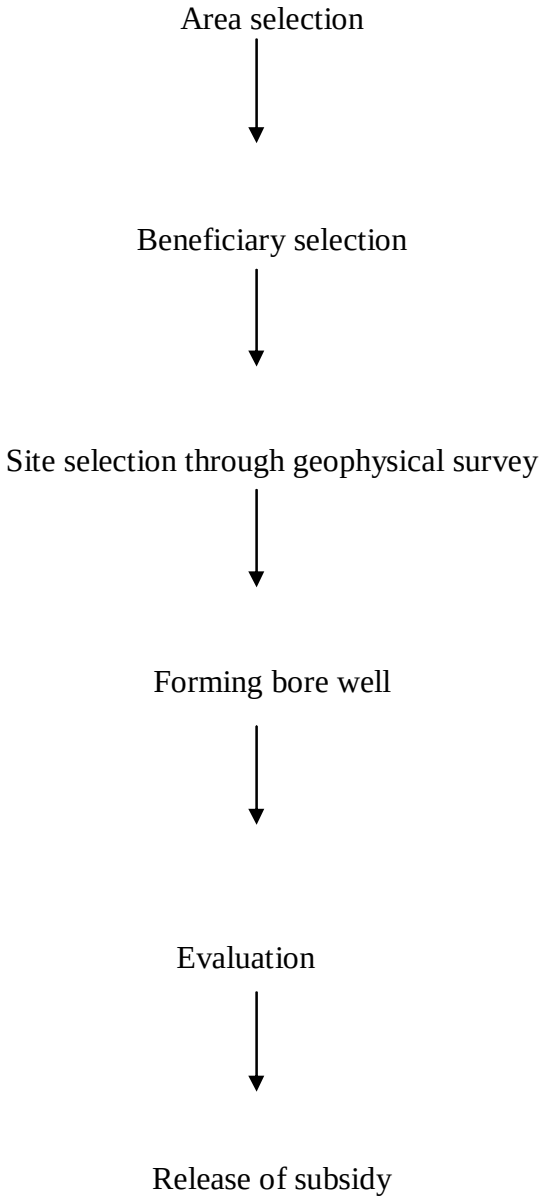
5. Project Component

Financial assistance to farmers to erect bore well with casing pipe on a scientific basis.

6. Project Costing and Financing

It is estimated that the project cost will be Rs 1,50,000 per Ha out of which 50per cent cost is to be provided as subsidy to the maximum of Rs. 75,000/-

7. Implementation Chart



8. Reporting

The progress of implementation will be periodically reported to the Commissioner of Horticulture in the prescribed format.

6.2.6 Distribution of Effective E Microbes

1. Problem Focus / Background

In Sivagangai District Fruit cultivation is around 2500 Ha. In this mango cultivation area will be 1600 Ha. Similarly vegetables are also cultivated in around 400 Ha. But due to economic – condition of the farmer, Fertilizer and PP chemical are not applied as per requirement.

2. Project Rationale

To provide the required materials and also bio control organism, to avoid using inorganic chemicals. The supply of effective microbes to horticulture farmers is considered essential. This will greatly increase the production of vegetables at a lower cost.

3. Project Strategy

It is planned to supply effective microbes at 10 liters per Hectare to vegetable growers to enhance microbial activity to increase nutrient fixation as well as biological plant protection. About 250 Ha of crops is to be benefited in 4 year span.

4. Project Goal

The goal of this component is to reduce the usage of chemical fertilizer and pp chemicals and maintain eco balance in vegetables growing area at a lower cost by using microbes.

5. Project Components

This scheme will be implemented with the following component

a) Selection of area and beneficiary

b) Educating farmer on use of E microbe

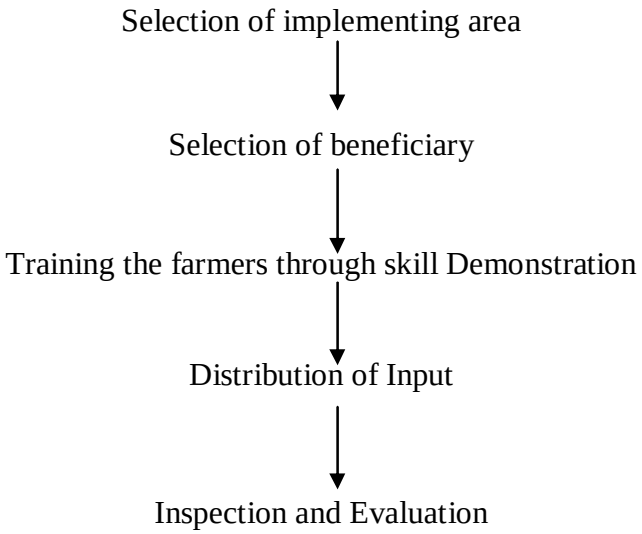
c) Supply of E microbe and application at 50per cent cost.

6. Project Cost and Financing

It is estimated to supply E microbe to an extent of 25 Ha at 10 lit/Ha. Estimated cost is Rs 400/ Lit.

7. Implementation Chart

The department of horticulture will implement as per the implement chart.



8. Reporting

The performance at field level will be periodically observed, evaluated and reports will be submitted to the commissioner of horticulture and to TNAU.

6.2.7 Mango Harvester

1. Background / Problem Focus

In Sivagangai District Mango cultivation occupies a predominant place among the fruit crops covering 1600 ha hitherto labour oriented conventional method is being followed especially in harvesting fruits, which results in damage to the produce and there by causing marketing loss.

2. Project Rationale

It has been planned to provide mango harvester at subsidized rate to the mango growers. This will envisage the harvest of quality fruits without much physical injury which will fetch a better market price. This will also overcome shortage of labour and save time.

3. Project Strategy

Under the component a total no of 350 Harvesters has been planned to be distributed over the project period of 4 year under 50per cent subsidies.

4. Project Goals

1. Harvest of quality fruits thus having better market price.
2. Saving of labour and time there by reduction in cost of cultivation.

5. Project Component

1. Supply of low cost harvester designed for easy handling and operation.
2. Financial assistance through subsidy.

6. Project Cost and Financing

The project cost will be 0.875 lakh for supply of 350 harvesters, the pattern of assistance will be 50per cent.

7. Implementation Chart of Project

The department of horticulture will implement as per the chart

Identification of mango grower on a cluster basis

↓

Selection of beneficiaries

↓

Training farmers / labours to use harvesters

↓

Inspection- Evaluation – Subsidy release

8. Reporting

Periodical reporting on the progress of the project will be submitted to Commissioner of Horticulture, Chennai.

6.2.8 Sales Outlet Point in the District

1. Background / Project Focus

Sivagangai being the District Capital town caters to the needs of thousands of farmers from the suburbs. Good quality seeds of vegetables, greens , planting materials and ornamental plants have a better demand throughout the year in order to meet out the requirement , A creation of sale point in the collectorate complex , nearer to DDH office will help greatly in serving the farming community .

2. Project Rationale

By opening a sale point in collectorate complex. Farmers can be supplied with good quality vegetable seeds and planting materials dovetailed with the on going scheme. This will in turn lead to better area expansion of vegetables and other horticulture crops. Besides, technical information on cultivation strategy will be highlighted to the buyers at the sale point itself.

3. Project Strategy

This project provides a sale counter in a rented building with infrastructure facilities to the tune of 2.6 lakhs which will enable to sell good quality horticultural Inputs at subsidized costs.

4. Project Goal

1) An easy access to farmers for purchase of needy horticulture inputs in proper time and season.
2) Area expansion of horticultural crops which in turn result in more production and income.

5. Project Component

1. Hiring a rented building and provision of infrastructure facilities
2. Sale of horticultural inputs at subsidized cost

6. Project Cost and Financing

The cost of the project is 2.60 lakh over a project period of 4 years. The finance is provided under NADP as a onetime 100per cent subsidy.

8. Implementation Chart

Hiring a rented building

↓

Provision of infrastructure facilities

↓

Sale of horticultural inputs at subsided cost

↓

Inspection and evaluation

8. Reporting

Periodical progress report will be sent on a Fortnightly basis.

8.2.9. Inter State Exposure Visit

1. Background / Problem Focus

The horticultural growers of Sivagangai District are not exposed to modern farming techniques and marketed horticulture. Since they are adopting age old conventional methods, the yield potential and level of income is not competitive enough to raise their standard of living. It is learnt that mango and grape growers of Maharashtra, cashew cultivators of Goa are following update technology and have liaison with global market and get high value for their farm produces. Hence exposing the farmers of Sivagangai District to the fellow farmers of these places will go a long way in changing their attitude and mode of adoption.

2. Project Rationale

Exposure visit will change the mindset since the growers feel the on farm experience and sharing of views with the successful farmers will have definite impact on their attitude.

3. Project Strategy

Elite, innovative and those farmers who are ready to adopt the latest farm techniques of changing scenario will be selected 50 farmers per batch will be taken for a week long exposure visit.

4. Project Goals

1) To change the mindset of the Horticultural growers of Sivagangai District.
2) To make them adopt updated technologies to meet the competitive global market needs.
3) To make them involve in the marketed horticulture.
4) To improve the living standard of farmers.

5. Project Component

The exposure visit module will be charted out that includes selection of fields and farmers of the outer states, batches departing and arrival dates, mode of transport, conveyance, boarding and lodging facilities etc.. , Field functionaries will accompany the farmers to assist in all aspects in this exposure visit.

6. Project Cost and Financing

During the project period, every year 200 farmers will be taken for exposure visit thus a total of 800 farmers will be benefited. Every time a batch of fifty farmers each of 4 batches will be under going exposure visit per year. The assistance will be Rs. 5000 per farmer. Thus a total of 2.50 lacks per batch and an yearly assistance of Rs 10.00 lakhs per 200 farmers. During the project period 40.00 lakhs will be spent.

9. Implementation Chart

Selection of farmers – Batch war

↓

Contact with other state horti Dept/SAU/Institutes.

↓

Preparation of journey chart – batch wise

↓

Starting of first batch and further follow up

8. Reporting

Inferences got read from the exposed farmers will be documented and reported.

6.2.10. Ten Hactre Mega Demonstration plot for Sivagangai District and
6.2.11 Enterprising farmers association
1. Background / Problem focus

In Sivagangai District Fruits and Vegetables are cultivated in scattered manner in different pockets in small areas by small and marginal farmers. These farmers are cultivating local varieties in conventional methods without adopting advanced technologies and they are getting only less yield and low remuneration. Also the cultivation is going on is an unorganized manner, which faces difficulties in mechanization and marketing.

2. Project Rationale

Fruits and vegetable growers are to be organized to layout mega Demonstration involving latest technologies to serve as a model plot for Horticulturists of Sivaganga District. Farmers are organized into group to form associations, will be registered under

society's act 27 of, 1975, to give them legal status. These associations will be provided with latest equipments such as tractor mounted sprayers, or pp equipments which increases production and remuneration.

3. Project Goals

The goals of this component are

1) Organizing small and marginal farmers to lay out Demo plot in a particular crop adopting all technologies.

2) Distribution of Necessary machineries and equipments to farmers association to equip their farming and marketing activities.

4. Project Component

This Scheme will be implemented with the following components.

1) Location of area for laying out demonstration and selection of beneficiaries

2) Providing necessary equipments to farmers association.

5. Project Cost and Financing

It is estimated that the demonstration plot will be laid at a total cost of Rs.25 Lakhs for 10 Ha. In this manner 4 demonstration plot will be laid in a span of 4 years including all the latest technologies covering most of the horticultural crops.

Similarly 4 farmers association will be empowered with farm equipments and machineries to the tune of Rs.25 Lakhs per year per association.

6. Implementation Chart

Selection of area

↓

Selection of beneficiary

↓

Implementing scheme components

↓

Observation and evaluation

7. Reporting

The scheme performance will be periodically evaluated and improvements and performance will be reported to commissioner of Horticulture and TNAU

6.2.12 Community Fencing

1. Background /Problem Focus

The Horticultural growers of Sivaganga District are economically weaker and unable to invest in erecting a protective fencing for their crops, As such, this condition has led to insecurity. The loss of seedling and produce is a continuous misery being faced by them at present. Since, individual farmers cannot layout such fence, a community based fencing covering a group of small and needy farmers will help a long way in protecting their seedlings and produce

2. Project Rationale

By erecting community fencing involving a group of farmers, safety and security will be ensured thus making the growers to follow the latest technologies as per the departmental guidance. Moreover such compact areas will also enable to undertake mechanization thus reducing drudgery in cultivation.

3. Project Strategy

Under this component Horticultural potential areas and farmers will be identified for provision of community fencing of their lands. Stone pillars with barbed wires are proposed to be utilized for laying out these fencing.

4. Project Goal

1) To create safety and security of the farmers lands involved in this project
2) To intensity the technology adoption thereby getting a potential yield and good economic returns.
3) To make the farmers adopt market oriented Horticulture.

5. Project Component

A group of small needy farmers having potential Horticultural lands will be selected and provision of fencing materials at 50per cent cost including erection will be made.

6. Project Cost and Financing

The Cost of the project is estimated to be Rs.1.0 Lakh/hec .Out of this 50per cent subsidy or Rs.50, 000/- to be provided per hectare. In this manner it is planned to cover 125 Hec over a span of 4 years. The total cost will be 62.50 lakhs.

7. Implementation Chart

Selection of area
↓
Selection of beneficiaries
↓
Procurement of fencing materials
↓
Erection of fencing
↓
Release of Subsidy

8. Reporting

The Progress under this component will be reported periodically to the commissioner of Horticulture and also to TNAU

6.2.13 Support for Betelvine

In Sivagangai district betel vine crop is cultivated in an area of 40 ha. Previously the crop was cultivated in an area of around 200 ha. Due to the higher cost of cultivation of betelvine crop than other horticultural crops, the betelvine area has been reduced for the past 5 years. Moreover these are cultivated by small and marginal farmers on tenant basis and are below poverty level. The objective is to render support for betelvine area expansion and upliftment of the economic life of farmers

1. Budget

New planting of betelvine crop costs Rs.40000/unit of 20 cents. Every year 4.0 ha will be selected new planting of betelvine crop and subsidy given to those farmers.

Sl. No	Scheme	2008-09		2009-10		2010-11		2011-12		Total	
		P	F	P	F	P	F	P	F	P	F
1	Betelvine new area culti-vation	4.0	20.0	4.0	20.0	4.0	20.0	4.0	20.0	16.0	80.0
2	50 perent Subsidy	--	--	--	--	--	--	--	--	16.0	40.00

P. Area in ha F. Rs. in lakhs

After cultivating the area the farmers can avail back ended subsidy. Every year 4.0 ha can be increased and the cost will be Rs.20.0 lakhs per year.

For four years 16.0 ha can be increased at a total cost of 80.0 lakhs, for which 50per centsubsidy of Rs.40.0 lakhs is to be provided by NADP.

SI.No	Cultural Activities	Betelvine (Rs)
1.	Ploughing	11250
2.	Farming beds and channels	8750
3.	Cost of plants/seeds/Nursery	25000
4.	Planting	5000
5.	Basal fertilizers	6000
6.	Top dressing fertilizers	20000
7.	Farm yard manure	26000
8.	Seed/Plant treatment	2000

SI.No	Cultural Activities	Betelvine (Rs)
9.	Spraying/dusting	36000
10.	Earthing up	20000
11.	Irrigation/Drainage	20000
12.	Harvest	26000
	Total cost of cultivation Rs.	206000

The cost of cultivation of betel vine crop is Rs.2.0 lakhs/acre. It is proposed to give the subsidy as back ended

2. Project Cost and Financing

The cost of cultivation of betel vine crop for 1 acre is Rs.2.0 lakhs. For this project cost for 20 cents is Rs.40000.The cost of 50per cent subsidy is Rs.20000/20 cents. The new area cultivation for one year to be adopted is 4.0 ha. For this project cost Rs. 20.0 lakhs. The 50 percent subsidy is Rs.10.0 lakhs/year. For four years the new planting area to be selected is 16.0 ha. The total project cost is Rs.80.0 lakhs. The 50 percent subsidy will be provided by NADP. The farmers can avail the subsidy as back ended.

3. Background / Problem Focus

In betel vine crop the wilt disease is a major problem. This affects the growth of the vine and the quality of betel leaves. It causes heavy economic losses to the farmers. Integrated pest and disease management can be effective for the control of pest and diseases. Most of the farmers are cultivating in the leased lands. By way of providing 50per cent subsidy for new area expansion the betel vine cultivation can be promoted.

4. Project Rationale

To encourage the farmers for bringing new area under betelvine cultivation by giving 50 percent subsidy, since the high cost of cultivation is the main reason for reduction in area under betel vine cultivation.

5. Project Strategy

The betel vine area will be increased by offering 50per cent subsidy for bringing new area under betelvine cultivation. Through demonstrations and technical advice to the farmers the production will be increased. And quality leaves improved so that for the produce they can get better price.

6. Project Goals

For this project the area of betel vine crop should be increased. The production and productivity should be increased by the technical advice given to the farmers.

7. Chart of the Project

The farmers will be selected by Horticultural officers with the assistance of Assistant Agricultural officers.(Horticulture)Assistant Director of Horticulture will monitor the project and guide the staff. The District Officer, Deputy Director of Horticulture will inspect the area and review the project.

8. Reporting

The Assistant Director of Horticulture will review the block level staff every week. The Horticultural Officers will inspect and report to the Assistant Directors of Horticulture. The Deputy Director of Horticulture will review the performance of staff once in 15 days. The Commissioner of Horticulture will review the District Officers performance once in a month.

Table 6.4 Proposed Activities and Budget Proposal for Horticulture

Requirement of Subsidy **(Rs.in Lakhs)**

S.No	Activities	Unit Cost	2008-09		2009-10		2010-2011		2011-12	
1	Net House structure									
	a. Nursery and Vegetable Production	Rs.1.00 lakh/300 M^2	10000 m^2	16.67	15000 m^2	24.98	20000 m^2	33.33	25000	41.63
2	Pandal for vegetable production	Rs.1.00 lakh/ha	5	2.5	5	2.5	5	2.5	10	5.0
3	Equipments for plant protection	Rs.3,000/No	200	3.0	200	3.0	200	3.0	200	3.0
4	plastic crates for vegetable handling and transport	Rs.250/Crate	500	0.625	1000	1.25	1000	1.25	1000	1.25
5	Bore well with casing pipe	Rs.1.5 Lakh	50	37.5	50	37.5	100	75	100	75
6	Humic acid/Effective E Microbes	Rs.400/litre	50lit	1.0	50lit	1.0	50lit	1.0	100	2.0
7	Mango harvester	Rs.500/No	50	0.125	100	0.25	100	0.25	100	0.25
8	Sales outlet points in districts (Rent and infrastructure)	Rs.2.60 lakh/No.	1	2.60	-	-	-	-	-	-
9	District Level Farmers Workshop	Rs.400/farmer/ day	1	0.40	1	0.40	1	0.40	1	0.40
10	Inter State Exposure visit (5days)	Rs.5,000/farm er	1	10.0	1	10.0	1	10.0	1	10.0
11	10 hectare mega demo plot for the districts.	Rs.25.00 lakhs each	1	25.0	1	25.0	1	25.0	1	25.0
12	Enterprising farmers associations	Rs.25.00 lakhs each	1	25.0	1	25.0	1	25.0	-	-
13	Community fencing	Rs.1lakhs Ha 150/Running m	20	10	25	12.5	30	15.0	50	25.0
14	Support for betel vine	Rs.40,000 for 20 cents	4ha	10.0	4	10.0	4	10.0	4	10.0
	Total			**144.42**		**153.38**		**201.73**		**198.53**

Grand Total for 4 years **Rs.698.06 Lakhs** (Excluding Precision farming)

Table 6.5 Year-wise Budget Requirement for Horticulture

(in Rs. Lakhs)

Sl.No	Year	Requirement of funds (excluding precision farming)	Remarks
1	2008-09	144.02	This Budget doesn't include precision farming component. For precision farming component the proposal is being formulated by TNAU.
2	2009-10	153.38	
3	2010-11	201.73	
4	2011-12	198.53	
	Total	**698.06**	

6.3 Animal Husbandry

The details of various components under Animal Husbandry including dairy development and training components to be handled by TANUVAS at a total budget estimate of Rs.1014.002 lakhs are presented in this chapter.

6.3.1 Feed and Fodder Development

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

1. Fodder production by Self Help Groups

Acute shortage of green fodder is one of the major factors limiting dairy development in Sivagangai District. Hence, to augment the availability of green fodder, intensive fodder production will be taken up by the Department of Animal Husbandry, Sivagangai covering a total area of 480 acres a the rate of 10 aces per block per year in all the 12 bocks of the district for a total period of 4 years through self help groups and women entrepreneurs at a total cost of 112.80 lakhs.

2. Popularizing Mineral Mixture

Quality mineral mixture containing all the essential macro and micro nutrients will be supplied to the dairy cows through the Department of Animal Husbandry, Sivagangai to the small dairy farmers at the rate of Rs.600 per cow per year (one Kg per animal per month; 12.0 Kg for one year @ Rs. 50 per Kg) for 2000 farmers per year for four years. A total of 8000 cross bred milch cows will be supplemented with mineral mixture at a total cost of Rs. 48 lakhs.

3. Crossbred Heifer Calves Nutrition Programme

Crossbred heifer calves between the age group of 6 month and one year will be supplemented with concentrated mixture, mineral mixture and heath cover. The concentrate mixture will be provided @ 1.0 Kg per animal for one year. Each calf identified will also be supplemented with mineral mixture 10 pockets of 50 Kg each per year. All the calves will be identified by tagging and will also be dewormed and vaccinated. For all these, the total cost works out to Rs. 5011 per calf per year. 100 calves will be covered each year for a period of 4 years. In total 400 heifer calves will be covered with the total cost of Rs. 20.44 lakhs. This programme will be implemented by the Department of Animal Husbandry, Sivagangai District.

4. Supply of Mineral Mixture at Subsidized Rate

The Aavin, Karaikudi will supply mineral mixture to the milch animals of the society members at subsidized cost (50 per cent) @ Rs. 500 per cow for 18 Kg per year per cow. A total number of 2000 animals will be benefited at a total cost of Rs. 10 lakhs.

5. Supply of Bypass Protein Feed to Milch Animals

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

II. Budget Cost

(Rs. in lakhs)

1	Augmenting fodder production (CO 3) through SHGs / Women entrepreneurs. Rs. 0.235 lakhs per acre. 10 acres per block per year, 12 blocks for four years. 480 acres in total (DAH)	:	112.80
2	Popularizing mineral mixture to improve livestock production @ Rs.600 per cow per year for 2000 cows for four years Total 8000 cows (DAH)	:	48.0

3	Crossbred heifer calves nutrition programme @ Rs.5110 per calf 100 calves per year. Total for 400 calves (DAH)	:	20.44
4	Supply of mineral mixture to milch animals at subsidized cost @ Rs.500 per cow, 500 cows per year for 2000 cows in four years (DAH)	:	10.00
5	Supply of bypass protein feed to milch animals @ Rs.3300 per cow 150 cows per year, for 600 cows four years	:	19.80
	Total	**:**	**211.04**

III. Background / Problem focus:

With shrinkage of pastureland, rapid urbanization and conversion of agricultural lands to other purposes, Sivagangai District is facing acute shortage of green fodder. At present Sivagangai District having 59.9 per cent deficit in dry fodder and 95.6 per cent deficit in green fodder. Due to lack of awareness, most of the farmers in Sivagangai District do not supplement mineral mixture in feeding of milch animals. Mineral mixture supplementation will help in improving the milk quality and quantity and also it will reduce infertility problems in dairy cows. Poor dairy farmers whose only concern is the milk producing cow, could not afford quality concentrate feed and proper health care for their heifer calves. As a result, heifer calves become stunted leading to delayed maturity and associated fertility problems. Hence, the dairy farmers have to be encouraged to rear their heifer calves on scientific lines by providing them with quality concentrate feed and the necessary health cover. By pass protein feeding is a newer technology in dairy nutrition. It enhances milk production and productivity in dairy cows. Conventional feeding although is cheaper, it does not provide a complete feed to the dairy cows leading to nutritional deficiencies and decreased production and productivity.

IV. Project Rationale

There is an acute shortage of fodder and the farmers find difficult to maintain high yielding dairy cows owing to huge demand for green and dry fodder. Hence, intensive fodder production activity has to be taken up to meet this heavy demand.

Supplementation of mineral mixture and bypass protein leads to dairy cows is seldom practiced by dairy farmers and hence, farmers have to be sensitized through supply of mineral mixture and by pass protein to their cows at subsidized prices. In order to ensure proper growth of heifer claves so that they can attain sexual maturity at an early age farmers has to be encouraged to rear their heifer calves on modern scientific lines by providing them with concentrate feed, mineral mixture and quality health care.

V. Project Strategy

1. Self Help Groups and interested women entrepreneurs will be selected from each block. Augmentation in quality and quantity of fodder from common property resources through group approach is proposed. Fodder slips will be procured from Chettinad Livestock Farm and members who have water source alone will be selected. 10 acres of CO-3 fodder will be produced per block involving the SHGs and interested women entrepreneurs. They will be supplied with all inputs for fodder production. Training on scientific fodder production will be given to the SHGs @ Rs.0.035 Lakh/SHG. Inputs for fodder production will be provided @ Rs.0.20 Lakhs/acre. A total number of 12 Groups will be involved in fodder production in all the 12 blocks @ 10 acres/block/year for a period of 4 years. The project will be implemented by the Department of Animal Husbandry, Sivagangai.
2. There are 12 blocks in the district with a total cross-bred cattle population of about 80,561. Infertility is the major problem and deficiency of minerals in the feed of cattle is common since most of the farmers do not provide a complete feed to their cows. Hence supply of 40 grams of mineral mixture per cow per day for one year will largely help to augment milk production and to improve the fertility rate in the cows. The cost of a kg of mineral mixture is Rs.50/- and is sufficient to feed a cow for one month. A total of Rs.600/- is necessary to provide 40 grams of mineral mixture per day per cow for one year. A total of 8000 cows will be supplied with mineral mixture. This project will be taken up by the Department of Animal Husbandry, Sivagangai. Mineral mixture will also be supplied to the

milch animals of the members of the society at subsidized cost (50per cent), @ 18 kg/year/cow @ Rs.500/cow/year. A total number of 2000 cows will be benefited at a total cost of Rs. 10.00 Lakhs.

3. Concentrate feed, mineral mixture and health care will be provided to 100 selected heifer calves each year @ Rs.5110 per calf. A total of 400 heifer calves will be covered at a total cost of Rs. 20.44 lakhs.
4. The Aavin, Karaikudi will supply bypass protein feed to the milck animals of the members of the society (360 Kg per animal per year) for 600 cows @ 50 per cent subsidy of Rs. 9.0 per Kg. The total cost will be Rs. 19.8 lakhs.

VI. Project Goals

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

VII. Project Component

1. Fodder production – 480 acres
2. Supply of minral mixtrure to 10000 cows (8000 cows - DAH and 2000 cows - DDD)
3. Crossbred heifer calves nutrition programme to cover 400 heifer calves.
4. Supply of bypass protein feed to 600 milch cows

VIII. Project Cost and Financing

1. Fodder Production

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

A. Fodder Production by the Department of Animal Husbandry, Sivagangai District

Rs. 0.235 Lakhs/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 fym 10 mt. @ Rs.300/mt.	:	3,000.00
3.b)	Labour cost for transportation and application, loading and unloading	:	1,000.00
4.a)	Cost of slips 16,000 numbers @ Rs.0.25 /slip	:	4,000.00
4.b)	Planting cost	:	840.00
5.a)	Cost of chemical fertilizers N 150 Kg @ Rs.5.48/kg – 822.00 P 50 Kg @ Rs.10.88/kg – 544.00 K 40 Kg @ Rs.3.85/Kg - 154.00	:	1,520.00

5. b)	Cost of labour for application	:	200.00
6.	After cultivation weeding	:	840.00
7.	Cleaning the channels	:	500.00
8.	Irrigation charges	:	800.00
9.	Harvesting charges and transportation	:	1,600.00
10.	Miscellaneous expenses	:	800.00
	Total Cost Required Per Acre	:	20,000.00
	Financial Requirement Per Self Help Group		
1.	Cost of training per SHG	:	0.035
2.	Cost of fodder cultivation	:	0.20
	Total Requirement per SHG	:	0.235
	Total requirement for 12 blocks with 12 SHG @ 10 Acres /Block/year for 4 years, 480 acres totally	**:**	**112.80**

B. Mineral Mixture Supplementation and Supply of Rumen Bypass Protein to Milch animals

1	Supply of mineral mixture to dairy cows @ Rs.600 per cow per year for 8000 cows (DAH)	Rs. 48.00 lakhs.
2	Supply of mineral mixture to members of milk society at subsidized cost (50 per cent) @ 18.0 Kg per year per cow @ 500 cows per year for a total of 2000 cows in four years (DDD)	Rs.10.00 lakhs

C. Heifercalves Nutrition Programme

1. Cost of concentrate feed @ 1.0 Kg per animal per day @ Rs.12.0 per Kg for one year Rs. 4380.00
2. Cost of mineral supplementation @ 10 Kg per animal per year @ Rs. 50 per Kg Rs. 500.00
3. Identification of calves @ Rs.50.0 per calf
4. Deworming and vaccination cost @ Rs, 50.00 per calf
5. Miscellaneous expenditure @Rs.130 per calf Unit cost 5110x400 units (DAH) Rs.20.44 lakhs.

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

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

IX. Implementation Chart of the Project

Activity	2008-2009	2009-2010	2010-2011	2011-2012
Augmentation of fodder production (CO-3) through SHG/women entrepreneurs, Rs. 0.235 Lakhs/acre, 10 acres/block/year, 12 blocks, for 4 years, 480 acres totally (DAH)	120acres	120acres	120acres	120acres
Supply of mineral mixture to dairy cows @ Rs.600/cow/year, for 8,000 cows (DAH)	2000 cows	2000 cows	2000 cows	2000 cows
Supply of mineral mixture at 50 per cent subsidy @ Rs. 500/- for 18 kg (one year supply) for 2000 animals (DDD)	500 cows	500 cows	500 cows	500 cows
Crossbred Heifer calves nutrition programme @ Rs.5110 per calf for 400 calves	100 calves	100 calves	100 calves	100 calves
Supply of by-pass protein feed to the milch animals (360 kg/animal/year) @ 50 per cent subsidy, Rs.9/kg, Rs.3,300/- per animal /year, for 600 cows in a period of 4 years	150 cows	150 cows	150 cows	150 cows

X. Reporting

1. Fodder and fodder seeds and slips production:

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

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

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

3. Crossbred Heifer Calves Nutritional Programme

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

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

1. Abstract

a. Tracking the Breedable Bovines in the District

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

b. Synchronized Breeding of Cattle and Buffaloes

Estrus synchronization will be carried out in 5600 numbers of cattle and buffaloes to increase the conception rate at a total cost of Rs. 39.20 Lakhs @ Rs.700 / animal. The project will be implemented by Aavin, Karaikudi.

c. Establishment of Mobile Veterinary Clinics

Mobile veterinary clinics (6 units) will be established at a total cost of Rs. 34.992 Lakhs @ Rs.5.832 Lakhs/unit under the Department of Animal Husbandry, Sivagangai for provision of health cover facilities in remote areas in the district.

d. Establishment of Mobile Veterinary Diagnostic Laboratory

Mobile veterinary diagnostic laboratory (one unit) will be established at a cost of Rs. 12.00 lakhs under the Department of Animal Husbandry, Sivagangai for collecting samples during disease out breaks and sero monitoring of important livestock diseases.

e. Strengthening of Veterinary Institutions

A total number of 26 veterinary institutions in the district will be strengthened with basic facilities like fencing, provision of bore-wells, water troughs and minor repair works also will be carried out at a total cost of Rs. 130.00 Lakhs @ Rs.5.00 Lakhs / institution. The project will be implemented by the Department of Animal Husbandry, Sivagangai.

f. Control of Parasitic Diseases to Enhance Vaccine Response

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

g. Supply of Stall-fed Goat Units

Goat units (20+1) will be supplied to the self help groups in the district @ Rs.0.42 Lakhs /unit. One unit/block/year, for 4 years, 12 blocks, 48 units totally at a total cost of Rs. 20.16 Lakhs. The project will be implemented by the Department of Animal Husbandry, Sivagangai.

h. Popularizing Backyard Poultry Units

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

I. Health-care for Existing Desi Birds in Back -yard

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

2. Budget: (Rupees in Lakhs)

1.	Tracking the breedable bovine population with an ear tag and a passbook @ Rs.20/- animal, for 100700 animals (DAH and DDD)	:	20.14
2.	Programmed breeding of cattle buffaloes @ Rs.700/animal, for 5600 cows and buffaloes (DDD)	:	39.20
3.	Establishment of mobile veterinary clinics @ Rs.5.832 Lakhs/unit, 6 units totally (DAH)		34.99
4.	Establishment of mobile veterinary diagnostic laboratory @ one unit		12.00
5.	Strengthening of 26 veterinary institutions with basic facilities like fencing, provision of bore-wells, water troughs and minor repair works @ Rs.5.00 Lakhs/unit (DAH)		130.00
6.	Control of parasitic diseases to enhance vaccine response @ Rs.1/- per sheep or goat and Rs.3/- per calf below one year, 4 times /year, Rs. 6.5 Lakhs/year, for 4 years (DAH)		26.0
7.	Supply of stall-fed goat units (20+1) to SHG @ Rs.0.42 Lakhs/unit, one unit/block/year, for 4 years, 12 blocks, 48 units totally		20.16

8.	Popularizing backyard poultry units 10 women per village @ 20 villages per year will be covered. Each selected woman will be provided with one unit of turkey/desi chicken. (one unit comprises of 8 females and 2 male chicks) @ 200 units per year. A total of 8000 units will be provided at a rate of Rs. 500 per unit and the total cost of the project will be Rs. 4.00 lakhs.		4.0
9.	Health care for existing desi birds in back yard: All the back yard poultry in Sivagangai district will be vaccinated against Ranikhet disease to prevent mortality in birds. A total of 50000 birds @ Rs. 1.0 per bird will be covered and the total cost of the project will be Rs. 2.0 lakhs for four years. The project will be implemented by the Department of Animal Husbandry, Sivagangai.		2.0
	Total	**:**	**288.49**

3. Background/ Problem Focus

a. Tracking the Breedable Bovines in the District

It is estimated that the district has a total number of 100700 breedable bovine populations. Tracking the breedable bovines with an ear tag and a passbook will help to follow the animals and will be the first step in the registration of bovines with accurate details about the animal, its health status etc.

b. Synchronized Breeding of Cattle and Buffaloes

Estrus synchronization will be planned in indigenous cattle and buffaloes to increase conception rate. Estrus synchronization will help in overcoming the problem of silent heat in buffaloes and there by improve their fertiltity.

c. Establishment of Mobile Veterinary Clinics

There is a 49per cent shortfall in the number of veterinarians in the district as against the total livestock population. Further, door-to-door timely health cover facilities especially in the remote villages of the district is very essential.

d. Establishment of Mobile Veterinary Diagnostic Laboratory

Establishing mobile veterinary diagnostic laboratory is very much needed especially during disease out breaks for early diagnosis of the disease so that proper control measures could be initiated.

e. Strengthening of Veterinary Institutions

A total number of 26 veterinary institutions in the district are not provided with certain basic facilities like fencing, provision of bore-wells, water troughs and minor repair works need to be carried out.

f. Control of Parasitic Diseases to Enhance Vaccine Response

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

g. Supply of Stall-fed Goat Units

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

h. Popularizing Back-yard Poultry Units

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

i. Health-care for Existing Desi Birds in Back-yard

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

4. Project Rationale

a. Tracking the Breedable Bovines in the District

It is estimated that the district has a total number of 100700 breedable bovine population. Tracking the breedable bovines with an ear tag and a passbook will help to follow the animals and will be the first step in the registration of bovines with accurate details about the animal, its health status etc.

b. Synchronized Breeding of Cattle and Buffaloes

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

c. Establishment of Mobile Veterinary Clinics

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

d. Establishment of Mobile Veterinary Diagnostic Laboratory

The mobile veterinary diagnostic laboratory will periodically collect blood, serum, dung and other samples from different locations of Sivagangai District for disease surveillance. This will help in forecasting the occurrence of major livestock diseases and the severity of parasitic diseases there by help in taking timely control measures.

e. Strengthening of Veterinary Institutions in the District

A total number of 26 veterinary institutions in the district will be strengthened with basic facilities like fencing, provision of bore-wells, water troughs and minor repair works also will be carried out at a total cost of Rs. 130.00 Lakhs @ Rs.5.00 Lakhs / institution.

f. Control of Parasitic Diseases to Enhance Vaccine Response

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

g. Supply of Stall-fed Goat Units to SHG

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

h. Popularizing Back-yard Poultry Units

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

i. Health-care for Existing Desi Birds in Back-yard

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

5. Project Strategy

a. Tracking the Breedable Bovines in the District

It is estimated that the district has a total number of 100700 breedable bovine population. Tracking the breedable bovines with an ear tag and a passbook at a cost of Rs.20/- per animal is proposed. The total outlay is Rs. 20.14 Lakhs.

b. Synchronized Breeding of Cattle and Buffaloes

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

c. Establishment of Mobile Veterinary Clinics

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

d. Establishment of Mobile Veterinary diagnostic Laboratory

The mobile veterinary diagnostic laboratory will periodically collect blood, serum, dung and other samples from different locations of Sivagangai District for disease surveillance. This will help in forecasting the occurrence of major livestock diseases and the severity of parasitic diseases there by help in taking timely control measures.

e. Strengthening of Veterinary Institutions in the District

A total number of 26 veterinary institutions in the district will be strengthened with basic facilities like fencing, provision of bore-wells, water troughs and minor repair works also will be carried out at a total cost of Rs. 130.00 Lakhs @ Rs.5.00 Lakhs / institution.

f. Control of Parasitic Diseases to Enhance Vaccine Response

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

g. Supply of Stall-fed Goat Units to SHG

Supply of stall-fed goat units (20+1) to SHG @ Rs.0.42 Lakhs/unit, one unit/block/year, for 4 years, 12 blocks, 48 units totally.

h. Popularizing Back-yard Poultry Units

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

i. Health-care for Existing Desi Birds in Back-yard

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

6. Project Goals

- Tracing the breedable bovines in the district.
- Estrus synchronization in selected 5600 cattle and buffaloes

- Establishment of 6 mobile veterinary clinics.
- Establishment of one mobile veterinary diagnostic laboratory
- Strengthening of 26 veterinary institutions in the district with basic facilities.
- Control of parasitic diseases in sheep, goats and calves (below one year of age) through deworming to enhance vaccine response.
- To establish 48 stall-fed goat units to promote intensive management of goats.
- Popularizing backyard poultry units to improve the livelihood of rural women
- Providing health care for existing desi birds in back yard

7. Project components

a. Tracking the Breedable Bovines in the District:

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

b. Synchronized Breeding of Cattle and Buffaloes

Estrus synchronization will be carried out in 5600 numbers of cattle and buffaloes at a total cost of Rs. 39.20 Lakhs @ Rs.700/animal. It involves use of hormones, deworming, monitoring etc.

c. Establishment of Mobile Veterinary Clinics

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

d. Establishment of Mobile Veterinary Diagnostic Laboratory

One mobile veterinary diagnostic laboratory will be established at Sivagangai at a cost of Rs. 12.0 lakhs for disease surveillance and monitoring.

e. Strengthening of Veterinary Institutions in the District

A total number of 26 veterinary institutions in the district will be strengthened with basic facilities like fencing, provision of bore-wells, water troughs and minor repair works also will be carried out at a total cost of Rs. 130.00 Lakhs @ Rs.5.00 Lakhs / institution.

f. Control of Parasitic Diseases to Enhance Vaccine Response

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

g. Supply of Stall-fed Goat Units to SHG

Supply of stall-fed goat units (20+1) to SHG @ Rs.0.42 Lakhs/unit, one unit/block/year, for 4 years, 12 blocks, 48 units totally.

h. Popularizing Back-yard Poultry Units

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

I. Health-care for Existing Desi Birds in Back-yard

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

8. Project Cost and Financing

Table 6.6 Project Cost for Genetic Upgradation of Livestock – 2008 to 2012

(in Rs. Lakhs)

Activity	2008-2009	2009-2010	2010-2011	2011-2012	Total Cost
Tracking the breedable bovine population with an ear tag and a passbook @ Rs.20/- animal, for 100700 animals (DAH and DDD)	20.14	-	-	-	20.14
Programmed breeding of cattle buffaloes @ Rs.700/animal, for 5600 cows and buffaloes (DDD)	9.80	9.8	9.8	9.8	39.20
Establishment of mobile veterinary clinics @ Rs.5.832 Lakhs/unit, 6 units totally (DAH)	34.99	-	-	-	34.99
Establishment of mobile veterinary diagnostic laboratory @ one unit	12.0	-	-	-	12.0
Strengthening of 26 veterinary institutions with basic facilities like fencing, provision of bore-wells, water troughs and minor repair works @ Rs.5.00 Lakhs/unit (DAH)	130.0	-	-	-	130.0
Control of parasitic diseases to enhance vaccine response @ Rs.1/- per sheep or goat and Rs.3/- per calf below one year, 4 times /year, Rs. 6.5 Lakhs/year, for 4 years (DAH)	6.5	6.5	6.5	6.5	26.0
Supply of stall-fed goat units (20+1) to SHG @ Rs.0.42 Lakhs/unit, one unit/block/year, for 4 years, 12 blocks, 48 units totally	5.04	5.04	5.04	5.04	20.16
Popularizing backyard poultry units 10 women per village @ 20 villages per year will be covered. Each selected woman will be provided with one unit of turkey/desi chicken. (one unit comprises of 8 females and 2 male chicks) @ 200 units per year. A total of 8000 units will be provided at a rate of Rs. 500 per unit and the total cost of the project will be Rs. 4.00 lakhs.	1.0	1.0	1.0	1.0	4.0
Health care for existing desi birds in backyard	0.5	0.5	0.5	0.5	2.0
Total	**219.97**	**22.84**	**22.84**	**22.84**	**288.49**

9. Implementation Chart of the Project

Activity	2008-2009	2009-2010	2010-2011	2011-2012
Tracking the breedable bovine population with an ear tag and a passbook @ Rs.20/- animal, for 100700 animals (DAH and DDD)	100700 cows	-	-	-
Programmed breeding of cattle buffaloes @ Rs.700/animal, for 5600 cows and buffaloes (DDD)	1400 animals	1400 animals	1400 animals	1400 animals
Establishment of mobile veterinary clinics @ Rs.5.832 Lakhs/unit, 6 units totally (DAH)	6 units	-	-	-
Establishment of mobile veterinary diagnostic laboratory @ one unit	1 unit	-	-	-
Strengthening of 26 veterinary institutions with basic facilities like fencing, provision of bore-wells, water troughs and minor repair works @ Rs.5.00 Lakhs/unit (DAH)	26 units	-	-	-
Control of parasitic diseases to enhance vaccine response @ Rs.1/- per sheep or goat and Rs.3/- per calf below one year, 4 times /year, Rs. 6.5 Lakhs/year, for 4 years (DAH)	-	-	-	-
Supply of stall-fed goat units (20+1) to SHG @ Rs.0.42 Lakhs/unit, one unit/block/year, for 4 years, 12 blocks, 48 units totally	12 units	12 units	12 units	12 units
Popularizing backyard poultry units 10 women per village @ 20 villages per year will be covered. Each selected woman will be provided with one unit of turkey/desi chicken. (one unit comprises of 8 females and 2 male chicks) @ 200 units per year. A total of 8000 units will be provided at a rate of Rs. 500 per unit and the total cost of the project will be Rs. 4.00 lakhs.	200 units	200 units	200 units	200 units
Health care for existing desi birds in backyard	-	-	-	-

10. Reporting

a. Tracking the Breedable Bovines in the District:

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

b. Synchronized Breeding of Cattle and Buffaloes

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

c. Establishment of Mobile Veterinary Clinics

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

d. Establishment of Mobile Veterinary Diagnostic Laboratory

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

e. Strengthening of 26 veterinary institutions with basic facilities like fencing, provision of bore-wells, water troughs and minor repair works

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

f. Control of Parasitic Diseases to Enhance Vaccine Response

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

g. Supply of Stall-fed Goat Units to SHG

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

h. Popularizing Back-yard Poultry Units

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

i. Health-care for Existing Desi Birds in Back-yard

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

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

Abstract

Ten portable milking machines will be supplied to the members of the society at a total cost of Rs.1.8 Lakhs @ Rs.0.18 Lakhs/unit. Provision of milking machines will help to improve the collection and quality of milk. One-bulk milk coolers will be established at Sivagangai block to improve the keeping quality of milk until it is processed. The total cost will be Rs.30.0 Lakhs. Three Khoa manufacturing units (@ Rs.0.77 Lakhs/unit) will be established at a total cost of Rs. 2.31 Lakhs to promote value-addition of milk. A total of 22 numbers of milk weighing machines will be established at milk producers' co-operative societies for accurate weighment of milk at a total cost of 3.74 Lakhs. A total number of 9 PC-based automatic milk collection stations will be established at IDF villages and milk producers' co-operative societies at a total cost of Rs.15.75 Lakhs @ Rs.1.75 Lakhs/unit. A project on energy management system will be implemented at a total cost of Rs.10.0 Lakhs.

Budget

(Rs. in lakhs)

Sl. No.	Particulars	Amount
1.	Supply of portable milking machines to members of the Society @ Rs. 0.18 Lakhs, 10 Units totally (DDD)	1.80
2.	Provision of bulk milk coolers @ Rs.30.0 Lakhs/unit, 1 units (DDD)	30.00
3.	Establishment of three khoa manufacturing units @ Rs. 0.77 Lakhs/unit (DDD)	2.31
4.	Supply of 22 milk weighing machines to milk producers' co-operative societies @ Rs. 0.17 Lakhs/unit (DDD)	3.74
5.	Provision of PC-based automatic milk collection stations to IDF villages and milk producers' co-operative societies @ Rs. 1.75 Lakhs/unit, 9 units (DDD)	15.75
6.	Energy management system (DDD)	10.00
	Total	**63.60**

Background/ Problem Focus

Presently hand-milking is practiced by the farmers. There is shortage of milkmen and problems of mastitis are common in hand milking. Automatic milking machines saves time, labour and prevents the occurrence of mastitis in cows.

Establishment of a bulk milk coolers will help to maintain the quality of milk until it is processed and marketed.

Facilities for the manufacture of value-added milk products like Khoa have to be strengthened to utilize surplus milk during certain seasons. Also this will meet to the demand for this products by the urban population. Electronic weighing balances are to be provided to small societies to weigh milk.

Further, in societies handling more than 500 litres of milk per day, it is essential to establish PC- based automatic milk collection stations.

Energy management system in the main processing plant will save power and will be economical.

Project Rationale

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

Project Strategy

Ten portable milking machines will be supplied to the members of the society at a total cost of Rs.1.8 Lakhs @ Rs.0.18 Lakhs/unit. Provision of milking machines will help to improve the collection and quality of milk. One-bulk milk coolers will be established at Sivagangai block to improve the keeping quality of milk until it is processed. The total cost will be Rs.30.0 Lakhs. Three Khoa manufacturing units (@ Rs.0.77 Lakhs/unit) will be established at a total cost of Rs. 2.31 Lakhs to promote value-addition of milk. A total of 22 numbers of milk weighing machines will be established at milk producers' co-operative societies for accurate weighment of milk at a total cost of 3.74 Lakhs. A total number of 9 PC-based automatic milk collection stations will be established at IDF villages and milk producers' co-operative societies at a total cost of Rs.15.75 Lakhs @ Rs.1.75 Lakhs/unit. A project on energy management system will be implemented at a total cost of Rs.10.0 Lakhs.

Project Goals

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

Project Components

Ten portable milking machines will be supplied to the members of the society at a total cost of Rs.1.8 Lakhs @ Rs.0.18 Lakhs/unit. Provision of milking machines will help to improve the collection and quality of milk. One-bulk milk coolers will be established at Sivagangai block to improve the keeping quality of milk until it is processed. The total

cost will be Rs.30.0 Lakhs. Three Khoa manufacturing units (@ Rs.0.77 Lakhs/unit) will be established at a total cost of Rs. 2.31 Lakhs to promote value-addition of milk. A total of 22 numbers of milk weighing machines will be established at milk producers' co-operative societies for accurate weighment of milk at a total cost of 3.74 Lakhs. A total number of 9 PC-based automatic milk collection stations will be established at IDF villages and milk producers' co-operative societies at a total cost of Rs.15.75 Lakhs @ Rs.1.75 Lakhs/unit. A project on energy management system will be implemented at a total cost of Rs.10.0 Lakhs.

Project Cost and Financing (Rs. in lakhs)

S. No.	Project	2008 -09	2009 -10	2010 -11	2011 -12	Total Cost
1.	Supply of portable milking machines to members of the Society @ Rs. 0.18 Lakhs, 10 Units totally (DDD)	0.72	0.36	0.36	0.36	1.80
2.	Provision of bulk milk coolers @ Rs.30.0 Lakhs/unit, 1 units (DDD)	30.0	-	-	-	30.0
3.	Establishment of three khoa manufacturing units @ Rs. 0.77 Lakhs/unit (DDD)	0.77	0.77	0.77	-	2.31
4.	Supply of 22 milk weighing machines to milk producers' co-operative societies @ Rs. 0.17 Lakhs/unit (DDD)	1.02	1.02	1.02	0.68	3.74
5.	Provision of PC-based automatic milk collection stations to IDF villages and milk producers' co-operative societies @ Rs. 1.75 Lakhs/unit, 9 units (DDD)	5.25	3.5	3.5	3.5	15.75
6.	Energy management system (DDD)	10.0	-	-	-	10.0
	Total	**47.76**	**5.65**	**5.65**	**4.54**	**63.6**

Implementation Chart of the Project

S. No.	Project	2008 -09	2009 -10	2010 -11	2011 -12
1.	Supply of portable milking machines to members of the Society @ Rs. 0.18 Lakhs, 10 Units totally (DDD)	4	2	2	2
2.	Provision of bulk milk coolers @ Rs.30.0 Lakhs/unit, 1 units (DDD)	1	-	-	-
3.	Establishment of three khoa manufacturing units @ Rs. 0.77 Lakhs/unit (DDD)	1	1	1	-
4.	Supply of 22 milk weighing machines to milk producers' co-operative societies @ Rs. 0.17 Lakhs/unit (DDD)	6	6	6	4
5.	Provision of PC-based automatic milk collection stations to IDF villages and milk producers' co-operative societies @ Rs. 1.75 Lakhs/unit, 9 units (DDD)	3	2	2	2
6.	Energy management system (DDD)	1	-	-	-

Reporting

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

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

Abstract

The following training programmes will be conducted by the Krishi Vigyan Kendra, Kundrakudi to the farmers and women SHGs at a total cost of Rs. 10.60 Lakhs:

1. Training programme on livestock farming

Livestock farmers will be provided with skill up gradation training on recent aspects of management of farm animals.

2. Study tour of farmers to livestock and poultry farms and research stations

Interested and progressive livestock farmers will be taken in to livestock and poultry farms and research stations so that they can see improved livestock/ poultry breeds and their management.

The following training programme will be conducted by Aavin, Karaikudi

Farmers Study Tour

Progressive dairy farmers will be taken to commercial dairy farms and milk processing plants.

Orientation Training for Milk Producers

Milk producers will be provided with orientation training at milk societies

Budget

Training Programmes by the Krishi Vigyan Kendra, Kundrakudi, TANUVAS at Sivagangai District.

(Rs. in lakhs)

Activity	2008-2009	2009-2010	2010-2011	2011-2012	Total Cost
1 Training programme on livestock farming	1.65	1.65	1.65	1.65	6.60
2. Study tour of farmers to livestock and poultry farms and research stations	1.0	1.0	1.0	1.0	4.0
Total	**2.65**	**2.65**	**2.65**	**2.65**	**10.6**

Training Programmes by the Aavin, Karaikudi

(Rs. in lakhs)

Activity	2008-2009	2009 -2010	2010-2011	2011-2012	Total Cost
1. Farmers study tour	2.0	2.0	2.0	1.50	7.50
2. Orientation training for milk producers	0.80	0.80	0.80	0.80	3.20
Total	**2.8**	**2.8**	**2.8**	**2.3**	**10.7**
Total Budget for Training	**5.45**	**5.45**	**5.45**	**4.95**	**21.3**

Background/ Problem Focus

The farmers are not aware of the latest technologies available in the areas of livestock farming.

Project Rationale

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

Project Strategy

The Training Programmes will be conducted by the Krishi Vigyan Kendra, Kundrakudi and Aavin, Karaikudi.

Project Goals

Capacity building in the areas of livestock farming, value-addition of milk and meat, sheep and goat rearing and hygienic meat production.

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

Project Components

The following training programmes will be conducted by the Krishi Vigyan Kendra, Kundrakudi to the farmers and women SHGs at a total cost of Rs. 10.60 Lakhs:

Training Programme on Livestock Farming

Livestock farmers will be provided with skill up gradation training on recent aspects of management of farm animals.

Study tour of Farmers to Livestock and Poultry Farms and Research Stations

Interested and progressive livestock farmers will be taken in to livestock and poultry farms and research stations so that they can see improved livestock/ poultry breeds and their management.

The following training programme will be conducted by Aavin, Karaikudi

Farmers Study Tour

Progressive dairy farmers will be taken to commercial dairy farms and milk processing plants.

Orientation Training for Milk Producers

Milk producers will be provided with orientation training at milk societies

Project Cost and Financing

Training Programmes by the TANUVAS, Krishi Vigyan Kendra , Kundrakudi

(Rs. in lakhs)

Activity	2008-2009	2009 -2010	2010-2011	2011-2012	Total Cost
Training programme on livestock farming 20 farmers / batch, Rs. 750/farmer, Rs.15,000 /batch, 44 batches @ 11 batches/year,	1.65	1.65	1.65	1.65	6.60
Study tour of farmers to livestock and poultry farms and research stations @ Rs.2000/farmer, 200 farmers for 4 years / 50 farmers / batch	1.0	1.0	1.0	1.0	4.0
Total	**2.65**	**2.65**	**2.65**	**2.65**	**10.6**

Training Programmes by the Aavin, Karaikudi

(Rs. in lakhs)

Activity	2008-2009	2009 -2010	2010-2011	2011-2012	Total Cost
Farmers study tour @ Rs.5000 per farmer 150 farmers for 4 years (120 farmer for first three years and 30 farmers for fourth year) (DDD)	2.0	2.0	2.0	1.50	7.50
Orientation training/workshop for milk producers' at society level Rs.20,000 per programme, 4 programmes/year, for 4 years	0.80	0.80	0.80	0.80	3.20
Total	**2.8**	**2.8**	**2.8**	**2.3**	**10.7**
Total Budget for Training	**4.65**	**4.65**	**4.65**	**4.15**	**18.1**

Implementation Chart of the Project

Training Programmes by the TANUVAS Centres at Coimbatore and Tiruppur

(No. of Programmes)

Activity	2008-2009	2009 -2010	2010-2011	2011-2012	Total
1. Training programme on livestock farming	11 batches	11 batches	11 batches	11 batches	44 batches
2. Study tour of farmers to livestock and poultry farms and research stations (50 persons per batch)	4 batches	4 batches	4 batches	4 batches	16 batches

Training Programmes by the Aavin, Karaikudi

(No. of Programmes)

Activity	2008-2009	2009 -2010	2010-2011	2011-2012	Total
1. Farmers study tour	40 farmers	40 farmers	40 farmers	30 farmers	150 farmers
2. Orientation training for milk producers	4 batches	4 batches	4 batches	4 batches	16 batches

Reporting

The Head of the Krishi Vigyan Kendra , Kundrakudi and the General Manager, Aavin, Karaikudi will submit the periodical progress report on the training programmes conducted to the higher authorities.

V. Institutional Development

Strengthening the Facilities at TANUVAS, Krishi Vigyan Kendra, Kundrakudi for Effective transfer of technology and extension services in Sivagangai District.

Abstract

The TANUVAS Krishi Vigyan Kendra, Kundrakudi will be strengthened for effective transfer of technology and extension services at a total cost of Rs. 10.00 Lakhs.

Budget

Sl. No.	Particulars	Amount (Rs. in lakhs)
1.	Strengthening of the TANUVAS, Krishi Vigyan Kendra, Kundrakudi with facilities for Transfer of Technology – Training @ Rs.10.00 Lakhs	10.00
	Total	**10.00**

Background/ Problem Focus

The Krishi Vigyan Kendra, Kundrakudi is one of the three Krishi Vigyan Kendras functioning under Tamil Nadu Veterinary and Animal SciencesUniversity, Chennai. The main objectives of this Kendra is to organize training on vocational training, Agriculture, Animal husbandry and allied fields, to conduct On farm testing in crop production, Livestock Production & Horticulture, to carry out front line demonstration on food grains, oil seeds, pulses etc., and to conduct in service training to field level extension functionaries. This Kendra organize On campus, Off campus trainings on Agriculture,

Animal Husbandry, Horticulture, Soil Science and Home science for farmers, Farm women, Rural youth and entrepreneurs. The topic and duration of training programmes are offered based on the needs and request made by the farmers/entrepreneurs meetings. The details about the training programmes are informed to farmers through line department officials, non-governmental organizations, farmer associations, personal letters to farmers and through All India Radio, Madurai. This center organizes Mass Contact Programmes and infertility camp for Livestock's to improve the animal health. This Kendra provides specific information about latest technologies in cultivation of crops, management of livestock, prevention and control of diseases in livestock etc., to farmers through radio and news paper. This center also offers advice and suggestions to farmers through farm visits, personal letters and telephone calls etc. More over, this Kendra also provides project reports on agricultural and allied enterprises for the entrepreneur. Strengthening Krishi Vigyan Kendra with facilities like LCD, Lap Top computers and other ICT devices will help the scientists for effective conduct of training programmes and extension activites in this district.

Project Rationale

The Krishi Vigyan Kendra, Kundrakudi is one of the three Krishi Vigyan Kendras functioning under Tamil Nadu Veterinary and Animal Sciences University, Chennai. The main objectives of this Kendra is to organize training on vocational training, Agriculture, Animal husbandry and allied fields, to conduct On farm testing in crop production, Livestock Production & Horticulture, to carry out front line demonstration on food grains, oil seeds, pulses etc., and to conduct in service training to field level extension functionaries. This Kendra organize On campus, Off campus trainings on Agriculture, Animal Husbandry, Horticulture, Soil Science and Home science for farmers, Farm women, Rural youth and entrepreneurs. Strengthening Krishi Vigyan Kendra with facilities like LCD, Lap Top computers and other ICT devices will help the scientists for effective conduct of training programmes and extension activities in this district.

Project Strategy

The Krishi Vigyan Kendra, Kundrakudi will be strengthened with provision of information and communication technology devices and audio-visual aids at a total cost of Rs.10.00 Lakhs.

Project Goals

To strengthen the Krishi Vigyan Kendra, Kundrakudi of Tamil Nadu Veterinary and Anuimal Sciences University with latest information and communication technology devices and audio-visual aids for effective transfer of technology and extension activities in the district.

Project Components

The Krishi Vigyan Kendra, Kundrakudi will be strengthened with provision of information and communication technology devices and audio-visual aids at a total cost of Rs.10.00 Lakhs.

Project Cost and Financing

S. No	Scheme Component	Unit cost	No of Units /year	2008-09	2009-10	2010-11	2011-12	Total units	Total cost
1	Strengthening of TANUVAS centre with facilities for transfer of technology - Training								
	1. Van	7.50	1	7.50				1	7.50
	2. LCD projector with laptop computer	1.35	1	1.35	-	-	-	1	1.35
	3. P.A. system	0.25	1	0.25	-	-	-	1	0.25
	4. Digital video camera	0.25	1	0.25	-	-	-	1	0.25
	5. Generator	0.50	1	0.50	-	-	-	1	0.50
	6. Charts & displays	0.15	1	0.15	-	-	-	1	0.15
	Total	**10.00**		**10.00**	-	-	-		**10.00**

Implementation Chart of the Project

Activity	2008-2009	2009-2010	2010-2011	2011-2012
Strengthening of the TANUVAS, Krishi Vigyan Kendra, Kundrakudi	Purchase of ICT devices and AV aids	-	-	-

Reporting

Strengthening of TANUVAS, Krishi Vigyan Kendra, Kundrakudi:

The Programme Co ordinator, Krishi Vigyan Kendra, Kundrakudi will implement the project and the progress of the project will be submitted to the Tamil Nadu Veterinary and Animal Sciences University, Chennai.

VI. Improvement of District Livestock Farm, Chettinad

Name of the Farm : District Livestock Farm, Chettinad

Total Area : 1907. 32 acres

Land Utilization

Sl.No.	Detail	Present Acres	Proposed acres
1.	Area Under roads and buildings including all animal sheds	120.00	120.00
2.	Air strip	42.00	42.00
3.	Fodder cultivation under irrigation	120.00	120.00
4.	Area under social forestry	200.32	200.32
5.	Sylvipasture area under part II scheme	125.00	125.00
6.	Area under IAMWARM project	100.00	100.00
7.	Unutilized barren land used for grazing	1200.00	
	For irrigated fodder cultivation		150.00
	For revamping grazing land		750.00
	To be allotted to TNAU		300.00
	Total	**1907.32**	**1907.32**

Livestock

Sl.No	Present stock (Adult)		Proposed (Adult)	
	Species / Breed	**Total No.**	**Species / Breed**	**Total No.**
1.	Tharparkar	72	16 males to be culled 60 cows to be purchased	116
2.	Jersery cross bred	171	102 to be culled 50 new cows purchased	119
3.	HJ crossbreds	150 + 1	To be culled	
4.	Kilakarisal sheep	123 – A 95-Y	To be transferred to DLF Abishegapatti 00 ramnad white ewes + rams to be purchased	500
5.	Jamunapari goat	6 + 20	80 Does + 3 Bucks to be purchased	109
6.	Large white Yorkshire pigs	2 + 22	50 sows + 6 boars to be added	80

Justification

- Existing stock of Tharparkar will be strengthened by out sourcing of 60 animals from native tract to local demand
- Jersey crossbred will be reduced with fresh additions to revamp production and maintain an elite herd
- HF crossbreeds will be totally removed owing to poor performance
- Kilakaraisal sheep will be maintained as nucleus stock at DLF Abishekapatti.
- Ramnad white sheep, popular in this tract will be introduced to meet local demand
- Existing stock of Jamunapari will be strengthened by purchase of animals from native tract to prevent inbreeding and improve performance.
- Piggery unit will be strengthened to meet the local demand for LWY piglets
- 900 acres of utilized land will be brought under fodder cultivation and grazing land development to meet the bio-mass need of farm livestock and to supply seed and slips to needy farmers

Total Budget Outlay : Rs. 419.57 Lakhs

A. Livestock Component

(Rs. in lakhs)

Particulars	Amount
Non-Recurring Cost	
Construction of 10 sheep sheds(100x20') and 5 pig sheds(40x22.5')	60.25
Purchase of 110 cows ,510 sheep,83 goats,56 pigs	24.07
Cost for chain link fencing for 21 km	100
Erection of 2 borewells with motors	10
Total Non-Recurring Cost	**194.32**
Recurring Cost	
i. Feed and Medicine	0.7
ii. Animal maintenance	3.65
Total Recurring Cost	**4.35**
Grand Total	**198.67**

B. Fodder Development

(Rs. in lakhs)

Particulars	
Area proposed for fodder cultivation	150 acres
Development of existing grazing land	750 acres
Non-Recurring Cost	
Establishment of fodder plot(irrigated) @ Rs.0.60 lakh per acre for 150 acres	90.90
Improvement of grazing lands @ Rs.5335 per acre for 750 acres(including land development and seed cost)	40.00
Erection of borewells 8 nos @ Rs.5.00 lakh per borewell including pumpsets and electrical accessories cost	40.00
Transformer installation	40.00
Total Non-Recurring cost	**210.90**
Recurring Cost	
Maintenance of fodder crops	5.00
Electricity charges	5.00
Total Recurring cost	**10.00**
Grand Total	**220.90**

Anticipated Benefits

- About 400 lambs of Ramnad white will be produced every year after reaching full strength in breeder population; 200 ram lambs per year will be sold to farmers to upgrade their stock
- About 700 piglets will be produced and sold to public and interested farmers
- 70-80 Jamunapari kids will be produced every year and quality bucks will be supplied to breeder / farmers to upgrade their local stock
- Fodder seeds and slips will be supplied to farmers for propagation
- Farm will serve as model unit to demonstrate sheep and goat farming and piggery apart from serving as model dairy unit to the farming community
- Boost the income of sheep farmers and pig farmers in surrounding areas

Table 6.7 Proposed Activities and Budget for Animal Husbandry – 2008 to 2012

(Rs. in lakhs)

Sl. No.	Project Title	Unit Cost	2008-2009		2009-10		2010-11		2011-12		Grand Total	
			Units	Cost	Units	Cost	Units	Cost	Units	Cost	Total Units	Total Cost
	Cattle & Buffalo											
1	Fodder production by SHGs @ 10 acre/Bl/yr total 12 blocks (DAH)	0.235	120	28.2	120	28.2	120	28.2	120	28.2	480	112.80
2	Identification and traceability of breedable bovine population (DAH)	0.0002	100700	20.14	0	0.0	0	0.0	0	0.0	100700	20.14
3	Mobile veterinary clinics @ 1/TK (DAH)	5.832	6	34.99	0	0.0	0	0.0	0	0.0	6	34.99
4	Control of parasitic diseases through treatment to enhance vaccine response (DAH)			6.5	0	6.5	0	6.5	0	6.5	0	26.00
5	Mobile veterinary diagnostic laboratory (DAH)	12	1	12.0	0	0.0	0	0.0	0	0.0	1	12.00
6	Popularizing mineral mixture to improve livestock production (DAH) @ 1.0 kg/month for one year	0.006	2000	12.0	2000	12.0	2000	12.0	2000	12.0	8000	48.00
7	Crossbred heifer calves nutrition programme (DAH)	0.0511	100	5.11	100	5.11	100	5.11	100	5.11	400	20.44

Table 6.7 Contd…

(Rs. in lakhs)

Sl. No.	Project Title	Unit Cost	2008-2009		2009-10		2010-11		2011-12		Grand Total	
			Units	Cost	Units	Cost	Units	Cost	Units	Cost	Total Units	Total Cost
	Sheep and Goat											
1	Semi intensive sheep/goat farming to improve meat production by SHG/tribes @ 1/Bl (DAH)	0.42	12	5.04	12	5.04	12	5.04	12	5.04	48	20.16
	Poultry											
1	Popularizing backyard poultry units (DAH)	0.005	200	1.0	200	1.0	200	1.0	200	1.0	800	4.00
2	Health care for existing desi birds in backyard (DAH)	0.00001	50000	0.5								0.50
	Others											
1	Renovation of existing VDs (DAH)	5	26	130.0	0	0.0	0	0.0	0	0.0	26	130.00
2	Improvement of District Livestock Farm Livestock component (Chettinad) (DAH)			198.67	0	0.0	0	0.0	0	0.0	0	198.67
3	Improvement of District Livestock Farm Fodder component (Chettinad) (DAH)			220.9	0	0.0	0	0.0	0	0.0	0	220.90
	DAH-Total			**675.05**		**57.85**		**57.85**		**57.85**		**848.60**
1	Programmed breeding indigenous cattle & buffalo to increase conception rate (DDD)	0.007	1400	9.80	1400	9.8	1400	9.8	1400	9.8	5600	39.20

Table 6.7 Contd…

(Rs. in lakhs)

Sl. No.	Project Title	Unit Cost	2008-2009		2009-10		2010-11		2011-12		Grand Total	
			Units	Cost	Units	Cost	Units	Cost	Units	Cost	Total Units	Total Cost
2	Supply of mineral mixture to the milch animals at subsidised cost (50percent) @ 18 kg/ year (DDD)	0.005	500	2.50	500	2.5	500	2.5	500	2.5	2000	10.00
3	Supply of by-pass protein feed to the milch animals (360kgs/ year/animal @ 50percent subsidised cost of Rs.9/- per kg.) (DDD)	0.033	150	4.95	150	4.95	150	4.95	150	4.95	600	19.80
4	Portable milking machines for farmers (DDD)	0.18	4	0.72	2	0.36	2	0.36	2	0.36	10	1.80
5	Bulk milk cooler (DDD)	30.00	1	30.00	0	0.0	0	0.0	0	0.0	1	30.00
6	Manufacturing facilities for milk khoa (DDD)	0.77	1	0.77	1	0.77	1	0.770	0	0.0	3	2.31
7	Milk weighing machine for milk producers co-op. societies (DDD)	0.17	6	1.02	6	1.02	6	1.02	4	0.68	22	3.74
8	P.C.based automatic milk collection stations to IDF villages milk producers cooperative societies (DDD)	1.75	3	5.25	2	3.50	2	3.50	2	3.5	9	15.75
9	Farmers study tour @ rs.5000/- per farmer (DDD)	0.05	40	2.00	40	2.00	40	2.00	30	1.5	150	7.50

Table 6.7 Contd…

(Rs. in lakhs)

Sl. No.	Project Title	Unit Cost	2008-2009		2009-10		2010-11		2011-12		Grand Total	
			Units	Cost	Units	Cost	Units	Cost	Units	Cost	Total Units	Total Cost
10	Energy management system (DDD)	10.00	1	10.00	0	0.00	0	0.00	0	0.0	1	10.00
11	Orientation training / workshop for milk producers at society level (DDD)	0.20	4	0.80	4	0.80	4	0.80	4	0.8	16	3.20
	DDD-TOTAL			**67.810**		**25.70**		**25.70**		**24.09**		**143.30**
1	Training programmes and village level campaign on livestock farming (TANUVAS)	0.15	11	1.65	11	1.65	11	1.65	11	1.65	44	6.60
2	Strengthening of training equipments for technology dissemination at KVK, Kundrakudi (TANUVAS)	10	1	10.00	0	0.00	0	0.00	0	0.0	1	10.00
3	Study tour of farmers to livestock and poultry research station (TANUVAS) @ 50 persons/batch	0.25	4	1.00	4	1.00	4	1.00	4	1.0	16	4.00
	TANUVAS - Total			**12.65**		**2.65**		**2.65**		**2.65**		**20.60**
	Grand Total			**755.512**		**86.70**		**86.70**		**85.09**		**1014.002**

6.4. Fisheries

The details of three project proposals under fisheries sector involving the State fisheries department, Tamil Nadu fisheries development corporation and TANUVAS at a total estimated cost of Rs. 45.00 lakhs for four years 2008 – 09 to 2011 – 12are furnished below.

6.4.2 Expansion of Fish Culture in Unutilised Water Bodies by Stocking (50 Percent Subsidy)

Abstract

Though this District occasionally receives the monsoon waters, some of the pockets are selected for improving the fish culture activities in the irrigation tanks. There are 20 No. of irrigation tanks with an extent of 2000 ha are selected for stocking the quality seeds.

Budget : Rs. 25.00 lakhs

Background / Problem Focus

- The District has good scope for fish
- Non availability of stock size fish seeds through out the year

Project Rationale

To stock fish seeds in the 2000 ha water bodies (20 irrigation tanks)

Project Strategy

To stock suitable fish seeds for enhanced fish production

Project Cost and Financing

Subsidy Cost for the Following Item

1.	Cost of seeds	-	Rs. 750
2.	Cost of fertilizer and manure	-	Rs. 250
3.	Cost of feed	-	Rs. 1250
4.	Cost of harvesting and marketing	-	Rs. 250
	Unit cost	-	Rs. 2500/ ha
	Unit cost after subsidy	-	Rs. 1250
	Total Cost Rs.1250 x 2000 ha	**-**	**Rs. 25,00,000**

Projects Components

Supply of seed, feed, manure, fertilizer

Implementation of Chart of the Project

S. No	Particulars	2008-09	2009-10	2010-11	2011-12
1.	Selection of irrigation tanks	√			
2.	Procurement of fish seeds and stock & Harvesting		√	√	√

Reporting

The project will be implemented by the Department of Fisheries

6.4.2 Development of Modern Fish Retail Outlet

Abstract

In Sivagangai district, there are established fish markets run by the municipalities concerned. The improperly stored unsold fish kept overnight result in fish spoilage and loss of quality and revenue. To avoid this, intervention is necessary to establish modern fish retail outlets at Sivagangai.

Budget : Rs. 10.00 lakhs

Background / Problem Focus

The modern fish retail outlet will be used to keep the excess stock until selling besides maintaining the quality of the harvested fishes for a long period.

Project Rationale

To avoid fish spoilage & loss of quality & revenue.

Project Strategy

The facility will be established at Sivagangai.

Project Goals

To avoid loss of revenue, this outlet will be established.

Project Components

1. Renovation of fish market
2. providing waste disposal water facilities and sanitary provision

Project Cost and Financing

(Rs. in lakh)

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

Implementation Chart of the Project

S.No	Particulars	2008-09	2009-10	2010-11	2011-12
1	Land development	√			
2	Fabrication and Installation of modern fish stall	√			

Reporting

The progress of work will be evaluated periodically by the State Fisheries Department.

6.4.3. Training to fish farmers

Abstract

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

Budget : Rs. 10.00 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). While these resources have a potential to yield 2.46 lakh tonnes of fish, the present yield is only 1.14 lakh tonnes. About 60percent culturable area has been brought under culture practices.

Project Rationale

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

Project Strategy

To conduct training programme on freshwater fish culture to 100 farmers so as to improve their socio economic conditions.

Project Goals

- To conduct 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

(in Rs.)

S.No.	Particulars	Budget
1.	Stipend@ Rs. 75/ participant for 100 participants/ 3days	7500
2.	Extension materials	2000
3.	Miscellaneous	500
	Total	10000
	Total cost Rs. 10000 x 100 participants	**10 lakhs**

Implementation of Chart of the Project

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

Reporting

The training activities will be supervised by Dean & Director of Research and Extension (Fisheries) of Fisheries College and Research Institute, Tamilnadu Veterinary and Animal Sciences University and reported to State Fisheries Department.

Table 6.8 Proposed Activities and Budget for Fisheries – 2008 to 2012

(Rs. in lakhs)

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	Expansion of fish culture in Unutilized water bodies by stocking fingerlings (50percentsubsidy)	Fisheries Department	0.0125/Ha	2000ha	500	6.25	500	6.25	500	6.25	500	6.25	25.00
2	Modern Fish Retail Outlet	TNFDC	10.00	1.00	1	10.00							10.00
	Fisheries - Total					**16.25**		**6.25**		**6.25**		**6.25**	**35.00**
3	Training of fish farmers	TANUVAS	0.10	100.00	25	2.50	25	2.50	25	2.50	25	2.50	10.00
	TANUVAS - Total					**2.50**		**2.50**		**2.50**		**2.50**	**10.00**
	Grand Total					**18.75**		**8.75**		**8.75**		**8.75**	**45.00**

6.5. Agricultural Engineering

Under agricultural engineering the projects have been proposed under Stream - I and Stream II. Under stream I, 27 components under introduction of newly developed agricultural machinery/ implements,innovative water harvesting structures, control of sea water intrusions and promoting the concept of mechanized villages at an estimated cost of Rs. 2663.37 lakhs and under stream II, 13 components under popularization of Agricultural mechanization through conventional machineries, water harvesting structures, soil conservation works and water management works at an estimated cost of Rs. 895.55 lakhs have been proposed as detailed below.

Stream - I - Project

1. Abstract

The total cost of the Project for the Promotion of Agricultural mechanization is Rs.2663.37. Lakhs.

2. Background / Problem Focus

Sivagangai District is a drought prone and backward district, with medium rainfall and most of the rainfall occurs in October and November months. The major and minor tanks of Sivagangai District are dependent on the rainfall and most of the lands are under rainfed agriculture.

If rain fails, there will be severe drought in this district and the district has faced several drought years due to insufficient and erratic rainfall. So the farmers are badly in need of rain water harvesting structures to collect the run off water in rainy seasons and utilize the water for irrigation at the critical stages.

The farmers of Sivagangai District are mostly small and marginal farmers with small size land holdings. The economic status of the farmers is dependent on their agriculture, which in turn depends on enough rainfall, for its success. Due to the failure of rainfall over several years and subsequent drought, many farmers left their lands as waste lands and migrated to other districts for their survival.

Hence, the labour problem in agriculture always exists in this area and also the demand for the agricultural machineries, particularly for weeding and harvesting. But, they couldn't afford to buy the machineries / implements due to their poor economic condition.

3. Project Rationale

Promotion of Mechanization in Agriculture by offering subsidies for the purchase of Agricultural machineries / Implements:

The farmers of Sivagangai District are having small and medium land holdings. Due to vagaries of monsoon rainfall and drought, many agricultural labourers migrated from the agricultural sector. So, the farmers are not getting labour for the agricultural operations particularly for transplanting, weeding and harvesting.

Due to labour problem, the farmers are dependent on hiring the machineries, which may not be available in their local area / village. So they are waiting for the arrival of machineries, which delays their operations in time. Due to the delay, the yield reduces both in quality and quantity.

Hence, the farmers must be motivated towards the revolution in agriculture with mechanization. The mechanization alone could help the farmers for successful agriculture with less / no labour. This mechanization will save enormous time and ensure quality product in terms of yield.

4. Project Strategy

The necessity of the mechanization in agriculture is felt by almost all the farmers. But, due to their poor economic condition, the farmers could not afford to buy the agricultural Machineries and implements, which are generally costlier.

For encouraging the farmers towards mechanization, the agricultural machineries / implements are to be supplied to the farmers at subsidized prices, at least with minimum 50per cent subsidy, so that the economically weaker small / marginal farmers could also purchase the subsidized machineries.

The agricultural machineries which are newly developed shall be promoted with 75per cent subsidy, so that the new technology and innovative machineries will reach many farmers easily. This Programme will be implemented over a period of four years from 2008-09 to 2011-12.

5. Project Goals

Under the National Agricultural Development Programme, this project is aiming at the 4per cent growth rate in agricultural sector in the forthcoming years. For the successful agriculture, the labour Problem which is the one of major factors affecting the present agricultural growth is to be combated with agricultural mechanization. Hence, promoting mechanized agriculture is our goal.

6. Project Components

The following agricultural machineries are proposed to be promoted among the farmers with subsidy.

I. Introduction of Newly Developed Agricultural Machineries / Implements

The necessity of mechanization in agriculture is felt by almost all the farmers. But, due to their poor economic condition, the farmers could not afford to buy the agricultural Machineries and implements, which are generally costlier.

For encouraging the farmers towards mechanization, the agricultural machineries / implements are to supplied to the farmers at subsidized prices.

II. Innovative Water Harvesting Structure

Rain water harvesting has become very vital and unavoidable, as the availability of good quality water is becoming rare and costlier. The rainfall is very erratic and most of the rain fall occurs in October and November months in this district. The farmers are experiencing paucity of irrigation water during flowering stage. If life saving irrigation was given at that time, the crops will survive and give a better yield. In the absence of last one or two irrigations, many farmers are facing crop failure and heavy financial loss. So, it has become very essential to harvest the rain water and utilize the same for irrigation at critical stages.

Now, all the farmers have realized the importance of rain water harvesting at the farm level, mainly through the Farm Ponds, and Recharge Shafts. Community wells have been constructed for assured water to the farmer on cluster basis.

III. Promoting the Concept of Mechanized Villages

Introduction of innovative machineries on cluster basis in selected villages by educating the farmers and to motivate them to use all type of machineries. If one village gets all benefits through the farm mechanization it will have a cascading effect on other farmers enabling to follow the farm mechanization easily.

7. Project Cost and Financing

The total project cost under Stream I is Rs. 2663.37 Lakhs. The amount for the above project will be sanctioned by the State Level Sanction Committee under National Agricultural Development Programme.

8. Implementation Chart of the Project

The agricultural mechanization Programme will be implemented over the forthcoming 4 years from 2008-09 to 2011-12 in phased manner.

9. Reporting

The reporting will be send periodically to the Director,CARDS, Tamil Nadu Agricultural University, Coimbatore.

Stream - II - Project

1. Abstract

The total cost of the Project for the Promotion of Agricultural mechanization is Rs.895.55. Lakhs.

2. Background / Problem Focus

Sivagangai District is a drought prone and backward district, with medium Rainfall and most of the rainfall occurs in October and November months. The major and minor tanks of Sivagangai District are dependent on the rainfall and most of the lands are under rainfed agriculture.

If rain fails, there will be severe drought in this district and the district has faced several drought years due to insufficient and erratic rainfall. So the farmers are badly in need of rain water harvesting structures to collect the run off water in rainy seasons and utilize the water irrigation at critical stages of crop growth.

The farmers of Sivagangai District are mostly small and marginal farmers with small size land holdings. The economic status of the farmers is dependent on their agriculture, which in turn depends on enough rainfall, for its success. Due to the failure of rainfall over several years and subsequent drought, many farmers left their lands as waste lands and migrated to other districts for their survival.

Hence, the labour problem in agriculture always exists in this area and also the demand for the agricultural machineries, particularly for weeding and harvesting. But, they couldn’t afford to buy the machineries / implements due to their poor economic condition.

3. Project Rationale

a. Promotion of Mechanization in Agriculture by offering subsidies for the Purchase of Agricultural machineries / Implements

The farmers of Sivagangai District are having small and medium land holdings. Due to vagaries of monsoon rainfall and drought, many agricultural labourers migrated from the agricultural sector. So, the farmers are not getting labour for the agricultural operations particularly for transplanting, weeding and harvesting.

Due to labour problem, the farmers are dependent on hiring the machineries, which may not be available in their local area / village. So they are waiting for the arrival of machineries, which delays timely agricultural operations.Due to the delay, the yield gets reduced both in quality and quantity.

By extending the present subsidy scheme to all farmers in the coming years, they will be motivated to use the machineries which they are frequently using on a regular basis.

b. Rain Water Harvesting and Soil Conservation Works:

Rain water harvesting has become very vital and unavoidable, as the availability of good quality water is becoming rare and costlier. The rainfall is very erratic and most of the rainfall occurs in October and November months in this district. The farmers are facing shortage of irrigation water during flowering stage. If life saving irrigation was given at that time, the crops will survive and give a better yield. In the absence of last one or two irrigations, many farmers are facing crop failure and heavy financial loss. So, it has become very essential to harvest the rain water and utilize the same for irrigation at critical stages.

Now, all the farmers have realized the importance of rain water harvesting at the farm level, Rain Water is collected in the farm ponds through the run off water during rainy days and the stored water is used for irrigation by pumping with oil engine.

Soil conservation to prevent the movement of soil particles by run off water by erosion is very essential to protect the precious and nutritious top soil. The Soil conservation works should start from the field level and as Sivagangai District is having a mild slope below two per cent the compartmental bunding is enough at the field level.

4. Project Strategy

a. Promotion of Mechanization in Agriculture by Offering Subsidies for the Purchase of Popular Agricultural Machineries / Implements

The necessity of the mechanization in agriculture is felt by almost all the farmers. But, due to their poor economic condition, the farmers could not afford to buy the agricultural Machineries and implements, which are generally costlier.

For encouraging the farmers towards mechanization, the popular agricultural machineries / implements are to be supplied to the farmers at subsidized prices, at least with minimum 25per cent subsidy, so that the economically weaker small / marginal farmers could also purchase the subsidized machineries.

a. Rain Water Harvesting and Soil Conservation Works

- This Project aims to assist the farmers in Rain Water Harvesting through formation of farm ponds with 90 per cent subsidy, in their patta lands.
- To avoid water conveyance loss through earthen channels, PVC pipe lining works with 90 percent subsidy are proposed.
- For Soil Conservation the Compartmental Bunding with 90 per cent subsidy in the field is proposed and to prevent soil erosion land shaping work has been proposed within the field level.

5. Project Goals

Under the National Agricultural Development Programme, this project is aiming at the four per cent growth rate in agricultural sector in the forthcoming years. For successful agriculture, the labour Problem which is the one of major factors affecting the present agricultural growth is to be met with agricultural mechanization. Hence, promoting the mechanized agriculture is our goal.

Rain Water Harvesting and Soil Conservation works are encouraged among the farmers, which will have direct and major benefit to the farming sector, in terms of increased yield and thereby to achieve the targeted agricultural growth very easily

6. Project Components

a. Promotion of Mechanization in Agriculture by Offering Subsidies for the Purchase of Popular Agricultural Machineries / Implements

Promoting the use of the following agricultural machineries with subsidy is proposed in this project in Sivagangai District.

I. Popularization of Agriculture Mechanization through Conventional Machinery / Equipments

Due to labour problem, the farmers are dependent on hiring the machineries, which may not be available in their local area / village. So they are waiting for the arrival of machineries, which delays their operations in time. Due to the delay, the yield gets reduced both in quality and quantity.

Hence, for motivating all the farmers to continuously use the machineries which are frequently used by them the present subsidy scheme will be extended to all farmers in the coming years.

I. Water Harvesting Structures

All the farmers realized importance of rain water harvesting at the farm level, mainly through farm ponds. Rain water is collected in the farm ponds through the run off water during rainy days and the stored water is used for irrigation by pumping with oil engine. Recharge shafts are proposed to collect the excess water and penetrate through shaft to increase ground water table level.

Controlling structures like check dams have been proposed to control the flow of water in the stream and prevent the soil erosion.

II. Soil Conservation Works

For soil conservation works compartmental bunding with 90per cent subsidy in the field is proposed and land shaping work has been proposed for preventing soil erosion.

III. Water Management Works

To maximize the conveyance efficiency of water in the farm level PVC pipe line works are proposed.

7. Project Cost and Financing

The project cost was 895.55 Lakhs. Under stream II. The amount for the above project will be sanctioned by the State Level Sanction Committee under National Agricultural Development Programme.

8. Implementation Chart of the Project

This project will be implemented over the forthcoming 4 years from 2008-09 to 2011-12 in phased manner.

9. Reporting

The report will be send periodically to the Tamil Nadu Agricultural University, Coimbatore.

Table 6.9 Proposed Activities and Budget for Agricultural Engineering - Stream - I Project

(Rs. in lakhs)

S. No	Project Component	Unit, Cost,	Sub-sidy, per cent	2008-09		2009-10.		20010-11.		20011-12.		Total.	
				Nos.	Cost	Nos	Cost	Nos.	Cost	Nos.	Cost	Nos.	Cost
I	**Introduction of Newly Developed Agrl. Machinery / Implements**												
1.	Mini combined Harvester TNAU model.	2.50	50per cent	5	6.25	5	6.25	5	6.25	5	6.25	20	25.00
2.	Multi crop Thrasher (High Capacity.)	2.10	50per cent	5	5.25	5	5.25	5	5.25	5	5.25	20	21.00
3.	Power Weeder with attachment (all models)	1.00	50per cent	4	2.00	4	2.00	4	2.00	4	2.00	16	8.00
4.	Power Thrasher.	1.00	50per cent	10	5.00	10	5.00	10	5.00	10	5.00	40	20.00
5.	Paddy Transplanter.	1.40	50per cent	15	10.50	15	10.50	15	10.50	15	10.50	60	42.00
6.	Post hole digger.	0.85	50per cent	2	0.85	2	0.85	2	0.85	2	0.85	8	3.40
7.	Maize Husker Sheller.	0.90	50per cent	5	2.25	5	2.25	5	2.25	5	2.25	20	9.00
8.	Coconut De - husker.	0.60	50per cent	4	1.20	6	1.80	4	1.20	4	1.20	18	5.40
9.	Ground nut decorticator.	0.35	50per cent	10	1.75	12	2.10	12	2.10	12	2.10	46	8.05
10.	Chisel Plough.	0.12	50per cent	5	0.30	5	0.30	5	0.30	5	0.30	20	1.20

Table 6.9 contd…

(Rs. in lakhs)

S. No	Project Component	Unit, Cost,	Sub-sidy, per cent	2008-09		2009-10.		20010-11.		20011-12.		Total.	
				Nos.	Cost	Nos	Cost	Nos.	Cost	Nos.	Cost	Nos.	Cost
11.	Power Weeder - Oleomac.	0.65	50per cent	3	0.975	3	0.975	3	0.975	3	0.975	12	3.90
12.	Ratoon Manager.	1.00	50per cent	15	7.50	15	7.50	15	7.50	15	7.50	60	30.00
13.	Multi crop Thrasher (Tractor PTO)	1.25	50per cent	5	3.125	5	3.125	5	3.125	5	3.125	20	12.50
14.	Knapsack Power operated Hydraulic Sprayer.	0.20	50per cent	20	2.00	20	2.00	20	2.00	20	2.00	80	8.00
15.	Power Operated Chaff Cutter.	0.30	50per cent	2	0.30	2	0.30	2	0.30	2	0.30	8	1.20
16.	Japanese Yanmar 6 - row Transplanter with nursery raising system.	7.50	50per cent	1	3.75	1	3.75	1	3.75	1	3.75	4	15.00
17.	Combine harvester - Tractor operated.	12.00	50per cent	2	12.00	2	12.00	2	12.00	2	12.00	8	48.00
18.	Cutter Plantar (Sugar cane.)	1.00	50per cent	5	2.50	5	2.50	5	2.50	5	2.50	20	10.00
19.	Spading Machine. (Sugar cane.)	1.00	50per cent	10	5.00	10	5.00	10	5.00	10	5.00	40	20.00
20.	Transh shredder(S cane)	1.25	50per cent	10	6.25	10	6.25	10	6.25	10	6.25	40	25.00
21.	Gender friendly equipments.	0.08	75per cent	100	6.00	100	6.00	100	6.00	100	6.00	400	24.00

Table 6.9 contd…

(Rs. in lakhs)

S. No	Project Component	Unit, Cost,	Sub-sidy, per cent	2008-09		2009-10.		20010-11.		20011-12.		Total.	
				Nos.	Cost	Nos	Cost	Nos.	Cost	Nos.	Cost	Nos.	Cost
II	**Innovative water harvesting structures.**												
1	Lined farm pond with mobile sprinkler.	3.00	90per cent	5	13.50	5	13.50	5	13.50	5	13.50	25	54.00
2	Rejuvenation of percolation ponds with 2 recharges shafts.	1.00	100per cent	20	20.00	25	25.00	30	30.00	25	25.00	100	100.00
3	Bore well with enargitation.	3.50	100per cent	150	525.00	150	525.00	150	525.00	150	525.00	600	2100
III	**Control of Sea Water Intrusion.**												
IV	Mechanization training to farmers for operation and maintenance	0.40	100per cent	5	2.00	10	4.00	15	6.00	10	4.00	40	16.00
V	**Promoting the concept of Mechanized Villages**												
1	Distribution of crop based package of Agrl. Machinery on cluster basis in the adopted villages.	Varied	75per cent	-	-	-	-	-	-	-	-	-	-
	1. Paddy.	31.90	-	1	23.93	-	-	1	23.93	-	-	2	47.85
	2. Groundnut.	3.50	-	-	-	1	2.43	-	-	1	2.43	2	4.86
	Total.				**669.18**	**-**	**655.63**	**-**	**683.53**	**-**	**655.03**	**-**	**2663.37**

Table 6.10 Proposed Activities and Budget for Agricultural Engineering - Stream II Projects

(Rs. in lakhs)

S. No	Project Component.	Unit, Cost	Sub sidy, per cent	2008-09		2009-10.		20010-11.		20011-12.		Total.	
				Nos.	Cost	Nos	Cost	Nos	Cost	Nos	Cost	Nos	Cost
1	**Popularization of Agriculture Mechanization through Conventional Machinery / Equipments**												
a	Power Tiller.	1.16	25per cent	60	17.40	60	17.40	60	17.40	50	14.50	230	66.70
b	Rotavator.	0.90	25per cent	30	6.75	40	9.00	40	9.00	40	9.00	150	33.75
c	Cultivator.	0.16	25per cent	25	1.00	25	1.00	30	1.20	30	1.20	110	4.40
d	Disc Plough.	0.35	25per cent	50	4.375	50	4.375	50	4.375	50	4.375	200	17.50
2	**Water Harvesting Structures**												
a	Farm Pond - Unlined	0.50	90per cent	50	22.50	50	22.50	50	22.50	50	22.50	200	90.00
b	Check dam – Minor	0.30	100per cent	20	6.00	20	6.00	20	6.00	20	6.00	80	24.00
c	Check dam - Medium	0.75	100per cent	15	11.25	15	11.25	15	11.25	15	11.25	60	45.00
d	Check dam – Major	1.00	100per cent	10	10.00	10	10.00	10	10.00	10	10.00	40	40.00
e	Recharge Shaft.	0.30	100per cent	15	4.50	15	4.50	15	4.50	15	4.50	60	18.00
3	**Soil Conservation works.**												
a	Compartmental bunding.	0.03	90per cent	2000	54.00	4000	108.00	4000	108.00	4000	108.00	14000	378.00
b	Land Shaping.	0.1	90per cent	100	9.00	100	9.00	100	9.00	100	9.00	400	36.00

Table 6.10 contd…

(Rs. in lakhs)

S. No	Project Component.	Unit, Cost	Sub sidy, per cent	2008-09		2009-10.		20010-11.		20011-12.		Total.	
				Nos.	Cost	Nos	Cost	Nos	Cost	Nos	Cost	Nos	Cost
4	**Water Management Works**												
a	PVC Pipe laying.	0.15	90per cent	250	33.75	250	33.75	250	33.75	250	33.75	1000	135
b	Fertigation Assembly.	0.12	50per cent	30	1.80.	30	1.80	30	1.80	30	1.80	120	7.20
	Total				**182.325**		**238.575**		**238.775**		**235.875**		**895.55**

6.6. Agricultural Marketing and Agribusiness

Strengthening of Agricultural Marketing and Agribusiness development inTamil Nadu through NADP Funding

1. Current Status of Agribusiness

Agriculture, as a primary sector provides livelihood to 56per cent of the population and contributes around 13per cent of the State GDP. In value terms between 65 and 75per cent of agricultural produce is transacted in markets, usually through long marketing chains, regulated markets and an emerging commercialized retail system in urban centers. Unorganized small players (handling less than 0.5 t/day) process more than 75per cent of industry output. The Government is taking efforts to achieve targeted growth rate of 4per cent in Agriculture during XI Plan period. Though fertile soil, good quality water and long period of sunlight which are the basic requirements for Agriculture available in abundance in Tamil Nadu, still the productivity has not been enhanced to its potential level.

The Government is taking efforts to attain sustainable agricultural development by bringing agriculture as a commercial venture by switching over from the present method of cultivation through adoption of new scientific method of cultivation to increase the productivity to manifold, value addition, processing and utilization of marketing opportunities. To improve the marketing opportunities for agricultural produce, the Uzhavar Santhai, post harvest management, cold storage facilities for perishables, food processing, establishment of export zones, terminal markets have been taken up. To reduce the loss of the food products which are upto 30per cent, necessary provisions are made in the Agricultural Industrial Policy to ensure remunerative price to the produce, encourage food processing sector and export to earn foreign exchange by increasing the food processing from the present level of1per cent to 10per cent, out of the total production, increasing value addition from 7per cent to 30per cent. Under this policy, all assistance which is provided to other industries will be extended to agro based industries, agricultural machineries and industries manufacturing micro irrigation equipments.

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

2. Agribusiness and the National Development Goals

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

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

The two most important programs related to agribusiness development are the Technology Mission for Integrated Development of Horticulture (TM) and the National Horticultural Mission (NHM). The focus of the TM is production of horticultural

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

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

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

Agricultural development continues to remain the most important objective of State planning and policy. The experience of agricultural development in the state has shown that the existing systems of delivery of agricultural inputs and marketing of agricultural output have not been efficient in reaching the benefits of technology to all the sections of farmers. The timely, quality and cost effective delivery of adequate inputs still

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

Small farms produce more than 35 percent of State total grain, and over half of total fruits and vegetables despite being resource constrained. The marginal holdings

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

4. Sector Problem Analysis

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

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

Entrepreneurs have weak linkages with farmers through contracts and vertical integration arrangements and are distant from consumers because of the absence of organized retail chains. Linkages with service providers are characterized by a lack of

confidence particularly in the case of research and extension organizations. The absence of proper certification, quality assurance systems and inadequate infrastructure continues to limit the integration of production with international markets.

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

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

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

5. Project Rationale

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

1. The rate of agricultural growth over the past decade has been declining in Tamil Nadu. Agribusiness through its linkages to production, industry and services has the potential to transform the agricultural system into a more dynamic sector.
2. As urbanization and incomes grow, there is a growing demand for a wider range of agrifood products, of higher quality and greater convenience, to use in Tamil Nadu. Meeting this demand requires organized retailing and effective agribusiness supply chains.
3. Agribusiness contributes to the production of higher value products and diversification away from staple foods. Through this diversification and the development of the value chain between producers and consumers, the rural economy benefits from innovation and the creation of non-farm employment.
4. Tamil Nadu has a comparative advantage in a number of agricultural commodities. Increasing integration with global markets and the potential to become a stronger player in agricultural trade requires quality assurance and competitive advantage.
5. The State Government has identified agribusiness development as a strategic priority. In Tamil Nadu, agribusiness has a significant role to play in rural and economic development, and agro-enterprises could be a major source of rural non-farm employment and income.
6. The existing government programs to promote agricultural diversification are broad-based programs with multiple objectives. For agribusiness development to happen a more focused approach is needed to complement the initiatives already covered by the different national programs.

6. Project Strategy

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

7. Project Approach

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

8. Project Goals

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

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

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

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

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

9. Project components

1. Establishment/ organization of commodity groups for marketing in the state with financial assistance from NADP
2. Facilitation of Contract Farming between farmers and bulk buyers in the state with financial assistance from NADP
3. Dissemination of Market intelligence
4. Arrangement of Buyers - Sellers Meet
5. Organizing the exposure visits to important markets with in the state and out side the state by commodity groups / farmers and extension functionaries.
6. Strengthening of market extension centre at each district/ block level for capacity building and dissemination of marketing information.
7. Strengthening of selected village shandies with financial assistance from NADP
8. Capacity building of farmer's skill
9. Price surveillance
10. Regulated Market uzhavar Shandies Publicity
11. Market Infrastructure

10. Project Components Description

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

Project Rationale

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

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

Project Strategy

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

Project Goals

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

Project Components

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

Project Cost and Financing

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

In this project it is proposed to organize 48 commodity groups in three commodities for marketing of agricultural commodities in Sivagangai district over the period of four years. This will require resources of Rs 11.04 Lakhs for the period of four years.

Reporting

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

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

Project Rationale

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

At more macro economic level, contracting can help to remove market imperfections in produce, capital (credit), land, labour, information and insurance markets; facilitate better coordination of local production activities which often involve initial investment in processing, extension etc.; and can help in reducing transaction costs. It has also been used in many situations as a policy step by the state to bring about crop diversification for improving farm incomes and employment. CF is also seen as a way to reduce costs of cultivation as it can provide access to better inputs and more efficient production methods. The increasing cost of cultivation was the reason for the emergence of CF in Japan and Spain in the 1950s and in the Indian Punjab in the early 1990s. Though there are concerns about the ability of the small farms and firms to survive in the changing environment of agribusiness, still there are opportunities for them to exploit like in product differentiation with origin of product or organic products and other niche markets. But, the major route has to be through exploitation of other factors like external economies of scale through networking or clustering and such other alliances like CF.

Marketing tie-ups between farmers and processors or bulk purchasers have special significance for small farmers, who have small marketed surplus and do no have staying power. Such arrangements are being encouraged to help in reducing price risks of farmers and to also expand the markets for farm products. It is to be noted that contract farming of sugarcane is going on for the last more than 50 years in Tamil Nadu. In case of cotton, maize and medicinal plants there are few cases of contract farming. Contract farming in milk, eggs and broiler production is successfully taking place in large scale in Tamil Nadu. The lessons taught in case of sugarcane, cotton and other commodities have to be taken into account during formulation of the project. For this in this NADP programme facilitation contract farming between the traders and producer is proposed.

Project Strategy

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

Project Components

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

Project Cost and Financing

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

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

Reporting

1. Quarterly progress reports to be sent to the Deputy Director (Agricultural Marketing and Agri Business) by the concerned Agricultural Marketing (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. 3. Dissemination of Market Intelligence

Project Rationale

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

The most important marketing information is price data. Agricultural price data are based on thousands or millions of transactions, many of them on a small scale, that are taking place every day all over the country. Collecting an adequate sample and making sure that these are representative enough to be useful is not an easy task. As

farmers become more market oriented, extension workers need to be in a position to advise them not only on how to grow crops but also on how to market them. Knowledge of produce handling, storage and packaging is also essential. An understanding of costs and margins is essential for all those involved with agricultural marketing. Before any agro-processing venture is started, or before an existing venture decides to expand its product line, an understanding of the market for the planned products is essential. Market research can never guarantee success but it can certainly increase the likelihood that the new business will turn out to be profitable. Hence in this project is included the dissemination of market intelligence provided by the Domestic and Export Market Intelligence Cell, Centre for Agricultural and Rural Development Studies, Tamil Nadu Agricultural University, Coimbatore and other agencies.

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

Project Components

1.Procurement of market intelligence reports and

2.Dissemination of Market intelligence to all the Stake holders through different mass media.

Project Cost and Financing

In this project it is proposed to disseminate Market intelligence of agricultural commodities to all the Stake holders through different mass media in Sivagangai district over the period of four years. This will require resources of Rs. 5.46 Lakhs for the period of four years.

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)

6.6.4. Arrangement of Buyers - Sellers Meet

Project Rationale

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

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

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

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

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

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

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

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

Project Cost and Financing

In this project it is proposed to arrange for 40 buyers sellers meet in Sivagangai district over the period of four years. This will require resources of Rs.9.20 Lakhs for the period of four years.

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

Project Rationale

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

have to rely more on known and proven technology. Agriculture research system claims to have a large number of promising technologies to achieve high growth and promote farming systems that improve natural resource base. However, these are not seen at farmers' fields at large. Visit of other areas, where new technologies are implementing successfully i.e., exposure visits is an important thing to enlighten the farmers for implementing those technologies in their areas also. It is easy to know the new technology through demonstration. Farmers will be selected to visit different places within the State where the technologies are well adopted. Therefore it is proposed to organize the exposure visit to important markets with in the state and out side the state by commodity groups / farmers and extension functionaries in the state for marketing of agricultural commodities in Tamil Nadu over the period of four years.

Project Strategy

Organizing the exposure visits to important markets with in the state and out side the state by commodity groups / farmers and extension functionaries.

Project Goals

Organizing the exposure visit to important markets with in the state and out side the state by commodity groups / farmers and extension functionaries in the state for marketing of agricultural commodities in Tamil Nadu over the period of four years from NADP funding

Project Components

1. Organizing the exposure visit to important markets with in the state by commodity groups / farmers
2. Organizing the exposure visit to important markets out side the state by commodity groups / farmers
3. Organizing the exposure visit to important markets with in the state and out side the state by extension functionaries

Project Cost and Financing

Visit of important markets, where new opportunity for marketing of the commodity and consumer preference i.e., exposure visits SAFAL market Bangalore is an important thing to enlighten the farmers for marketing their produce as well as consumer preference. It is easy to know the marketing of the commodity through observation and participation in the well developed markets. Farmers will be selected to visit different market places within the State where the new opportunities for marketing of commodities exist. This will require resources of Rs.7.99 Lakhs for the period of four years.

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)

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

Project Rationale

Over the last few years mass media has seen a phenomenal growth in the country both in terms of reach and advance in technology. This medium has not been exploited to its full potential for the purpose of agricultural extension specifically market led extension. A concerted and well-coordinated effort now needs to be made to use the electronic media in the Extension strategy by strengthening infrastructure facility. Market led Extension is now becoming more diversified, technology intensive, knowledge oriented and more demand-driven. This requires the extension workers at the cutting edge level to be master of so many trades, which is neither practicable nor possible. Use of IT in extension enables the extension workers to be more effective in meeting the information needs of farmers. The growing Information and communication technology

is used widely in the entire developmental sector except in agricultural sector. Use of interactive multimedia and such other tools will help the extension workers to serve the farmers better. Similarly, extension systems have to utilize the existing print and electronic mass media for faster dissemination of information to farmers. The technological advancement in telecommunication and space technology has to be fully tapped for devising appropriate programs for farmers. Hence there is a urgent need to strengthening of market extension centre at each district/ block level with LCD projectors and lap top computer including internet facilities.

Project Strategy

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

Project Goals

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

Project Components

Strengthening of market extension centre at each district/ block level

Project Cost and Financing

Over the last few years mass media has seen a phenomenal growth in the country both in terms of reach and advance in technology. This medium has not been exploited to its full potential for the purpose of agricultural extension specifically market led extension. A concerted and well-coordinated effort now needs to be made to use the electronic media in the Extension strategy by strengthening infrastructure facility. In this project it is proposed to strengthening market extension centre in Sivagangai district over the period of four years. This will require resources of Rs.2.50 Lakhs for the period of four years.

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)

6.6.7. Capacity Building of Farmers' Skill

Project Rationale

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

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

the following training programmes are proposed with budget requirement of Rs. 16.98 Lakhs.

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

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.

Project Components

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

Project Cost and Financing

In this project it is proposed to organize about 147 trainings under Capacity Building of Farmers Skill titles for marketing of agricultural commodities in Sivagangai district over the period of four years. This will require resources of Rs 16.98 Lakhs for the period of four years.

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

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

6.6.8 Strengthening of selected Market Infrastructure (equipments) through NADP Funding

Rationale

Considering the importance of different Markets, there is an urgent need to develop these markets in a phased manner with necessary infrastructural amenities to have a strong base of the marketing channel. Suitability and adequacy of marketing infrastructure depends on the type and quantity of marketed surpluses of agricultural produce in the State. The estimated marketed surpluses of various commodities are given in the Table 6.11 reflects the need for improvement in the market infrastructure in coming years.

Table 6.11 Estimates of Marketed Surpluses of Various Commodities

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

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

Project Components

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

Project Cost and Financing

In this project it is proposed to strengthen market infrastructure in Sivagangai district over the period of four years. This will require resources of Rs.3.34 Lakhs for the period of four years.

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. Establishment of Price surveillance mechanism through NADP Funding

Rationale

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

Project Components

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

Project Cost and Financing

In this project it is proposed to collect data at a minimum interval of one month from major assembly markets on a continuous basis in Sivagangai district over the period of four years. This will require resources of Rs.0.25 Lakhs for the period of four years.

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)

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

Rationale

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

Project Components

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

Project Cost and Financing

In this project it is proposed to have the publicity programmes with the above components in this district over the period of four years.

Reporting

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

11. Project Cost

The total cost for development of agricultural marketing so as to increase the profitability of farmers would be Rs. 305.16 Lakhs for this district for the eleventh plan period.

12. Implementation

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

13. Project Performance Monitoring System

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

14. Sustainability

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

Table 6.12 A. Original Project Proposals for Agricultural Marketing and Agri-Business

(Rs. in Lakhs)

S. No	Components	2009			2010			2011			2012			Total
		Unit cost	Physical	Financial	Unit cost	Physical	Financial	Unit cost	Physical	Financial	Unit cost	Physical	Financial	
1	**Commodity group formation**													
	Paddy	0.20	4	0.80	0.22	4	0.88	0.24	4	0.96	0.26	4	1.04	**3.68**
	Maize	0.20	4	0.80	0.22	4	0.88	0.24	4	0.96	0.26	4	1.04	**3.68**
	Chillies	0.20	4	0.80	0.22	4	0.88	0.24	4	0.96	0.26	4	1.04	**3.68**
2	**Market Intelligence dissemination**													
	Touch screen	0.10	4	0.40	0.11	0	0.00	0.00	0	0.00	0.00	0	0.00	**0.40**
	Farmers traders training	0.10	10	1.00	0.11	10	1.10	0.12	10	1.20	0.13	10	1.30	**4.60**
	Purchase of marketing materials	0.10	1	0.10	0.11	1	0.11	0.12	1	0.12	0.13	1	0.13	**0.46**
3	**Facilitation of contract farming**													
	Village meetings	0.15	10	1.50	0.17	10	1.65	0.18	10	1.80	0.20	10	1.95	**6.90**
4	**Trainings on**													
	Warehousing and Storage	0.10	4	0.40	0.11	4	0.44	0.12	4	0.48	0.13	4	0.52	**1.84**
	Grading	0.10	4	0.40	0.11	4	0.44	0.12	4	0.48	0.13	4	0.52	**1.84**
	Market Intelligence	0.10	4	0.40	0.11	4	0.44	0.12	4	0.48	0.13	4	0.52	**1.84**
	Post Harvest	0.10	4	0.40	0.11	4	0.44	0.12	4	0.48	0.13	4	0.52	**1.84**
	Commodity Markets	0.10	4	0.40	0.11	4	0.44	0.12	4	0.48	0.13	4	0.52	**1.84**
	Export Promotion	0.10	5	0.50	0.11	10	1.10	0.12	10	1.20	0.13	10	1.30	**4.10**

Table 6.12 A. contd…

(Rs. in Lakhs)

S. No	Components	2009			2010			2011			2012			Total
		Unit cost	Physical	Financial	Unit cost	Physical	Financial	Unit cost	Physical	Financial	Unit cost	Physical	Financial	
	Transport Incentives	0.10	8	0.80	0.11	8	0.88	0.12	8	0.96	0.13	8	1.04	**3.68**
5	Exposure visit to markets													
	Within State	0.20	2	0.40	0.22	2	0.44	0.24	2	0.48	0.26	2	0.52	**1.84**
	Outside state	0.75	1	0.75	0.83	2	1.65	0.90	2	1.80	0.98	2	1.95	**6.15**
	Visit to National Markets	1.50	0	0.00	1.65	0	0.00	1.82	0	0.00	2.00	0	0.00	**0.00**
6	Arrangement of buyer seller meetings	0.20	10	2.00	0.22	10	2.20	0.24	10	2.40	0.26	10	2.60	**9.20**
7	Streng. Of market extension centre	2.50	1	2.50	2.75	0	0.00	3.00	0	0.00	3.25	0	0.00	**2.50**
8	Streng. Of village shandies	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	**0.00**
9	Market price surveillance	0.10	0	0.00	0.11	0	0.00	0.12	1	0.12	0.13	1	0.13	**0.25**
10	Publicity - regulated market	5.00	1	5.00	5.50	1	5.50	6.00	1	6.00	6.50	1	6.50	**23.00**
11	Market infrastructure activities													
	Providing Moisture meter	0.18	4	0.72	0.20	4	0.79	0.22	4	0.87	0.24	4	0.96	**3.34**
Total				**20.07**			**20.26**			**22.23**			**24.10**	**86.66**

Table 6.12 B. Additional Project Proposals for Agricultural Marketing and Agri-Business - (DDA(AB)

(Rs.in lakhs)

Sl. No.	Possible Development Interventions	2009-10		2010-2011		2011-2012		Total	
		Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
I.	**Infrastructure**								
1	Construction of rural godowns in the premises of the regulated markets (Sivagangai , Karaikudi & Manamadurai)	2	40.00	1	20.00	0	0.00	3	60.00
2	Storage godowns for storing produce under lock and key for few days - Singampunari	1	10.00	0	0.00	0	0.00	1	10.00
3	Construction of new drying yards/renovation of dilapidated ones	1	3.00	1	3.00	1	3.00	3	9.00
4	Construction of new auction halls/modernizing the existing ones	0	0.00	0	0.00	0	0.00	0	0.00
5	Construction of money disbursement halls/counters	0	0.00	0	0.00	0	0.00	0	0.00
6	Construction of office buildings and staff quarters	0	0.00	0	0.00	0	0.00	0	0.00
7	Installation of processing units/purchase of new instruments in the premises of the regulated markets	0	0.00	0	0.00	0	0.00	0	0.00
	(i) Mechanical drier	0	0.00	0	0.00	0	0.00	0	0.00
	(ii) Mechanical winnower	0	0.00	0	0.00	0	0.00	0	0.00
	(iii) Groundnut decorticator	0	0.00	0	0.00	0	0.00	0	0.00
	(iv) Sieving machine	0	0.00	0	0.00	0	0.00	0	0.00
	(v) Cotton Ginning Unit / Pressing Unit	0	0.00	0	0.00	0	0.00	0	0.00
	(vi) Coconut Kernel drying and oil processing units	0	0.00	0	0.00	0	0.00	0	0.00
	(vii) Packaging Units	0	0.00	0	0.00	0	0.00	0	0.00

Table 6.12 B. Contd.,

Sl. No.	Possible Development Interventions	2009-10		2010-2011		2011-2012		Total	
		Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
8	Strengthening the State Ghee and Oil Grading Laboratories	0	0.00	0	0.00	0	0.00	0	0.00
9	Strengthening the Commercial Grading Centres with Laboratory facilities (more numbers can also be included)	0	0.00	0	0.00	0	0.00	0	0.00
10	Strengthening the infrastructure facilities in the Uzhavar Shandies								
	i) Electronic weighing balance	100	5.00	0	0.00	0	0.00	100	5.00
	ii) Construction of toilet	2	2.00	0	0.00	0	0.00	2	2.00
	iii) Construction of compound wall	1	1.00	0	0.00	0	0.00	1	1.00
	iv) Purchase of computer and its accessories	2	1.00	0	0.00	0	0.00	2	1.00
	v) Permanent advance to meet out petty expenses for Rs.500/- per month	0	0.18	0	0.20	0	0.22	0	0.60
	vi) Building maintenance	0	0.40	0	0.50	0	0.60	0	1.50
11	Construction of cold storage facilities in Uzhavar Shandies and in rural godowns	0	0.00	0	0.00	0	0.00	0	0.00
12	Office automation with computer facility for billing etc. in regulated markets	0	0.00	0	0.00	0	0.00	0	0.00
13	Lawying and relawying of village link roads	0	0.00	0	0.00	0	0.00	0	0.00
14	Provision of Oil moisture meters	0	0.00	0	0.00	0	0.00	0	0.00
15	Provision of Oil testing machines	0	0.00	0	0.00	0	0.00	0	0.00
16	Provision of Electronic weighing machines	0	0.00	0	0.00	0	0.00	0	0.00

Table 6.12 B. Contd.,

Sl. No.	Possible Development Interventions	2009-10		2010-2011		2011-2012		Total	
		Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
17	Others if any (Specify)- Computer with copier cum printer for office use	1	0.75	0	0.00	0	0.00	1	0.75
II.	**Publicity and Propaganda**								
1	Market committee-wise strengthening of the Publicity and Propaganda units i.e.wall paintings	2	0.20	2	0.25	2	0.30	6	0.75
2	Market committee-wise purchase of extension education aids (provision of LCD projector)	1	0.50	0	0.00	0	0.00	1	0.50
3	Strengthening the regional Publicity and Propaganda wings of the Marketing Board and establishing more regional units	0	0.00	0	0.00	0	0.00	0	0.00
4	Pre-harvest campaigns on large scale	40	4.00	40	4.00	40	4.00	120	12.00
5	Others if any (Specify)	0	0.20	0	0.25	0	0.30	0	0.75
III.	**Public relations**								
1	Construction of bus-stop shed un front of the regulated markets and in selected villages	1	0.30	1	0.40	1	0.50	3	1.20
2	Taking up public relations activities in the villages	0	0.00	0	0.00	0	0.00	0	0.00
3	Construction of common village threshing floors	5	15.00	5	15.00	5	15.00	15	45.00
4	Construction of village common discussion (Chavadi) hall	0	0.00	0	0.00	0	0.00	0	0.00
5	Distribution of tarpaulins to small and marginal farmers	40	2.00	40	2.00	40	2.00	120	6.00
6	Installation of electric light facilities including solar lights in the community threshing floors	6	6.00	6	6.20	6	7.00	18	19.20

Table 6.12 B. Contd.,

Sl. No.	Possible Development Interventions	2009-10		2010-2011		2011-2012		Total	
		Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
7	Construction of over head tanks, laying of street pipelines and provision of public drinking water taps in a village or two wherein the market arrivals are more	0	0.00	0	0.00	0	0.00	0	0.00
8	Provision of Education loan to the children of a few regular customers	10	1.00	10	1.00	10	1.00	30	3.00
9	Celebrating the regulated market fortnight in each district (just like co-operative weeks/fortnight)	1	2.00	1	2.00	1	2.00	3	6.00
10	Others if any (Specify)	0	0.00	0	0.00	0	0.00	0	0.00
IV.	**Facilities to farmers / Stakeholders**								
1	Construction of rest/stay rooms for farmers I regulated markets	0	0.00	0	0.00	0	0.00	0	0.00
2	Construction/modernization of the common toiletry facilities in the regulated markets	0	0.00	0	0.00	0	0.00	0	0.00
3	Provision of parking lot facilities in the needy centers	0	0.00	0	0.00	0	0.00	0	0.00
4	Providing drinking water facilities to animals	0	0.00	0	0.00	0	0.00	0	0.00
5	Provision of transport facilities/routing the vehicle to transport commodities to the regulated markets	0	0.00	0	0.00	0	0.00	0	0.00
6	Creating farm inputs retailing facilities	0	0.00	0	0.00	0	0.00	0	0.00
7	Others if any (Specify) Providing tharpalins to the already constructed rural godown	5	0.25	5	0.25	5	0.30	15	0.80

Table 6.12 B. Contd.,

Sl. No.	Possible Development Interventions	2009-10		2010-2011		2011-2012		Total	
		Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
V.	**Any other innovative interventions (specify)**							0	0.00
	i) New office building for DDA (AB) Sivagangai	1	30.00	0	0.00	0	0.00	1	30.00
	ii) Computer with its accessories	1	0.70	0	0.00	0	0.00	1	0.70
	iii) Xerox machine	1	1.00	0	0.00	0	0.00	1	1.00
	iv) Fax machine	1	0.25	0	0.00	0	0.00	1	0.25
	v) LCD projector	1	0.50	0	0.00	0	0.00	1	0.50
	Grand Total	**226**	**127.23**	**112**	**55.05**	**111**	**36.22**	**449**	**218.50**

Budget Abstract

(Rs.in lakhs)

Sl.No.	Particulars	2008-09	2009-10	2010-11	2011-12	Total
A.	Original Project	20.07	20.26	22.23	24.10	86.66
B.	Additional Project DDA(AB)	-	127.23	55.05	36.22	218.50
	Grand Total	**20.07**	**147.49**	**77.28**	**60.32**	**305.16**

6.7. Forestry

Social Forestry Development

Forest Area

There are 88 forest areas in Sivagangai district constituting a total area of 17611.68 hectares. 60 areas fall under the Reserve forest category with 10680.52 hectares and 28 under Reserve land category with 6931.16 hectares.

Green Cover Classification of Forest

The forest under Green Cover Classification was 22149 hectares. Dense forest and sparse forest areas are 742 hectare and 538 hectare respectively. There is no land and degraded forest area covering this region.

Man Made Forest Plantations

The man made forest plantations have been restricted to the existing forest areas in Sivagangai district. About 4625.72 hectares of man made forest area are available in the district. Casuarinas and Sandal were in 1673.84 ha and 1671.7 ha respectively. Cashew and eucalyptus were in 805.25 ha. 425.95 ha respectively followed by teak (40.71 ha.) and red sanders [8.3 ha.]. These are the man made forest plantations in the district.

Details of Villages Abutting Forest Area

Abutting forest areas are located in Tiruppathur and Sivagangai taluks in the district. Information about revenue abutting forest areas is not available

Tribal Villages

There are no designated tribal villages in this district.

Trends in Production of Forest Produce

The reserve forest has various trees, which show a declining trend in the production of forest produce in Sivagangai district. Industrial wood and fuelwood are the produces of the reserve forest in the district.

Table 6.13 Proposed Activities and Budget for Forestry

Formation of Farm Pond in Tamil Nadu Afforestation Project implementing Villages of Sivaganga Social Forestry Division During 2008-09

Abstract Estimate

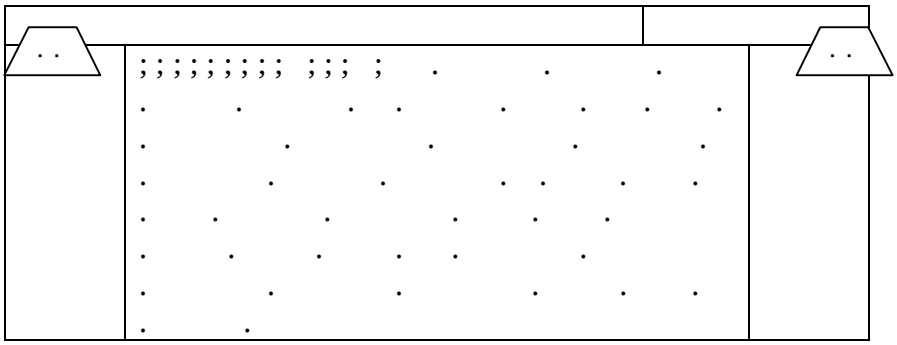
(Amount in Rs.)

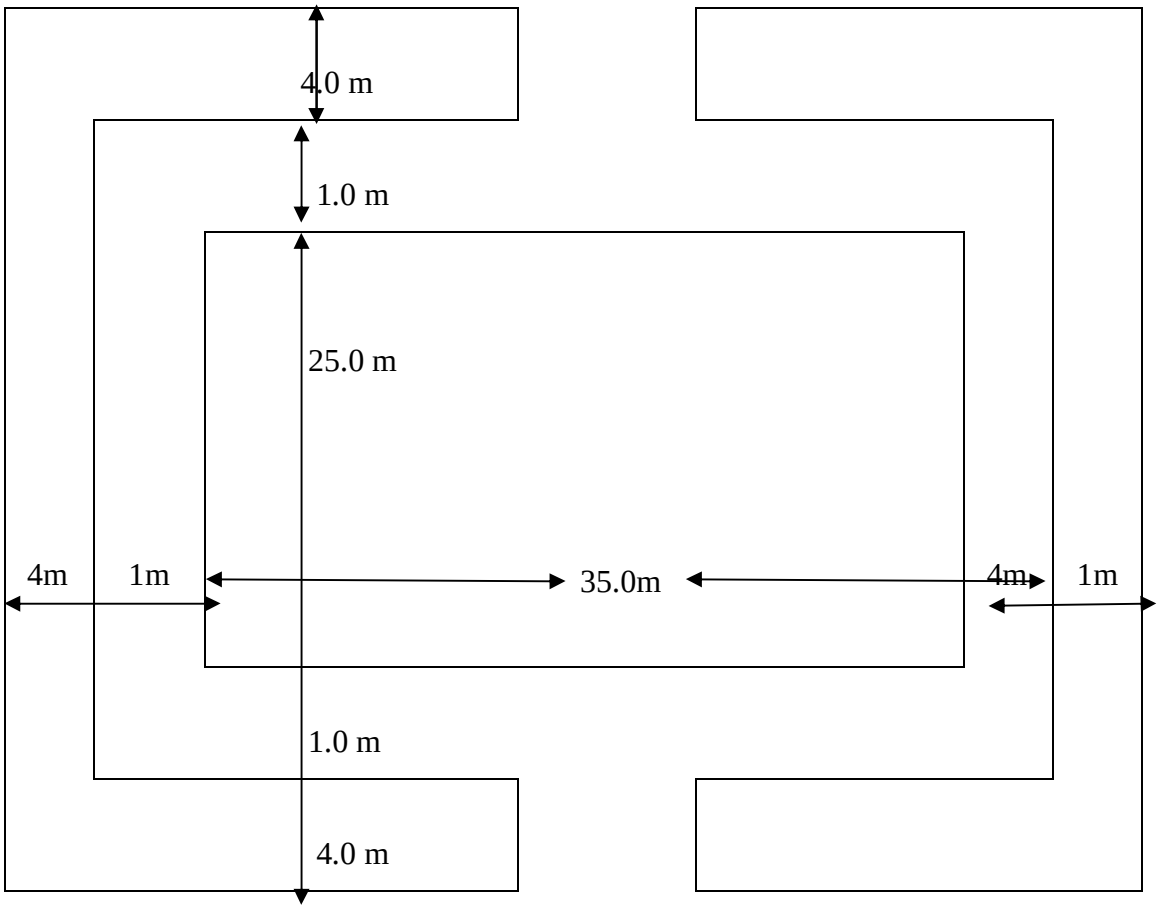
Sl. No	Description of Work	SSR Item No	Quantity	Rate	Per	Amount
1	2	3	4	5	6	7
1	Clearing the light Jungle growth	3/07-08	945.00 m^2	1.50	M^2	1417.50
2	Topsoil Removal of bund portion	62 /07-08	169.20 m^2	26.00	M^3	4399.20
3	Formation of key trenches	62 /07-08	67.68 m^3	26.00	m^3	1759.70
4	Earthwork excavation of burrow pit initial lead of 10mt and initial lift of 2mt	62 /07-08	1443.75 m^3	26.00	m^3	37537.50
5	Extra lead	76 /07-08	196.35 m^3	3.30	m^3	647.95
6	Extra lift	77/07-08	481.25 m^3	2.70	m^3	1299.40
7	Breaking clods consolidating and sectioning	78 /07-08	1443.75 m^3	1.70	m^3	2454.40
8	Name board, Photograph charges					484.35
	Total					**50000.00**

Detailed Estimate

Sl. No	Description of works	No	Length	Breadth	Depth	Contends	
1	2	3	4	5	6	7	
1	Clearing the light Jungle growth		45.0	35.0	-	1575.00	m^2
	Deduct voids 40per cent					-630.00	m^2
						945.00	m^2
2	Topsil Removal of bund portion	-	144.0	4.00	0.30	172.80	m^3
	Deduct inlets outlet	2 Nos	1.5	4	0.30	-3.60	m^3
						169.20	m^3
3	Formation of key trenches	1 x 2 Nos	144	0.6	0.4	69.12	m^3
	Deduct inlet and outlet	2 x 2 Nos	1.5	0.6	0.04	-1.44	m^3
						67.68	m^3
4	Earthwork excavation of burrow pit	-	35	25	1.65	1443.75	
5	Extra lead		17	7	1.65	196.35	
6	Extra lift 1443.75/3	-	-	-	-	481.25	
7	Breaking clods consolidating and sectioning	-	-	-	-	1443.75	

FORMATION OF FARM POND





II. Creation of Energy Wood Plantation in Sivaganga Social Forestry Division during 2008-09

Project at a Glance

Title : Project for creation of Energy Wood Plantation

Project area : Sivaganga District (Comprising of 12 Blocks Viz. Sivaganga Thiruppuvanam, Kalayarkoil, Manamadurai, Ilayangudi, Devakottai, Kannangudi, Sakkottai, Kallal, Thiruppathur, Singampunari, S.Pudur)

In each block.Nearly more than 2150 panchayat tanks are available in this district. The Plantation available in the tank is very meagre comparing to largest extent of area Details of block wise tanks as follows.

Background

Sivaganga District came into existence on 15th March 1985. It is bounded by the Ramanathapuram district on east and south, Madurai District on the west, Virudhunagar District on south-west, Thiruchirappalli District and north. The District share 3.1per cent of the total geographical area of the state and 1.9per cent of the states total population. The district is divided into six taluks and 12 blocks, the district enjoys semi-arid climate with temperature ranging from 22 to 39 ^{o} C. The average rainfall is 800-900 mm.

Cropped area of 28 percent of geographical area is much below the state average of 45per cent. Large tracks of lands amounting to nearly 35per cent of the area are lying unutilized.. Main sources of irrigation are tanks. More than 2150 numbers of tanks are distributed all over the district. Hence there is large scope for energy wood plantation in this district. Due to degradation of the land the area under land farming ha decreased over last two decades and sustainable use of natural resources and cultivation of tree species is the key factor.

Project Strategy

- Owing to the long-term nature of environment conservation and community participation the project is planned for One year.
- Utmost care and importance is taken to develop and provide employment in this project area.
- The One year project period will concentrate on mobilizing people to participate in the cultivation activities.
- The selected district will be operated on block basis out of 12 blocks.
- To have close monitoring 500 Ha. of plantation will be tackled

Implementing Agency	:	Social Forestry Division, Sivaganga
Objectives	:	To create energy wood plantation (Babul) in the Tank Foreshore area To extend the green cover in Sivagangai district (only 5.4 percent Forest Covered in this district) To generate income to local body i.e. Panchayat Union. To protect the environmental condition of this district To improve the living standard of the local community by creating assets and resource management To improve employment opportunity to the local people
Duration	:	One year

Project at a Glance

Title	:	Project for creation of Energy Wood Plantation
Project area	:	Sivaganga District (Comprising of 12 Blocks Viz. Sivaganga Thiruppuvanam, Kalayarkoil, Manamadurai, Ilayangudi, Devakottai, Kannangudi, Sakkottai, Kallal, Thiruppathur, Singampunari, S.Pudur) In each blocks Panchayat tanks are available enormously, nearly more than 2150 tanks are available in this district. The Plantation available in the tank is very megre comparing to largest extent of area Details of block wise tanks as follows.

Sl.No	Name of Block	Panchayat Tank
1.	Sivagangai	231
2.	Kalayarkoil	133
3.	Manamadurai	86
4.	Thiruppuvanam	63
5.	Ilayangudi	115
6.	Devakottai	160
7.	Kannangudi	193
8.	Kallal	168
9.	Sakkottai	157
10.	Thiruppathur	213
11.	Singampunari	639

Model Estimate for Creation of Energy Wood Plantation in Tank Fore Shore Over an Area of 10 ha. In Social Forestry Division, Sivagangai

Name of Species : Babul
Espacement : 3m x 3m

Area for in Ha	:	10
No.of seedlings Proposed/Ha		1110
Casualities 10per cent	:	110
Total Seedlings/ Ha	:	**1220**
Total Seedlings for 10 Ha	:	
10 Ha x 1220 =	:	12200

Planting Operations - Part - B

S. No	Quantity / Nos	Description of Works	FSR item	Rate	Amount
1	2	3	4	5	7
1	12200 Nos.	Cost of 13 x 25 cm seedlings	As per part-A M.E	3.05 each	37210.00
2	1000 m	Survey and demarcation including cutting1m wide - Chain & Campus survey	3.3	27.16100m	271.60

Planting Operations - Part – B contd…

S. No	Quantity / Nos	Description of Works	FSR item	Rate	Amount
3	10 Nos	Cost of boundary stones of size 0.15 x 0.15 x 0.90m including conveyance loading and unloading	P.WD SSR	65.00/ each	650.00
4	10 Nos.	Planting of boundary stone pillars in pits	P.WD	3.20 /each	32.00
		of size30cm x30cm x 45cm for demarcation	SSR		
5	11100	Aligning and marking or stacking excluding cost of stacks	5.2.1	120.89/1000 Nos	1341.90
6	11100	Digging 45cm^3 pits in tank bed areas during raing season	5.6.1	339.01/100 Nos	37630.10
7	12200	Transport of container seedlings up to2 km including loading & unloading by hired vehicles.	5.44 97-98	116.00/1000km	1415.20
8	12200	Transport of container seedlings Addl load 8 kms by hired vehicles	5.44 / 97-98	6.00/1000 km	585.60
9 a)	3660 Nos	Distribution of seedlings upto 100m	5.15.1	148.04/1000m	541.80
b	4880 Nos	Distribution of seedlings upto 200m	5.15.2	197.10/1000m	961.80
c	3660	Distribution of seedlings upto 500m	5.15.3	397.70/1000m	1455.60

Planting Operations - Part – B contd…

S. No	Quantity / Nos	Description of Works	FSR item	Rate	Amount
10	1.10	Cost of poultry manure 100 gms/ plant	PCCF	900.00 tonnes	990.00
	MT	including loading and unloading	ME		
11	11100	Application of poultry manure	"	0.10/ each	1110.00
12	11100	Planting container plants by refilling of pits of size 45 cu.cm	5.21	100.74/100 cu. Cm.	11182.10
13	1110	Replacement of causalities by reopening the failed pits and planting the seedlings 282.95/2 + 100.74 = 242.21	5.23	242.21/100 cu. cm.	2688.50
14a)	11100	Scrap weeding for 1mt dia and Soil working 15cm depth around each plant and removing the grass roots away from the site for upturning the soil	5.24	107.75/100cm.	11960.25
b)	11100 Nos	IInd soil work	"	107.75/100 Nos.	11960.25
15	LS	Erection of name board			1000.00
16	LS	Contingencies to meet out unforeseen expenditures such as purchase of pesti-cides, neem cake, wire mesh aligning wire etc,	LS		513.30
		Total			**123500.00**

Model Estimate For Raising Nursery For Plantation In Tank Foreshore, In Social Forestry Division, Sivagangai

Name of Species : Babul

No.of seedlings : 10000

Ploythene Bag size - 13x25cm

Nursery Works - Part- A

S. No	Quantity / Nos	Description of Works	FSR item	Rate	Amount
1	2	3	4	5	7
1	10000	Cost of Polythene bags (13x25cm -200G)	L.R	460.00/1000 Nos	4600.00
2	10 KG	Cost of Seeds	L.R	40.00/ kg	400.00
3	133.30M2	Preparation of Nursery site by clearing and leveling the site for formation of standard beds	4.1	211.99/ 200 m^2	169.60
4	1 No	Formation of germination beds in size of 10m x 1m x 0.3m	4.2	26.00 bed /	26.00
5	0.33 Cl.	Cost of Farm yard mannure for germi nation beds	ME	44.00/ cl	14.50
6	1	Digging water storage pit-Top3m x3m, bottom 2.1x2.1m depth 1m.	PWD	162.00/ each	162.00
7	40Rm	Forming brushwood fencing around the nursery	5.36.1	400.00/ 1000RM	16.00
8	1 No	Watering the germination beds for twice daily with rose cane-15 days	4.5.1	71.83/ 10 beds day	107.75
9	8.40 cum	Collection & supply of good quality earth silt and sand	ME	64.8 /cu.m	544.75
10	2.80 cu.m	Collection & supply of Farm yard manure. For filling bags	14.19 97-98	176.00/ cu.m	492.80

Nursery Works - Part- A

11	10000	Preparation of soil mixture by breaking clods,sieving and mixing of fertile earth (including red soil,silt & sand etc) and farm yard manure heaping at the filling side and filling polythene bags arranging beds in beds and pricking out the seedlings.	4.6.4	392.45/1000	3924.50
12	1 No	Pudding shade pandals for newly pricked out seedlings	4.9	85.05/ each	85.05
13	350 kg	Cost of vermicasting at 35 grams per bag	ME 2005-06	5.00/ kg	1750.00
14	150 kg	Cost of VAM at 15 grams per bag	"	10.00/ kg	1500.00
15	60 kg	Cost of Azospirillum at 6grams per bag.	"	15.00/ kg	900.00
16	60 kg	Cost of phasphobacteria at 6 grams per bag	"	15.00/ kg	900.00
17		Watering the container plants with Rose cans			
a	10000	Twice daily 10 WD	4.10.4	20.15/1000 day	2015.00
b	10000	Once daily 30 WD	4.11.4	10.07/1000 day	3021.00
c	10000	Once alternate days 10 WD	4.11.4	10.07/1000 day	1007.00
d	10000	Twice in a week 35 WD	4.11.4	10.07/ 1000day	3524.50
18	10000	Shifting the container plants weeding,	4.15.4	44.68/1000 shift	2234.00
	5 shit	grading and replacement of casualties in the bags-5 shifts.			
19	10000	Cost of water for watering the container	4.18.4	0.85/1000 day	722.50
	85 days	Seedlings from private well.			
20	133.30 m2	Land rent for the nursery site -6 month	4.17	86.00/40m^2 month	2064.00
21	LS	Contingencies for unforeseen items such as purchase of pesticide neem cake etc.,	-	-	319.05
		Total			**30500.00**

Model Estimate for Raising 10.000 Nos. Misc.Tree Seedlings for Free Distribution in Social Forestry Division, Sivagangai During-2008-09

Size of poly. Bags : 30 X 45 CM- 400g

Sl No	Quantity	Unit	Description of works	FSR No	FSL	Rate	Amount
1	2	3	4	5	6	7	9
1	10000	Nos	Cost of Polythene bags (30x45) 400G			3680/1000	36800.00
2	12	kgs	Cost of seeds	LR		25/ kgs	300.00
3	600	Sqm	Preparation of nursery site by clearing and levelling the site for forming standard bed size 10x1mt 250 Nos/Bed	4.1	2.42	211.99/200 Sq.m	636.00
4	1	Nos	Formation of germination bed of size 10x1m x0.3m by breaking clods, mising farm yard manure and, earth, spreading durl etc. 2500 Nos/beds.	4.2		26 /Bed	26.00
a	0.33	Cl	Cost of farm yard manure for germination beds.	LR		44/ CL	14.50
5	1	Nos	Digging watr storage pit-Top 3mx3m, bottom 2.1x2.1 m, depth 1m	PWD SSR 2004-05		162 each	162.00
6	40	Rm	Forming brushwood fencing around the nursery	5.36.1		400/1000 Rm	16.00

Model Estimate for Raising 10.000 Nos. Misc.Tree Seedlings for Free Distribution in Social Forestry Division, Sivagangai During-2008-09

7	1	Nos	Watering the germination beds twice daily with rose cane -15 days	4.5.1	0.82	71.83/10.00 beds/days	107.40
8	1	Nos	Watering the germination beds Once daily with rose cane -15 days	4.5.2	0.41	35.9210 beds/days	53.90
9	69.26	Cu.m	Collection & supply of good quality earth, sand and silt etc. Average load of 3km	PWD SSR		64.85 /Cu.m	4492.00
10	**23.1**	Cu.m	Collection & supply of Farm yard manure			176 /Cu.m	4065.60
11	1000	Nos	Preparation of soil mixture by breaking, sieving and mixing fertile earth (including red soil, silt & sand etc) and farm yard manure heaping at the filling site and filling in polythene bags at the 3:1 and arranging bags and pricking out the seedlings excluding cost of earth & farm yard manure.	464	28.6	2502.7/1000	25027.30
12			Cost of vermicasting and Bio fertilizers	Rea search			
a	350 kg	Kg	Cost of Vermicasting at 35 grames per Plant	wing		5.00	1750.00
b	150 kg	kg	Cost of VAMat 15 grams per plant	-do-		10.00	1500.00
c	60 kg	kg	Cost of Azospirillum at 6 grams per Plant	-do-		15.00	900.00
d	60 kg	kg	Cost of phasphobacteria at 6 grams per plant	-do-		15.00	900.00

Model Estimate for Raising 10.000 Nos. Misc.Tree Seedlings for Free Distribution in Social Forestry Division, Sivagangai During-2008-09

13	1	Nos	Putting shade pandals for new/ pricked out seedlings and for mother beds wherever necessary.	4.9	1	87.60	87.60
14			Watering the container plants with rose cans.				
a	1000	Nos	Twice daily -10 WD	4.10.7	0.56	49.06	4906.00
b	1001	Nos	Once daily - 30 WD	4.11.7	0.28	24.53	7359.00
c	1002	Nos	Once on alternate days - 70 WD	4.11.7	0.28	24.53	17171.00
d	1003	Nos	Twice a week	4.11.7	0	0	0.00
15	10000	Nos	Shifting the container plants seedlings, grading and replacement of casualties in the bags 7 shifts.	4.15.7	2.69	235.64	16494.80
16	10000	Nos	Cost of water for watering the container seedlings from private wells-110 days	Pccf		3.20	3520.00
17	600 mt or 15 cent		Land rent for the nursery in private lands (7 Months) at 500 Nos/cent (40mt)	4.17 97-98		86	9030.00
18	LS		Contingencies for unforeseen items such as purchase of Bio fertilizers neem cake etc, Provision of nursery Board.				1680.90
			Total				**137000.00**

Model Estimate For Raising Pungan Seedlings For Planting in Tank Bund in Social Forestry Division, Sivagangai 2008-09

Size of Polythene bags - 16x30 cm-Name of Species : Pungan
No.of seedlings-10000-Nos

Nursery Works - Part- A

S. No	Quantity / Nos	Description of Works	FSR item	Rate	Amount
1	2	3	4	5	7
1	10000	Cost of Polythene bags (16x30 - 400G)	L.R	1001.00/1000 Nos	10010.00
2	12kg	Cost of Seeds	L.R	40.00/ kg	480.00
3	200.0 M2	Preparation of Nursery site by clearing and leveling the site for formation of standard beds	4.1	211.99/ $m^2$200	212.00
4	1 No	Formation of germination beds in size of 10m x 1m x 0.3m	4.2	24.00/ bed	26.00
5	0.33 Cl.	Cost of Farm yard manure for germination beds	ME	44.00/ cl	14.50
6	1 No	Digging water storage pit-Top3m x 3m, bottom 2.1x2.1m depth 1m.	PWD	162.00/ each	162.00
7	40Rm	Forming brushwood fencing around the nursery	5.36.1	400.00/1000 RM	16.00
8a	1 No	Watering the germination beds for twice daily with rose cane-15 days	4.5.1	71.83/10 beds / day	107.40

Model Estimate For Raising Pungan Seedlings For Planting in Tank Bund in Social Forestry Division, Sivagangai 2008-09

9	16.80 cum	Collection & supply of good quality earth silt and sand	ME	64.85/ cu.m	1089.50
10	5.60 cu.m	Collection & supply of Farm yard Manure. For filling bags	14.19 97-98	176.00/ cu.m	985.60
11	10000	Preparation of soil mixture by breaking clods, sieving and mixing of fertile earth (including red soil, silt & sand etc) and farm yard manure heaping at the filling side and filling polythene bags arranging beds in beds and pricking out the seedlings.	4.6.5	521.22/1000	5212.20
12	1 No	Pudding shade pandals for newly pricked out seedlings	4.9	87.60/ each	87.60
13	350 kg	Cost of vermicasting at 35 grammes per	ME	5.00/ kg	1750.00
		Bag	2005-06		
14	150 kg	Cost of VAM at 15 grams per bag	"	10.00/ kg	1500.00
15	60 kg	Cost of Azospirillum at 6 grams per bag	"	15.00/ kg	900.00
16	60 kg	Cost of phasphobacteria at 6 grams per bag	"	15.00/ kg	900.00
17		Watering the container plants with Rose cans			

Model Estimate For Raising Pungan Seedlings For Planting in Tank Bund in Social Forestry Division, Sivagangai 2008-09

A	10000	Twice daily 10 WD	4.10.4	32.41/1000 day	3241.00
b	10000	Once daily 30 WD	4.11.4	16.21/1000 day	4863.00
c	10000	Once alternate days 40 WD	4.11.4	16.21/1000 day	4863.00
d	10000	Twice in a week 10 WD	4.11.4	16.21/1000 day	810.00
18	10000 5 shift	Shifting the container plants weeding, grading and replacement of casualities in the bags-5 shifts	4.15.4	69.20/1000 shift	3460.00
19	10000 90 days	Cost of water for watering the container seedlings from private well.	4.18.4	1.60/ 1000day	1440.00
20	200 m2	Land rent for the nursery site -6 month	4.17	86.00/40m^2 month	2580.00
21	LS	Contingencies for unforeseen items such as purchase of pesticide neem cake	---	---	290.20
		Total			**45000.00**

Model Estimate for Raising Jatropa seedlings for Planting In Tank Bunds in Social Forestry Division, Sivagangai

Size of Polythene Bags - 13x25cm -200G Name of Species : Jatropa

No.of seedlings = 10000 Nos

Nursery Works - Part-A

S. No	Quantity / Nos	Description of Works	FSR item	Rate	Amount
1	2	3	4	5	7
1	10000	Cost of Polythene bags (13x25 cm- 200G)	L.R	460.00/1000 Nos	4600.00
2	25 kg	Cost of Seeds	L.R	40.00/ kg	2000.00
3	133.3	Preparation of Nursery site by clearing and levelling the site for formation of standard beds	4.1	211.99/200 m^2	141.30
4	1 No	Formation of gemination beds in size of 10m x 1m x 0.3m	4.2	24.00/ bed	24.00
5	0.33 Cl.	Cost of Farm yard mannure for germination beds	ME	44.00/ cl	14.50
6	1	Digging water storage pit- Top 3m x 3m, bottom 2.1x2.1m depth 1m.	PWD	162.00/ each	162.00
7	40Rm	Forming brushwood fencing around the nursery	5.36.1	400.00/1000 RM	16.00
8a	1 No	Watering the germination beds twice daily with rose cane-15 days	4.5.1	71.83/10 beds day	107.75

Model Estimate for Raising Jatropa seedlings for Planting In Tank Bunds in Social Forestry Division, Sivagangai

b		-do - daily once	"	34.87/10 beds day	52.30
9	8.40 cum	Collection & supply of good quality earth silt and sand	ME	64.85/ cu.m	544.75
10	2.80	Collection & supply of Farm yard	14.19	176.00/ cu.m	492.80
	cu.m	manure. For filling bags	97-98		
11	10000	Preparation of soil mixture by breaking clods, sieving and mixing of fertile earth (including red soil, silt & sand etc) and farm yard manure heaping at the filling side and filling polythene bags arranging beds in beds and pricking out the seedlings.	4.6.4	392.45/1000	3924.50
12	1 No	Pudding shade pandals for newly pricked out seedlings	4.9	87.6/ each	87.60
13	350 kg	Cost of vermicasting at 35 grams per bag.	ME 2005-06	5.00/ kg	1750.00
14	150 kg	Cost of VAM at 15 grams per bag	"	10.00/ kg	1500.00
15	60 kg	Cost of Azospirillum at 6grames per bag	"	15.00/ kg	900.00
16	60 kg	Cost of phasphobacteria at 6 grams per bag	"	15.00/ kg	900.00
17	10000	Watering the container plants Twice daily 10 WD	4.10.4	20.15/1000 day	2015.00
b	10000	Once daily 30 WD	4.11.4	10.07/1000 day	3021.00
c	10000	Once alternate days 30 WD	4.11.4	10.07/1000 day	1007.00

Model Estimate for Raising Jatropa seedlings for Planting In Tank Bunds in Social Forestry Division, Sivagangai

d	10000	Twice in a week 5 WD	4.11.4	10.07/1000 day	3524.00
18	10000 4 shit	Shifting the container plants weeding, grading and replacement of casualties	4.15.4	44.68/1000 shift	2234.00
		in the bags-4 shifts.			
19	10000 75days	Cost of water for watering the container Seedlings from private well.	4.18.4	0.85/1000 day	637.50
20	133.30 m2	Land rent for the nursery site -6 month	4.17	86.00/40m^2 month	1719.60
21	LS	Contingencies for unforeseen items such	-	-	624.40
		as purchase of pesticide neem cake			
		Total			**32000.00**

Model Estimate For Raising Bund Plantation In Social Forestry Division, Sivagangai

Length - 1 .00 KM-Name of Species Pungan -Jatropa

(16X30CM) (13X25CM)

Espacement 10x10m 2x2m

No.of seedlings-100-1000-(in 4 rows for 1.00 km

Casuality 10per cent-10-100

Total No.of Seedlings-**110-1100**

Planting Operation - Part-B

S. No	Quantity / Nos	Description of Works	FSR item	Rate	Amount
1	2	3	4	5	7
		Pungan Seedlings Planting.			
1	110 Nos	Cost of Pungan Seedlings(16 x 30cm)	ME	4.75/ each	495.00

Model Estimate For Raising Bund Plantation In Social Forestry Division, Sivagangai

2	1000m2	Cutting and clearing light growth	PWD SSR	1.45/ m^2	1450.00
3	1.00 km	Survey and demarcation	3.3 2007-08	27.16/100m	271.60
4	100 Nos	Aligning and Marking	5.2.4	120.89/1000	12.10
5	100 Nos	Digging 45cm3 pits during rainy season	5.6.2	282.95/100	339.10
6	2.025 cu.m	Cost of farmyard manure for filling in the pits(0.45x0.45x0.10-100Nos) 2.025 m^3	14.19 97-98	176.0/ cu.m	356.40
7	110 Nos	Transporting of seedlings upto 2km by hired vehicles - (16 x 30 cm)	5.44 97-98	170.00/1000	18.70
8	110 Nos	Transporting of seedlings beyond 2kms maximum 8km by hired vehicles (16x30cm seedlings)	5.44 97-98	7.00/1000	6.20
9		Transporting of polythene container seedlings by head load in the places where approach road are not available to take vehicles to planting site (16x30cm seedlings)			
a	55 Nos	Distance up to 500mt	5.13.2	443.96/1000	25.15
b	55 Nos	Distance up to 1000mt	5.13.3	510.3/1000	28.90
10		Distribution of seedlings from where seedlings are stacked to the planting site (16x30cm seedlings)			
a	55 Nos	Distance up to100mt	5.15.1	274.19/1000	15.10
b	55 Nos	Distance up to 200mt	5.15.2	408.22/1000	22.45
11	100 Nos	Planting pungan seedlings in the 45cm3 pits	5.21	100.74/100	100.70
12	10 Nos	Replacement of casualties by re opening the failed pits.	5.23	242.21/100	27.00
13	100 Nos	Weeding and soil working around the plants 1mt dia and 15cm depth	5.24	107.75/100	107.80

Model Estimate For Raising Bund Plantation In Social Forestry Division, Sivagangai

14	100 Nos	Forming semicircular bunds	5.25	252.29/100	252.30
15	100 Nos	Providing individual thorny fence around the plants in bunds 1.0m height and 0.75cm in diameter	8/14-5 97-98	5.50/ each	550.00
		Jatropa Planting			
16	1100	Cost of Jatropa seedlings (13x25 cm)	Model estimate	3.20/ each	3300.00
17	1000 Nos	Aligning and Marking	5.2.4	120.89/1000	120.90
18	1000 Nos	Digging 45cm3 pits during rainy season	5.6.2	282.95/100	3391.00
19	20.25 m3	Cost of farmyard manuxe for filling in the pits (0.45x0.45x0.10m) x 1000 = 20.25m3	14.19 97-98	176.00/ cu.m	3564.00
20	1100 Nos	Transport of seedlings up to 2km by hired vehicles (13x25cm)	5.44 97-98	116.00/1000 Nos	127.60
21	1100 Nos	Transport of seedlings beyond 2km maximum 8 km by hired vehicles (13x25 cm)	5.44 (a) 97-98	6.00/1000 Nos	52.80
22		Transporting of polythene contrainer seedlings by head load in the places where approach roads are not available to take vehicles to planting site(13x25cm)			
a	550	Distance up to 500 Mt	5.13.2	314.48/1000	173.00

Model Estimate For Raising Bund Plantation In Social Forestry Division, Sivagangai

b	550	Distance up to 1000 Mt	5.13.3	366.17/1000	201.40
23		Distribution of polythene container seedlings from where seedlings are stacked to the planting site			
a	550	Distance up to 100 Mt	5.15.1	148.04/1000	81.40
b	550	Distance up to200 Mt	5.15.2	197.10/1000	109.39
24	1000	Planting the container seedlings in the 45cm3 pits	5.21	100.74/100 Nos	1007.40
25	100	Replacement of casualties by reopening the failed pits	5.23	242.21/100 Nos	270.29
26	1000	Weeding and soil working around the plants 1mt dia and 15cm depth	5.24	107.75/100 Nos	1077.50
27	1000	Forming semicircular bunds	5.25	252.29/100 Nos	2522.90
28	1 No 6 month	Wages of protection mazdoor for tank bunds and Tank foreshore plantation	District Collector Rate	2000.00/ Month(Rs.80/day) 25day/Month	17250.00
29	LS	Contingencies for unforeseen items			671.92
					38000.00

Table 6.14 Budget Abstract for Forestry – 2008 to 2012

(Rs. in Lakhs)

Sl.No.	Particulars	Budget (2008-12)
1	Formation of Farm Pond in Tamil Nadu Afforestation Project implementing villages of Sivaganga social forestry division	0.50
2	Model estimate for creation of energy wood plantation in tank fore shore over an area of 10 ha. in social forestry division, Sivagangai	1.24
3	Model estimate for raising nursery for plantation in tank foreshore, in social forestry division, Sivagangai	0.31
4	Model estimate for raising 10.000 nos. Misc. tree seedlings for free Distribution in social forestry division, Sivagangai	1.37
5	Model estimate for raising pungan seedlings for planting in tank bund in social forestry division, Sivagangai	0.45
6	Model estimate for raising Jatropa seedlings for planting In tank bunds in social forestry division, Sivagangai	0.32
7	Model estimate for raising bund plantation in social forestry division, Sivagangai	0.38
	Total	**4.57**

6.8. Water Resources Organization / PWD

Project I : Modernization of PWD Irrigation Tanks in Sivagangai District

Saraguniyar Division

Project cost Rs. 1495.61 Lakhs

I) Abstract

This project is to rehabilitate 104 nos. of PWD irrigation tanks, 3 existing anicuts and to construct a new anicut at a cost of Rs 1495.61 lakhs under National Agricultural development Programme in a phased manner for 4 years from 2008-09. The implementing agency of this project is PWD. The monitoring agency will be the funding agency.

II) Budget

The total project cost works out to Rs. 1495.61 lakhs for modernizing 104 PWD tanks, three existing anicuts and constructing one new anicut. This project is for a span of 4 years. The year wise financial outlay is as follows:

I year (2008-09)	-	Rs.652.72 lakhs
II year (2009-10)	-	Rs.349.30 lakhs
III year (20010-11)	-	Rs.225.09 lakhs
IV year (2011-12)	-	Rs.268.50 lakhs

III) Background /Problem Focus

Sivagangai District, as a whole is totally depending on rain fed tanks for irrigation and the farmers in this district are surviving only with their uncertain water resources. Hence it is absolutely necessary to rehabilitate the irrigation infrastructures viz tanks and anicuts and thereby saving the available fresh water for using it judiciously for agriculture.

The marginal farmers of this district are often approaching the District administration to redress their grievances mainly about their irrigation tanks.

IV) Project Rationale

The PWD tanks proposed in this project have lost their functionality due to eroded tank bunds, dilapidated sluices and weirs. As such, it leads to reduction in original designed capacity and thereby cultivation under these tanks is affected and gap in ayacut gets increased.

By implementing this project, the original designed capacity of tank will be restored and irrigation infrastructures like sluices, weirs and anicuts will be modernized resulting in assured water supply to its ayacut area.

V) Project Strategy

An action plan for a span of 4 years from 2008-09 to 2011-12 is prepared to rehabilitate and modernize 104 nos. of PWD tanks in Sivagangai and Manamadurai Taluks of Sivagangai District.

VI) Project Goals

The Goal of NADP is to boost up the growth in agriculture sector through various means. Developing the agriculture infrastructure is one of the best strategies to achieve the required growth. As Sivagangai District has no perennial river, the farmers are entirely depending on irrigation tanks for agriculture. So, rehabilitating these tanks gets prime focus.

By implementing this project, the original designed capacity of tank will be restored and assured water supply to its ayacut area will be ensured. As a result, cultivation can be stabilized and gap in ayacut area can be bridged resulting in increase of socio-economic status of the farmers of this district.

The good side effects of this project would be

- Recharging of depleted ground water table
- Restoration of dead storage for cattle feeding and Fisheries
- Afforestation of tank bed.

VII) Project Components

This project envisages the following components

- Reconstructing / Repairing the existing tank sluices and weirs for better water regulation.
- Providing flood protection walls at vulnerable points.
- Strengthening the tank bund to the PWD standards.

- Lump sum Provision @ 6 percent of total value of project for Labour welfare fund, Petty supervision charge, Documentation, Photo and Video charges, unforeseen item and contingencies.

VIII) Project Cost and Financing:

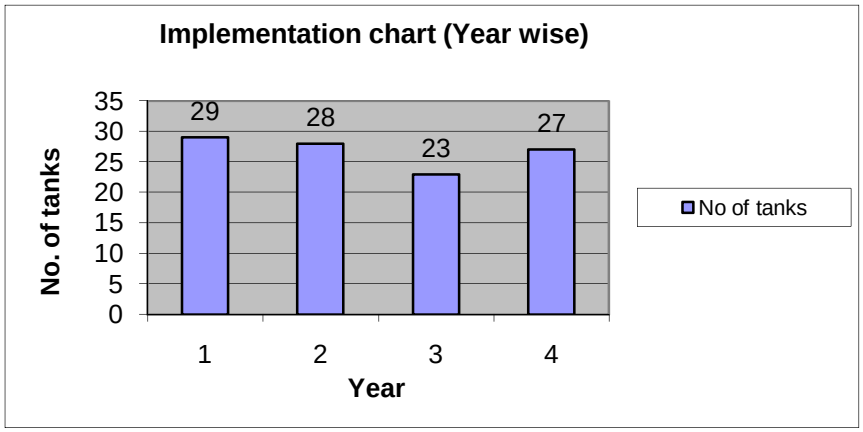
The total project cost works out to Rs. 14.95 crores. for modernizing 104 PWD tanks ,3 existing anicuts and constructing 1 new anicut.

To cope up with growing inflation rate, 10per cent increase in rates has been envisaged in the project cost of consecutive year. List of tanks to be taken up in 4 consecutive years with break up details of all the components involved is enclosed.

IX) Implementation Chart of the Project

A graphical representation is prepared according to the action plan for the four year project.

Graph: Project Implementation chart



X) Reporting

In this project, the following are highlighted:

- Total No. of PWD tanks proposed : 104
- Total No. of existing anicuts proposed : 3
- Total No. of new anicut proposed : 1
- Budget for 4 years : Rs.1495.61 lakhs

Table 6.15 Action Plan – PWD – Saruguniyar Division

(Rs. in lakhs)

Sl. No	Name of Work	Total No of units proposed	Physical programme year wise				Financial programme year wise				Total
			08- 09	09-10	10- 11	11- 12	08 -09	09-10	10 -11	11-12	
1	Modernization of PWD tanks & existing anicuts in Sivagangai Taluk	107	29	28	23	27	352.72	349.30	225.09	268.5	1195.61
2	Constrruction of New anicut	1	1	--	--	--	300	--	--	--	300.00
	Total	**108**									**1495.61**

Saruganiyar Basin Subdivision
Sivagangai

Saruganiyar Basin Division
Sivagangai

Table 6.16 List of Works proposed under NADP Scheme for 2008-09

(Rs. in lakhs)

Sl. No	Name of Work	Benefitted Ayacut (in Ha)	Sluice				Weir/ Anicut	Retaining wall		LS Prov. @ 6 per cent	Rough Cost Est.
			Repair		Reconst		Amt	Length in m	Amt		
			No	Amt	No	Amt					
1	Modernisation of Elanthangudi tank	82.69	2	2.50	2	4.00	2.00	30	2.10	0.64	11.24
2	Modernisation of Alupillaithangi tank	88.53	1	1.25	1	2.00				0.20	3.45
3	Modernisation of Mulakulam tank	78.53	2	2.50	2	4.00		20	1.40	0.47	8.37
4	Modernisation of Uruli tank	53.02			2	4.00	0.50			0.27	4.77
5	Modernisation of Periyairuvan tank	56.39	2	2.50	2	4.00		10	0.70	0.43	7.63
6	SR to Mathur Anicut	120.24						150	10.00	0.60	10.60
7	SR to Pillur Anicut	332.71					2.00	500	10.00	0.72	12.72
8	Modernisation of Alangudi tank	101.54			3	6.00		30	2.40	0.50	8.90
9	Modernisation of Kothankulam tank	46.74	2	2.70	2	4.00		30	2.40	0.55	9.65

Table 6.16 contd…

(Rs. in lakhs)

Sl. No	Name of Work	Benefitted Ayacut (in Ha)	Sluice				Weir/ Anicut	Retaining wall		LS Prov. @6per cent	Rough Cost Est.
			Repair		Reconst		Amt	Length in m	Amt		
10	Modernisation of Thamarakki tank	48.29			1	2.00		20	1.40	0.20	3.60
11	Modernisation of Moopai tank	52.84	1	1.25	3	6.00		20	1.40	0.52	9.17
12	Modernisation of Thukkalur tank	58.62	1	1.25	2	4.00		20	1.40	0.40	7.05
13	SR to Thukkalur anicut	168.09						200	15.00	0.90	15.90
14	Modernisation of Pagani tank	56.94			2	4.00	0.50	50	3.50	0.48	8.48
15	Modernisation of Jayathunganeri tank	83.34			4	8.00		30	2.10	0.61	10.71
16	Modernisation of Maranthai tank	76.92			2	4.00	3.00	25	1.75	0.53	9.28
17	Modernisation of Poovanthi tank	414.5	1	1.00			65.00			3.96	69.96
18	Modernisation of Sadangi tank	1207.87					60.00			3.6	63.60
19	Modernisation of Kondagai tank	769.72	3	5.00		3.00	3.00			0.66	11.66
20	Modernisation of Kalukarkadai tank	139.2	2	2.00	1	2.25	3.00			0.435	7.69
21	Modernisation of Kanakkankudy North tank	170.34	1	1.00			8.00			0.54	9.54

Table 6.16 contd…

Sl. No	Name of Work	Benefitted Ayacut (in Ha)	Sluice				Weir/ Anicut	Retaining wall		LS Prov. @6per cent	Rough Cost Est.
			Repair		Reconst		Amt	Length in m	Amt		
22	Modernisation of Kanakkankudy south tank	98.59	1	1.00			5.00			0.36	6.36
23	Modernisation of Manjalkudy tank	48.32	1	1.00	2	4.00	8.00			0.78	13.78
24	Modernisation of Poigai tank	116	1	1.00	1		5.00			0.36	6.36
25	Modernisation of Vaviyarendal tank	48.58	1	1.00	2	3.00	1.00			0.3	5.30
26	Modernisation of Keelasorikkulam tank	106.98	1	1.00	1	1.50	2.00			0.27	4.77
27	Modernisation of Melasorikkulam tank	56.64	1	1.00	1	1.50	1.50			0.24	4.24
28	Modernisation of Parayankulam tank	46.31	1	1.00	1	1.50	1.50			0.24	4.24
29	Modernisation of Ladenendal tank	102.87	1	1.00	1	1.50	1.00			0.21	3.71
	Total	**4831.35**	**26.00**	**30.95**	**38**	**74.25**	**172.00**	**1135**	**55.55**	**19.97**	**352.72**

Table 6.17 List of Works Proposed under N.A.D.P. Scheme for 2009-10

(Rs. in lakhs)

Sl. No	Name of Work	Benefitted Ayacut (in Ha)	Tank Bund		Sluice				Weir/ Anicut	Retaining wall		LS Prov. @ 6 percent	Rough Cost Est.
					Repair		Reconst		Amt	Length in m	Amt		
			Length	Amt	No	Amt	No	Amt					
1	Modernisation of Erumbukudi tank	45.82	1600	5.50	2	2.70	2	4.50		100	8.00	1.24	21.94
2	Modernisation of Manaseri tank	44.13	1700	5.90			3	6.75	3.00	50	4.00	1.18	20.83
3	Modernisation of Mathur tank	41.71	1530	5.30	2	2.70	3	6.75		20	1.60	0.98	17.33
4	Modernisation P.Velangulam tank	64.31	1585	5.50	2	2.70	3	6.75	1.00	30	2.40	1.10	19.45
5	Modernisation of Mutharasan tank	51.27	1160	4.00	2	2.70	2	4.50				0.67	11.87
6	Modernisation of Sithaloor tank	74.95	1800	6.30		0.00	3	6.75		30	2.40	0.93	16.38
7	Modernisation of Okka Kanmoi	68.75	1850	6.40	2	2.70	2	4.50				0.82	14.42
8	Modernisation of Erumaikulam tank	95.46	1830	6.30	2	2.70	2	4.50		30	2.40	0.95	16.85
9	Modernisation of Athani tank	72.12	2078	7.20			4	9.00		10	0.80	1.02	18.02
10	Modernisation of Keelappongudi tank	55.13	1524	5.20			1	2.25		15	1.20	0.52	9.17

Table 6.17 Contd…

Sl. No	Name of Work	Benefitted Ayacut (in Ha)	Tank Bund		Sluice				Weir/ Anicut	Retaining wall		LS Prov. @ 6 percent	Rough Cost Est.
					Repair		Reconst		Amt	Length in m	Amt		
			Length	Amt	No	Amt	No	Amt					
11	Modernisation of Kochadai tank	41.68	1980	6.90			3	6.75		20	1.60	0.92	16.17
12	Modernisation of Kolanthi tank	70.49	2013	7.00			1	2.25	1.00	25	2.00	0.74	12.99
13	Modernisation of Erivayal tank	82.69	2074	7.20			1	2.25	2.00	50	4.00	0.93	16.38
14	Modernisation of Kurukathan tank	66.51	1500	5.20			1	2.25				0.45	7.90
15	Modernisation of Tharuthalai tank	102.18	2135	7.40			1	2.25	1.00	25	1.75	0.74	13.14
16	Modernisation of Seithur tank	65.62	3355	11.60			2	4.50	1.00	25	1.75	1.13	19.98
17	Modernisation of Thiruppuvanam tank	821.85			2	4.50	1	3.00				0.45	7.95
18	Modernisation of Kanjirangkulam tank	45.34			2	2.00	1	2.00				0.24	4.24
19	Modernisation of T.Velankulam tank	126.37			1	1.00	1	2.00	15.00			1.08	19.08
20	Modernisation of Thalikulam tank	47.17			2	2.00	1	2.00	5.00			0.54	9.54

Table 6.17 Contd…

Sl. No	Name of Work	Benefitted Ayacut (in Ha)	Tank Bund		Sluice				Weir/ Anicut	Retaining wall		LS Prov. @ 6 percent	Rough Cost Est.
					Repair		Reconst		Amt	Length in m	Amt		
			Length	Amt	No	Amt	No	Amt					
21	Modernisation of Pitchaipillaiyendal tank	75.34			1	1.00			7.00			0.48	8.48
22	Modernisation of Sembarayanendal tank	76.92			2	2.00	1	2.00	3.00			0.42	7.42
23	Modernisation of Maruthankudy tank	50.35			2	2.00	1	1.50	1.50			0.30	5.30
24	Modernisation of T.Pappankulam tank	69.64					2	3.00	1.50			0.27	4.77
25	Modernisation of Ambalathadi tank	114.18					3	5.00	3.00			0.48	8.48
26	Modernisation of Thavatharendal tank	46.15			2	2.00	3	5.00	2.00			0.54	9.54
27	Modernisation of Sembaikulam tank	44.13			1	1.00	2	3.00	2.00			0.36	6.36
28	Modernisation of Kattikulam tank	1212.42			6	5.00	-					0.30	5.30
	Total	3772.68	29714	102.9	33	38.70	50	105.0	49.00	430.0	33.90	19.77	**349.3**

Table 6.18 List of Works proposed under N.A.D.P. Scheme for 2010-11

(Rs. in lakhs)

Sl. No	Name of Work	Bene fitted Ayacut (in Ha)	Tank Bund		Sluice				Weir/ Anicut	Retaining wall		LS Prov. @6per cent	Rough Cost Est.
					Repair		Reconst						
			Length	Amt	No	Amt	No	Amt	Amt	Length in m	Amt		
1	Modernisation of Parachikulam tank	76.3	1980	6.70	2	3.00	2	5.00		20	1.80	0.99	17.49
2	Modernisation of Pulagani tank	49.45	1300	4.40	2	3.00	2	5.00				0.74	13.14
3	Modernisation of Pulikanmoi tank	49.68	1080.00	6.70	2	3.00	2	5.00		10	0.90	0.94	16.54
4	Modernisation of Eluppakidi tank	68.62	2250	7.50	2	3.00	2	5.00		10	0.90	0.98	17.38
5	Modernisation of Venjakanmoi tank	56.97	2340	8.00			1	2.50		15	1.35	0.71	12.56
6	Modernisation of Maraniusilankulam tank	50.81	1890	6.40			2	5.00		15	1.35	0.77	13.52
7	Modernisation of Mudikandan tank	152.56	2780	9.40	1	1.50	2	5.00		20	1.80	1.06	18.76
8	Modernisation of Kadambankudi (Chetti) tank	42.26	1140	3.90			2	5.00		10	0.90	0.59	10.39
9	Modernisation of Kadavankudi tank	62.87	1550	5.10			1	2.50		20	1.80	0.56	9.96

Table 6.18 contd…

Sl. No	Name of Work	Bene fitted Ayacut (in Ha)	Tank Bund		Sluice				Weir/ Anicut	Retaining wall		LS Prov. @6per cent	Rough Cost Est .
					Repair		Reconst						
			Length	Amt	No	Amt	No	Amt	Amt	Length in m	Amt		
10	Modernisation of Kandaneri tank	58.53	1920	6.40			3	7.50		20	1.80	0.94	16.64
11	Modernisation of Paikudipatti tank	60.00	1464	5.00			2	5.00				0.60	10.60
12	Modernisation of Milaganur tank	569.13			--		--		10.00			0.60	10.60
13	Modernisation of Thuthikulam tank	52.63			--		2	2.50				0.15	2.65
14	Modernisation of Mukkudi tank	82.37			2	2.25			2.00			0.26	4.51
15	Modernisation of S.Pudukottai tank	76.11			2	2.50	1	1.50				0.24	4.24
16	Modernisation of Sengulam tank	44.13			2	2.00			2.00			0.24	4.24
17	Modernisation of Piramanur tank	742.46			4	4.50	2	3.00	2.50			0.60	10.60

Table 6.18 contd…

Sl. No	Name of Work	Bene fitted Ayacut (in Ha)	Tank Bund		Sluice				Weir/ Anicut	Retaining wall		LS Prov. @6per cent	Rough Cost Est .
					Repair		Reconst						
			Length	Amt	No	Amt	No	Amt	Amt	Length in m	Amt		
18	Modernisation of Sangankulam tank	99.37			1	1.00	2	3.00	1.00			0.30	5.30
19	Modernisation of Rangiyam tank	472.22			2	2.00	2	3.00	1.00			0.36	6.36
20	Modernisation of T.Puliyankulam tank	70.4			1	1.00	2	3.00	1.00			0.30	5.30
21	Modernisation of Idaikattur tank	456.4			--		1	2.00				0.12	2.12
22	Modernisation of Achankulamtank	117.51			2	2.00	-		1.00			0.18	3.18
23	Modernisation of Palayanur tank	448.81			5	7.50	-		1.00			0.51	9.01
	Total	3959.59	19694	69.50	30	38.25	33	70.50	21.50	140	12.60	12.74	**225.09**

Table 6.19 List of Works Proposed under N.A.D.P. Scheme for 2011-12

(Rs. in lakhs)

Sl. No	Name of Work	Bene fitted Ayacut (in Ha)	Tank Bund		Sluice				Weir/ Anicut	Retaining wall		LS Prov @ 6 percent	Rough Cost Est..
					Repair		Reconst						
			Length	Amt	No	Amt	No	Amt	Amt	Length in m	Amt		
1	Modernisation of Narkulam tank	45.91	1100	3.50	1	1.65	2	5.50				0.64	11.29
2	Modernisation of Pasankarai tank	42.51	1170	4.00	2	3.30	3	8.25				0.93	16.48
3	Modernisation of Peranpethi tank	55.80	650	2.20	2	3.30	2	5.50		20	2.00	0.78	13.78
4	Modernisation of Namanur tank	170.58	1580	5.40			2	5.50		20	2.00	0.77	13.67
5	Modernisation of O.Pudur tank	42.17	990	3.40			1	2.75		20	2.00	0.49	8.64
6	Modernisation of Okkur tank	84.24	1950	6.70			2	5.50		20	2.00	0.85	15.05
7	Modernisation of Pirambu kanmoi	58.17	1402	4.90			3	8.25				0.79	13.94
8	Modernisation of Piravalur tank	88.22	1890	6.50			2	5.50				0.72	12.72
9	Modernisation of Thirumalai tank	43.26	1234	4.20			1	2.75				0.42	7.37
10	Modernisation of Perungudi tank	40.92	1580	5.40			2	5.50				0.65	11.55
11	Modernisation of Sadayan tank	42.79	1210	4.20			3	8.25		30	3.00	0.93	16.38
12	Modernisation of Sekkady tank	83.49	2134	7.40			3	8.25		20	2.00	1.06	18.71

Table 6.19 contd…

(Rs. in lakhs)

Sl. No	Name of Work	Bene fitted Ayacut (in Ha)	Tank Bund		Sluice				Weir/ Anicut	Retaining wall		LS Prov @ 6 percent	Rough Cost Est.
					Repair		Reconst						
			Length	Amt	No	Amt	No	Amt	Amt	Length in m	Amt		
13	Modernisation of Sengulam tank	47.74	1462	5.00			1	2.75				0.47	8.22
14	Modernisation of Siruvilla tank	53.28	2300	7.90			2	5.50				0.80	14.20
15	Modernisation of Veelaneri tank	57.49	2200	7.60			2	5.50		20	2.00	0.91	16.01
16	Modernisation of Maranadu tank	1527.55			2	2.00	2	6.00	10.00			1.08	19.08
17	Modernisation of Keelamelkudy tank	118.27			--		1	2.00				0.12	2.12
18	Modernisation of Melamelkudy tank	122.69			--		2	4.00				0.24	4.24
19	Modernisation of keelapasalai tank	301.09			--		1	2.00				0.12	2.12
20	Modernisation of Kuvalaiveli tank	201.9			--		1	2.00				0.12	2.12

Table 6.19 contd…

(Rs. in lakhs)

Sl. No	Name of Work	Bene fitted Ayacut (in Ha)	Tank Bund		Sluice				Weir/ Anicut	Retaining wall		LS Prov @ 6 percent	Rough Cost Est.
					Repair		Reconst						
			Length	Amt	No	Amt	No	Amt	Amt	Length in m	Amt		
21	Modernisation of Vakudy tank	181.1			--		1	2.00				0.12	2.12
22	Modernisation of Arasakulam tank	126.48			2	2.00	1					0.12	2.12
23	Modernisation of Manambakki tank	55.16			-		1	2.00				0.12	2.12
24	Modernisation of Annavasal tank	130.32			2	2.00	1	4.00	12.00			1.08	19.08
25	Modernisation of Chettikulam tank	62.25			-		1		5.00			0.30	5.30
26	Modernisation of Papakudy tank	260.44			2	2.00			5.00			0.42	7.42
27	Modernisation of Pottapalayam tank	65.69			2	2.50						0.15	2.65
	Total	**4109.51**	**22852**	**78.30**	**15**	**18.75**	**43**	**109.25**	**32.00**	**150.00**	**15.00**	**15.20**	**268.50**

Project -2 Modernization and Rehabilitation of Irrigation Infrastructures in Manimuthar Sub Basin

I. Project Rationale

(i) The Government of India has launched National Agricultural Development programme (NADP) Rashtriya Krishi Vikas Yojana (RKVY) which basically was evolved to improve additional Growth in the Agricultural Sector.

(ii) The Agricultural Productivity and per capita income of farmers will be augmented benefiting a total ayacut of 4494.25 Ha

(iii) A Gap of 608.10 Ha between the registered ayacut and cultivable ayacut will be bridged.

(iv) Also stabilization to an extent of 3860.15 Ha will be achieved.

II. Project Strategy

A) New Scheme

(i) It is proposed to construct new anicuts and groynes in the open off take of Palar, Virusuliyar, Manimuthar and Saruganiyar minor basins in order to feed the supply channels effectively.

(ii) New Head sluices are proposed to regulate the flow in the supply channels and river training works are also proposed to protect the river banks and supply channels.

B) Modernisation of Tanks and Anicuts

(i) The dilapidated sluices are proposed to be repaired / reconstructed according to their present condition to arrest leakages and to improve the efficiency.

(ii) The dilapidated weirs are proposed to be repaired / reconstructed considering their present working condition in order to increase their discharging capacity.

(iii) Protection walls have been proposed at the vulnerable points in the tank bunds, supply channels and surplus courses to avoid breaches during heavy floods.

(iv) Selective Field channels, lining works have been proposed based on the request of the ayacutdars in some of the tanks to improve to flow efficiency and to avoid seepage loss and to ensure supply of works at the tail end of ayacut.

(v) An existing protection wall in the left upstream side of Rajakkal anicut across Palar river was fully damaged during 11/2005 floods. Now it has been proposed to reconstruct the wall to safeguard the nearby village as requested by the Villagers.

III. Project Goals

(i) To improve the system efficiency and conserving the rivers and supply channels.

(ii) Increasing the food production upto 912.50 tonnes at post project.

(iii) To Rehabilitate the Irrigation structures in tanks and supply channels to improve its working efficiency to store more waters and to avoid wastage of water.

IV. Project Components

A) New Scheme

(i) It is proposed to construct new anicuts across

Manimuthar : 2 Nos.

Saruganiyar : 1 No.

(ii) It is proposed to construct new check dam across

Virusuliyar : 1 No.

Palar : 1 No.

(iii) It is proposed to construct new groynes across

Virusuliyar : 2 Nos.

Palar : 1 No.

Saruganiyar : 1 No.

(iv) It is proposed to rehabilitate the S.R.Pattinam Supply channels and Thaneer vayal tank.

(b) Modernisation of Tanks

(i) It is proposed to modernize the following tanks comprising the work such as repairs and reconstruction of sluices and weirs and construction of Protection walls, selective field channel lining and construction of protection walls in the supply channels / surplus courses.

Sl.No.	Name of Tank	Name of Village
1.	Chinnakambani tank	Kambanur
2.	Panangudi Tank	Panangudi
3.	Karanadu Tank	Karanadu
4.	Karuvi Tank	Keelapoongudi
5.	Mangalam Tank	S.V.Mangalam
6.	Siyamuthu Tank	S.Mathur
7.	Palaya Neduvayal Tank	Neduvayal
8.	Kulathupatti Tank	Kulathupatti
9.	Kudikattu Tank	Kudikadu
10.	Thiruppakottai Tank	Thiruppakkottai
11.	Themmapattu Tank	Themmapattu
12.	Iluppagudi Tank	Iluppakudi
13.	Thalakavoor Tank	Talakavoor
14.	Keeranipatti Tank	Keeranipatti
15.	Bhiramanappatti Tank	Bhiramanapatti
16.	Sunnampu Iruppu Tank	Sunnampu Iruppu

Sl.No.	Name of Tank	Name of Village
17.	Ammi Tank	M.Soorakudi
18.	Vadathy Tank	S.V.Mangalam
19.	Velliankudipatti Surplus course	Neduvayal
20.	Boothani Tank Supply Channel	Soorakudi
21.	Murai Tank Supply channel	Muraiyur
22.	Periya Vaikkal supply channel	Kirungakottai
23.	Rajakkal Anicut	Melappatti
24.	Kappalur tank	Kappalur
25.	Mangalgudi Supply Channel	Thiruppakottai
26.	Manakudi supply channel	Hanumanthakudi
27.	Anjukottai supply channel	Thidakottai

V. Project Cost and Financing

(1) New Scheme	:	675.00 Lakhs
(2) Modernization of Tank	:	228.00 Lakhs
Total	**:**	**903.00 Lakhs**

VI. Project Implementation

(i) Floating of open tenders for execution of new schemes and modernization works

(ii) Finalization of tender by following different processes to select the successful tender for execution of works in phased manner upto 2011 – 2012.

VII. Continuity of Scheme

After completing the new and modernization scheme all the infrastructures will be maintained by WRO field Engineer of Madurai Region in Co-ordination with Water users Association. The existing buildings will be sufficient to continue the scheme.

Milestones

1. By implementing the project the system efficiency will be increased and Irrigation potential will be increased and farmers' income will be enhanced by economical and optimum use of water.

2. An extent of 3860.15 Hectares will be stabilized besides bridging a gap of 608.10 Ha.

3. There will be an additional food production of 912.50 M.T. of paddy during the first crop period.

4. There may be a possibility of raising second Crop in the Post project period.

5. Increased food production will be beneficial to farmers below poverty level in the backward area in 27 Villages of Sivagangai District.

Table 6.20 Action Plan – Manimuthar Sub-Basin

(Rs.in lakhs)

Name of the Proposal	Estimate cost	Works proposed Year wise (Physical)					Budget Abstract				
		2008-09 Nos	2009-10 Nos	2010-11 Nos	2011-12 Nos	Total	2008-09	2009-10	2010-11	2011-12	Total
(I) New Schemes											
Construction of Groyne with head sluice across Saruganiyar River to feed Veerakanjanendal Tank and Karnadu tank in Panangudi village of Karaikudi Taluk in Sivagangai District.	25.00	1	-	-	-	1	25.00				25.00
Construction of Check dam in Palar River to feed Murai Tank in Muraiyur village of Thiruppathur Taluk in Sivagangai District.	50.00	1	-	-	-	1	50.00				50.00
Construction of Groyne with head sluice across Virusuliyar River to feed Nedumaram Tank in Nedumaram village of Thiruppathur Taluk in Sivagangai District	25.00	1	-	-	-	1	25.00				25.00
Construction of Check dam in Virusuliyar River to feed Kummangudi Tank in Kummangudi village of Thiruppathur Taluk in Sivagangai District.	50.00	1	-	-	-	1	50.00				50.00

Table 6.20 contd…

(Rs.in lakhs)

Name of the Proposal	Estimate cost	Works proposed Year wise (Physical)					Budget Abstract				
		2008-09 Nos	2009-10 Nos	2010-11 Nos	2011-12 Nos	Total	2008-09	2009-10	2010-11	2011-12	Total
Construction of Anicut across Manimuthar River to feed SR.Pattinam Tank and Veppankulam Tank in Karaikudi Taluk of Sivagangaii District.	145.00	1	-	-	-	1	145.00				145.00
Construction of Anicut across Manimuthar River to feed Thalakkavayal Tank and Kaikkudi Tank in DevakottaiTaluk of Sivagangaii District.	200.00				1	1				200.00	200.00
Construction of Groyne across Palar River to feed Rettaiyan Tank in Ranasingapuram village of Thiruppathur Taluk in Sivagangai District.	25.00	1	-	-	-	1	25.00				25.00
Construction of Groyne across Virusuliyar River to feed Murugani Tank in Meyyapatti village of Thiruppathur Taluk in Sivagangai District.	20.00	1	-	-	-	1	20.00				20.00
Rehabilitation to SR Pattinam Supply Channel and Thenneervayal Tank in Devakottai Taluk in Sivagangai District.	55.00	1	-	-	-	1	55.00				55.00

Table 6.20 contd…

(Rs.in lakhs)

Name of the Proposal	Estimate cost	Works proposed Year wise (Physical)					Budget Abstract				
		2008-09 Nos	2009-10 Nos	2010-11 Nos	2011-12 Nos	Total	2008-09	2009-10	2010-11	2011-12	Total
Construction of Anicut across Saruganiyar River to feed Anni Kanmoi Nedungulam Kanmoi and other Tanks and Rehabilitation of the above Tanks in Karaikudi Taluk of Sivagangai District.	80.00	1	-	-	-	1	80.00				80.00
(II) Modernisation of Tanks											
Modernisation of Kudikadu tank in Kudikadu village of Devakottai taluk in Sivagangai District.	11.00		1	-	-	1		11.00			11.00
Modernisation of Thiruppakkottai tank in Thiruppakkottai village of Devakottai taluk in Sivagangai District.	10.00		1	-	-	1		10.00			10.00
Modernisation of Themma tank in Themmapattu village of Thiruppathur taluk in Sivagangai District.	30.00			1	-	1			30.00		30.00
Modernisation of Illupakudi tank in Illupakudi village of Karaikudi taluk in Sivagangai District.	4.50		1	-	-	1		4.50			4.50
Modernisation of Thalakkavur tank in Ilangudi village of Thiruppathur taluk in Sivagangai District.	5.00		1	-	-	1		5.00			5.00
Modernisation of Keeranipatti tank in Keeranipatti village of Thiruppathur taluk in Sivagangai District.	4.00		1	-	-	1		4.00			4.00

Table 6.20 contd…

(Rs.in lakhs)

Name of the Proposal	Estimate cost	Works proposed Year wise (Physical)					Budget Abstract				
		2008-09 Nos	2009-10 Nos	2010-11 Nos	2011-12 Nos	Total	2008-09	2009-10	2010-11	2011-12	Total
Modernisation of Biramanappatti tank in Biramanappatti village of Thiruppathur taluk in Sivagangai District.	10.00	1	-	-	-	1	10.00				10.00
Modernisation of Sunnambiruppu tank in Sunnambiruppu village of Thiruppathur taluk in Sivagangai District.	15.00		1	-	-	1		15.00			15.00
Modernisation of Chinnakambani tank in Kambanur village of Thiruppathur taluk in Sivagangai District.	2.50		1	-	-	1		2.50			2.50
Modernisation of Panangudi tank in Panangudi village of Karaikudi taluk in Sivagangai District.	3.00		1	-	-	1		3.00			3.00
Modernisation of Karnadu tank in Panangudi village of Karaikudi taluk in Sivagangai District.	6.00		1	-	-	1		6.00			6.00
Modernisation of Karuvi tank in Keelapoongudi village of Karaikudi taluk in Sivagangai District.	4.00		1	-	-	1		4.00			4.00
Modernisation of Mangalam tank in S.V.Mangalam village in Singampunari block of Thiruppathur taluk in Sivagangai District.	4.00		1	-	-	1		4.00			4.00

Table 6.20 contd…

(Rs.in lakhs)

Name of the Proposal	Estimate cost	Works proposed Year wise (Physical)					Budget Abstract				
		2008-09 Nos	2009-10 Nos	2010-11 Nos	2011-12 Nos	Total	2008-09	2009-10	2010-11	2011-12	Total
Modernisation of Syamuthu tank in S.Mathur village in Singampunari block of Thiruppathur taluk in Sivagangai District.	20.00		1	-	-	1		20.00			20.00
Modernisation of Palayaneduvayal tank in Neduvayal village in S.Pudur block of Thiruppathur taluk in Sivagangai District.	10.00		-	1	-	1			10.00		10.00
Modernisation of Kulathupatti tank in Kulathupatti village in S.Pudur block of Thiruppathur taluk in Sivagangai District.	6.00		-	1	-	1			6.00		6.00
Construction of Protection Wall in the breached portion in the surplus course of Velliankudippatti in Neduvayal Village in Thiruppathur Taluk of Sivagangai District.	6.00			1	-	1			6.00		6.00
Construction of Protection Wall in the breached portion in the Boothani Tank Supply Channel in S.V.Mangalam Village in Thiruppathur Taluk of Sivagangai District.	10.00		-	1	-	1			10.00		10.00
Construction of Protection Wall in the breached portion in the Murai Tank Supply Channel in Muraiyur Village in Thiruppathur Taluk of Sivagangai District.	10.00		-	1	-	1			10.00		10.00

Table 6.20 contd…

(Rs.in lakhs)

Name of the Proposal	Estimate cost	Works proposed Year wise (Physical)					Budget Abstract				
		2008-09 Nos	2009-10 Nos	2010-11 Nos	2011-12 Nos	Total	2008-09	2009-10	2010-11	2011-12	Total
Construction of Protection Wall in the breached portion in Periya Vaikkal Supply Channel in Kirungakkottai Village in Thiruppathur Taluk of Sivagangai District.	10.00		-	1	-	1			10.00		10.00
Construction of Protection Wall in the breached portion in U/S side of Rajakkal Anicut in Melappatti Village in Thiruppathur Taluk of Sivagangai District.	10.00		-	1	-	1			10.00		10.00
Modernisation of Ammi tank in Soorakkudi village in Singampunari block of Thiruppathur taluk in Sivagangai District.	7.00		-	1	-	1			7.00		7.00
Modernisation of Vadathi tank in S.V.Mangalam village in Singampunari block of Thiruppathur taluk in Sivagangai District.	8.00		-	1	-	1			8.00		8.00
Modernisation of Kappalur tank in Kappalur village of Devakottai taluk in Sivagangai District.	10.00	1				1	10.00				10.00

Table 6.20 contd…

(Rs.in lakhs)

Name of the Proposal	Estimate cost	Works proposed Year wise (Physical)					Budget Abstract				
		2008-09 Nos	2009-10 Nos	2010-11 Nos	2011-12 Nos	Total	2008-09	2009-10	2010-11	2011-12	Total
Modernisation of Mangalakudi Supply Channel in Thiruppakkottai village of Devakottai taluk in Sivagangai District.	4.00		1			1		4.00			4.00
Modernisation of Manakkudi Supply Channel in Hanumanthakudi village of Devakottai taluk in Sivagangai District.	4.00		1			1		4.00			4.00
Modernisation of Anjukottaai Supply Channel in Thidakkottai village of Devakottai taluk in Sivagangai District.	4.00		1			1		4.00			4.00
Total	**903.00**	**11**	**15**	**10**	**1**	**37**	**495.00**	**101.00**	**107.00**	**200.00**	**903.00**

Project 3: Rehabilitation of Ex-Zamin Tanks in Karaikudi Division

Project Cost : 142.00 Crores

I. Abstract

❋ **Project at a Glance**

This project is to rehabilitate **1352** Nos. of Ex-Zamin tanks at a project cost of Rs. **142.00** crores, under National Agricultural development Programme – **STREAM II** in a phased manner for 4 Years from 2008-2009. The implementing agency of this project is Public Works Department (Now Water Resources Department) of State government of Tamil Nadu. The monitoring agency will be funding agency.

❋ **Synopsis of Ex-Zamin Tanks**

The Irrigation tanks about **4226** Nos. are spread widely at Sivaganga District with the nomenclature of "***Ex-Zamin Tanks***". These tanks are having ayacut less than 100 Acres, which were originally maintained by the then "Zamindars". On implementation of "Abolition of Zamindars Act", those tanks were brought under the control of Government of Tamil Nadu for further maintenance and hence they are called ***"Ex-Zamin Tanks".*** Among **4226** Tanks,

1074 Nos are having ayacut 0 to 10 Acres (5862.28 Acres)

2301 Nos. are having ayacut 11 to 50 Acres (58924.05 Acres)

851 Nos. are having ayacut 51 to 100 Acres (59180.60 Acres)

The Total ayacut covered by these tanks is **1, 23,966.93** Acres (say) **48805.88** Ha.

II. Introduction

These Ex-Zamin tanks have lost their functioning due to their eroded bunds, dilapidated sluices & Weir and silted up tank bed. As such it leads to reduction in its original designed capacity and thus cultivation under these tanks is worse affected and Gap in ayacut is deeply increased day by day. More over the availability of drinking water, cattle feeding and Ground water table are getting depleted.

III. Back Ground / Problem Focus

Generally the agriculture in drought prone area like Sivaganga District is totally depending upon rain fed tanks and ponds only and they are surviving only with their un-certain water resources, Hence it is needless to mention, to up keep these tanks to their prescribed standards, to restore the un-certainly available rain water and to utilize the same properly for both Drinking and Irrigation needs, is necessary.

The marginal farmers of this District are often approaching the District Administration through various grievance day meetings to redress their grievances mainly about their irrigation tanks.

To bring out all the irrigation tanks to their standards, a mass programme at a huge expense is needed.

IV. Project Rationale

The Prime and sole object of this particular E.T.S. Division, (Ex-Zamin Tank Standardisation Division, Karaikudi) under PWD is to retrieve one and all the facts contemplated with the Ex-Zamin tanks.

As a pioneer in the field of standardizing Irrigation tanks is PWD, this Division is executing the Rehabilitation works in all ex-zamin tanks to the required standards.

In earlier decades from inception of this division (i.e. From 1983) **1679** tanks, irrespective of having ayacut 0 to 100 Acres, have been standardized and handed over to the respective Panchayat Unions for further maintenance. Under various caption of funding like AMIP (Accelerated Minor Irrigation Programme) STIP (State Tank Irrigation Project) by the State Government of Tamil Nadu and SGRY (Sampoorna Grameen Rozgar Yojana) & RSVY (Rashtriya Shram Vikhas Yojana) by the Central Government of India, these 1679 Nos. of Ex-Zamin tanks have been brought up to their standards and handed over to the respective Panchayat Unions.

V. Project Strategy

An action plan for a span of 4 years from 2008-09 to 2011-12 is prepared to rehabilitate **1352** Nos. of Ex-Zamin tanks at a total project cost of Rs. **142.00 Crores**.

Now under the National Competitive Bidding, various Irrigation Schemes are being implemented under PACKAGE system in Public Works Department. Likewise this NADP may also be implemented under a package system in a phased manner contains a shelf of tanks, which would he hold good for the completion of project in a post-haste manner. In this,

i) It is decided to Rehabilitate the tanks to its original standards
ii) The dilapidated sluices of tanks will be reconstructed and up graded for maintaining the discharging capacity.

VI. Project Goals

The goal of NADP is to raise the growth in Agriculture sector. To raise the growth, the irrigation infra structure should be developed. As the Sivaganga District is one among the rain starving districts, the agriculture is solely depending upon the irrigation tanks only. Because there is no perennial supply system the rehabilitation of irrigation tanks is necessary.

By implementing the rehabilitation of Ex-Zamin tanks, the original designed capacity of each tank will be restored and assured supply to its ayacut can be achieved.

Due to the assured supply, the existing low level average cultivation can be stabilized and the Gap in ayacut will be bridged.

By implementing this project the social economic status of the marginal farmers in Sivaganga District will considerably increased by way of increased food production. The side effects of this project would be

i. The increase in recharging of depleted water table.
ii. Restoration of dead storage for cattle feeding, Fisheries etc.,
iii. Afforestation in the tank bed.

VII. Project Components

The rehabilitation of tanks may have the following components.

i) Raising and strengthening the tank bunds to the required standards.
ii) Renovating existing supply channels and surplus courses to augment the present sources of supply.
iii) Modernizing the existing sluices and Weirs for the better regulation in economical usage of available water without any loss.
iv) Introducing better distribution system by forming the lined field channel to increase the efficiency of supply to field up to 10 hectares of ayacut of command area.
v) Providing flood protection walls at vulnerable points of bund, wherever found necessary to avoid total loss of water due to unprecedented floods.
vi) L.S. Provision for Labour Welfare fund, P.S. Charges, Investigation charges, Documentation charges, Photographic and Video graphics charges unforeseen and Contingencies charges.

VIII. Project Cost And Financing

The total project cost would be Rs.**142.00** Crores for rehabilitating **1352** Nos. of ex -zamin tanks in Sivagangai District.

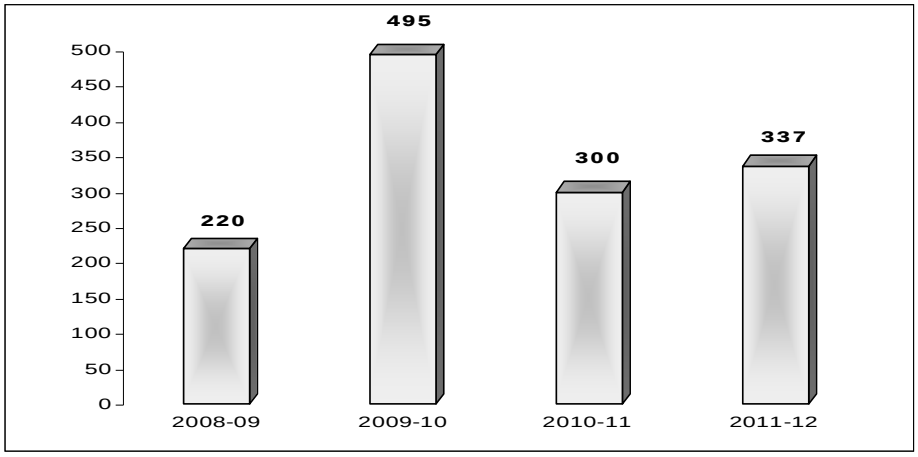
A cost analysis has been prepared at the prevailing market rates as contained in the schedule of rates for the year 2008-2009 for Sivaganga District and arrived as **Rs. 9.00 lakh / Tank.** Accordingly the project cost for the current year 2008-2009 for rehabilitating **220** nos. tanks is arrived as **Rs. 19.80 Crores**.

For the inflation in rates, every year on an average 10 per cent of increase in cost is made for the consecutive year's schedule. So the total cost of project for rehabilitating **1352 nos**. of tanks in a phased manner would be Rs. **142.00** Crores.

IX. Implementation Chart of the Project

On wide publicity in daily news magazines and by web-net, the two cover tenders are received from various competitive Bidders. After screening and scrutinizing, comparing, verifying the credentials and obtaining necessary securities, the project will be assigned by an agreement to the eligible bidder. Likewise this project can also be carried out.

A graphical representation is prepared according to the action plan for the four year project



As the nature of works proposed to be carried out could not be split up into a separate item of schedule, no. of tanks in a bunching way is proposed for implementation.

Hence in a span of four years, **1352** nos. of ex-zamin tanks will be rehabilitated and brought up to the required standards.

X. Reporting

The reports will be sent periodically to the PWD head quarters from each division. As a conclusion, the following are highlighted.

- Total no. of tanks proposed for rehabilitation is 1352 Nos.
- Total ayacut to be benefited by stabilizing and bridging the Gap in ayacut is 23,207.76 Hectares.
- Expected food production is **31,241.12** MT.

Table 6.21. Action Plan – PWD – Karaikudi Division

Cost Analysis for One Tank

I. Direct Charges

1.	Reconstruction and / or Repairs to Sluices	:	Rs. 4,00,000
2.	Repairs to weir	:	Rs. 60,000
3.	Flood protection wall at Vulnerable points (30 mts)	:	Rs. 1,00,000
4.	Providing screw gearing Plug and Plug rod arrangement to sluices	:	Rs. 60,000
5.	Providing bathing Ghats and Cattle feeding arrangements	:	Rs. 50,000
6.	Reshaping the weakened bund, bank connection and filling low pockets and rain gullies	:	Rs. 1,80,000
	TOTAL	:	Rs. **8,50,000**

II . Indirect charges

1.	Outsourcing for the preparation detailed project estimate	:	6,000
2.	Documentation of bidding documents, Project Report and Estimates	:	5,000
3.	Providing information boards	:	10,000
4.	Labour Welfare fund	:	2,500
5.	Advertisement charges	:	6,000
6.	Photographic charges and Video graphic charges	:	2,500
7.	Unforeseen and P.S. charges	:	18,000
	Sub Total	:	50,000
	Total Rs.	:	**9,00,000**

Project Cost

	I. Project Cost for 2008-2009		
	No. of tanks proposed for 2008-2009	**:**	220 Nos
	Project cost for 2008-2009	**:**	220 x Rs.9.00 Lakhs **1980** Lakhs
	II. Project Cost for 2009-10		
	Cost of Project for 1 tank	**:**	Rs. 9.00 Lakhs
	ADD: 10per cent for rate escalation	**:**	0.90
		:	**9.90** Lakhs
	No. of tanks proposed for 2009-10	**:**	495 Nos.
	Project cost for 2009-2010	**:**	495 x Rs. 9.90
			4900.50 Lakhs
	III. Project Cost for 2010-11		
	Cost of Project for 1 tank	**:**	Rs. 9.90 Lakhs
	ADD: 10per cent for rate escalation	**:**	0.99
		:	**10.89** Lakhs
	No. of tanks proposed for 2010 -11	**:**	300 Nos.
	Project cost for 2010-2011	**:**	300 x Rs. 10.89
			3267 Lakhs

	IV. Project Cost for 2011-12		
	Cost of Project for 1 tank	**:**	Rs. 10.89 Lakhs
	ADD: 10per cent for rate escalation	**:**	1.09
		:	**11.98** Lakhs
	No. of tanks proposed for 2011-12	**:**	337 Nos.
	Project cost for 2011-2012	**:**	337 x Rs. 11.98
			4037.26 Lakhs

Total Cost of Project III

1. For 2008 - 2009 : Rs. 1980.00 Lakhs
2. 2009 - 2010 : Rs. 4900.50 Lakhs
3. 2010 – 2011 : Rs. 3267.00 Lakhs
4. 2011 – 2012 : Rs. 4037.26 Lakhs

Rs.14184.76 Lakhs

Project : 4. Rehabilitation of Shieldkal and its 40 Tanks in Sivagangai Taluk of Sivagangai District

Est. Rs.540 Lakhs

Introdution

Shieldkal canal comes under Periyar Main Canal system and located in the tail end of 12 th B.C. of Periyar Main Canal . 12 th Branch canal under the Periyar main canal system offtakes at Pulipatti Regulator across PMC and runs 22.75 Km and feeds 39759 Ac.(single crop) as regular ayacut and 38248 Ac. as extension ayacut. Shieldkal ayacut comes under 12 th BC extension ayacut area.

Shieldkal Canal

Shieldkal canal starts below surplus weir of Kurichi Tank in Melur Taluk of Madurai District and runs for a length of 8.01 Km and feeds 40 tanks , having a total ayacut of 707.53.0 Ha(1748.30Ac) in Sivagangai Taluk of Sivagangai District. At present, Periyar water is being supplied to Shieldkal through a Bye pass channal , which takes off from the 49 th sluice channel of 12 th BC , before it enters Kurichi Tank. This Bye pass channel 1.75 Km long and runs along foreshore of Kurichi Tank. Shieldkal receives 47 cusecs of Periyar water through this Bye pass channel and the No of flow discharge is 21 days.

Present Condition

Agricultural Situation

All agricultural activities are carried out manually, except land preparation and puddle. For transplanting, weeding and harvesting, farmers make use of hired labour mostly engaged from neighbour families within the village. Present crop budgets are as follows.

Crop	Yield (Tons)	Gross (in Rs)	Production (Tons)
Paddy	3.5	14000	2146.49

Social Aspects

The number of families benefiting from the project is 1090 and the number of beneficiaries is about 3270 (3 adults per family)

The average size of farm holding is 0.65 ha. The relevant farm size and the number of farmers as follows :

- Less than 1 ha; marginal : 850 farmers
- Between 1 to 2 ha small : 200 farmers
- Above 2 ha big : 40 farmers

These figures confirm that almost all beneficiaries are marginal and small farmers.

Water Management

Periyar system releases water to Shieldkal, when a combined storage of 7000 Mcft. of water must be available in both the reservoirs and in local Tanks. At present, the supply from Periyar Main Canal system to Shieldkal is 47 causes and the No of flow discharge days are 21.

Proposals

The shieldkal receives 47 cusecs from Periyar Main Canal system, for 21 days. In practical, sufficient water is not available to irrigate a total ayacut of 707.53 ha (1748.30 Ac) in 21 days supply and thus resulting a gap of 94.265 ha.

Hence, it is now proposed to reduce the flow discharge days to 10 days from 21 days at a rush supply of 100 cusecs.

Water supply as per existing conditions	=	21 days x 47 cusecs.
	=	987 cusecs.
Water supply as per revised conditions	=	10 days x 100 cusecs.
	=	1000 cusecs.

By adopting this rush supply, it is expected that the gap of 94.265 ha will be benefited and improved food production of 2971.63 tonnes can be achieved. The BC Ratio works out to 3.99 : 1 and the ERR works out to 31.60percent.

Discussion on Hydraulic Features of the Source Existing hydrology

Periyar main cancal system releases water to shieldkal thro bye-pass channel by assuming No of days for flow discharge is 21 days. The discharging quantity is 47 cusecs.

Proposed Hydrology

The Superintending Engineer, PWD WRO, Periyar Vaigai Circle, Madurai has proposed to improve the existing hydrology of the Shieldkal as follows.

The Existing Hydrology

During release of water for extension area single crop, Periyar main canal system releases water to Shieldkal through bye-pass channel by assuming no of days for flow discharge is 21 days. The discharging quantity is 47 cusecs.

Proposed Hydrology

Besides bye-pass channel supply, an additional quantity of 53 cusecs will be supplied through the existing scour vent in surplus weir of Kurichi Tank. Hence the total quantity is 100 cusecs. The total no of days for flow discharge is restricted to 10 days from 21 days.

Discussion on Proposals and Designs

The existing feeder channels from the sluices of shieldkal canal are proposed to be enlarged to carry 100 cusecs in 10 days by constructing raising courses on both sides of the feeder channel using R.R masonry of 0.3 m average height over the ground level.

Channel Standardisation

It is proposed to regrade the shieldkal channel throughout its total length of 8010m.

Reconstruction of Sluices

It is proposed to reconstruct to fully damaged and dilapidated wingwall / head wall type sluices of feeding tanks.

Road Bridges

It is proposed to construct a road bridge across shieldkal channel in Kallarathinipatty village for transporting agricultural accessories.

Improvements to Cross Drainage Works

It is proposed to reconstruct sluice No. 5(L) in Shieldkal Channel.

Discussion on Technical Issues

After analysing the issues involved in improving the supply to Shieldkal, it was decided by the Superintending Engineer and Field Engineers based on their experience that the duration of flow is not occuring for 21 days in all these years. Hence, the supply should be rushed at a higher rate, reducing the No of flow days.Accordingly ,the supply from Periyar Main Cannal system to Shieldkal is increased to 100 Cusecs from 47 Cusecs and the No of days required for flow discharge is reduced to 10 days from 21 days.

Benefited Area

40 No of tanks having a total ayacut of 707.53.0 Ha (1748.30 Ac) covering 7 villages in Sivagangai Taluk of Sivagangai District, benefited thro Shieldkal canal.

Costing of the Project

The total cost of the project works out to 540 Lakhs based on the current schedule of rates for the 2007 – 2008. The physical and financial programme is enclosed separately.

Ayacut Area as Registered

Shieldkal canal feeds 40 No of tanks thro 7 No. of sluices and having a total registered ayacut of 707.53.0 Ha (1748.30 Ac).

As Cultivated and Gap to be Bridged

Based on the 12 years Pasali, the average cultivation area is 613.265 Ha to a registered ayacut of 707.53.0 Ha and the gap is 94.265 Ha.

Issues on Lower Riparian Rights

As this scheme does not involve any changed water allocations, the lower riparian rights will not be affected.

Land Acquisition Aspects

Land acquisition is not arised in this scheme.

Collector's Concurrence

This project proposal submitted for collector's concurrence and obtained.

Cropping Pattern

At present, the irrigating area is under cultivation of different crops like paddy and pulses. Based on the observations, cropping pattern and crop water requirements have been worked out and enclosed separately.

Conclusion

After completion of works , the gap of 94.265 Ha. will be bridged and resulting a improved food production of 2971 MT can be achieved .The BC Ratio works out to 3.99 : 1 and the ERR works out to 31.60percent.

Physical Programme of Works

Rehabilitation of Shieldkal and Its 40 Tanks

Sl No	Description	Unit	Total Qty	Physical Programme 2008-09	Remarks
	Works				Works to be started
I	Shieldkal and its Sluices				
1	Dismantling	M^3	2.5	2.5	
2	E.W. Using Machinery	M^3	98750	98750	
3	E.W. for Foundation	M^3	1509	1509	
4	C.C. 1:4:8	M^3	148300	148300	
5	Steel Centering	M^3	2980	2980	
6	C.C. 1:3:6	M^3	136491	136491	
7	R.C.C. 1:2:4	M^3	22	22	
8	R.R. Masonry	M^3	1336	1336	
9	Fabrication	Qtl	22	22	
10	Wearing Coat	M^3	9	9	
11	Gravel Packing	M^3	30	30	
12	Rough Stone dry Packing	M^3	46	46	
13	Pointing	M^3	6900	6900	
14	Cut Stone Fixing	M^3	0.80	0.80	
15	Plastering	M^3	8730	8730	
16	Shutter Arrangements	NO	26	26	

Physical Programme of Works

Rehabilitation of Shieldkal and Its 40 Tanks

II	Bye-Pass Channels				Works to be started
1	Jungle Clearance	M^3	8000	8000	
2	E.W. Using Machinery	M^3	19600	19600	
3	E.W. Foundation	M^3	650	650	
4	E.W. Conveyance	M^3	14850	14850	
5	C.C. 1:4:8	M^3	915	915	
6	Steel Centering	M^3	10780	10780	
7	C.C. 1:3:6	M^3	1760	1760	
8	R.C.C. 1:2:4	M^3	6.5	6.5	
9	Fabrication	Qtl	875	875	
10	R.R. Masonry	M^3	515	515	
11	Plastering	M^3	1170	1170	
12	Constn of Well Syphon	NO	3	3	
III	40 Tanks			198180	
1	Jungle clearance	M^2	198180	352300	
2	E.W.Using Machinery	M^3	352300	53100	
3	E.W. for Foundation	M^3	53100	39	
4	Reconstn of Sluices	NO	39	77	
5	Providing Front Leading Channel	NO	77	77	
6	Providing Rear Field Channel	NO	77	77	
7	S.G. Plug and Plug rod	NO	77	3	
8	Providing Front Protection Wall	NO	3	3	

Physical Programme of Works

Rehabilitation of Shieldkal and its 40 Tanks

Sl No	Description	Total Cost	Physical Programme	Remarks
			2008-09	
	Works			Works to be started
I	Shieldkal and its Sluices			
1	Dismantling	172.00	172.00	
2	E.W. Using Machinery	2248188.00	2248188.00	
3	E.W. for Foundation	82995.00	82995.00	
4	C.C. 1:4:8	519720.00	519720.00	
5	Steel Centering	288398.00	288398.00	
6	C.C. 1:3:6	993343.00	993343.00	
7	R.C.C. 1:2:4	62447.00	62447.00	
8	R.R. Masonry	2114821.00	2114821.00	
9	Fabrication	78936.00	78936.00	
10	Wearing Coat	19409.00	19409.00	
11	Gravel Packing	7251.00	7251.00	
12	Rough Stone dry Packing	26836.00	26836.00	
13	Pointing	377775.00	377775.00	
14	Cut Stone Fixing	3233.00	3233.00	
15	Plastering	957581.00	957581.00	
16	Shutter Arrangements	3083600.00	3083600.00	
	Sub Total	10864705.00	10864705.00	

Physical Programme of Works

Rehabilitation of Shieldkal and its 40 Tanks

Sl.No	Description	Total Cost	Finicial Programme 2008-09	Remarks
II	Bye-Pass Channels			**Works to be started**
1	Jungle Clearance	12000.00	12000.00	
2	E.W. Using Machinery	365540.00	365540.00	
3	E.W. Foundation	35771.00	35771.00	
4	E.W. Conveyance	485892.00	485892.00	
5	C.C. 1:4:8	1607049.00	1607049.00	
6	Steel Centering	992600.00	992600.00	
7	C.C. 1:3:6	3833164.00	3833164.00	
8	R.C.C. 1:2:4	16929.00	16929.00	
9	Fabrication	3139500.00	3139500.00	
10	R.R. Masonry	838276.00	838276.00	
11	Plastering	130652.00	130652.00	
12	Constn of Well Syphon	1104000.00	1104000.00	
	Sub Total	**12561373.00**	**12561373.00**	
III	40 Tanks		---	
1	Juncle clearance	340261.00	340261.00	
2	E.W.Using Machinery	11079830.00	11079830.00	
3	E.W. for Foundation	1205370.00	1205370.00	
4	Reconstn of Sluices	6027000.00	6027000.00	
5	Providing Front Leading Channel	3773000.00	3773000.00	
6	Providing Rear Field Channel	3797000.00	3797000.00	
7	S.G. Plug and Plug rod	2310000.00	2310000.00	
8	Providing Front Protection Wall	447000.00	447000.00	
	Sub Total	**28979461.00**	**28979461.00**	

Tanks Under Shieldkal Canal

S.No	Name of the Tank	Registered Ayacut	Average Cultivation	Gap
I.	Kallaradhinipatti Village			
	1. Adhini Kanmoi	72.06.0 Ha.	59.06.0 Ha	13.00.0 Ha.
II.	Thirumalai Village			
	2 Ponnachi Tank	6.98.0 Ha.	5.86.0 Ha	1.12.0 Ha.
	3. Thirumalai Tank	43.88.0 Ha.	36.86.0 Ha	7.02.0 Ha.
	4. Koneri Tank	8.32.0 Ha.	6.91.0 Ha	1.41.0 Ha.
	5. Poikalipatti Tank	26.86.0 Ha.	22.43.0 Ha	4.43.0 Ha.
	6. Vaiyapuri Tank	4.81.5 Ha.	4.00.0 Ha	0.81.5 Ha.
	7. Enan Tank	5.73.0 Ha.	4.76.0 Ha	0.97.0 Ha.
III.	Namaoor Village			
	8. Pulavan Tank	19.35.0 Ha.	15.96.5 Ha	3.38.5 Ha.
IV.	Melapoongudi Village			
	9. Thanakkan Tank	10.52.0 Ha.	8.72.0 Ha	1.80.0 Ha.
	10. Valayankulam Tank	23.34.0 Ha.	19.49.0 Ha	3.85.0 Ha.
	11. Karunkali Tank	16.35.0 Ha.	13.74.0 Ha	2.61.0 Ha.
	12. Kovil Kanmoi	27.57.0 Ha.	23.02.0 Ha	4.55.0 Ha.
	13. Uppandhi Tank	16.65.0 Ha.	13.82.0 Ha	2.83.0 Ha.
	14. Avakkudi Tank	8.21.5 Ha.	6.82.5 Ha	1.39.0 Ha.
	15. Keechalai Tank	14.99.5 Ha.	12.44.5 Ha	2.55.0 Ha.
	16. Kottakudi Tank	16.36.0 Ha.	13.58.0 Ha	2.78.0 Ha.
	17. Kadamboorani Tank	17.74.0 Ha.	16.64.0 Ha	1.10.0 Ha.
	18. Melarangudi Tank			
	19. Keelarangudi Tank	4.24.5 Ha.	3.54.5 Ha	0.70.0 Ha.
	20. Ondhi Tank	2.99.0 Ha.	2.49.0 Ha.	0.50.0 Ha.

Tanks Under Shieldkal Canal

S.No	Name of the Tank	Registered Ayacut	Average Cultivation	Gap
S.No	**Name of the Tank**	**Registered Ayacut**	**Average Cultivation**	**Gap**
V.	Cholapuram Village			
	21. Ethicheri Tank	99.87.0 Ha.	82.89.0 Ha.	16.98.0 Ha.
VI.	Saloor Village			
	22. Kalladambal Tank	9.63.0 Ha.	8.03.0 Ha.	1.60.0 Ha.
	23. Villian Orani	8.09.5 Ha.	6.755 Ha.	1.34.0 Ha.
	24. Kanjanathi Tank			
	25. Poosani Tank	25.82.0 Ha.	21.56.0 Ha.	4.26.0 Ha.
	26. Kinathuvayal Tank			
	27. Kathankuthan Tank			
	28. Kattuthukki Tank			
	29. Pookuli Tank	20.76.0 Ha.	18.26.0 Ha.	2.50.0 Ha.
	30. Siluvinipathy Tank	19.56.0 Ha.	16.24.0 Ha.	3.32.0 Ha.
VII.	Nalukottai Village			
	31. Karunkulam Tank	31.95.0 Ha.	26.52.0 Ha.	5.43.0 Ha.
	32. Pottakulam Tank	23.72.0 Ha.	19.81.0 Ha.	3.91.0 Ha.
	33. Sillakurichi Tank			
	34. Elandankulam Tank	7.23.0 Ha.	6.00.0 Ha.	1.23.0 Ha.
	35. Sirukudi Tank	17.87.0 Ha.	14.74.0 Ha.	3.13.0 Ha.
	36. Sengulam Tank			
	37. Panaiyan Tank	37.04.5 Ha.	30.56.0 Ha.	6.48.5 Ha.
	38. Anai Vilunthan Tank			
	39. Pilani Tank	42.15.0 Ha.	34.56.0 Ha.	7.59.0 Ha.
	40. Thamani Tank	16.87.0 Ha.	13.92.0 Ha.	2.95.0 Ha.
	Total	**707.53.0 Ha.**	**613.26.5 Ha.**	**94.26.5 Ha.**

Table 6.22 Budget Proposal for L.S Provision for Shieldkal Tanks – 2008 – 09

(in Rupees)

Sl. No.	Description	Total Cost	Financial Progarm 2008-09
	L.S. Provisions		
1	P.S. Charges and Contingencies	2,84,000	2,84,000
2	Labour Welfare @ 0.3percent.	1,60,000	1,60,000
3	Provision for biding, name boards, sign boards for tanks and channels and photographic charges.	1,71,000	1,71,000
4	Provision for Investigation and preparation of estimates	1,02,000	1,02,000
	Sub Total	**717000**	**717000**

Grand Total

Works = 53283000

L.S Provision = 717000

Total = 5,40,00,000 (Rs.540 lakhs)

Table 6.23 Budget Abstract – PWD

(Rs. in lakhs)

Sl.No.	Particulars	Budget
1	Project I: Modernization of PWD Irrigation Tanks in Sivagangai District Saraguniyar Division	1495.61
2	Project 2: Modernization and Rehabilitation of Irrigation Infrastructures in Manimuthar Sub Basin	903.00
3	Project 3: Rehabilitation of Ex-Zamin Tanks in Karaikudi Division	14184.76
4.	Rehabilitation of shieldkal tanks	540.00
	Total PWD Budget	**17123.37**

PROCEEDINGS

The District level NADP plan preparation meeting was held on 13.05.08 under the chairmanship of Th.Pankaj Kumar Panswal, District Collector, Sivagangai District at the collectorate complex. The District Collector has given a brief introduction about the meeting. Th.M.Chandrakumar, Assistant Professor from Tamil Nadu Agricultural University has presented about the purpose and importance of the meeting and also the role of Tamil Nadu Agricultural University in preparing the District and State Agriculture NADP plan. Th.Tangavelu, PA (Agriculture) has coordinated the meeting and the discussion. A detailed discussion has been conducted on the plans given by different line departments. The line department officials including Agriculture, Horticulture, Animal Husbandry, Forestry, Fisheries, Agricultural Engineering, Public Works Department and Panchayat union chairmen were participated in the meeting. The district collector has reviewed all the plans and suggested some improvements. And the implement plan of all the projects were discussed and analysed during the meeting. The PA to Collector (Agriculture) has guided to prepare the plans and compilation. The meeting was concluded with improved suggestions from the collector and line department officials.

TABLE OF CONTENTS

List of Tables

List of Tables Contd,,,,,

LIST OF FIGURES

National Agricultural Development Programme –
Sensitization Workshop Meeting held on 13.05.2008 at Sivagangai District

The District Collector Addressing the Participants

TNAU Scientist Presenting the Report

View of the Participants

The District Collector Discussing with the Participants