NATIONAL AGRICULTURE DEVELOPMENT PROJECT –

DISTRICT AGRICULTURE PLAN

PROJECT TEAM

Overall Coordination	**:**	**Dr. K. Palanisami, Director, CARDS and Nodal Officer (NADP)**
		Dr. R. Venkatram, Professor and Principal Coordinator (NADP)
District Level Coordination	**:**	**Mrs. S. Hemalatha Assistant Professor Dept. of ARM, TNAU, Coimbatore**
		Dr.G.Rangaraju Professor and Head Oilseed Research Station Tindivanam
		Dr. C. Velevan Assistant Professor Oilseed Research Station Tindivanam
		Mr. B. Kadarmaideen Executive Engineer (AED) Villupuram
		Mr. S. Rajasekaran Deputy Director of Horticulture Villupuram

Mr. S. Palanivel
Assistant Engineer (AED)
Villupuram

Mr. S. Arunagiri
Assistant Engineer
Public Works Department
Kallakurichi

Mr. T. Subramanian,
Agricultural Officer
Office of the Joint Director of Agriculture
Villupuram

Tamil Nadu Agricultural University

Prof. C.RAMASAMY
Vice-Chancellor

COIMBATORE-641 003
TAMIL NADU
INDIA.

FOREWORD

Date .....

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

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

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

(C. RAM AS AMY)

Coimbatore
June 30, 2008

Tel : Off.:+91-422 2431788 • Res.:+91-422 2430887 • Fax:+91-422 2431672
Email : vc@tnau.ac.in / c_ramasamy@yahoo.com

Dr. K. Palanisami
Director, CARDS

Tamil Nadu Agricultural University
Coimbatore-3

PREFACE

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

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

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

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

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

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

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

Date: 30.06.2008

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

TABLE OF CONTENTS

Table of contents

Table of contents contd…

Table of contents contd…

List Figures

EXECUTIVE SUMMARY

Villupuram district is the 23 rd district of the state of Tamil Nadu. It is the fourth largest district in the state and is predominantly an agrarian district. The district sprawls over an area of 8,204.63 Sq. kms. The district comprises of 8 taluks and 21 blocks. The major crops grown in the district are paddy, cumbu, maize, groundnut, cotton, gingelly, sugarcane etc. Villupuram district is industrially a backward district. It is the home of four sugar mills and modern rice mills. Handloom industry also flourishes in the district. Villupuram District lies between 11^{o} N and 12^{o} S latitude and 78^{o} W and 80^{o} E longitude with an area of 722203 Hectares. The district is located in the northern part of Tamil Nadu and close to the State capital of Chennai at a distance of about 100 Kms.

The district population is approximately 29.60 lakhs in 2001 as against 27.56 lakhs in 1991 Census. The SC population accounts for about 27.39 per cent and ST population accounts for about 2.159 per cent of the total population in the district. The sex ratio of the district is about 985 females for 1000 males in 2001. The soil types found in the district are red, black cotton and costal sand. The district receives the maximum rainfall during the north east monsoon season. Villupuram district belongs to the North eastern agro-climatic zone and 76 per cent of the land holders own less than one hectare of land in this district. The major sources of irrigation are tube wells and open dug wells. Most of the blocks have reached the over exploited stage in groundwater. The district possesses 8.24 lakhs of white cattle.

Villupuram district has a coastal line of 30 kms. There are 17 Regulated Markets, functioning under the control of Villupuram Market Committee in Villupuram district. The district is well connected by rail and the total length of railway lines in the district is about 180kms. There exists a good network of roads for surface transport. The total road length is about 2961 Kms, of which National Highway accounts for 124 Kms. There are 48 transformers distributing the electricity to the urban and rural areas. All the towns, villages, hamlets and tribal villages have been electrified in the district. There are about

totally 14 banks in Villupuram. Villupuram district is having 44 police stations, 3 out posts and 2217 police personnel to maintain law and order. Silica sand, river sand, black granite, blue metal and gravel are the mineral resources available in the district. SWOT analysis is one of the management techniques applied in preparing the district plan. The district ranks first in the production of rice in the state.

Nearness to state capital and Union Territory of Pondichery, nearness to growth centers like Tiruchirapalli, Salem and Export promotion Zone are the major strengths of this district. Uneven rainfall, fragmented land holdings, heavy downpour in coastal areas than interior areas and seasonal rivers are some of the weaknesses of this district. Scope for the formation of SHGs on account of presence of poor, downtrodden and SC/ST population and presence of money lenders. There is also good scope for the development of mineral industry development.

In Villupuram district, paddy, millets, pulses, oilseeds are the major food crops and cultivated on an average area of about four lakh hectares every year. Technology adoption and area increasing are the major strategies planned for agricultural development in this district. Distribution of Soil Health Cards, Vermi - composting are the other innovative activities planned for. Increasing the productivity with minimum usage of water, distribution of MN mixture, Bio-fertilizer, Gypsum and Green manure seeds, supply of implements at subsidised cost, Farmer Field School (FFS),pipeline distribution, construction of rural godowns, distribution of hybrid sunflower minikits, farmers training and strengthening of the State Seed Farms are the major interventions planned for agricultural development in the district. Allied agricultural sectors like Horticulture, Agricultural Engineering, Public Works Department, Animal Husbandry also are equally important for the development of the district. Tapioca and cashew are the most important horticultural crops accounting for the major area under horticulture in the district. The major development activities proposed are Net house structure, nursery and vegetable production, pandal for vegetable production, plant protection package for vegetables, plastics crates for vegetable handling and transport, farm waste

shredder/vegetable waste shredder, cashew high density planting, borewell with casing pipe, banana bunch cover, humic acid/effective e-Microbes, production of disease free planting materials, grapes bird net, tractor mounted steam boiler, support system for crops, banana, gloriosa, banana corm injector, mango harvester, sales outlet points in district (rent and infrastructure), District Level Farmers Workshop, Inter State Exposure visit (5 days), Mango and Amla in noon meal scheme, TANHOPE), 10 hectares mega demo plot for the district, Enterprising Farmers Associations, Community fencing, Support for betelvine and Support for senna cultivation.

Agricultural mechanization, creation of farm ponds, link roads, drip irrigation system for oil palms, soil and water conservation, improving the conveyance efficiency, construction of ground level conservation tanks are the activities planned for the agricultural engineering development of the district. Organization of commodity groups for marketing in the state, Facilitation of Contract Farming between farmers and bulk buyers in the state, dissemination of market intelligence, arrangement of Buyers - Sellers Meet, Organizing the exposure visits to important markets within and out side the state by commodity groups / farmers and extension functionaries., strengthening of market extension centre at each district/ block level for capacity building and dissemination of marketing information.

Capacity building among farmers, regulated market, Uzhavar Shandies publicity and market infrastructure are the major interventions for the agricultural marketing development of the district. Genetic improvement of cattle and buffaloes, enhancement of milk production, development of fodder banks, development of small ruminants, improvement of livestock health and layer farming are the activities for the development of livestock and poultry.

Construction of 50,000 lits. cold room facility at Villupuram dairy, installation of bulk milk cooler centre, purchase of plant and machineries under Central Government Scheme, provision for stainless steel milk cans, establishing automatic milk collection

station (with computer), digital weigh balance (50 Kg.), feed mixing unit (1Ton/Day capacity),electronic milk tester, community milk collection station with milking machine of 2 cans, establishing 50 Mobile Artificial Insemination Centers per year totaling *200* Centers for four years, provision of clean milk production, provision of computers, provision of milk collection centers and construction of building are the activities planned for Aavin development of the district.

Sea ranching programme, installation of artificial reefs, assistance to private fish seed rearing / fish seed production with 50 per cent subsidy, repairs to existing nurseries to increase fish seed production, creation of additional fish seed rearing facility, supply of mopeds fitted with ice box to retail fish vendors (50% subsidy) ,supply of fishing implements (Nets) (50 per cent subsidy)expansion of fish culture in open water system (50 per cent subsidy), infrastructure development in pre- harvest for effective conservancy in three reservoirs , increasing the fish production in Villupuram District (FRP Boats with Engine), capacity building and training to the fish farmers, establishment of three Fish Landing Centres for three reservoirs, establishment of ornamental fish farming, 500 Sq.mts. area backyard type of ornamental fish breeding unit to the private entrepreneurs (75 per cent subsidy),installation of modern fish stall at Villupuram and development of Marakkanam backwater are the interventions for the fisheries development in the district. Anicuts, supply channels, tanks, field channel, Manimukthanadhi Dam development activities are the activities planned for the Vellar Basin sub-division, Kallakurichi. Strengthening of tank bund by desilting of tank, repairs/ re-construction of sluices and weirs, improvements to distributaries, improvements to field channels.Desilting and repairs to supply channels, desilting of the tanks are the interventions in the Middle Pennaiyar Basin Division, Tiruvannamalai**.** Supply channel, tank bund, water spread area, sluices, weir and field channel are the activities for the Lower Pennaiyar Basin Development. Summary of the total budget planned for the development of agricultural and allied agricultural sectors in Villupuram district is given below, in the following table.

Abstract of Total Budget for the Development of Agriculture and Allied Sectors in Villupuram District during the XI Plan Period under NADP

(**Rs in lakhs)**

S.No	Sectors	2008-09	2009-010	2010-11	2011-12	Total
1.	Agriculture	1723.480	1107.555	1041.555	1019.055	4891.645
2.	Horticulture	125.100	154.600	155.600	155.600	590.900
3.	Animal Husbandry	1528.450	648.830	211.790	208.760	2597.830
4.	Fisheries	240.480	117.900	132.900	46.150	537.430
5.	Agrl Engineering	1686.460	1682.460	1722.460	1500.940	6592.320
6.	Agrl Marketing	85.800	367.830	501.280	422.640	1377.550
7.	Public Works Department	1406.500	739.000	702.500	829.860	3677.860
	Total	**6796.27**	**4818.18**	**4468.09**	**4183.01**	**20265.54**

Thus, a total outlay of Rs 20265.54 lakhs for the development of agriculture and allied sectors in Villupuram District is required for the XI plan period under NADP.

CHAPTER - I

INTRODUCTION

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

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

Methodology Adopted for Preparation of District Agriculture Plan

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

Major Areas of Focus

(a) Integrated development of major food crops like paddy, coarse cereals, minor millets, pulses, oilseeds;
(b) Agriculture mechanization;
(c) Activities related to enhancement of soil health;
(d) Development of rainfed farming systems in and outside watershed areas, as also Integrated development of watershed areas, wastelands, river valleys;
(e) Integrated Pest Management schemes;
(f) Strengthening of Market Infrastructure and marketing development;
(g) Strengthening of Infrastructure to promote Extension Services;
(h) Activities relating to enhancement of horticultural production and popularization of micro irrigation systems;
(i) Animal husbandry and fisheries development activities;
(j) Study tours of farmers;
(k) Organic and bio-fertilizers;
(l) Innovative schemes.

Collection of Data

The preparation of district level plan involved basically collection of base line and bench mark details. So a template is developed to collect these particulars from the

different districts (29 districts) of Tamil Nadu. In order to dovetail the ongoing schemes, with the action plans, the current ongoing agriculture programs were listed with their physical and financial performance and finally converged as the plan under National Agriculture Development Programme.

Formulation of District Planning Unit

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

a) Deans of other campuses / Heads of Krishi Vigyan Kendra or Research Station in respective district and one scientist from each campus
b) Co-ordinating staff from Directorate of Centre for Agricultural and Rural Development Studies to represent each district
c) Officials of Line Departments from Agriculture, Horticulture, Agricultural Engineering, Marketing, Animal Husbandry and Fisheries, Seed certification, Public Works Department etc. the task are fulfilled.

Sensitization Workshop

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

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

Preparation of Draft Action Plan and Presentation in District Collectors Meeting

Based on the baseline information and proposals, draft action plan was prepared and this was presented in the District Collectors Meeting held on 10.05.08 in Villupuram district under the chairmanship of District Collector . This meeting was attended by the scientists from TNAU, officials from line departments and the representatives of local bodies wide coverage was given in the media also.

Finalisation

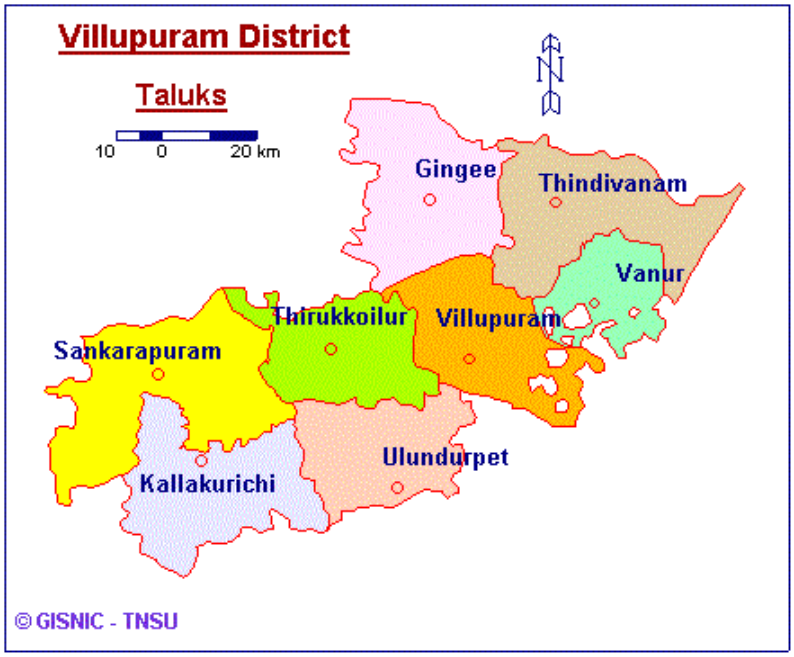
The feedback received in the District Collectors Meeting were incorporated before finalization of the District Agriculture Plan. The Strategic Research Extension Plan and Agriculture Technology Management Agency reports were also reviewed and relevant details have been incorporated in the draft report.

CHAPTER - II

GENERAL DESCRIPTION OF THE DISTRICT

2.1 Introduction

Villupuram district is the 23 rd district of the Tamil Nadu state. It has been formed by bifurcating the erstwhile composite South Arcot district and commenced functioning since 30 the September 1993 with Villupuram as its head quarters (Fig I). It is the fourth largest district in Tamil Nadu and is predominantly an agrarian district.



Source : Website of Villupuram district http://www.Villupuram.tn.nic.in/

Figure I – Map of Villupuram District

The district, sprawling over an area of 8,204.63 Sq. kms, is administratively divided into four revenue divisions, eight revenue taluks, 54 revenue firkas and 1490 revenue villages. There are three municipalities ,15 town panchayats, 22 panchayat unions and 1104 village panchayats in this district (Table 2. 1) .

Table 2.1 Names of Taluks and their extent in Villupuram District

S.No	Name of the Taluk	Area in Sq. Km.
1.	Sankarapuram	1414.21
2.	Gingee	1151.84
3.	Kallakurichi	1132.05
4.	Tindivanam	1121.51
5.	Villupuram	1013.34
6.	Thirukoilur	839.30
7.	Ulundurpet	819.61
8.	Vanur	712.77
	District Total	8,204.63

Source : Website of Villupuram district http://www.Villupuram.tn.nic.in/

The major crops grown in the district are paddy, groundnut, sugarcane, cumbu, gingelly and tapioca. Out of the total geographical area of 7.22 lakh hectares, the net area sown was 3.31 lakh hectares in 2006-07. Forest area accounts for about 10 per cent. Sericulture is also coming up in this district in a modest way.

Villupuram district is industrially a backward district. However it has got four sugar mills and a number of modern rice mills. Handloom industry is in existence. The district is well connected by roads and rail. There are six marketing cooperatives and 17 regulated markets. The functioning of regulated markets in the district is quite impressive. Almost, the entire district is electrified. The district has 318 post offices and is well - knitted by banking institutions. The livestock population of the district is 16.13 lakhs and the white cattle alone accounts for 8.24 lakhs.Sizable sheep, goat and pig population is also noticed in the district. As the district has got 31 kms of coast line, the marine fishing is practiced in 19 coastal villages. Backwater and inland fishing is also practiced in a modest way in this district.

2.2 District at a Glance

2.2.1 Location

Villupuram district lies between 11^{o} N and 12^{o} S latitude and 78 ^{o} W and 80 ^{o} E longitude with an area of 722203 hectares. The district is located in the northern part of Tamil Nadu and close to the state capital of Chennai at a distance of about 100 Kms from its northern border. The district head quarters Villupuram is about 160 Kms from Chennai. The boundaries of the district are Bay of Bengal and Union Territory of Pondicherry in the East, and Kancheepuram and Tiruvannamalai districts in the North, Cuddalore and Perambalur districts in the South and Dharmapuri and Salem districts in the West.

2.2.2 Demographic Profile

Villupuram district has a total population of 2960373 (as per 2001 Census), of which males account for 1492442 (50.41 per cent) and females account for 1467931 (49.59 per cent). The urban population according to 2001 Census is 426917(14.42 per cent) and the rural population is 2533456 (85.58 per cent). Density of the population in the district per sq. km. is 410. The people are primarily agrarian. The sex ratio of the district is 985 females for 1000 males in 2001 (Table2.2).

Table 2.2 Basic Demographic Details of Villupuram District

(Numbers)

Demographic details	I991	2001
Male	1403434	1492442
Female	1352240	1467931
Total	2755674	2960373
Population (in"000")	2756	2960
Density per SQ.KM	380	406
Sex Ratio (No. Of females per 1000 Males	967	985

Source : Website of Villupuram district http://www.Villupuram.tn.nic.in/

As could be observed from the Census 2001, the district human population is approximately 29.60 lakhs as compared to 27.56 lakhs in 1991 Census. The sex ratio works out to 985 in 2001 as against 967 in 1991. The total population as per 2001 Census is 29.60 lakhs as against 27.56 lakhs in 1991 Census. This shows a growth rate of 7.43 per cent over the decade. The taluk wise details on SC, ST and total population are furnished in Table 2.3 below.

Table 2.3 Taluk-wise SC, ST and Total Population in Villupuram District
(in numbers)

Sl. No.	Name of the Taluk		Total Population			SC Population			SC Population		
			Male	Female	Total	Male	Female	Total	Male	Female	Total
1.	Villupuram	U	60513	59170	119683	7442	7630	15072	207	209	416
		R	248723	243982	492705	69556	69364	138920	1910	1884	3794
		T	309236	303152	612388	76998	76994	153992	2117	2093	4210
2.	Gingee	U	13863	13526	27389	2352	2211	4563	130	133	263
		R	173616	173233	346849	35468	35355	70823	3458	3487	6945
		T	187479	186759	374238	37820	37566	75386	3588	3620	7208
3.	Tindivanam	U	43597	43279	86876	8427	8471	16898	197	206	403
		R	163780	162485	326265	55732	55481	111213	2259	2299	4558
		T	207377	205764	413141	64159	63952	128111	2456	2505	4961
4.	Vanur	U	12128	11947	24075	1414	1433	2847	50	47	97
		R	72740	69752	142492	25655	24685	50340	794	818	1612
		T	84868	81699	166567	27069	26118	53187	844	865	1709
5.	Tirukkovilur	U	23675	23910	47585	3722	3832	7554	166	185	351
		R	164888	161048	325936	49223	47801	97024	1143	1154	2297
		T	188563	184958	373521	52945	51633	104578	1309	1339	2648
6.	Sankarapuram	U	6241	6022	12263	947	936	1883	92	78	170
		R	166368	162044	328412	42311	40610	82921	21187	20467	41654
		T	172609	168066	340675	43258	41546	84804	21279	20545	41824
7.	Kallakkurichi	U	45294	44494	89788	8949	8920	17869	292	219	511
		R	149425	146037	295462	54751	53394	108145	162	157	319
		T	194719	190531	385250	63700	62314	126014	454	376	830
8.	Ulundurpettai	U	9716	9542	19258	1896	1908	3804	11	11	22
		R	137875	137460	275335	40389	40666	81055	236	272	508
		T	147591	147002	294593	42285	42574	84859	247	283	530
	Total		1492442	1467931	2960373	408234	402697	810931	32294	31626	63920

Source : Website of Villupuram district http://www.Villupuram.tn.nic.in/

As could be observed from the above table, the SC population accounts for about 7.39 per cent and ST population accounts for about 2.16 per cent of the total population

in the district. As per the latest census data, the SC/ST population in Villupuram District is about 7.73 lakhs forming 30.30 per cent of the population of the district. Thus, there is a very good scope for voluntary agencies to play a major role for the upliftment of the downtrodden. The religion-wise statistics are also provided in Table 2.4 below.

Table 2.4 Population by Religion

(in numbers)

Sl. No	Religion	Persons in District	Persons in Tamil Nadu	Percent to Total in	
				District	Tamil Nadu
1	Hindu	2726949	54985079	92.12	88.11
2	Christian	115745	3785060	3.91	6.07
3	Musilim	110120	3470647	3.72	5.56
4	Jain	5092	83359	0.17	0.13
5	Sikh	343	9545	0.01	0.02
6	Buddhist	193	5393	0.01	-
7	Other Religions	142	7252	-	0.01
8	Religions not stated	1789	59344	0.06	0.10
	Total Population	2960373	62405679	100	100

Source : Website of Villupuram district http://www.Villupuram.tn.nic.in/

It is vivid from the table above, that the caste hindu (population) is the major religion accounting for about 92.12 per cent. The Christian and Muslim population accounts for about 3.91 per cent and 3.72 percent respectively. The populations belonging to other religions are very meagre. Population migration from rural to urban areas could be well understood from the data given in Table 2. 5, below.

Table 2.5 Migration from Rural to Urban in Villupuram District

(in numbers)

Census Year	Total Population	Rural	Urban	Percentage of urban to total population %
1991	2755674	2549211	206463	7.49
2001	2960373	2533456	426917	14.42

Source : Website of Villupuram district http://www.Villupuram.tn.nic.in/

The urban population is only 7.49 per cent in 1991 and it increased to 14.42 per cent in the year 2001. Migration increase might be due to better expected opportunities for livelihood, education, marriage etc. Rural urban migration results in shelter and

environmental problems and other associated problems such as worsening living conditions urban crowding, etc.

Gender Development Index (GDI)

The GDI is a summary measure, which has been found to be useful in comparing stages of gender development. It is also useful to compare GDI and HDI (Human development index) to access the gender of equality. Hence the details on the same are furnished below in Table 2.6

Table 2.6 GDI and HDI values in Villupuram District and in the State

District/State/Country	HDI Value	GDI Value
Villupuram	0.587	0.582
State	0.657	0.654
INDIA	0.571	0.553

Source : Website of Villupuram district http://www.Villupuram.tn.nic.in/

The GDI for Villupuram district is 0.582 as against the state value of 0.654. The Gender Development Index Values among the districts in Tamil Nadu vary from 0.582 to 0.766 and hence Villupuram district stands the last. The GDI rank is less than the HDI rank in Villupuram district showing that the women in the district suffer from lower achievements than men.

In Villupuram District 21 Hospitals are functioning to look after the Health and Family welfare of the people. Out of these, 10 Hospitals come under allopathy, 9 under Siddha and 2 under Homeopathy, with staff strength of 140 Doctors, 149 Nurses and 279 Technical persons. The Network also includes 2 Allopathy dispensaries, 1 Siddha dispensary, 80 Primary Health Centres and 557 Health Sub-Centres. One mobile medical team fulfils the medical need of the people of Kalrayan Hills.

2.2.3 Soils and Topography

The soil types found in the district are red, black cotton and costal sand. Alkaline and saline patches are also spotted in the south-west and eastern parts of the district. The

topography is almost plain in major areas. The kalrayan hills and Gingee hills are with undulated terrain. The details on the types of soil and the places in which they are found are given below in Table 2.7.

Table 2.7 Soil types and Places of Occurrence in Villupuram District

Sl. No	Type of Soil	Places in the District
1	Red soil	Ulundurpet, Vanur, Gingee, Tindivanam
2	Black soil	Kallakurichi, Chinnasalem
3	Red sandy soil	Kanai, Thiruvennainallur

Source: Office of the Joint Directorate of Agriculture Villupuram

2.2.4 Rainfall and Climate

The rainfall and climate are the major factors that influence to a great degree the nature of agriculture in any region. Therefore, the rainfall details for Villupuram district are exhibited below in Table 2.8.

Table 2. 8 Month Wise and Season Wise Rainfall for the Past 5 Years in Villupuram District

(in mm)

Sl. No	Name of the Month Season	2003	2004	2005	2006	2007
1	January	_	2.50	_	5.20	3.70
2	February	_	_	8.00	_	5.40
	Winter	**_**	**2.50**	**8.00**	**5.20**	**9.10**
3	March	6.00	_	17.00	39.60	_
4	April	6.60	_	51.30	24.40	5.00
5	May	15.10	398.60	59.20	56.20	18.80
	Summer	**27.70**	**398.60**	**127.50**	**120.20**	**23.80**
6	June	29.50	39.50	13.50	77.40	47.60

Table 2. 8 Contd..

Sl. No	Name of the Month Season	2003	2004	2005	2006	2007
7	July	125.60	54.50	48.20	30.60	107.90
8	August	239.20	24.00	120.00	128.90	183.40
9	September	72.90	353.50	185.50	115.40	55.60
	S.W Monsoon	**467.20**	**471.50**	**367.20**	**352.30**	**394.50**
10	October	187.10	328.50	231.60	313.30	310.20
11	November	239.70	192.10	489.50	221.70	134.70
12	December	19.70	_	334.00	63.60	322.00
	N.E Monsoon	**446.50**	**520.60**	**1055.10**	**598.60**	**766.90**
	Year Total	**941.40**	**1393.20**	**1557.80**	**1076.30**	**1194.30**

Source: Office of Joint Directorate of Agriculture Villupuram

The district receives an average rainfall of 4.96 mm (0.4 per cent) in the winter season, 139.56 mm (11.32 per cent) in the summer season,410.54 mm(33.31 per cent) in the south west monsoon season and 677.54 mm (54.96 per cent) in the North east monsoon season. These indicate that the district receives the maximum rainfall in the north east monsoon season. The district is characterized by semi arid tropical climate. The temperature is moderate and Villupuram district belongs to the North eastern agro climatic zone.

2.2.5 Land Use Pattern

The land utilization pattern indicates the way in which the land is put under various uses. To have an idea of the same in Villupuram district the land use statistics are furnished below in Table 2.9

Table 2.9 Land Use Pattern in Villupuram District

S. No	Classification	Year(2005-06) (Ha)	Year(2006-07) (Ha)	Percentage
1.	Total Geographical area	722203	722203	
2.	Forest	71697	71697	9.93
3.	Barren and uncultivable area	56655	56651	7.84
4.	Landput to Non-agricultural uses	120328	135874	18.81

Table 2. 9 contd…

S. No	Classification	Year(2005-06) (Ha)	Year(2006-07) (Ha)	Percentage
5.	Cultivable waste	11602	10405	14.51
6.	Permanent pastures and other grazing lands	4195	4195	0.58
7.	Miscellaneous tree crops and grooves not included in the not area sown	7652	6142	0.85
8.	Current fallows	89796	86725	12.00
9.	Other fallows	17278	19802	27.62
10.	Net area sown	343000	330712	45.79
11.	Area sown more than once	37611	58680	17.74
12.	Gross area sown	380611	389392	53.92
13.	Cropping Intensity (%)	111.00	118.00	-

Source: Office of Joint Directorate of Agriculture Villupuram

From Table 2.9 it could be observed that the cropping intensity was 111 percent in 2005-06 and 118 percent in 2006-07.Out of the net irrigated area ,the area sown more than once is only 11 per cent in 2005-06 and 18 per cent in 2006-07.These indicate the need for increasing the area sown more than once and its stabilization in the years to come.

Out of the total land area of 7.22 lakh hectares, an extent of 3.31 lakh hectares (45.8 percent) is utilised for cultivation. The waste land (Categories 3&5) available in the district is 67056 ha. Vast stretches of waste land are formed in Gingee, Kallakurichi, Marakkanam and Vanur Blocks. Sizable area remains as current fallow (12 percent of the geographical area) and this needs attention to the planners. Forest land accounts for 9.93 per cent in the geographical area in the district as against the normal requirement of about 30 per cent coverage and this also indicates the need for more afforestation and social forestry programme in the district.

2.2.6 Land Holdings Distribution

The details of land size classification and the number of land holdings are given in Table 2.10 below.

Table 2.10 Agriculture Land Holdings and Area of Villupuram District

Sl. No	Size of the Land Holders	Land Holdings		Area of the Land Holdings	
		Number	Percentage	Hec.	Percentage)
1	Less than one hectare (Small)	405582	75.98	142257	32.89
2	1 to 2 hectare (Medium)	80005	14.99	112107	25.92
3	Above 2 hectare (Large)	48231	9.03	178212	41.20
Total		533818	100	432576	100

Source **:** Office of Joint Directorate of Agriculture Villupuram

In this district, 76 per cent of the land holdings are less than one hectare of land, 15 per cent of them own 1to 2 hectares of land and only 9 per cent of the land holders own more than 2 hectares of land. On the other hand it could be observed that about 33 per cent of land area is operated by small farms, while the large farms operate 41 per cent of the land area indicating the skewed distribution of land area.

2.2.7 Cropping Pattern

Names of the major crops grown and the respective hectares are detailed in Table 2.11 below

Table 2. 11 Major Crops and their Area in Villupuram District

(in hectares)

Sl. No.	Name of the crop	05-06	06-07	07-08 (upto Feb'08)
1	Paddy	168435	166400	166363
2	Cholam	1465	1000	1151
3	Cumbu	14810	12700	19870
4	Ragi	959	3600	2297
5	Maize	1377	7800	11353
6	Pulses	21476	48500	51455
7	Cotton	5023	9800	8387
8	Sugarcane	56564	54500	46444
9	Groundnut	58252	70500	84111
10	Gingelly	6840	12400	12231
11	Sunflower	995	2900	2496
12	Castor	147	400	414
	TOTAL	**336343**	**390500**	**406572**

Source : Office of the Joint Directorate of Agriculture Villupuram

From the Table 2.11, it could be found that paddy occupies the maximum area of 1.66 lakh hectares, followed by Groundnut(0.84 lakh hectares), pulses (0.52 lakh hectares), sugarcane (0.46 lakh hectares) and cumbu (0.20 lakh hectares) in 2007-08. Maize, gingelly and cotton are grown in an area of about 10,000 hectares each. The area of cumbu, ragi, maize and pulses have increased dramatically in the three years period from 2005-06 to 2007-08. The area of paddy and sugarcane is more or less constant over the years. The oilseed crops like groundnut, sunflower and castor has increased markedly over the years as could be evidenced from the Table 2.11.

2.2.8 Fertilizers and Chemicals

The consumption pattern of the major fertilizers and plant protection chemicals are depected in the Table 2.12 below.

Table 2.12 Consumption of Fertilizers and Chemicals

Sl. No	Fertilizers	2004 – 05	2005 – 06	2006 - 07
1	Nitrogen (Metric Tonnes)	37000	26690	24180
2	Phosphatic (Metric Tonnes)	21000	10943	9554
3	Potassic (Metric Tonnes)	18000	13809	6899
4	Paddy Micro-Nutrients (Metric Tonnes)	54.500	55.300	54.750
5	Pulses Micro-Nutrients (Metric Tonnes)	0.600	0.400	0.800
6	Oilseeds Micro-Nutrients (Metric Tonnes)	31.200	29.300	31.500
7	Bio- Fertilizers-Azospirillum	1.920	1.897	2.400
8	Rhyzobium	0.900	0.954	0.900
9	Phosphobacteria	1.200	1.362	1.000
10	Plant Protection chemicals			
11	Dust (Metric Tonnes)	37.822	21.41	33.965
12	Liquid (Lit)	32858	32374	41235
13	Biopesticides (Lit)	8360	11552	13500
14	Powder (MT)	5.500	5.448	5.300
15	Others	—	—	—

Source : Office of Joint Directorate of Agriculture Villupuram

Nitrogen, phospatic and potash fertilizers consumption has decreased from 2004-05 to 2006-07.Use of micro nutrients and bio- fertilizers has increased. This indicates that farmers are conscious about the pollution which is the result of the continuous use of inorganic fertilizers. In the usage of plant protection chemicals, the use of bio-pesticides has increased considerably, which confirms the above said notion.

2.2.9 Rivers, Ground Water and Irrigation

As the rivers in the district are seasonal, the major sources of irrigation are tube wells and open dug wells. The net irrigated area in the district is 2.45 lakhs hectares which forms 33.9 per cent of the total area of the district and 45.90 per cent of the net cultivated area of 3.30 lakhs hectares. River irrigation accounts for less than 5 per cent of the total irrigated area and the district is largely depending on ground water and tanks. Out of the 2.48 lakh hectare meters of utilisable water, the recharge of around 2.05 lakh hectare meters have already been utilised leaving a balance of 0.43 lakh hectare meters which can be economically exploited. The major sources of irrigation and the extent of coverage are given in Table 2. 13 below.

Table 2.13 Source- wise Net Area Irrigated in Villupuram district

Sl.No	Irrigation Sources	2004-05 hectares	2005-06 hectares	2006-07 hectares
1	Canals	6370	6255	6648
2	Tanks	56845	69915	61205
3	Wells & Tube wells	52416	63555	54525
4	Others if any	106390	165810	175186
	Total	**222021**	**305535**	**297564**

Source: Office of Joint Directorate of Agriculture Villupuram

i) Rivers

The major rivers flowing through the district are indicated below.

- Gadilam River flows through Thirukoilur Taluk.
- Malattar River joins Gadilam before flowing into the Bay of Bengal.
- Pennar River flows through Thirukoilur and Villupuram Taluk.

- Sankaraparani rises in Gingee Taluk and flows through Villupuram Taluks.
- Gomukhi affluent of main tributary of Manimuktha River falling into Vellar River in Cuddalore District.

The rivers are only seasonal, mostly carrying flood waters and none of them is perennial. These rivers could not be used for irrigation purpose to the expected level because of low precipitation. The net irrigated area has shown a fluctuating uptrend as could be noted from Table .2.13.

(ii) Dams and reservoirs

Vidur and Komuki reservoirs are located in this district with the ayacut area of 1295.02 ha. and 2023 ha respectively. Water from these reservoirs is used for irrigation purposes only in this district.

(iii) Ground Water Potential

As all the rivers are not perennial, greater dependence on ground water is noticed in the district. The block wise details of groundwater potential of the district are presented in Table 2.14.

Table 2.14 Distribution of Blocks According to Ground Water Potential in Villupuram District

Sl. No	Critical	Semi critical	Safe	Over Exploited
1	Kallakurichi		Kalarayan Hills	Gingee
2	Vanur	Kanai		Kandamangalam
3	Chinnasalem	Thiyagadurgam		Koliyanur
4	Thirunavalur	Tirukoilur		Mugaiyur
5				Marakkanam
6				Melamalayanur
7				Mailam
8				Olakkur
9				Rishivandhiyam

Table 2.14 contd…

Sl. No	Critical	Semi critical	Safe	Over Exploited
10				Sankarapuram
11				Ulundurpet
12				Thiruvennallur
13				Vallam
14				Vikravandi

Source: Office of Joint Directorate of Agriculture Villupuram

Out of the 22 Blocks of the district, 7 Blocks are falling under the category of Critical/ Semi critical and only one block viz Kalavarayan Hills falls under safe category. The overexploited blocks are numbering 14.

2.2.10 Livestock Population

Livestock is an important asset of the farmers and it supplements the farm income to a considerable extent,particularly in small and marginal holdings.The particulars on cattle population are furnished below, in Table 2.15.

Table 2.15 Livestock Population of Villupuram District (AS PER 17th Census)

(in Nos.)

S.No	Type of livestock	Population
1.	Cattle	824136
2.	Buffaloes	49003
3.	Sheeps	227455
4.	Goat	471428
5.	Horses & Ponies	1671
6.	Donkeys	680
7.	Pigs	38672
8.	Total	1613045
9.	Rabbits	2576
10.	Total poultry	772090
11.	Cattle female	511903
12.	Buffalow female	33865

Source: Department of Animal Husbandry Villupuram district

It could be inferred from the table above that the district possessed 8.24 lakhs of white cattle, which is sizable. There are about 0.5 lakhs of buffaloes. While goat population is 4.71 lakhs, sheep population is 2.28 lakhs .The poultry population is 7.72 lakhs. Thus sizable cattle and poultry population indicates the potentials for livestock development in the district. The other particulars on livestock are also given below, in Table 2.16.

Table 2.16 Breedable Female Animals Available in Villupuram District (AS PER 17th CENSUS)

S.No	Type of livestock	Population
Exotic & cross-bred cattle		
1.	Milch animals	92948
2.	Dry animals	43561
3.	Heifers below 21/2 years	46488
Indigenous and native pure cattle		
1.	Below I year	94389
2.	Below 3 years	97210
3.	Milch animals	171754
4.	Dry animals	106826
5.	Not calved	28600
Breedable female bovine		
1.	Exotic & cross bred	155797
2.	Indigenous & native pure	164507
3.	Total	320304
4.	Buffaloes	2215
5.	Total	342456

Source : Department of Animal Husbandry Villupuram district

It is evidenced from the above table that about one lakh milch animals and about 1.56 lakh cross bred animals indicate the potentials for dairy development in the district.

2.2.11 Fisheries Wealth

Villupuram district has a coastal line of 30 kms. Inland fresh water area spreads on about 83014 hectares and estuaries & brackish water area is 2072 hectares. Marine

fishing is practised in 19 coastal villages of the district. The fish production has increased both in quantity and values. There has been no fish seed production of standard fry. Fish production in both inland and coastal have steadily increased from 1993 to 1996 in the district.

2.2.12 Hills and Forests

Gingee and Kalrayan Hills are the two hills in the district. Forest area in the district constitutes about 9.9% of the total area of the district, which spreads in the areas bordering Salem, Dharmapuri and Thiruvannamalai Districts with divisions of reserve forest, interface forest and social forest. Teak wood, rose wood and sandal wood trees are grown in the hills. In the Kalrayan Hills and Gingee areas some medicinal plants are also grown. In the social forest areas, trees raised are mainly for firewood and paper making. Babul, Eucalyptus and Casuarina are found to be grown in the district. In some pockets of the district, cashew is also grown.

2.2.13 Agricultural Markets

There are 17 Regulated Markets functioning under the control of Villupuram Market Committee in Villupuram district, of which 13 markets are functioning in its own land and buildings. The first regulated market (RM) was opened during 1939 at Tindivanam and the last RM was opened during 1986 at Moongilthuraipattu. In Villupuram market committee 18 crops have been notified. The annual transaction of agricultural produce ranges from 3.4 Lakh Mts to 4.61 Lakh Mts. The annual receipt of market fees ranges from Rs 2.64 crores to Rs 3.65 crores. The total value of the products transacted ranges from Rs. 226 crore to Rs. 324 crore per annum.

Of the total production of paddy, 55 per cent is sold out through the RMs .So also cumbu 75 per cent, Ragi 38 per cent, groundnut 16 per cent Gingelly 159 per cent, Cotton 31 per cent and Pulses 20 per cent. At times Cotton from Perambalur is sold in Villupuram Regulated market.

2.2.14 Industries

The Villupuram District is one of the industrially backward districts of Tamil Nadu. There is no industrial estate in the district. The names of industries and number of units functioning in the district are listed below in Table 2.17.

Table 2.17 List of Industries in Villupuram district

Name of the Industry	No. of Units
Food Industry	2,191
Cotton Textiles	91
Hosiery and Garments	1,618
Wood Products	195
Paper products and printing	462
Leather products	95
Rubber and Plastic products	119
Chemicals and Chemical products	107
Non-Metalic Mineral products	92
Basic Metal Industry	1
Metal Products	339
Machinery parts	572
Electrical Machinery and Apparatus	78
Transport Equipments and Parts	2
Miscellaneous Manufacturing Industries	104
Real Estate and Business Services	39
Personal Services	96
Repair Services	263
Service not classified	4
Sugar Mills	4
Total	6,472

Source : Website of Villupuram district http://www.Villupuram.tn.nic.in/

The district has four sugar mills of which three are in the co-operative sector and one in private sector. It has a spinning mill, two cotton textile mills, few shoe making units, few sago units, granite units, crusher units, a few edible oil mills, a number of modern rice mills, two paper pulp units, two mineral water units etc. Other than these, there is no major industrial unit in the district. Nearness to Pondicherry offers good scope for development of ancillary units in the district. Further, the district offers good scope for setting up of agro -processing units.

Handloom Industry

In Villupuram district, about 34 Handloom weavers co-operative societies are existing. Out of which, only 26 societies are functioning. Besides, 2000 individual weavers are engaged in this sector and weave silk sarees and cotton lungies. Now the societies and weavers are facing the problem of accumulated stock, high cost of production, competition from power loom sector and hence remained idle for most of the days.

Sericulture

Sericulture is being under taken in Addukam, Avalurpet, Manandal, Athipattu, Kolappalur, Kanai, Kedar, Olakkur, Melvalai, Sembiama Devi and Chinnasalem. Department supplies disease free silkworm eggs to the farmers and provide training to them in mulberry cultivation and rearing of cocoons. Marketing of cocoon is not a problem since the Department itself purchases all the cocoon and any cocoons remains could be taken to Kanakapura in Karnataka by the farmers. The Department has constructed a cold storage to keep the eggs. At present the eggs are procured from Trichy, Vaniyambodi, Krishnagiri, Salem, Keelpennathur and Coimbatore. Self- help Groups have been involved in this sector also.

2.2.15 Transport and Communication

Adequate transport facilities are available in the district for the movements of passengers and goods. The district is well connected by rail and roads.

(i) Roads

Villupuram District is adequately well served by a network of roads as described in Table 2.18 below. There is no airport in this district.

Table 2.18 Length of Roads (in Kms) in Villupuram District

Cement Concrete	Bituminous	Water Bound Macadam	Total	Unsurfaced Roads	Grand Total
193.486	5504.007	464.626	6162.119	2278.262	8440.381

Source : Website of Villupuram district http://www.Villupuram.tn.nic.in/

Huge quantities of agricultural produce transacted through the various regulated markets in the district are transported within and outside the district mostly by roads.There are travelers and inspection bungalows and Guest Houses maintained by the Government Departments and municipalities.

(ii) Railways

The district headquarters Villupuram is well connected by the rail network. Villupuram is a junction through which the following routes are passing.

Table 2.19 Railways in Villupuram District

Villupuram - Trichy chord line	B.G
Villupuram - Kadpadi	M.G
Villupuram - Pondicherry (work under progress)	B.G
Chennai - Trichy main line (Electrified: Villupuram-Tambaram)	B.G
Villupuram - Egmore (Electrified)	B.G

Source : Website of Villupuram district http://www.Villupuram.tn.nic.in/

Besides, there is Cuddalore - Salem line passing through Chinnasalem. The approximate length of railway lines in the district is 180 Kms. Out of 8 Taluks of the district except three Taluks namely Gingee, Vanur and Sankarapuram, the remaining five Taluks are connected by railways.

(iii) Communication

Post offices are the vital means for communicating written information, sending messages to the needed destinations. Telephones are the essential means for oral communication and is the most easy way of transferring the messages. The number of post offices and telephone exchanges are presented in the Table 2.20 below.

Table 2.20 Postal and Telegraph Offices

Sl.No.	Subject	Number
1.	Post office doing Postal business only	318
2.	Post office doing Post & Telegraph business	12
3.	Telegraph office	3
4.	Telephone Exchange	55
5.	Telephones in use	76037
6.	Public call office	7850

Source : Website of Villupuram district http://www.Villupuram.tn.nic.in/

There are 330 post offices in the district, out of which 12 post offices carry out telegraphic business also in Villupuram district. Totally 76037 telephone lines are in use in the district and there are 7850 public call offices in the district.

2.2.16 Electricity

There is no power Generation by Electricity Board in Villupuram district. But the Electricity Board purchased power from two private power units located at Panchalam. There are 48 transformers distributing the electricity to the urban and rural areas. All the towns, villages, hamlets and tribal villages are electrified. Out of the total power consumed in the district, about 63.7 per cent goes to agriculture, 13.7 per cent goes to industries and the balance of 22.6 per cent to households, public lighting, etc.

2.2.17 Banking Institutions

There are totally about 14 banks in Villupuram .They are Indian Bank, Bank of Madura Ltd, Central Bank of India, City Union Bank, Corporation Bank, State Bank of India, Indian Overseas Bank, Karur Vysia Bank, Lakshmi Vilas Bank, Punjab National Bank, Tamilnadu Mercantile Bank Ltd, The Nedungadi Bank Ltd, The South Arcot Co-Op. Central Bank and Villupuram Urban Bank.

2.2.18 Police and Protections

Villupuram district is having 44 police stations, 3 out posts and 2217 police personnel to maintain law and order. In 2002-03, 7260 cases were registered under various categories and 40 cases were registered against women harassment and dowry. In the total available 6 sub jails, 978 male and 65 female convicts have been jailed. During this year 2737 accidents had occurred in which 2844 persons are injured and 661 persons lost their life.

2.2.19 Mineral Resources

The district has fairly rich mineral deposits. The fossil ferrous cretaceous limestones are found in Thirunakkanai near Tindivanam. The alluvial beds are found in Vellalar Pennaiyar, Gadilam and Ginjee rivers. Iron ore is found to occur in limited quantity along the banks of river Pennar in Kallakkurichi taluk. In Kunnam near Tindivanam, world famous black granite is available in plenty and a greater part of it is being exported. Those rocks are capable of taking high polish and are used for wall facings, floor tiles and as monumental stones. In Marakkanam near Tindivanam, Plenty of lime shell deposits all along the coast are found which are of high chemical grade. Besides these, silica sands of high purity, containing 99.9 percent of silicon dioxide occur as natural sands near Marakkanam. Sugar industry is also a major industry in the district. Kallakkurichi Co-operative sugar Mills ltd. located at Moongithuraipattu in Kallakkurichi

is one of the major sugar mills in this district. South India Sugars Ltd. Mundiampakkam, in Villupuram Dist., manufactures Sugar molasses, bagass and dealing in fertilizers.

Silica Sand, River sand, Black Granite, Blue Metal and Gravel are the mineral resources under production in the district. There have been 55130 MT, 2000 CBM, 5446.74 CBM, 5461 CBM and 40500 CBM respectively.

2.2.20 Education

School education facilities are available in the district through 1777 primary schools (including nursery schools) 311 middle schools, 150 high schools, 100 higher secondary schools. Regarding higher education, Arts Colleges, engineering Colleges, Poly-Techniques, Industrial Training Institute and Teacher Training Institutes are available in the district. The Government has run hostels for boys and girls for SC., ST., MBC and Backward classes.The literacy rate of Villupuram district is 64.7 per cent compared to the state figure of 73.47 per cent in the year 2001.

2.3 Development Vision and Strategy

(i) Vision

Uplifting the level of living of the rural households by increasing the productivity levels of crops, livestock and fishery to the extent of 5 to 6 per cent through effective transfer of technology, modernization of the irrigation systems and crop diversification that could generate more rural employment and income, in the long - run.

(ii) Strategy

In order to realize the vision put forth above, the following strategies are contemplated. Raising the productivity levels of crops, livestock and fisheries through the application of latest science based technologies.

- Modernizing/developing the existing irrigation systems/structures/waterways
- Optimal use of groundwater potential through water conservation and water harvesting techniques and by preventing sea water intrusions in coastal belt.

- Crop diversification by replacing less remunerative crops by more profitable crops.
- Popularisation of farming system approach.
- Development of inland marine fisheries by the application of latest production techniques with infrastructure and financial supports.
- Strengthening and developing the agro processing industry.

To promote agriculture and develop farmers, Tamil Nadu agricultural university and the various line departments should join hands and work. Public, private partnership should be encouraged. Various NGOs and self-help groups should be allowed to participate in the development of Villupuram district. Committee should be formed involving Industrialists, farmers, academicians, NGOs, representatives of the public viz. MLA, MP with the leadership of the collector. This will help to develop the district and realize the vision in the long run.

CHAPTER - III
SWOT ANALYSIS OF THE DISTRICT

3.1 Introduction

In planning agricultural development, one of the important management techniques employed is the SWOT analysis. The expansion of the abbreviation "SWOT" is as follows.

S	..	Strengths
W	..	Weaknesses
O	..	Opportunities
T	..	Threats

In the analysis, the strengths, weaknesses, opportunities and threats are identified. For accelerating the agricultural growth, the strengths can be made use of, weaknesses can be rectified, opportunities can be tapped and threats, if any, may be avoided. It is with this perspective in view the SWOT analysis has been attempted.

3.2 SWOT Analysis of Villupuram District

The results of the SWOT analysis of Villupuram district are presented below.

(i) Strengths

- Good rail links(180 Kms) and the district headquarters is having the railway junction.
- Good network of roads for surface transport and the total road length is about 2961 Kms, of which National Highway accounts for 124 KMS.
- Nearness to state capital viz Chennai and Union Territory of Pondicherry.
- Nearness to growth centres like Tiruchi, Salem and Export promotion Zone.
- Nearness to Chennai and Tiruchi Airports and Cuddalore and Chennai sea ports.
- All villages are electrified.
- Good banking net- work with 182 bank branches.
- Vast reserves of various types of minerals.

- Existence of Committed voluntary Agencies/Non Governmental Agencies.
- Availability of adequate number of skilled and as well as unskilled labourers.
- Existence of well functioning Regulated Markets.
- Hill areas with development potentials.
- Fertile soils and high water tables in some pockets.
- Availability of irrigation water from dams and anaicuts in some pockets during rainy season.
- Scope for backyard poultry, Japanese quails and turkeys
- Upgradation of latest technical know-how in livestock farming systems and value addition to livestock products.

(ii) Weaknesses

- Uneven rainfall and heavy downpour in October, November and consequent flash floods.
- Rainfall is heavier in coastal areas compared to interior areas.
- Fragmented land holdings
- Rivers are seasonal.
- Low precipitation resulting in poor use of rivers for irrigation purpose.
- Greater dependence of ground water resulting in the depletion of its potential
- Out of 22 blocks, only Kalrayan hills is categorized as Safe according to ground water classification.
- Heavy dependence on Agriculture.
- Vast stretch of wastelands in some pockets.
- Low literacy rate (24.3% as against state average of 62.5%).
- Lack of adequate number of training institutions.
- Lack of motivation and entrepreneurship.
- No government industrial estate.
- No fishing harbour and organized marketing centres for fish even though the district has a coastal line of 30 Kms.
- Weak primary level Co-operative institutions.
- Nearness to Pondicherry which is offering a lot of concessions for setting up medium and large scale industries.
- Shortage of fodder seeds / seedlings for propagation

- Market decline in buffalo population leading to negative growth rate in buffalo milk production
- No recognized breed of goat in the district.

(iii) Opportunities

- Scope for pushing up the production frontiers in major crops grown in this district
- Scope for development of Horticulture and Sericulture and development of Handicrafts.
- There exists potential for increasing milk and milk products.
- Scope for developing bamboo based livelihood activities enlarging the area under bamboo cultivation and thereby promoting paper industries.
- Government's plan to establish fishing harbour and a marketing centre for fish.
- Plan to set up fresh water prawn hatcheries in the nearby districts offering scope for fresh water prawn culture.
- Ample scope for setting up biogas plants on account of existence of sugar mills and large population of cattle.
- Scope for setting up modern rice mills, oil mills and other agro – processing units.
- Scope for setting ups radiological and pathological laboratories in rural areas.
- There exists ready markets for farm products.
- Scope for formation of SHGs on account of presence of poor, downtrodden and SC/ST population and presence of money lenders and their involvement in agricultural development activities.
- Scope for mineral industry development.

(iv) Threats

- Large scale conversion of Agricultural land for residential and industrial purposes.
- Poor loan recovery in respect of Government sponsored programmes like TAHDCO, PMRY, Fisherman Welfare Schemes, etc, resulting in inadequate credit flow to rural areas.

3.3 Emerging Issues

Major strengths of the district are well developed infrastructural facilities like, road and rail transport, communication network, regulated markets, rural electrification and moderately developed irrigation structures and availability of water during rainy seasons and high water tables in some pockets of the district. The nearness and quick

reach to Chennai, Pondicherry and Cuddalore assure ready market for farm products. The 30 Kms coastline also adds to the strength of the district. One inherent weakness the district possesses is the low and uneven rainfall and poorly developed major and medium irrigation structures. This necessitates the district to take up meticulously all water harvesting and conservation measures. The artesian condition of the groundwater indicates the scope for digging artesian wells in the potential areas.

Low literacy level, lack of motivation and entrepreneurship among the people and lack of training facilities etc, indicate the need for improving the literacy level, motivation of the people and entrepreneurial development measures in the district.

Opportunities identified, exhibited the fact that the there is scope for improving the productivity and hence production of crops like paddy, cumbu, maize, cholam, groundnut sunflower and pulses. The sugarcane cultivation also requires attention as this district alone has got four sugarcane mills .There exists scope for developing livestock based activities like dairying, goat and sheep rearing, poultry farming, piggery etc. There exists scope for increasing the production of horticultural crops like fruits, vegetables and flowers as they got excellent marketing avenues. The Kalrayan hills development potential is huge and it is to be explored and improved particularly in forest products including bamboo. The existence of shrub- jungles and waste lands in some pockets provides excellent scope for forest and fodder development in the district.

As this district has got huge mineral deposits, there exists the scope for the further growth of the mineral based industry. Development scope for agro- processing including rice milling and sugar milling is enormous.

3.4 Composite Index of Agricultural Development of Villupuram District

Agricultural Development of a district is a comprehensive multidimensional process involving large number of related indicators. Hence, it can be well represented by the

composite indices which are used as yardsticks not only to gauge the development of each district but also to compare its performance in relation to other districts. These indices help to classify the sub-regions based on a set of large multivariate data. The information contained in the large set is transformed into a small set of indices which would provide a convenient method for classification. There are many methods of classification based on multivariate data. Among them, one method which is statistically sound is that developed by Iyengar and Sudarshan.(1982). This method is simple and easy to apply and it helps to classify the districts into various stages of development, viz, 'highly developed', 'developed', 'developing', 'backward' and 'very backward'. In this method, for each district a 'composite index' is constructed. The index lies between 0 and 1 with 1 representing 100 per cent development and 0 representing no development at all.

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

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

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

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

Obviously these standardized indices lie between 0 and 1. These indices are then used to determine the weights of individual variable and then they are subjected to further

statistical analysis by fitting suitable probability distribution to determine the cut-off points for classification of the districts into five categories as mentioned above. The detailed methodology can be found in Iyengar and Sudarshan (1982).

The data base for the current study on Villupuram district is taken from various government publications like Season and Crops Report and Economic Appraisal of Tamil Nadu for the 4 periods 1990-91, 1995-96, 2000-01 and 2005-06. In all, 25 indicators of agricultural development as given in Table 3.1 were used for estimating the composite index of development for the district. The 25 indicators were grouped into 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 Villupuram district, which was classified as 'developed' in agricultural development during 1990-91 and became 'developing' in agriculture during 95-96 and again became under the category of 'developed' during 2000-01 and 2005-06. In terms of overall agricultural development, its rank among the 29 districts of Tamil Nadu varied from 9 to 16 during the 1990-91 to 2005-06. As far as the individual components of agricultural development are concerned, its ranks in the above periods are summarized in the following Table 3.2. The table shows that all the components and its performance in the period of study are satisfactory. In the case of cultivators and labourers variables occupied ranks between 2nd and 7th ranks in all the four periods, considered (Table 3.1 and 3.2).

Table 3.1. Selected Indicators of Agricultural Development for Villupuram District

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

Table 3.2. Rank of Villupuram 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	13	11	13	-	-	5	12
	1995-96	18	10	5	15	19	7	16
	2000-01	21	15	5	9	11	2	13
	2005-06	10	8	10	7	9	3	9

CHAPTER - IV
DEVELOPMENT OF AGRICULTURAL SECTOR

4.1 Introduction

The outcome of the analytical description of the resource base in chapter II and the results of the SWOT analysis in chapter III had facilitated the process of identifying the development issues. The on going projects/schemes are listed, the results of the constraint analysis are briefly indicated and finally the needed interventions for further development have been outlined in this chapter. Issues related to land- use pattern are discussed first.

4.2 Land Use

The current fallow, other fallows, cultivable waste, barren land and uncultivable land account for about 24 per cent of the total geographical area. Small farm holdings are in large numbers. These lead to identify the following development issues in agriculture.

- Minimising current fallows
- Bringing the land area of cultivable waste under cultivation of either field crops or tree crops.
- Development of small farmers.

Thus, the scope for wasteland development exists to a considerable extent.

4.3 Soil Health

The fertility status of the soil in general is low in most parts of the district. Problem soils are found in few pockets. Thus, the following issues emerge in this district.

- Soil health improvement practices
- Reclaiming the problem soils

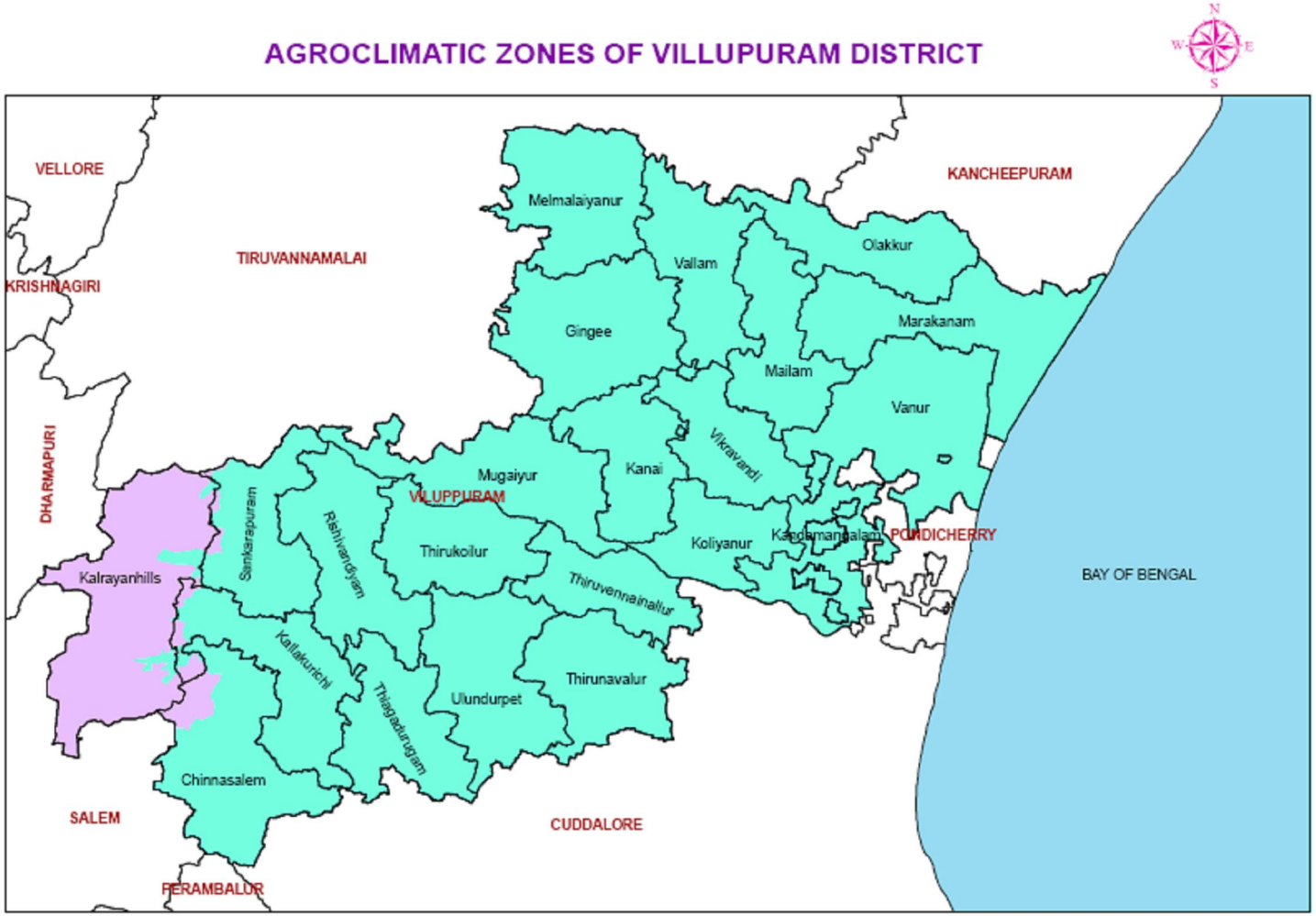
Application of organic manures, raising green manure crops, application of gypsum are some of the soil amendment measures , that can be thought of in improving the soil health.

Villupuram Soils and Area in Hectare

Soil Description	Area (ha)
Deep, fine, montmorillonitic, Vertisols	111828.95
Deep, fine, mixed, Inceptisols	76407.99
Moderately deep, fine loamy, mixed, Inceptisols	60801.22
Moderately deep, fine, mixed, Inceptisols	46432.75
Moderately shallow, fine loamy, mixed, Alfisols	33969.92
Deep, fine, mixed, Alfisols	28136.11
Shallow, loamy skeletal, mixed, Alfisols	23596.94
Very deep, fine loamy, mixed, Inceptisols	16297.87
Shallow, clayey, mixed, Alfisols	15354.03
Deep, fine loamy, mixed, Alfisols	15315.53
Moderately shallow, clayey skeletal, mixed, Inceptisols	13980.83
Moderately shallow, fine, mixed, Inceptisols	13734.62
Shallow, clayey skeletal, mixed, Alfisols	12576.06
Shallow, loamy, mixed, Alfisols	12378.47
Moderately deep, clayey skeletal, mixed, Alfisols	11741.80
Shallow, loamy skeletal, mixed, Inceptisols	10655.38
Shallow, clayey, mixed, Inceptisols	10093.75
Deep, fine loamy, mixed, Inceptisols	9698.56
Moderately deep, fine, mixed, Alfisols	9695.31
Very shallow, loamy, mixed, Entisols	8544.99
Very deep, fine loamy, mixed, Ultisols	7840.10
Moderately deep, fine loamy, mixed, Alfisols	7803.45
Moderately shallow, fine, mixed, Alfisols	7451.54
Very shallow, loamy skeletal, mixed, Inceptisols	6284.65
Moderately shallow, fine loamy, mixed, Inceptisols	6139.23
Shallow, loamy, mixed, Inceptisols	5594.22
Very deep, fine loamy, mixed, Alfisols	5567.07
Very deep, fine, mixed, Alfisols	5449.26
Moderately deep, coarse loamy, mixed, Inceptisols	5352.76
Very deep, fine, montmorillonitic, Vertisols	5020.76

Soil Description	Area (ha)
Deep, coarse loamy, mixed, Ultisols	4357.76
Deep, fine, montmorillonitic, Inceptisols	3848.40
Very deep, fine silty, mixed, Entisols	3780.29
Moderately deep, coarse loamy, mixed, Entisols	3673.11
Deep, coarse loamy, mixed, Entisols	2705.56
Moderately deep, loamy skeletal, mixed, Inceptisols	2421.98
Shallow, clayey skeletal, mixed, Inceptisols	1982.46
Shallow, loamy skeletal, mixed, Entisols	1586.61
Deep, fine silty, mixed, Inceptisols	1565.55
Moderately shallow, loamy skeletal, mixed, Entisols	1281.45
Moderately shallow, coarse loamy, mixed, Entisols	1036.57
Deep, contrasting particle size, mixed, Inceptisols	1019.24
Very deep, coarse loamy, mixed, Entisols	991.14
Very deep, coarse loamy, mixed, Inceptisols	864.64
Shallow, clayey, mixed, Entisols	721.41
Deep, sandy, mixed, Entisols	548.34
Moderately shallow, fine, montmorillonitic, Inceptisols	459.31
Very deep, clayey skeletal, kaolinitic, Alfisols	251.90
Deep, fine, mixed, Mollisols	190.70
Deep, fine loamy, mixed, Ultisols	157.10
Deep, coarse loamy, mixed, Inceptisols	78.50
Moderately deep, fine, montmorillonitic, Inceptisols	76.92
Moderately deep, very fine, montmorillonitic, Vertisols	43.02

AGROCLIMATIC ZONES OF VILLUPURAM DISTRICT



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

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.

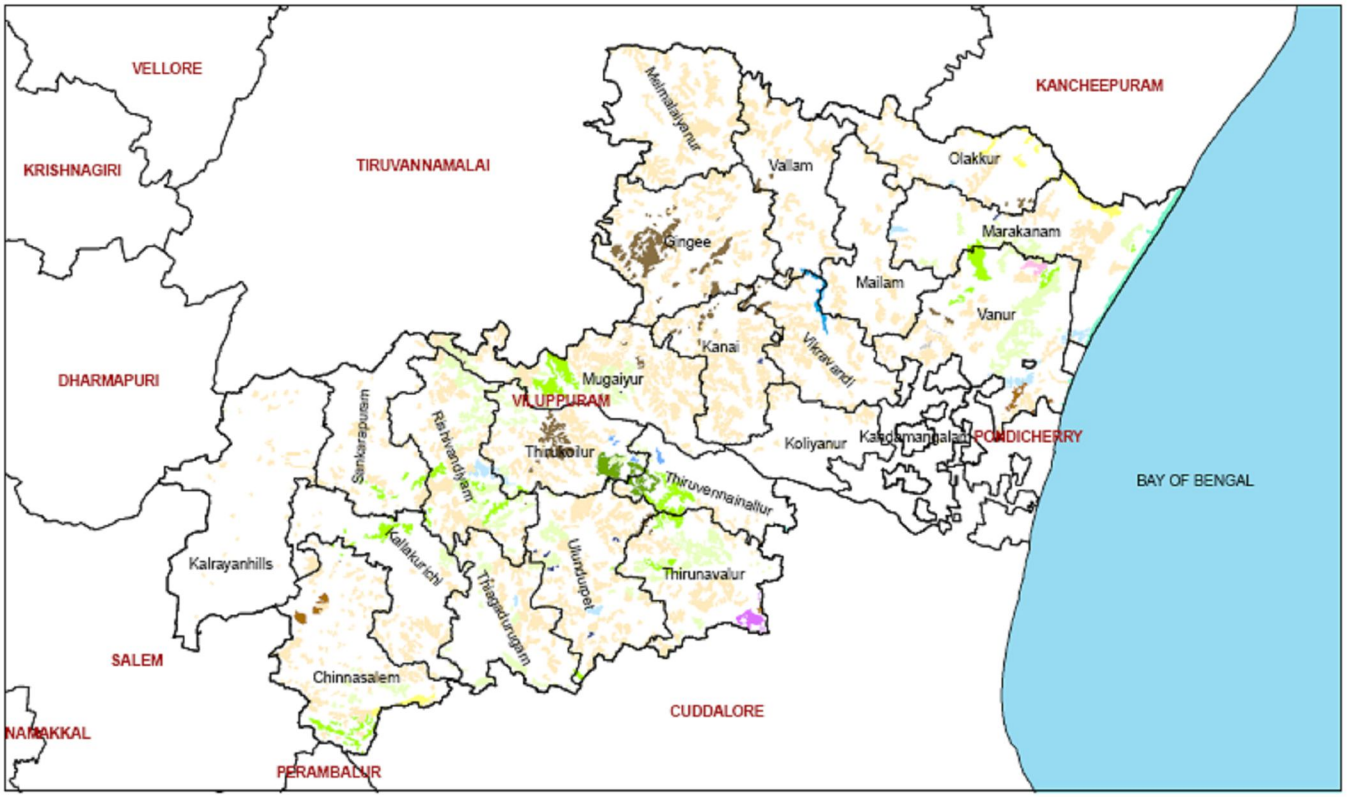
HIGH RAINFALL ZONE

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 VILLUPURAM DISTRICT



EXPLANATION OF DIFFERENT LAND DEGRADATION CATEGORIES

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

Water Erosion

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

1. Sheet erosion

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

2. Rills

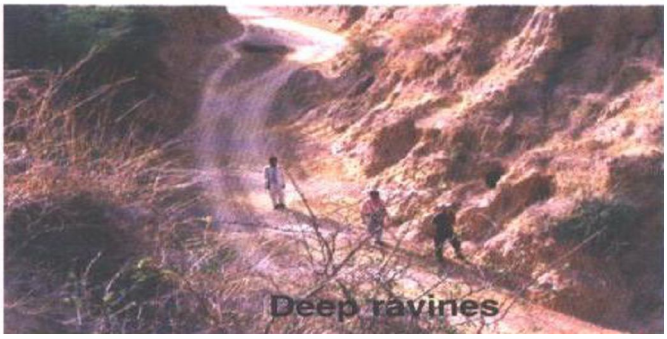
When the surface runoff goes in the form a concentric flow, a tiny water channels are formed in the field. These are small rivulets of such a size that they can be worked over with farm machinery. Rills are generally associated with the cultivated lands and are visible in the ploughed soil after first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

3. Gullies

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

4. Ravines

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



Wind Erosion

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

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

5. Sheet Erosion

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

6. Stabilized Dunes / Partially stabilized Dunes

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

Stabilized sandune

Partially stabilized sanddune

7. Un-stabilized dunes

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

Water logging

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

8. Surface Ponding

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

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

9. Sub-surface Water logging

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

10. Salinization / Alkalization

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

Salinity

Sodic

11. Acidification

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

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

Glacial

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

12. **Frost Heaving**

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

13. **Snow covered areas**

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

Degradation due to anthropogenic factors

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

14. **Industrial effluent affected areas**

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

15. **Mining and dump areas**

These are the areas subjected to removal of different earth material (both surfacial and sub-surfacial) by manual and mechanized operations. Large scale quarrying and

mechanizations results in mining and mine dumps. It includes surface rocks and stone quarries, sand and gravel pits, brick kilns, etc. Mine dumps are those areas where waste debris is accumulated after extraction of required minerals. Generally these lands are confined to the surroundings of the mining area.

16. **Brick kiln areas**

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

Others

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

17. **Mass movement/ Mass wastage**

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

18. **Barren rocky / stony areas**

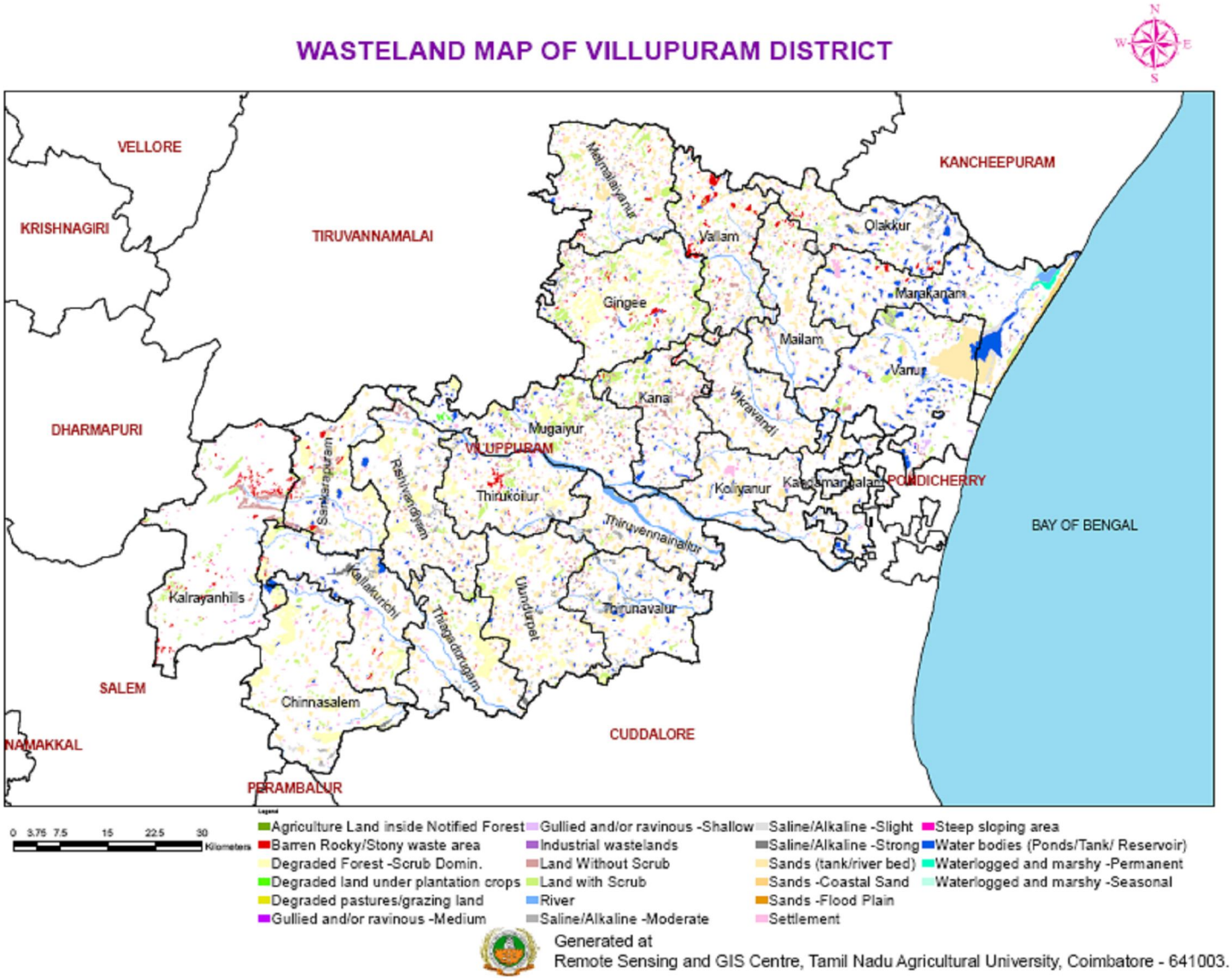
Barren / rocky / stony areas are the rock exposures of varying lithology often barren and devoid of soil and vegetal cover. They occur in hill forests as openings or as isolated exposures on plateau and plains. These can be easily delineated from other type of degraded land because of their severe nature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

19. Miscellaneous

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

Sea Ingress areas

WASTELAND MAP OF VILLUPURAM DISTRICT



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

WASTELAND CLASSIFICATION

Culturable Wastelands

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

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

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

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

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

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

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

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

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

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

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

Unculturable Wastelands

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

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

4.4 Water Resources Management

Vidur and Komuki are the two medium irrigation dams in the district with canal system irrigating about 6000 hectares. The tank irrigation is also found in sizable area of about 60000 hectares. Well irrigation is the major source with 54000 hectares. About 73 per cent of the net area sown is irrigated in the district. The net irrigated area in the district is about 45.90 per cent of the net cultivated area. The annual rainfall of 1194 mm is fairly good .While 64 per cent is received during North- east monsoon season, 33 percent is received during south west monsoon season. However the waterways and the tanks are silted much and the rain water is wasted by easy flooding and overflowing..Therefore water harvesting measures form as the thrust area of development in addition to rehabilitating the existing water structures. .Therefore the issues for development identified are as follows.

- Medium irrigation dams available in the district viz Vidur and Komuki require strengthening and proper up keep.
- As a rain harvesting measure the anaicuts at various feasible locations may be constructed across the seasonal rivers and the water distribution channels to nearby tanks may also be constructed.
- Critical groundwater position and heavy dependence on well irrigation needs groundwater recharge by proper rain harvesting techniques.
- Modernizing the existing wells, construction of new wells , electrifying the pumpsets, are essential.

4.5 Major Crops and Varieties Grown

Paddy, Cumbu, Groundnut, gingelly and sugarcane are the major crops grown in the district. The areas under cumbu, maize are increasing .Sizable area under sugarcane keeps feeding the four sugar mills in the district. The development issues that must be considered are

- TOT must be targeted on the major crops.
- Cotton area can be stabilized.
- Cultivation of maize and sunflower requires encouragement for spreading on more area.
- Pulses production must also be given attention.

4.6 Input Management

The declining trend in the use of inorganic fertilizers in the last three years might be due to timely non - availability of fertilizers and hiking prices. The utilization of micro nutrients and bio - fertilizers was almost constant during the three years period. Among the plant protection chemicals used the use of liquid chemicals and bio - pesticides have shown the uptrend.

The following are the major thrust areas of development.

- The fertilizer supply during seasons must be made available without shortages.
- Making available the right type of fertilizers in right time.
- Fertilizers must be made available under the notified prices
- The prices of phosphatic fertilizers may be subsidized as its prices are very high.
- Liquid pesticides, chemicals and bio-pesticides may also subsidized.
- Use of weedicides may be encouraged, through subsidized prices.
- Timely availability of adequate quantities of high yielding varieties/hybrid seeds of major crops.

4.7 Constraint Analysis

The results of the constraint analysis are briefly indicated below.

- The yield gap exists in major field crops grown in the district and this requires effective transfer of technologies.
- Lower literacy level, lack of entrepreneurial traits limit the pace of development and hence the development education must be the core of development planning.
- Lack of organized efforts in adopting the water harvesting techniques resulting in more surface run- off rain water and hence the recharge of groundwater is at the minimal.
- Heavy silting of tanks and distributaries reduced the water –holding capacity and the water flow to a great degree.
- Non- availability of right type of fertilizers in right time, right place, right quantity and in right prices hampers the productivity and hence the production in the major crops are not cultivated are upto the potentials.

4.8 Special Projects / Programmes Ongoing in the District

The existing schemes in the district are

1.Integrated Cereals Development Programme

- Distribution of Certified Seeds(Paddy)
- SRI demonstration
- IPM demonstration

2.Integrated Cotton Development Programme

a) seed

- Supply of Breeder Seeds
- Distribution of Certified Seeds

b) Plant Protection Measures

- Conducting farmers training
- Providing seed treat chemicals
- Surveillance of pests
- Distribution of Pheromone Traps
- Distribution of Bio Agents
- Supply of MOS
- Supply of POS
- FCS on Production Technology

c) Human Resource Development

- State Level Training

d) New Interventions

- Bio-fertilizer Distribution
- Micro Nutrient Distribution
- Inter Cropping with Pulses
- Farmers Field School
- Contingencies

e) 100 percent Funded by Government Of India

- Production of 'F' Seed
- Production of 'C' Seed
- Electronic Print Media etc.

3. Integrated Scheme of Oilseeds, Pulses, Oilpalm and Maize (Isopom – Oilseeds)

- Purchase of Breeder Seeds
- Production of Foundation Seeds
- Production of Certified Seeds

- Distribution of Certified Seeds
- Pipes carrying water from sources to field
- Block demonstration covering with polythene mulch
- IPM Demonstration
- Distribution of Gypsum
- Bio-pesticides distribution
- Bio-fertilizer distribution
- Distribution of Hand Sprayers
- Distribution of Power Sprayers
- Weedicide Distribution
- CBD-Groundnut
- Gingelly
- Sunflower
- Combined Nutrient Spray
- Farmers Training
- Provision of Audio Visual Aids

4. Integrated Scheme of Oilseeds, Pulses, Oilpalm and Maize (Isopom –Pulses)

- Purchase of Breeder Seeds
- Foundation Seed Production
- Certified Seed Production
- Certified Seed and Seed Distribution
- DAP Spray
- Bio-Fertilizer Distribution
- Pipes for carrying water from sources
- CBD
- IPM Demonstration
- N.P.V. Distribution
- Bio-pesticides Distribution
- P.P.Equipments Distribution
- Micro Nutrient Spray
- Farmers Training

5. Integrated Scheme of Oilseeds, Pulses, Oilpalm and Maize (Isopom-Oilpalm)

- Assistance for planting materials-IInd instalments
- Area Expansion
- IInd year cultivation maintenance
- Installation of Drip Irrigation system
- Farmers Training
- Block Demonstration
- Oilpalm Chaff Cutter

6. Integrated Scheme of Oilseeds, Pulses, Oilpalm and Maize (Isopom-Maize)

- Production of Certified Seeds
- Distribution of Certified Seeds
- Block Demonstration
- IPM Demonstration
- Pipeline distribution
- Seminars
- Farmers Training
- Contingency & P.O.L
- Officers Training

7. Seed Village Scheme

- Distribution of Paddy Seeds
- Distribution of Oilseeds
- Distribution of Pulses Seeds
- Farmers Training

8. Coconut Development Schemes (Cochin Board Assisted Schemes)

- Management of disease affected palm
- Laying out of organic manure pit
- Laying out of Demonstration plot

9. Innovative Schemes - Formation of 'FIG'

- Formation of new 'FIGs'

The various activities, physical and financial targets under each of the existing schemes are portrayed in Tables 4.1 to 4.7, below.

Table 4.1 Integrated Cereals Development Programme 2007-08

Sl. No.	Name of the Component	Unit (Phy.)	Physical Target	Finance Target (L.Rs.)
1	Distribution of Certified Seeds(Paddy)	Metric Tonnes	1000	20.0
2	SRI Demonstration	Nos.	100	25.0
3	IPM Demonstration	Nos.	60	10.2
	TOTAL			**55.2**

Source : Office of the Joint Director of Agriculture,Villupuram

Table 4.2 ICDP- Cotton - Target for the Year 2007-2008

S. No.	Component	Physical Target	Financial Target (L.Rs.)
I.	**SEED**		
	Supply of Breeder Seed	6	0.008
	Distribution of Certified Seed	50	1
II	**PLANT PROTECTION**		
	Farmers Training (Nos.)	45	2.25
	Seed Treat Chemical (Qtls.)	40	0.024
	Surveillance of Pests (Nos.)	100	1.00
	Distribution of Pheromone Traps (Ha.)	150	0.21
	Distribution of Bio Agents (Ha.)	150	0.675
	Supply of MOS (Nos.)	150	1.20
	Supply of POS (Nos.)	200	4.00
	FCS on Production Technology (Nos.)	45	2.25
III.	**HUMAN RESOURCES DEVELOPMENT**		
	State Level Training (Nos.)	25	_
IV.	**NEW INTERVENTIONS**		
	Bio-fertilizer Distribution (Nos.)	11500	0.1731
	Micro Nutrient Distribution (MTs)	2	0.12
	Inter Cropping with Pulses (Qtl.)	30	0.195
	Farmers Field School	20	3.40
	Contingencies	-	1.00
V.	**100% FUNDED BY GOI**		
	Production of 'F' Seed (Qtls.)	3	0.1
	Production of 'C' Seed (Qtls.)	50	0.42
	Electronic Print Media etc.	-	-
	TOTAL		**18.025**

Source : Office of the Joint Director of Agriculture,Villupuram

Table 4.3 ISOPOM – Oilseeds

Sl. No.	Name of the Component	Unit (Phy.)	Physical Target	Finance Target (L.Rs.)
1	Purchase of Breeder Seeds	Qtl.	26	-
2	Production of Foundation Seeds	Qtl.	640	3.200
3	Production of Certified Seeds	Qtl.	3200	16.000
4	Distribution of Certified Seeds	Qtl.	3200	26.600
5	Pipes carrying water from sources to field	Nos.	50	7.500
6	Block demonstration covering with polythene mulch	Ha.	70	4.900
7	IPM Demonstration	Nos.	8	1.814
8	Distribution of Gypsum	Ha.	3000	16.500
9	Bio-pesticides distribution	Ha.	600	1.500
10	Bio-fertilizer distribution	Ha.	13000	6.500
11	Distribution of Hand Sprayers	Nos.	80	0.640
12	Distribution of Power Sprayers	Nos.	50	1.000
13	Weedicide Distribution	Ha.	6	0.030
14	CBD-Groundnut	Ha.	80	3.200
	Gingelly	Ha.	50	1.000
	Sunflower	Ha.	7	0.175
15	Combined Nutrient Spray	Ha.	160	0.320
16	Farmers Training	Nos.	12	1.800
17	Provision of Audio Visual Aids	Nos.	4	0.960
	TOTAL			**93.639**

Source : Office of the Joint Director of Agriculture,Villupuram

Table 4.4 ISOPOM – Pulses

Sl. No.	Name of the Component	Unit (Phy.)	Physical Target	Finance Target (L.Rs.)
1	Purchase of Breeder Seeds	Kgs.	580	0.290
2	Foundation Seed Production	Qtl.	72.94	0.365
3	Certified Seed Production	Qtl.	911.8	4.560
4	Certified Seed and Seed Distribution	Qtl.	911.8	7.294
5	DAP Spray	Ha.	1485	1.486
6	Bio-Fertilizer Distribution	Ha.	2470	1.236
7	Pipes for carrying water from sources	Ha.	28	4.200
8	CBD	Ha.	198	3.960
9	IPM Demonstration	Ha.	10	1.232
10	N.P.V. Distribution	Ha.	50	0.125
11	Bio-pesticides Distribution	Ha.	100	0.250
12	P.P.Equipments Distribution	Nos.	250	2.000
13	Micro Nutrient Spray	Ha.	3490	2.443
14	Farmers Training	Nos.	10	1.500
	TOTAL			**30.941**

Source : Office of the Joint Director of Agriculture,Villupuram

Table 4.5 ISOPOM-Oilpalm

Sl. No.	Name of the Component	Unit (Phy.)	Physical Target	Finance Target (L.Rs.)
1	Assistance for planting materials-IInd instalments	Ha.	800	34.320
2	Area Expansion	Ha.	800	56.000
3	IInd year cultivation maintenance	Ha.	52	1.274
4	Installation of Drip Irrigation system	Nos.	23	1.526
5	Farmers Training	Nos.	600	2.400
6	Block Demonstration	Nos.	5	0.850
7	Oilpalm Chaff Cutter	Nos.	2	0.200
	TOTAL			**96.570**

Source : Office of the Joint Director of Agriculture,Villupuram

Table 4.6 ISOPOM-Maize

Sl. No.	Name of the Component	Unit (Phy.)	Physical Target	Finance Target (L.Rs.)
1	Production of Certified Seeds	Qtl.	10.000	0.050
2	Distribution of Certified Seeds	Qtl.	10.000	0.080
3	Block Demonstration	Nos.	10	0.400
4	IPM Demonstration	Nos.	2	0.454
5	Pipeline distribution	Nos.	8	0.950
6	Seminars	Nos.	2	0.300
7	Farmers Training	Nos.	1	0.150
8	Contingency & P.O.L	Nos.	-	0.340
9	Officers Training	Nos.	-	0.160
	TOTAL			**2.884**

Source : Office of the Joint Director of Agriculture,Villupuram

Table 4.7 Seed Village Scheme - 2007-2008 (Targets)

Sl. No.	Name of the Components	Unit (Phy.)	Target	
			Physical	Finance (L.Rs.)
1	Distribution of Paddy Seeds	MT	310	21.700
2	Distribution of Oilseeds	MT	60	6.000
3	Distribution of Pulses Seeds	MT	7.5	1.500
4	Farmers Training	Nos.	40	6.000
	TOTAL			**35.200**
VIII.	**Coconut Development Schemes (Cochin Board Assisted Schemes)**			
1	Management of disease affected palm	Nos.	100	0.250
2	Laying out of organic manure pit	Nos.	1	0.200
3	Laying out of Demonstration plot	Nos.	35	6.125
	TOTAL			**6.575**
IX.	**Innovative Schemes - Formation of 'FIG'**			
	Formation of new 'FIGs'	Nos.	55	6.595

Source : Office of the Joint Director of Agriculture,Villupuram

4.9 Recommended Interventions in the District

In Viluppuram district Paddy, Millets, Pulses, Oilseeds are the major food crops cultivated on an average area of 4 lakh hectares every year.Cotton is also cultivated in a limited area.

The Government of India proposed the Scheme, National Agriculture Development Programme during the XI'th Five Year Plan period aiming at increasing the food production with annual growth rate of 4 per cent in Agriculture Sector. Its main aim is to develop the agriculture as a profitable venture and improve the productivity of agriculture through the application of science - based latest technologies. The recommended interventions for the proposed DAP are given below.

A. Technology Adoption Strategy

- Increasing the area and yield levels of paddy, millets, cotton, maize and oilseed crops
- Strengthening of State Seed Farms.

B. Area Increasing Strategy particularly under maize and sunflower

C. Other Components

- Distribution of Soil Health Cards
- Vermi Composting
- Increasing the Productivity with minimum usage of water
- Distribution of MN.Mixture, Bio-fertilizer, Gypsum and Green Manure Seeds
- Supply of implements at Subsidised Cost
- Farmer Field School (FFS)
- Pipeline distribution
- Construction of Rural godowns
- Distribution of Hybrid Sunflower Minikits
- Farmers Training
- Strengthening of State Seed Farms

Detailed activities with budget provisions for the recommended interventions are given in chapter VI.

CHAPTER - V

DEVELOPMENT OF ALLIED AGRICULTURAL SECTORS

5.1 Introduction

Allied agricultural sectors like horticulture, agricultural engineering, PWD, animal husbandry also are equally important for the development of the district. The development issues of the allied sectors are identified, the ongoing schemes/projects, the constraint analysis results are discussed and the needed interventions are outlined sector-wise, in this chapter.

5.2 Horticulture Sector

There is a very good scope for the development of horticulture in the district. Tapioca and cashew are the most important crops accounting for the major area under horticulture in the district.

5.2.1 Development Issues

Following are the major issu3es of development identified in the district.

- Yield levels and area under traditional vegetables can be increased by effective transfer of technologies and provisions of high yielding seeds as nearby markets are available.
- Banana cultivation faces the cyclone havoc in most years and hence a well developed support system must be advocated to get a good crop.
- There exists potential for raising fruit trees like Sapota, Pomegranate, Amla, etc in the reclaimed wastelands.
- There exists demand for disease free seedlings etc.
- There exists potential for hill products development in the kalrayan hills.

5.2.2 Special Projects /Programmes Ongoing in the District

1. Continuance Proposal for 2008-09 under TN-IAMWARM, Varaganadhi Sub Basin

In this scheme the following crops are allotted with a total budget of 121.1 lakhs. The details of the area and budget are provided in Table.5.1

Table 5.1 Continuance Proposal for 2008-09 under TN-IAMWARM, Varaganadhi Sub Basin Abstract

S.No	Crop	Target for 2008-09	
		Physical (HA)	Financial (in Lakhs)
I	**Fruits**		
1	Mango	45	5.063
2	Sapota	10	1.125
3	Banana	75	5.625
	Total	**130**	**11.813**
II	**Vegetables**		
1	Hybrid Bhendi U.S.Agri	236	35.400
2	Hybrid Bhendi M.10	158	23.700
3	Hybrid Brinjal	60	9.000
4	Hybrid Tomato	12	1.800
5	Hybrid Watermelon	80	12.000
	Total	**546**	**81.900**
III	**Spices**		
1	Chillies	37	5.550
2	Coriander	10	1.500
	Total	**47**	**7.050**
IV	**Tree Crops**		
1	Casuarina equisilifolia	60	6.750
2	Casuarina junguniana	60	6.750
	Total	**120**	**13.500**
V	**Flowers**		
1	Tube Rose	38	4.560
2	Jasmine	5	0.600
3	Marigold	10	1.200
4	Crosandra	4	0.480
	Total	**57**	**6.840**
	Grand Total	**900**	**121.103**

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

A. Fruits

- Mango
- Sapota
- Banana

B. Vegetables

Hybrid Bhendi U.S.Agri

- Hybrid Bhendi M.10
- Hybrid Brinjal
- Hybrid Tomato
- Hybrid Watermelon

C. Spices

- Chillies
- Coriander

D. Tree Crops

- Casuarina equisilifolia
- Casuarina junguniana

E. Flowers

- Tube Rose
- Jasmine
- Marigold
- Crosandra

2. Continuance Proposal for 2008-09 under National Horticulture Mission

Under this scheme the details of the area expansion and the budget provisions are exhibited in Table 5.2.

Table 5.2 Continuance Proposal for 2008-09 under National Horticulture Mission

Abstract

S. No	Crop	Target for 2008-09	
		Physical (HA)	Financial (Rs. in Lakhs)
I	Area Expansion		
1)	Fruits		
a)	Perennial		
i)	Mango	400	45.000
ii)	Amla	100	11.250
	Total	500	56.250
b)	Non - Perennial		
i)	Banana	200	15.000
	Second Year maintenance		
a.	Perennial		
i)	Mango	1850	83.250
ii)	Amla	100	4.500
	Total	1950	87.750
b.	Non-Perennial		
i)	Banana	200	6.000
2)	Spices		
i)	Turmeric	200	22.500
3)	Plantatiions:-		
	First Year:-		
i)	Cashew	100	5.625
ii)	Cocoa	100	5.625
	Total	200	11.250
	Second Year:-		
i)	Cashew	300	6.750
4)	Organic Farming	25	2.500
	First Year	**200**	**11.250**
	Second Year	**300**	**6.750**
	Grand Total	**3575**	**208.000**

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

Fruits

Perennial

- Mango
- Amla

Non - Perennial

- Banana

Second Year Maintenance

Perennial

- Mango
- Amla

Non-Perennial

- Banana
- Spices
- Turmeric

Plantations
First Year

- Cashew
- Cocoa
- *Second Year*
- Cashew
- Organic Farming

3. Integrated Horticulture Development Scheme

Under this scheme the following inputs are provided to the farmers belonging to general, Sc and ST categories with a total budget of Rs.22.11 lakhs as given in Table.5.3, below.

Table 5.3 Integrated Horticulture Development Scheme Continuance Proposal Programme for 2008 – 2009

Rs in lakhs

S.No	Particulars	General		SC		ST		Total	
		Phy Ha.	Fin	Phy Ha	Fin	Phy Ha	Fin	Phy Ha	Fin
I	**Fruits**								
1	Sapota	10	0.480	-	-	-	-	10	0.480
2	T.C. Banana	20	5.000	4	1.000	-	-	24	6.000
	Total	**30**	**5.480**	**4**	**1**			**34**	**6.480**
II	**Vegetables High yielding**								
1	Brinjal	80	0.192	20	0.048	-	-	100	0.240
2	Tomato	80	0.192	20	0.048	-	-	100	0.240
3	Amaranthus	20	0.075	4	0.008	-	-	24	0.083
4	Annual Murungia	42	0.210	8	0.040	-	-	50	0.250
	Total	**222**	**0.669**	**52**	**0.144**	**-**	**-**	**274**	**0.813**
III	**Hybrid Vegetables**								
1	Bhendi	80	3.200	20	0.800	5	0.200	105	4.200
2	Watermelon	80	6.000	20	1.500	-	-	100	7.500
	Total	**160**	**9.200**	**40**	**2.300**	**5**	**0.200**	**205**	**11.700**
IV	**Flowers**								
1	Crossandra	4	1.500	1	0.375	-	-	5	1.875
2	Rose	4	1.000	1	0.250	-	-	5	1.250
	Total	**8**	**2.500**	**2**	**0.625**	**-**	**-**	**10**	**3.125**
	Grand Total	**420**	**17.849**	**98**	**4.069**			**523**	**22.118**

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

Fruits

- Sapota
- T.C. Banana
- High Yield Vegetable
- Brinjal @ Rs.600/kg
- Tomato @ Rs.600/kg
- Amaranthus @ Rs.150/kg
- Annual Murugai @ Rs.1000/kg

Hybrid

- Bhendi @ Rs.1000/kg
- Watermelon @ Rs.5000/kg

Flowers

- Crossandra @ Rs.3.00
- Rose @ Rs.5.00

4. Integrated Horticulture Development Scheme

This scheme covers the following crops and the beneficiaries belong to general, SC and ST categories**.**

Table 5.4 Integrated Tribal Development Scheme Continuance Proposal for 2008-2009

Sl.No	Name of the component	Physical (in Ha)	Financial (in lakhs)
1	Setting of Individual Farmer Orchard	100	1.45
2	High yield veg. seed distribution	100	0.5
3	Farmers Training for two Days Programme	100	0.2
4	Farmers Training and Visit Programme	13	0.195
5	Distribution of oil engine in subsidy rate	2	0.225
6	Distribution of sprayer in subsidy rate	7	0.2625
7	Providing drip irrigation system to farmers	1	0.3
	Total	**323**	**3.133**

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

Fruits

- Sapota
- T.C. Banana

Vegetables Highl yielding

- Brinjal
- Tomato
- Amaranthus
- Annual Murungia

Hybrid Vegetables

- Bhendi
- Watermelon

Flowers

- Crossandra
- Rose

The total budget for this scheme is Rs.22.12 lakhs**.**

V. Integrated Tribal Development Scheme

Under this scheme, the following activities are carried out with a total budget of Rs 3.13 lakhs.

\

Table 5.5 National Bamboo Mission Continuance Proposal for 2008-2009

S.No	Component	Target	
		Physical	Financial
1	Plantation in non forest areas (in ha)	100	8.000
2	Improvement of existing stock (in ha)	25	2.000
3	Training to farmers with in state (in nos)	350	5.320
4	Training to farmers outside state (in nos)	20	0.500

Table 5.5 contd…

S.No	Component	Target	
		Physical	**Financial**
5	Demonstration of Technology (in nos)	1	0.100
6	Micro Irrigation (in ha)	10	2.000
7	Coloured Brochures and Leaflets	-	0.100
8	Promotion Campaign	-	0.330
Total		**606**	**18.350**

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

- Setting of Individual Farmer Orchard
- High yield veg. seed distribution
- Farmers Training for two Days Programme
- Farmers Training and Visit Programme
- Distribution of oil engine in subsidy rate
- Distribution of sprayer in subsidy rate
- Providing drip irrigation system to farmers

VI Micro Irrigation

Under Micro Irrigation scheme the Drip irrigation schem details are furnished in Table 5.6 below.

Table 5.6 Micro Irrigation Action Plan for 2008-2009

Abstract

Sl. No	Crops/Spacing	No. of beneficiaries	Area in Ha.	Total Cost involved (Rs. In lakhs)
A. Drip Irrigation				
1	Mango (10Mx10M)	150	150	13.500
2	Anola (6Mx6M)	10	10	1.510
3	Banana (1.5Mx1.5M)	20	20	5.500
4	Guava (6Mx6M)	-	-	-
5	Pomegranate (3Mx3M)	-	-	-
6	Citrus (6Mx6M)	-	-	-
7	Cashew (8Mx8M)	-	-	-
8	Flowers (1.5Mx1.5M)	-	-	-
9	Medicinal and Aromatic Crops (1Mx1M)	-	-	-
10	Vegetables (1Mx1M)	10	10	2.880
11	Spices (1Mx1M)	10	10	2.880
12	Coconut (9Mx9M)	100	100	11.050
	Sub Total Drip	**300**	**300**	**37.320**
II. Demonstration for Drip				
1	Mango (10Mx10M)	10	5	0.675
2	Anola (6Mx6M)	2	1	0.227
3	Banana (1.5Mx1.5M)	4	2	0.825
4	Cashew (8Mx8M)	2	1	0.149
5	Flowers (1.5Mx1.5M)	2	1	0.413
6	Chillies (1Mx1M)	2	1	0.432
7	Vegetables (1Mx1M)	2	1	0.432
	Sub Total Drip	**24**	**12**	**3.153**
	Grand Total	**324**	**312**	**40.473**

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

5.2.3 Constraints Analysis

The major constraints identified in developing horticulture in the district are

- Lack of exposure of farmers particularly of dry land tract to the feasibility of cultivating horticultural crops for more profitability.
- Heavy investment requirement and long waiting time for economic bearing of fruit trees.
- Lack of proper irrigation infrastructure support, including precision farming devices.
- Lack of easy access for technology transfer and timely input support, including disease free seed materials.

5.2.4 Recommended interventions for Horticultural Development

Based on the resource base available in the district and the needs of the people the following interventions for horticultural development in this district are recommended.

1. Net House structure
    a. Nursery and Vegetable production
2. Pandal for vegetable production
3. Plant protection package for vegetables
4. Plastics crates for vegetable handling and transport
5. Farm waste shredder/vegetable waste Shredder
6. Cashew high density planting
7. Borewell with casing pipe
8. Banana bunch cover
9. Humic acid/Effective E Microbes
10. Erection of net for production of disease free planting materials
11. Grapes bird net
12. Tractor mounted steam boiler
13. Support system for crops
    a. Banana
    b. Gloriosa
14. Banana Corm injector

15. Mango harvester
16. Sales outlet points in districts (Rent and infrastructure)
17. District Level Farmers Workshop
18. Inter State Exposure visit (5 days)
19. Mango/Alma in noon meal scheme (TANHOPE)
20. 10- hectare mega demo plot for the districts
21. Enterprising Farmers Associations
22. Community fencing
23. Support for betel vine
24. Support senna cultivation

5.3 Agricultural Engineering Sector

5.3.1 Introduction

Agricultural growth in the recent years go against the general economic trend. Among the many reasons attributed for this deceleration in agricultural growth, one reason could be the non - availability of labour and under utilization of machinery/implements in various areas of agricultural sector. Government policies have made the common man to earn more i.e. per capita income has increased particularly in the urban areas. Govt. policies and novel schemes also have opened new avenues of employment for agricultural labourers in the rural areas. As a result there is shortage and non-availability of labour during needy days of farm operations i.e., during transplanting, weeding, harvesting etc., Though efforts on farm mechanization dates back to three decades, farm mechanization has gained wider acceptance among farming community only in the recent years particularly in farm operations like ploughing, harvesting, thrashing, transportation etc.

At present there is a Centrally Sponsored Scheme which targets mainly individual farmers, particularly small and marginal farmers. An amount of Rs.94.30 lakhs has been fixed as financial target for Viluppuram district for the year 2007-08. Even with this allotment, it becomes impossible to satisfy the requirements of all the farmers. Also many small and marginal farmers are not affordable to pay back the non subsidy portion even

with bank loans. Entire demand could not be met by government departments also by other hiring agencies/farmers. Except government department, private agencies hire out machinery at a higher cost which are not affordable by small/marginal farmers.

It thus, becomes inevitable that agricultural mechanisation is one important focus area for increasing the production and productivity. Also, agricultural mechanisation has to be focused from a different angle. Popularisation of agricultural machineries may be done not only through individual farmers/ demonstrations but also through a community consisting of only farmers. Thus it is right time to shift our focus towards farmers associations/ water users' associations as being carried out for many Government Programmes. Machinery owned by Farmers' Associations may be a viable alternative in the present scenario. This will help mainly the small and marginal farmers at the appropriate time of cultural operations. Employment of rural youth for operating community owned machinery could also be possible. As NADP/RKVY provides scope for specific agricultural mechanization projects, the same has been proposed to help small and marginal farmers. The other details of the Project are furnished below.

5.3.2 Special projects /programmes ongoing in the district

A) Land Development Scheme

Custom hiring of Tractor, Bulldozer and Combine Harvester to needy farmers at the rates fixed by Government.

B) Tube Well Scheme

Custom hiring of Percussion Drill, Rotary Drill, Hand Boring Set for sinking of bore/tubewells. Custom hiring of Rock Blasting units for deepening of wells.

C) Replacement of Old pumpsets

Subsidy is given to replace old pumpsets

D) Agricultural Mechanisation Programme

Subsidy is given to purchase Tractor, Powertiller, Rotavator and other gender friendly equipments.

E) Soil Conservation Scheme (RWH and Run off Management Structures)

Construction of Water harvesting structures like Checkdams, Percolation Ponds and Farmponds on watershed basis.

F) NABARD assisted RWH works

Construction of Water harvesting structures like Checkdams, Percolation Ponds and Farmponds on watershed basis with assistance from NABARD-RIDF XI.

G) Reclamation of Alkali Soils

Subsidy is given to raise horticultural plantations in alkali affected lands.

H) TN IAMWARM Project in Varahandahi sub basin

"More money per litre of water" is the motto of the scheme.
Subsidy is given for installing MIS and construction of farm ponds. User friendly advanced implements will be supplied to Water Users' Associations.

I) Integrated Tribal Development Programme

Execution of Soil Conservation works in Kalrayan Hills of Sankarapuram Taluk under Tribal Sub Plan

J) National Agricultural Development Programme

Subsidy is given to purchase Powertiller, Rotavator and other transplanter, posthole digger and gender friendly equipments.

K) Demonstration of Agricultural Machinery

Demonstration of Improved Agricultural implements for creating awareness among farmers

L) Training to farmers

Training is imparted to farmers on operation and maintenance of different type of machinery, Micro Irrigation Systems etc.

M) Micro Irrigation Scheme

Subsidy is given to needy farmers for installing MIS with assistance from TANHODA

5.3.3 Constraints

The major constraints identified with reference to the development of agricultural engineering in the district are the following.

i. Lack of knowledge on the scientific methods of irrigation as well as mechanisation of the farms among the farmers of the district.
ii. High investment requirement on the part of the farmers
iii. Paucity of the funds to take up mechanization on large scale.
iv. Large number of marginal and small farms.

5.3.4. Recommended interventions for Agricultural Engineering Development

The following interventions are planned for agricultural engineering development in Villupuram district.

1. Proposal for assistance under the STREAM I

Project I

Agricultural Mechanisation Programme for Farmers' Associations

A Type of machinery/implements proposed.

- Combine Harvester (Chain type)
- Combine Harvester (Tyre Type - Tractor operated)
- Power Tiller (with Rotavator)

B Implements

- Rotavators for tractors
- Post Hole Digger (tractor operated)
- Seed Drill for Maize & Ground nut, Maize and Millet dehusker
- Paddy transplanter
- Paddy thrasher
- Paddy reaper
- Cono weeder
- Animal Drawn Puddler
- Animal Drawn Wooden leveller
- Chaff cutter for Oil palm.

Project -II

Creation of Farm Ponds For Water Harvesting And Fishculture On Private Lands/

Project –III

Installation of Drip Irrigation System for Oil Palm

Proposals for Assistance under the STREAM II

Implements

- Rotavator
- Posthole Digger
- Cultivator
- Disc Plough
- Power thresher
- Maize husker cum sheller
- Offset disc harrow

Soil and water conservation

- Compartmental bunding (ha)
- Percolation Ponds

Run off control measures

- Major Checkdam
- Medium Checkdam
- Minor Checkdam

Improvement of conveyance efficiency

- Ground level collection tanks
- PVC conveyance (Ha)

5.4 Agricultural Marketing and Agribusiness development

5.4.1 Introduction

Agriculture, as a primary sector provides livelihood to 56% of the population and contributes around 13% of the State GDP. In value terms between 65 and 75% 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 75% of industry output. The Government is taking efforts to achieve targeted growth rate of 4% 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 yet been enhanced to its full 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 etc have been taken up. To reduce the loss of the food products, which are upto 30 per cent, necessary provisions are made in the Agricultural Industrial Policy to ensure remunerative price to the produce, encourage food processing sector and export to earn foreign exchange by increasing the food processing from the present level of 1per cent to 10 per cent, out of the total production, increasing the value addition from 7 per cent to 30 per cent. Under this policy, all types of assistance which are 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.

5.4.2 Recommended Project interventions

The following interventions are planned for the development of the agricultural marketing in the state

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 development

5.5 Animal Husbandry Sector

5.5.1 Introduction

Veterinary Services are imparted to livestock either by protecting them from various livestock diseases (i.e.) Prevention & Control and (or) by providing treatment and other health services like Artificial Insemination, deworming, castration, etc. The health services to the livestock are provided through the wide network of Veterinary Institutions such as Polyclinics, Clinician Centres, Veterinary Hospitals, Veterinary Dispensaries, Sub-Centres and Mobile Veterinary Units.

The animal disease intelligence units undertake prevention and control of various contagious and infectious diseases. Most of livestock vaccines and poultry vaccines are manufactured in the Institute of Veterinary Preventive Medicine, Ranipet and are supplied to all the Veterinary Institutions as per requirements.

Apart from various regular vaccination programmes, centrally sponsored programmes such as NPRE, FMDCP, ASCAD and Canine Rabies Control Programme are also being implemented by the department. Veterinary services are also effectively controlling the various interstate movements of cattle and other livestock. The details of the veterinary institutions available in the district are as follows.

No. of Veterinary institutions available in Villupuram District

Regional Joint Director Office	..	1
Deputy Director Sheep Farm Chinnasalem	..	1
Divisional Assistant Director	..	3
Clinician centre	..	1
Veterinary Hospital	..	7
Veterinary Dispensaries	..	61
Mobile Veterinary Dispensaries	..	4
Veterinary Sub centers	..	89

Livestock rearing is practised primarily as a subsistence activity to meet household food requirements in our state/country. Almost every rural household owns livestock, / poultry, out of which cattle (34.88 per cent) is the principal livestock followed by goats (24.74 per cent), sheep (20.27 per cent) and buffalo (10.57 per cent). Out of total livestock, nearly 65 – 70 per cent livestock are owned by small farmers, marginal farmers and landless agricultural labourers. A large proportion of the human population live in rural areas (55 – 60 per cent) and most of them live below poverty line. For these disadvantaged lot, livestock rearing offers scope for alternative development by providing additional income and employment.

With the aim of improving the animal husbandry practices in all sub-sectors of livestock, the following projects are proposed under DAP.

5.5.2 Recommended Project Interventions

- Genetic improvement of cattle and buffaloes
- Enhancement of milk production
- Development of Fodder Banks
- Development of Small Ruminants
- Improvement of Livestock health
- Layer Farming

5.6 Aavin Development

5.6.1 Introduction

The Villupuram - Cuddalore District Cooperative Milk Producers' Union Ltd., was registered on 01.09.1982 under the Tamil Nadu Cooperative Societies Act and started on 01.08.1983 with main objective of uplifting the poor farmer members by procuring milk from them through the Milk Producers Cooperative Societies formed at village level and to coordinate various input activities for the members. The Union has the operational area of the whole erstwhile undivided South Arcot District. The Union

has also been registered under the Milk & Milk Products Act of 1992 vide Lr. No. 272/RMMPO/2000 dated 07.09.2000 with a view to assure remunerative prices to the milk producers of Cooperative Societies stable, steady and well organized and distribution of quality ,milk and milk products to consumers at the reasonable prices..The Union has been selected under various schemes of State and Central Governments as detailed below

5.6.2 Ongoing Schemes

Schemes Implemented by Aavin

A. Centrally Sponsored Scheme

1. Support to Training and Employment Programme for Women Self Help Groups.

Under this scheme, the total outlay of the project is Rs. 88.89 lakhs. Out of which 90% is sanctioned by the Govt. of India (Department of Women & Child Development) and balance of 10 per cent is contributed by District Milk products Union.

Details of Centrally Sponsored Schemes

(Rs. in lakhs)

Sl. No.	**Details**	**2002-03**	**2003-04**	**2004-05**
1.	Project cost Govt. of India Share 90 per cent Union share 10 per cent	34.116	29.704	24.670
2.	Amount released	19.903	10.112	Nil
3.	Amount released	19.903	10.112	Nil
4.	DCS organized	8	7	5
5.	Expenditure details Rs. In lakhs			
		Target	**Released**	**Achievement**
1.	Administrative & Project costs	3.814	3.814	6.691
2.	Training for Beneficiaries and Project Functionaries	5.152	5.152	
3.	Infrastructure	5.690	5.690	5.442
4.	Estt, of Cooperatives	1.200	11.200	10.540
5.	Project over riding cost	2.01	2.01	0.568
6.	Materials required for training needs	6.250	2.668	2.668
	Total	**34.116**	**34.116**	**29.538**

Source : Records of the Aavin, Villupuram

2. Strengthening Infrastructure for Quality and Clean Milk Production Programme

Under this scheme, the total outlay of the project is Rs. 114.15 lakhs. Out of this, the Government of India's share is Rs. 92.28 lakhs and the union share is Rs.21.87 lakhs.

B. State Government Schemes

1. Part II Scheme

Under this scheme the Govt. of Tamil Nadu grants subsidies for the development of Certain infrastructures like SS Milk Cans, Electronic Milk Testers LN2 Containers, Bulk Milk Coolers etc. to the Primary Milk Cooperative Societies. The scheme details are presented below.

Table 5.7 Physical and Financial Targets of Part II Scheme

Year	VPM		Remarks
	Physical (Nos.)	Financial Rs	
(2006-07)			
S.S milk can 200Nos @ Rs.2200 / Unit	100	2.20	Union contribution Rs.1.10 lakhs sent to TCMPF
Milk Collection 55 kit@ Rs.5000 /Unit	30	1.50	The materials will be procured through the TCMPF and supplied to the beneficiaries at the earliest.
(2007-08)			
S. S. Milk can 300	200	-	Proposal sent to CMPDD Office and list of MPCS will be sent shortly.
Milk Collection	5	3	

Source : Records of the Aavin, Villupuram

2. Milch Animal Loan Scheme
I) Tabcedco & Tamco Loan

In order to uplift the economic status of Backward class members of Primary Milk Producers Cooperative Societies and to enhance the rural employment opportunities by increasing the milk production capacity in the district, the Union has received Milch Animal loans from the TABCEDCO & TAMCO. The details of the scheme are given below in the Table5.2 below.

Table 5.8 TACEDCO-TAMCO Milch Animal Loan Scheme

S No.	Name of the Scheme	Year	Loan amt. received from TABCEDCO / TAMCO (Rs)	Loan amt. disbursed to MPCS (Rs)	No. of MPCS	No. of benefi-ciaries	No.of Milch animal	Date of loan completed
1	TABCEDCO	2003-04	1425000	1425000	23	100	100	30.09.06
2	TABCEDCO	2004-05	2194500	2194500	53	154	154	31.03.08
3	TABCEDCO	2005-06	4275000	4275000	78	300	300	31.12.08
4	TAMCO	2006-07	1425000	1425000	3	50	100	

Source : Records of the Aavin, Villupuram

ii. THADCO Loan:

Under this scheme subsidies to the tune of Rs. 8000/- is provided per beneficiary who is a Adi Dravida member of a Primary Milk Producers Co op. Society for the purchase of two milch animals and the balance of Rs. 16000/- is provided as bank loan.

C Asian Development Bank Assistance

At present the Asian Development Bank has sanctioned a project outlay of Rs. 88.03 lakhs for the creation of livelihood programme by promoting dairying activities among the people in Tsunami affected coastal area of Villupuram and Cuddalore Districts with the aim of improving their earnings.

5.6.3 Recommended Interventions

The following interventions are planned for the development of the dairy sector in Villupuram district.

- Proposal for 50,000 lits of Cold Room Facility at Viluppuram Dairy
- Proposal for Installation of Bulk Milk Cooler Centre
- Proposal for purchase of plant & machineries under central govt. scheme.
- Proposal for stainless steel milk-cans
- Automatic milk collection station:- (with computer)
- Digital Weighing Balance (50 Kg.)

- Feed Mixing Unit (1 Ton/Day Capacity)
- Electronic Milk Tester
- Community Milk Collection Station with milking machine of 2 cans
- Proposal For Creation Of 50 Mobile Artificial Insemination Centers / Year for five Years – totaling 250 Centres
- Provision of Clean Milk Production assistance
- Provision of Computers
- Provision of Milk Collection Centres – Construction of Building)
- Fodder Cultivation (proposals enclosed separately)

5.7. Fisheries Development

5.7.1 Introduction

Villupuram District is one of the most potential districts for marine, inland and brackish water fishing. There are 18,500 ha of inland water resources, 40.7 km length of coastal areas. The inshore waters of the district yield 8225.24 MTs of marine fishes. The inland fisheries resources contribute 180 M.Tonnes. In Villupuram District, there are 4542 active marine fishermen and 4176 fisherwomen and 4384 inland fishermen. The activities of the fishing industry are outlined below.

An overview of fisheries activities

- Coastal length is 40.7 Km
- Marine fish production 8225.24 MTs
- Marine fishing villages 19
- Marine Fishermen Cooperative Societies – 36
- Inland Fishermen Cooperative Societies - 44
- Active marine fishermen 4542
- Active marine fisherwomen 4176
- Active inland fishermen – 3378
- Active inland fisherwomen – 1003
- In the inland sector 2 fish rearing centres owned by private sector

- There are 13 Nos. of shrimp hatcheries (P.monodon) with a total production capacity of 400 million seeds.
- 125 Nos. of shrimp aqua farms in 259.88 ha are functioning
- Lot of scope for developing inland fish farming and brackishwater shrimp farming
- The marine landing include sardines, mackerels, seers, crab, shrimps etc.
- In the inland side major carps such as Catla, Rohu, Mrigal, Common Carp and fresh water prawns are harvested.
- Mariculture activities are picking up fast in the district.

5.7.2. Issues of Concern

- Unpredictable monsoon leads to water scarcity at times. Many water bodies receive water only during north east monsoon.
- Mismatch of major carp breeding season and water availability in tanks.
- Lack of proper infrastructure facilities for seed rearing, fish landing and marketing.
- The average present fish production in long seasonal tanks being 360 kg/ha against its potential of 2000 kgs/ha.
- Fish culture in natural small water system is being practiced by stock and harvest system and not by scientific culture method.
- Unstable export price for shrimps.
- Non-availability of alternate species for shrimp aquaculture.
- Over fishing pressure for limited inshore coastal resources.

5.7.3. Key Areas of Intervention

- Infrastructure development to attain self - sufficiency in seed production through private and Government.
- Expansion of fish culture in hitherto unutilised water bodies
- Infrastructure development to conserve the endangering native fish.
- Mariculture activities such as cage culture of fin fishes and seaweed unit
- Development of Integrated Model for Coastal Aquaculture.

- ❖ Infrastructure development to modernize the existing marketing facilities in key areas
- ❖ Trainings are arranged to fish farmers to develop their knowledge in fish culture

5.7.2 Recommended Interventions

Marine

- ➢ Sea ranching programme
- ➢ Installation of Artificial reefs

Inland

- ➢ Assistance to private fish seed rearing / fish seed production with 50% Subsidy
- ➢ Repairs to existing nurseries to increase fish seed production
- ➢ Creation of additional fish seed rearing facility
- ➢ Supply of Mopeds fitted with Ice box to retail fish vendors (50% subsidy)
- ➢ Supply of fishing implements (Nets) (50% subsidy)
- ➢ Expansion of fish culture in open water system (50% subsidy)
- ➢ Infrastructure Development in pre- harvest for effective conservancy in three reservoirs
- ➢ Increasing the fish production in Villupuram District (FRP Boats with Engine)
- ➢ Capacity building and training to the fish farmers
- ➢ Establishment of three Fish Landing Centres for three reservoirs existing in this district
- ➢ Establishment of ornamental fish farming 500 Sq.mts. area backyard type of ornamental fish breeding unit to the private entrepreneurs (75 % subsidy)
- ➢ Installation of modern fish stall at Villupuram
- ➢ development of Marakkanam backwater

5.8 Irrigation System Development (PWD)

5.8.1 Introduction

List of works proposed under National Agricultural Development programme (NADP) / Rashtriya Krishi Vikas Yojana (RKVY) for the years 2007 -2012 (Five Year Programme) in Manimuktha Nadhi Sub Basin of Villupuram district is discussed below.

Basins and Sub-basins of Villupuram District

Villupuram district has two water basins and they are Vellar Basin and Pennaiyar Basin. Pennaiyar Basin is being looked after by Lower Pennaiyar Division, WRO , Public works Department, Villupuram. Vellar Basin Sub division, WRO, Public Works Department, Kallakurichi is incharge of part of Vellar Basin and also part of Pennaiyar Basin (Gadilam) in Villupuram district.

5.8.2 Recommended Interventions

A Vellar Basin Sub-division

Manimuktha Nadhi Sub basin Development.

The development works planned for this basin are listed below

- Anicuts
- Supply Channels
- Tanks
- Field Channel
- Manimukthanadhi Dam development

B. Middle Pennaiyar Basin

List of works proposed Under National Agricultural Development programme (NADP) / Rashtriya Krishi Vikas Yojana (RKVY) for the year 2007 – 2012 (Three Year Programme) in Sathanur Left Bank Canal in Villupuram District.

Sathanur Left Bank Canal

List of works proposed for this canal is given below

- Strengthening of tank bund by desilting of tank
- Repairs / Re-construction of sluice and weirs.

- Improvements to distributaries.
- Improvements to field channels.
- Desilting and repairs to supply channels.
- Desilting of the tanks to certain extent under this scheme will help to reduce the gap in the Irrigation Area under the tank area.

C. Lower Pennaiyar Basin

The interventions planned for this basin are listed below

- Supply Channel
- Tank Bund
- Water Spread Area
- Sluices
- Weir
- Field Channel

Projectization and the cost details are presented in chapter VI.

5.9. Agricultural Credit

5.9.1. Credit Disbursement

Governments 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 Villupuram district is furnished in Table 5.9.

Table 5.9.Activity Wise Credit Disbursement and Projections under Agricultural and Allied Sectors in Villupuram District

(Rs in Lakhs)

Sectors	2008-09	2009-10	2010-11	2011-12
Crop loan	73504.46	77179.68	81038.67	85090.60
Term loan		0.00	0.00	0.00
Micro Irrigation	2188.64	2298.07	2412.98	2533.62
Land Development	600.05	630.05	661.56	694.63
Farm Mechanization	4588.84	4818.28	5059.20	5312.16
Plantation & Horticulture	825.85	867.14	910.50	956.02
Forestry & Waste land Development	50.86	53.40	56.07	58.88
Dairy Development	3504.70	3679.94	3863.93	4057.13
Poultry	239.83	251.82	264.41	277.63
Sheep/Goat/Piggery	150.40	157.92	165.82	174.11
Fisheries	120.06	126.06	132.37	138.98
Storage Godown & Market yards	0.00	0.00	0.00	0.00
Bio-gas	0.00	0.00	0.00	0.00
Sericulture	0.00	0.00	0.00	0.00
Others	250.15	262.66	275.79	289.58
Sub total - Term loan	12519.38	13145.34	13802.63	14492.74
Total Agriculture Credit (1+2)	86023.84	90325.02	94841.30	99583.34
Non Farm sector	4019.74	4220.73	4431.76	4653.35
Other Priority Sector	10526.14	11052.45	11605.07	12185.32
Grand Total	100569.72	105598.20	110878.13	116422.01

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. 105598.20 Rs. 110878.13 and Rs. 116422.01 lakhs respectively. The total flow of agriculture credit in terms of crop loan and term loan in 2011-12 would be Rs. 99583.34 lakhs. The flow of credit for non farm sector and other priorty sectors in 2011-12 would be Rs. 4653.35 and Rs. 12185.32 lakhs respectively.

CHAPTER - VI

DISTRICT PLAN

6.1 Introduction

Villupuram district is the 23 rd district of the state of Tamil Nadu. It is the fourth largest district in Tamil Nadu. The important crops grown in this district are paddy, gingelly, groundnut, maize, sugarcane etc. This district has got four sugar mills, modern rice mills and is also supported by handloom industry. The major population of the Villupuram district is concentrated in the rural area (85.58 percent). The migration of people from urban to rural area has increased considerably between the years 1991 to 2001. The soil types found in the district are red, black cotton and costal sand. The district enjoys a climate of semi-arid tropic. The district receives the maximum rainfall in the north east monsoon season. The maximum farmers own less than one hectares of land. The major sources of irrigation are open and dug wells as the rivers are seasonal. Ground water potential of the district is not satisfactory in more than fourteen blocks as they are over exploited. The district possesses a sizable wealth of livestock which supplements the farm income as majority of the farmers own less than one hectare of land. Marine fishing is practiced in 19 coastal villages of the district. With this background, interventions in the agriculture, horticulture, agricultural engineering, marketing, animal husbandry and fisheries and the associated budget provisions are described in this chapter.

6.2. Agriculture Sector

In Villupuram District Paddy, Millets, Pulses, Oilseeds are the major food crops and cultivated on an average area of 4 lakh hectares every year. The recommended interventions proposed for the DAP are detailed below.

Crop-wise Strategies Proposed

A. Technology Adoption strategy

Paddy

- Quality seed distribution through enhanced SRR
- Improving the quality seed availability.
- Increasing the productivity with minimum usage of water through SRI Techniques
- Supply of implements at subsidized cost to meet labour scarcity
- Distribution of MN Mixture to overcome deficiency and to enhance the productivity
- Pest and disease control through Bio-agents and IPM approach.
- Soil Health care through Bio-fertilizers distribution
- Increasing the area under suitable hybrid rice to increase per hectare production
- Improving the Humus contents of the soil-vermi composting .

Millets

- Increasing area under Maize.
- Encouraging dry land farmers through Establishment of Water Conservation Technological Park.
- Establishment of Rainfed Academy to provide training and village connectivity.
- Popularizing hybrids (including private) to enhance productivity.
- Distribution of M.N Mixture, Bio-fertilizers at 50 per cent subsidized cost.

Oilseeds

- Encouraging Hybrid sunflower seed mini kit demonstration
- Quality input supply through Seed Village Concept
- Increasing productivity in Groundnut, Gingelly through Micronutrient application, Gypsum distribution, Bio- fertilizer application.
- Pest and diseases control through IPM approach
- Encouraging integrated approach to increase farm income. Viz., Bee keeping / Goat rearing/ poultry etc.
- Encouraging water harvesting techniques to have better crop.
- Thrust to increase area under oil palm
- Construction of Rural Godown.
- Training Farmers.
- Precision farming
- Pipe line distribution.

Cotton

- Cotton Precision farming 10 Ha cluster approach
- Encouraging Contract Farming through private firms
- Providing Micro Irrigation System for efficient water usage.
- Reducing the cost in cotton cultivation through IPM and Farmers Field School.
- Subsidized distribution of inputs and bio control agents to farmers.
- Encouraging area expansion under Bt. Cotton.

Changes in Extension Approaches

- Bottom up approach through ATMA
- Group based Training and knowledge updation to Commodity Interest Groups
- Gender empowered agriculture through TANWABE and empowering farm women.
- Involving Women SHG in quality seeds and seedlings production.
- Integrated Farming approach for assured employment and increased income.
- Availability of information at door step through AGRINET
- Encouraging exchange of ideas of farmers through Farmers Exchange Programme.
- All Technologies to be made available at Block level.
- Agricultural, Agricultural Engineering, Horticulture – Departments to be
- functioned at Block Level.

General Approaches

- Soil Health Care -Issue of Soil Health Card in a phased manner, encouraging the Green Manuring, Vermi Compost, Organic farming to increase Soil Health
- Judicial use of Water-Through micro irrigation, SRI, rain water harvesting techniques, etc.
- Increase in Cropping Intensity-Through Diversification
- Quality & Sustainable agricultural production-Through Organic farming, IPM and INM.
- Drudgery Reduction -Through farm implements/ Labour saving implements
- Quality input-Through supply at right time, right place and affordable price
- Better marketing -Through Contract Farming
- Agriculture Labour Welfare-Through skill up gradation
- Diversification -Adoption of ideal Cropping Pattern suiting to the land and water resources

B. Area increasing Strategy

During the XIth FYP period it has been proposed to increase the area under cultivation of major crops as detailed below.

Table 6.1 Production and Area of Crops

Sl. No.	Name of the Crop	Present level of area under cultivation (Ha.)	Proposed area under cultivation during the end of XI FYP	Production (MT/Ha.)	
				Existing	Proposed
1.	Paddy	1.60	1.75	3.600 (Rice)	6.750 (Rice)
2.	Millet	0.30	0.40	1.400	4.600
3.	Oilseeds	0.80	1.00	1.500	2.500

Source : Office of the Joint Director of Agriculture, Villupuram.

To Achieve the above said area and Production of food crops, the proposal has been given for the Amount of Rs.4876.645 Lakh for Paddy, Millet, Oilseeds and Cotton Crops for five years. A separate proposal for Pulses Crop was sent to Government under National Food Security Mission. Further, since the district is also covered under National Horticulture Mission, separate allocation has been made by the government. Hence not proposed in the RKVX.

C. Other Strategic Interventions:

(i) Quality Seed Distribution through Enhanced SRR

During the X FYP period the following percentage of the cultivated area was covered by using certified seeds distributed through Department and Private Agencies.

Table 6.2 Coverage of Certified Seeds

Crop	Department	Private	Total
Paddy	17	43	60
Millet	8	85	93
Oilseeds	5	22	27

Source : Office of Joint Director of Agriculture, Villupuram

During XI plan under DAP it has been proposed to cover 100% of the cultivated area by using certified seeds. It has also been planned to involve TANWABE Groups/FIG's for procuring and distributing Certified seeds for which Revolving Fund of Rs.50000/- has been proposed to the groups with the procurement incentives at Rs.3000 per Metric Tonnes. It has been proposed to procure around 300 Metric Tonnes of Paddy /per year. It has also been contemplated to increase the existing rate of distribution of subsidy from Rs.2/-to Rs.5/- per Kg.

(ii) Distribution of Soil Health Cards

Soil, water are the major resources for Agriculture. To maintain the quality of soil is very essential for getting better yield, so it is proposed to distribute soil health card to the left over farm families of Xth Plan Period. It is proposed to distribute One Lakh numbers of cards during XI Five Year Plan Period.

(iii) Vermi Composting

The Humus content of the soil has been slowly degraded by using non judicious use of in-organic fertilizers. Applying vermi compost is the best way to maintain the organic content of the soil. So it is proposed to start 210 Nos. of mini vermi composting units with the assistance of Rs.10,000/- per unit.

(iv) Increasing the Productivity with Minimum Usage of Water

Proposed to lay out SRI demonstration in the farmer's field's with the assistance of Rs.3000/- per Ha (or) at 50 per cent subsidized cost and it has been planned to lay out 4000 ha. demonstrations during the XI FYP period.

(v) Distribution of MN.Mixture, Bio-fertilizers, Gypsum and Green Manure Seeds

To overcome the deficiency and enhance the productivity, it has been proposed to distribute the above inputs at 50 per cent cost to the farmers, and has been proposed to cover 40,000 hectares during the XIth FYP period.

(vi) Promoting more area under Hybrid Rice Cultivation

It is time to increase the food production to meet out the needs of growing population through hybrid rice cultivation and for which 25,000 hectares coverage has been aimed at.

(vii) Supply of Implements at Subsidised Cost

It has also been proposed to distribute Marker and Conoweeder at 50 per cent subsidized cost to meet Labour scarcity to 3000 farm holders.

(viii) Farmer Field School (FFS)

Integrated pest management approach through FFS in Agriculture showed better results and made the farmer himself a scientist. So it is proposed to conduct 400 FFS during the XI FYP period and thereby to educate 12,000 farmers.

(ix) Millets- Hybrid seed Distribution

In Villupuram district every year around 30,000 hectares of area was cultivated under millet crops both under rainfed and irrigated condition. Average productivity was around 1.4 MT per ha. Now it has been targeted to increase to 4.6 MT per ha at the end of XI FYP period. So it is proposed to cover 50 per cent of the area by using hybrid millet seeds during this plan period and also to distribute agricultural inputs like bio-fertilizers, MN. Mixtures etc., at 50 per cent subsidized cost to the farmers.

(x) Oilseeds-Seeds Subsidy

With a view to encourage dryland farmers through enhanced SRR, it has been planned to increase the seed procurement and distribution subsidies at Rs.10/- and 12/- per kg instead of Rs.5/- and 8/- per kg.

(xi) Pipeline Distribution

Water is scarce nowadays. Therefore in the cultivating of dry land crops, with water carried through pipelines from water source would avoid evaporation loss and drainage losses. So it is proposed to distribute 1050 units of pipeline during XI FYP period at 50 per cent subsidized cost.

(xii) Construction of Rural godowns

To save the products from the Post harvest losses, it has been contemplated to construct rural godowns at the village level on community basis and hence it is proposed to construct 50 Numbers of rural godowns in this district during this plan period.

(xiii) Distribution of Hybrid Sunflower Minikits:

The area under sunflower cultivation is slowly increased from 290 ha to 2900 ha during the Xth plan period. Now it has been aimed at covering 5000 hectares during XIth plan period by using of Hybrid Sunflower seed minikit demonstration. It has also been proposed to lay out 200 demonstrations during the same period.

(xiv) Farmers' Training

It has been planned to conduct 85 Batches of Farmers Training during XIth plan period to educate 4250 farmers.

(xv) BT-Cotton Subsidy

In Villupuram District more than 75 per cent of the Cotton crops are under Bt Variety. Till date, no assistance is given by Government for the cultivation of BT cotton and hence it is proposed for seed distribution subsidy and also subsidy for MN. Mixture.

(xvi) Extension Activities

Extension activities plays an important role in transferring technologies from Lab to Land. Therefore, it is proposed to arrange one information centre at District level. It is also proposed for form 650 Farmers Interest Groups with the financial assistance of Rs.12,500/- per Group and arrange for the farmers exposure visits. District level Kissan Mela, Training farmers through Farmers Training Centre and propaganda through mass media are also included.

(xvii) Strengthening of State Seed Farms

With a view to produce more of quality seeds in the state seed farms, infrastructure should be strengthened. In Villupuram district there are four State Seed Farms located at Kakuppam, Iruvelpattu, Vanur and Vadakkananthal. The major crops cultivated in the above State Seed Farms are Paddy, cumbu, groundnut etc. Every year around 200 MT. of Paddy foundation Stage I & II seeds are produced in these farms and distributed to the ryots for arranging certified seed farms to meet the certified seed distribution target.

In all the State Seed Farms, infrastructure facilities are required for quality seed production. Hence proposals are putforth for an amount of Rs.245.5 lakhs to provide the required infrastructure facilities etc. Mechanical transplanter, mini harvester, civil works, digging of bore wells, construction of seed godown, thrashing floor, bush clearance, laying of burried pipelines instead of open irrigation channels and office automation i.e. purchase of computer and accessories with internet facility. The budget provisions for carrying out the above proposed activities are outlined in Table 6.3, below.

I. Paddy

Table 6.3 Budget Provisions for Agricultural (Crop) Development Activities

(Rs in lakhs)

Sl. No	Name of the Component	Unit	2008-09		2009-10		2010-11		2011-12	
			Phy	Fin	Phy	Fin	Phy	Fin	Phy.	Fin.
I.	**SEED**									
1.	One Time Grant to 'TANWABE' Group/FIG to take Certified seed production & Distribution @ Rs.50000/- per Group (like Revolving fund)	No.	6	3.00	5	2.5	5	2.5	5	2.5
2.	Incentive for Seed production to SHG @ Rs.3- per kg.	MT	180	5.4	150	4.5	150	4.5	150	4.5
3.	Seed distribution subsidy for the seeds produced by SHG @ Rs.5.00 per kg.	MT.	180	9.00	150	7.5	150	7.5	150	7.5

Table 6.3 contd…

(Rs in lakhs)

Sl. No	Name of the Component	Unit	2008-09		2009-10		2010-11		2011-12	
			Phy	Fin	Phy	Fin	Phy	Fin	Phy.	Fin.
4.	Supply of Quality Certified seeds at nominal cost to enhance the SRR @ Rs.5 per kg.	Tonnes	500	25.0	500	25.0	500	25.0	500	25.0
5.	High Yielding Variety seed mini-kit distribution @ Rs.100 per kit	Nos.	1200	1.20	1000	1.0	1000	1.0	1000	1.0
6.	Hybrid seed production subsidy @ Rs.20/- per kg. to FIG/TANWWABE Groups	Tonnes	24	4.8	20	4.0	20	4.0	20	4.0
7.	Hybrid Rice seed distribution @ Rs.100/- per kg. (or) 75% of the seed cost	Tonnes	24	24.00	20	20.0	20	20.0	20	20.0
II	**I.N.M**									
	Distribution of Green Manure seeds at 75% Subsidy Limited to Rs.15 per kg.	Tonnes	10	1.5	10	1.5	10	1.5	10	1.5
	Distribution of Soil Health Cards @ Rs.100 per Card	L. No.	0.2	2.0	0.2	2.0	0.2	2.0	0.2	2.0
	Assistant to start Vermi Compost Production Unit @ Rs.10000/- per Unit to TANWABE/FIG's	Nos.	60	6.0	50	5.0	50	5.0	50	5.0
	Distribution of Mn.Mixture @ Rs.100/Ha. (or) 50% Subsidy whichever is less	L.Ha	0.1	10.0	0.1	10.0	0.1	10.0	0.1	10.0
	Gupsum distribution @ Rs.500 per Ha.	L.Ha.	0.1	50.0	0.1	50.0	0.1	50.0	0.1	50.0
III	**FFS**									
1.	Farmers Field School @ Rs.17000/- per No.	Nos.	100	17.0	100	17.0	100	17.0	100	17.0
IV	**Machineries and Equipments & Technologies**									
	Distribution of Marker, Cono Weeder and other Items @ Rs.3000/- per Ha. (or) 50% Cost	Ha.	700	21.0	700	21.00	700	21.00	700	21.0
	Transplanter to TANWABE/ FIG farmers @ Rs.75000/- each (or) 50% Cost	No.	5	3.7	5	3.75	5	3.75	6	4.5

Table 6.3 contd…

(Rs in lakhs)

Sl. No	Name of the Component	Unit	2008-09		2009-10		2010-11		2011-12	
			Phy	Fin	Phy	Fin	Phy	Fin	Phy.	Fin.
	SRI Demonstration/Hybrid rice @ Rs.3000/- per Hect.	Ha.	1000	30.0	1000	30.00	1000	30.00	1000	30.0
	Village Campaign @ Rs.1000/- per Campaign	Nos.	400	4.0	300	3.00	300	3.00	300	3.0
	Production of Short film @ Rs. 2.5 L.Rs.	Nos.	1	2.5	1	2.50	1	2.50	1	2.5
	Distribution of Tarpaulin @ Rs.5000 per No. (or) 50% Cost	Nos.	500	25.0	500	25.00	500	25.00	500	25.0
	Distribution of Bio-fertilizer @ 50% subsidy	L.Nos.	1.0	3.0	1.0	3.00	1.0	3.00	1.0	3.0
	Construction of Thrashing floor @ Rs. 2.00 Lakh per No. (Community based)	Nos.	50	100.0	50	100.0	50	100.0	50	100.00
	Publicity/ POL/Hiring of vehicle	-	-	0.5	-	0.500	-	0.50	-	0.50
	Total			**348.70**		**338.75**		**338.75**		**338.75**

Source : Records of the Joint Director of Agriculture, Villupuram

II. Millets

Table 6.4. Budget Provisions for Millets

Rs in lakhs

Sl. No.	Name of the Component	Unit	2008-09		2009-10		2010-11		2011-12	
			Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
1.	Hybrid Seed disitribution – 50% Subsidy (or) Rs.8/- Per kg.	Tonnes	13	1.04	10	0.8	10	0.8	10	0.8
2.	Hybrid Seed Technology Demonstration – Rs.2000/- Per Ha. (or) 50% Subsidy	Ha.	50	1.0	50	1.0	50	1.0	50	1.0
3.	Bio-Fertilizer distribution 50% Subsidy	L. Nos.	0.1	0.3	0.1	0.3	0.1	0.3	0.1	0.3
4.	Hybrid Maize Seed distribution @ Rs.75/- per Kg.	Tonnes	10	7.5	10	7.5	10	7.5	10	7.5
	TOTAL			**9.6**		**9.6**		**9.6**		**9.6**
									Grand total	**38.64**

III. Pulses

In general pulses are the least cared crops in Villupuram district. By research it is found that the pulses respond very well for fertilizer application, especially DAP. Therefore, with a view to educate and encourage the farmers it has been proposed to apply DAP by giving incentives to the farmers, that too only in the first year of the plan period. The budget provision for DAP 2 percent spray in pulses for the first year only, is Rs.15.00 lakhs.

IV. Groundnut

Table 6.5 Budget Provisions for Groundnut (Irrigated)

Rs in lakhs

Sl. No	Name of the Component	Unit	2008-09		2009-10		2010-11		2011-12	
			Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin.
1.	Seed Procurement @ Rs.10 per kg.	Tonnes	1250	125.0	1200	120.0	1200	120.0	1200	120.0
2.	Bio-fertilizer distribution @ 50% Subsidy	Lakh Nos.	1.5	4.	1.0	3.0	1.0	3.0	1.0	3.0
3.	Gypsum distribution @ Rs.500 per Ha.	Ha.	11000	55.0	10000	50.0	10000	50.0	10000	50.0
4.	Mn. Mixture distribution @ 50% Subsidy (or) Rs.250-	Ha.	1300	3.25	1200	3.0	1200	3.0	1200	3.0
5.	FFS	Nos.	20	4.54	15	3.4	15	3.405	15	3.405
6.	Pipeline distribution @ Rs.15000/- per Unit	Nos.	300	45	250	37.5	250	37.5	250	37.5
7.	Breeder Seed Purchase/ distri bution – Rs.50/kg.	MT.	6	3.00	5	2.5	5	2.5	5	2.5
8.	Precision farming 10 Ha. Cluster – Rs.8.0 Lakh/Cluster	Nos.	7	56.0	5	40.0	5	40.0	5	40.0
9.	Construction of Rural godown @ Rs.10.0 Lakh/Nos.	Nos.	50	500.0	-	-	-	-	-	-

Table 6.5 contd…

(Rs in lakhs)

Sl. No	Name of the Component	Unit	2008-09		2009-10		2010-11		2011-12	
			Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin.
10.	Seed Village @ Rs.20 per kg. (or) 50% Susbsidy	Tonnes	1400	280.0	1400	280.0	1400	280.0	1400	280.0
11.	Farmers Training Rs.20000/- per Training	No.	25	6.000	20	4.0	20	4.0	20	4.000
12.	**Pulses**									
	DAP 2 % Spray	Ha	7500	15.00	-	-	-	-		15.00
	Total			**58.4**		**543.4**		**543.4**		**558.4**

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

V. Oilseeds (Rainfed)

Table 6.6 Budget Provisions for Oilseeds (Rainfed)

(Rs in lakhs)

Sl. No.	Name of the Compo nent	Unit	2008-09		2009-10		2010-11		2011-12	
			Phy.	Fin.	Phy.	Fin.	Phy	Fin.	Phy.	Fin.
1.	M.N.Mixture distribution – 50% Subsidy (or) Rs.250/-	Ha.	700	1.75	700	1.75	700	1.750	700	1.75
2.	Sunflower Hybrid seed disitribution @ Rs.50- per kg.		-	-	-	-	-	-	-	-
3.	Sunflower Minikit distribution 100% Subsidy @ Rs.400/- per No.	Nos.	50	0.20	50	0.20	50	0.200	50	0.20

Table 6.6 contd…

(Rs in lakhs)

Sl. No.	Name of the Compo nent	Unit	2008-09		2009-10		2010-11		2011-12	
			Phy.	Fin.	Phy.	Fin.	Phy	Fin.	Phy.	Fin.
4.	Gingelly seed production subsidy Rs.10/- per Kg.	MT.	5	0.50	5	0.50	5	0.500	5	0.50
5.	Gingelly Seed distri bution subsidy @ Rs.12/Kit.	MT.	5	0.60	5	0.60	5	0.600	5	0.60
6.	MNSo4 distn. @ 50% subsidy @ 50% (or) Rs.100 per Ha.	Ha.	1100	1.10	1000	1.00	1000	1.000	1000	1.00
	TOTAL			**4.15**		**4.05**		**4.050**		**4.05**

Source : Office of the Joint Director of Agriculture, Villupuram

Table 6.7 Budget Abstract for Oilseeds

(Rs in lakhs)

Sl. No.	Crop	2008-09	2009-10	2010-11	2011-12
1.	Irrigated Oilseed	1081.29	543.405	543.405	543.405
2.	Rainfed Oilseed	4.15	4.050	4.050	4.050
	TOTAL	1085.44	547.455	547.455	547.455

Source: Office of the Joint Director of Agriculture, Villupuram

VI . Cotton

Table 6.8 Budget Provisions for Cotton

Rs in lakhs

Sl. No.	Name of the Component	Unit	2008-09		2009-10		2010-11		2011-12	
			Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin.
1.	BT.Cotton Seed distribution @ 50% Subsidy (or) Rs.375 whichever is less for 450 gm. pkt. (Dept. & Private)	Lakh Nos.	0.1	37.5	0.1	37.5	0.1	37.5	0.1	37.5
2.	Mn.Mixture distribution 50% Subsidy – Limited to Rs.500 per hect.	Ha.	600	3.0	600	3.0	600	3.0	600	3.0
3.	Cotton Variety Seed distribution Rs.20/- per kg.	Tonnes	5	1.0	5	1.0	5	1.0	5	1.0
4.	Precision farming 10 ha. cluster 90% Subsidy – Limited to Rs.6.0 Lakhs	Nos.	5	30.0	5	30.0	5	30.0	5	30.0
5.	FFS to Farm Womens Rs.17000/- per Training	Nos.	10	1.7	10	1.7	10	1.7	10	1.7
	TOTAL			**73.2**		**73.2**		**73.2**		**73.2**

Source : Office of the Joint Director of Agriculture, Villupuram

VII. Extension Activities

Table 6.9 Budget Provisions for Extension Activities

(Rs in lakhs)

Sl. No.	Name of the Component	Unit	2008-09		2009-10		2010-11		2011-12	
			Phy	Fin	Phy	Fin	Phy	Fin	Phy.	Fin.
1.	Strengthening of Dist. Extn. Centre (JDA's Office) providing LCD, LTD, Scanner, Digi.Camera, Printer, Copier @ Rs.2.5 Lakh (One Yr.Lumpsum	No.	1	2.50-	-	-	-	-	-	-
2.	Formation of FIG's @ Rs.12500/- per group	No.	350	43.75	300	37.50	-	-	-	-
3.	Establishment of Agri Clinic Business 25% Subsidy Limited to Rs.2.5 Lakh.	No.	11	27.50	10	25.00	-	-	-	-

Table 6.9 contd…

(Rs in lakhs)

Sl. No.	Name of the Component	Unit	2008-09		2009-10		2010-11		2011-12	
			Phy	Fin	Phy	Fin	Phy	Fin	Phy.	Fin.
4.	Farmers Exposure Visit – **Interstate** – 5 farmers/ Block @ Rs.600 per farmer per day – 10 days (30 farmers per Team)	No.	4	1.80	4	1.80	4	1.80	4	1.80
	b) **Within the State Visit**									
	50 farmers/ 5 days/Rs.300 per day per farmer (50 farmers /Block)	Nos.	4	0.75	4	0.75	4	0.75	4	0.75
5.	District level Exhibition/ Kissan Mela	No.	1	1.00	1	2.00	1	2.00	1	2.00
6.	Publicity & Propaganda – Printing materials, Digi.Play Board, Contract of Press Tour, T.V, Radio message, Tech.Transfer @ Rs.2.00 Lakhs	No.	1	2.00	1	2.00	1	2.00	1	2.00
7.	Video Conferencing facility to District Headquarters @ Rs.10.00 Lakh	1	1	10.00	-	-	-	-	-	-
8.	Farmers Training through FTC 50 farmers/2 days/ Rs.20000/- per Block	No.	40	8.00	40	8.00	40	8.00	40	8.00
9.	Strengthening of FTC – Purchase of LCD, LTC, Scanner, Printer, Copier, Digital Camera – Lumpsum Rs. 2.5 Lakhs.	No.	1	2.50	-	-	-	-	-	-
	Total			**100.80**		**77.05**		**14.55**		**14.55**

Source: Office of the Joint Director of Agriculture, Villupuram

VIII. State Seed Farms

Table 6.10 Requirement of Infrastructure to State Seed Farms of Villupuram District (100% GOI Fund)

(Rs in lakhs)

Sl. No	Item of works	Unit	08-09	09-10	10-11	11-12	Total
1.	Renovation of Existing Borewell	No.	1.500	-	-	-	1.500
2.	Digging of new Borewells	No.	4.50	-	-	-	4.500
3.	Burried pipeline	Tonnes	15.000	15.000	25.000	12.500	67.500
4.	Fencing	Tonnes	15.000	10.000	10.000	10.000	45.000
5.	Renovation of seed godowns	No.	6.000	2.000	2.000	3.000	13.000
6.	Construction of New Seed godowns	No.	15.000	15.000	15.000	-	45.000
7.	Digging of New Farm Ponds	No.	8.000	4.000	-	-	12.000
8.	Mini Harvestor (Mechanical)	No.	4.000	-	-	-	4.000
9.	Paddy Transplanter	No.	2.500	2.500	-	-	5.000
10.	Submerged Motor	No.	-	-	-	-	0.500
11.	Thrashing Floor (Renovation)	No.	1.500	1.000	1.000	-	3.500
	Thrashing Floor (New)	No.	1.000	2.000	-	-	
12.	Office Automation		4.000	-	-	-	4.000
13.	Civil works		5.000	5.000	5.000	10.000	25.000
14.	Power Tiller with Trailer	No.	4.000	2.000	-	-	6.000
15.	Mini metrological observatory	No.	2.000	2.000	-	-	4.000
16.	Bush Clearance	Ac.	1.000	1.000	-	-	2.000
	Total		**90.50**	**61.500**	**58.000**	**35.500**	**245.500**

Source: Office of the Joint Director of Agriculture, Villupuram

Table 6.11 Agricultural Department – Budget Summary

Sl. No	Name of the work	Year wise Financial requirement (Rs. Lakhs)				
		2008-09	2009-10	2010-11	2011-12	Total
I	Increasing the area and yield by different activists for the following major crops					
1	Paddy	348.70	338.75	338.75	338.75	1364.95
2	Millets	9.84	9.60	9.60	9.60	38.64
3	Pulses	15.00	-	-	-	15.00
4	Irrigated and rainfed Oil Seed Crops	1085.443	547.455	547.455	547.455	2727.80
5	Cotton	73.20	73.20	73.20	73.20	292.80
6	I.C.E. and C.B	100.00	77.05	14.55	14.55	206.95
II	Strengthening of State seed farms	90.50	61.50	58.00	35.50	245.50
	Grand Total	**1723.48**	**1107.555**	**1041.555**	**1019.055**	**4891.645**

Source: Office of the Joint Director of Agriculture, Villupuram

In sum, the total budget outlay for agriculture (crops) development works out to Rs.4891.645, for XIth plan period and NADP for Villupuram District as could be discerned from the table above.

6.3. Horticulture Sector

The productivity in horticulture crops is quite low though the potential is high. The main reason for the low productivity in the horticulture crops is the non- adoption of advanced scientific technologies in cultivation. Adoption of cultivation practices in a précise manner would result in increased productivity of horticulture crops. Most of the farmers are not coming forward to go in for précise cultivation of horticulture crops because of high investments on seeds, fertilizers , plant protection chemicals and micro irrigation systems though the return in the advanced cultivation is very high.

Initially, if the farmers are provided with the vital inputs at subsidised cost then they will be able to realize the importance and then will follow the improved practices leading to higher productivity and improved socio- economic status of the farming community.

(i) Project rationale

Horticulture products are considered as protective foods and hence are highly nutritious to human consumption. They will provide balanced nutrition to the people for maintaining good health. The present production level of horticulture products does not meet the requirements. People consume only 50-60 per cent of the total requirements of fruits and vegetables due to their non-availability and cost factor. So, it is inevitable need to increase area and productivity of fruits, vegetables and other horticulture crops through the adoption of hi- tech horticulture.

(ii) Project Goals:-

1. To increase the production and productivity by bringing new area under cultivation of horticulture crops and adoption of hi-tech horticulture.
2. Improving the post-harvest management technologies in grading, packing and transporting.
3. Providing ready marketing facilities to the growers.

(iii) Project Strategy

1. Bringing more area under fruits, vegetables flowers and spices and plantation.
2. Encouraging protected cultivation of highly remunerative crops.
3. Providing support to Banana and other crops to protect the yield.
4. Encouraging production of disease free planting materials.
5. Adoption of proper plant protection measures
6. Adoption of post- harvest management technologies to prevent post- harvest handling losses.

(iv) Project Component

1. Net House structure
   a. Nursery and Vegetable production
2. Pandal for vegetable production
3. Plant protection package for vegetables
4. Plastics crates for vegetable handling and transport
5. Farm waste shredder/vegetable waste Shredder
6. Cashew high density planting
7. Borewell with casing pipe
8. Banana bunch cover
9. Humic acid/Effective E Microbes
10. Erection of net for production of disease free planting materials
11. Grapes bird net
12. Tractor mounted steam boiler
13. Support system for crops
    a. Banana
    b. Gloriosa
14. Banana Corm injector
15. Mango harvester
16. Sales outlet points in districts (Rent and infrastructure)
17. District Level Farmers Workshop
18. Inter State Exposure visit (5 days)
19. Mango/Alma in noon meal scheme (TANHOPE)
20. 10- hectre mega demo plot for the districts
21. Enterprising Farmers Associations
22. Community fencing
23. Support for betel vine
24. Support senna cultivation

v) Project Cost

The detailed development activities planned for the XI plan and physical and financial targets fixed are portrayed in Table 6.12**.** The budget Provision in abstract form is given in 6.13.

Table 6.12 Budget outlay for Horticulture Development in Villupuram District

Sl. No	Activities	Unit Cost	2008-09		2009-10		2010-2011		2011-2012	
			Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
1	Net House structure a. Nursery & Vegetable Production	Rs.1.00Lakh/300 Sqm	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
2	Pandal for vegetable production	Rs.1.00 lakh/ha	-	-	-	-	100ha	-	-	-
3	Package for plant protection	Rs.3,000/ha	100 50ha	3.00	100 50ha	3.00	-	3.00	100Ha	3.00
4	Plastics Crates for Vegetable handling and transport	Rs.250/ha	1000	2.5	1000	2.5	1000No	2.5	1000No	2.5
5	Farm waste shredder/vegetable waste Shredder	Rs.40,000/ No	1No	0.40	1No	0.40	1No	0.40	1No	0.40
6	Cashew high density planting	Rs.9,000/ha	-	-	-	-	-	-	-	-
7	Borewell with casing pipe	Rs.1.5lakh	-	-	-	-	-	-	-	-
8	Banana Bunch cover	Rs.10/piece	1,10,000	11.000	1,10,000	11.00	1,10,000	11.00	1.10,000	11.00
9	Humic acid/Effective E Microbes	Rs.400/litre	-	-	-	-	-	-	-	-
10	Eraction of new for production of disease free planting material of	Rs.1.00lakh/300sqm	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
11	Grapes bird net	Rs.100lakh/ha	-	-	-	-	-	-	-	-
12	Tractor mounted steam boiler	Rs.50,000/No	-	-	-	-	-	-	-	-
	Total									
13	Support system for crops									
	a.Banana	Rs.1.5lakhs/ha	20ha	30.00	20ha	30.00	20ha	30.00	20ha	30.00
	b.Glorisa	Rs.30,000/ha	-	-	-	-	-	-	-	-

Table 6.12 contd…

Sl. No	Activities	Unit Cost	2008-09		2009-10		2010-2011		2011-2012	
			Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
14	Banana Corm injector	Rs.300/No	2000No	6.00	3000No	9.00	3000No	9.00	3000No	9.00
15	Mango harvester	Rs.500/No	2000No	1.00	2000No	1.00	2000No	1.00	2000Nos	1.00
16	Sales outlet points in districts (Rent and infrastructure	Rs.2.60lakhs/No	1No	-	1No	-	1No	-	1no	-
17	District Level Farmers Workshop	Rs.400/farmer/day	2	1.200	2	1.200	2	1.200	2	1.200
18	Inter State Exposure visit (5days)	Rs.5,000/farmer	100	5.00	100	5.00	100	5.00	100	5.00
19	Mango/Alma in noon meal scheme (TANHOPE)	Rs.50,000/group/ district	2group	1.00	3group	1.50	3group	1.50	3group	1.50
20	10hectare mega demo plot for the districts	Rs.25.00lakhs each	-	-	-	-	-	-	-	-
21	Enterprising farmers associations	Rs.25.00lakhs each	2No	50.000	3No	75.00	3nos	75.00	3no	75.00
22	Community fencing	Rs.50,000/No	4No	2.00	6No	3.00	8No	4.00	8no	4.00
23	Support for betelvine	Rs.40,000 for 20cents	5unit	2.00	5unit	2.00	5unit	2.00	5unit	2.00
24	Support senna cultivation	Rs.15,000/ha	-	-	-	-	-	-	-	-
	Total			**125.1**		**154.6**		**156**	**590.90**	**155.60**

Source : Office of the Assistant Director, Horticulture, Villupuram

Table 6.13 Budget Abstract for Horticulture Development

Sl. No	Activities	Unit Cost	2008-2009	2009-2010	2010-2011	2011-2012
			Fin	Fin	Fin	Fin
1	Net House structure a. Nursery & Vegetable Production	Rs.1.00Lakh/300 Sqm	5.00	5.00	5.00	5.00
2	Pandal for vegetable production	Rs.1.00 lakh/ha	0	0	0	0.00
3	Package for plant protection	Rs.3,000/ha	3.00	3.00	3.00	3.00
4	Plastics Crates for Vegetable handling and transport	Rs.250/ha	2.5	2.5	2.5	2.5
5	Farm waste shredder/vegetable waste Shredder	Rs.40,000/ No	0.40	0.40	0.40	0.40
6	Cashew high density planting	Rs.9,000/ha	0	0	0	0
7	Borewell with casing pipe	Rs.1.5lakh	0	0	0	0
8	Banana Bunch cover	Rs.10/piece	11.000	11.00	11.00	11.00
19	Humic acid/Effective E Microbes	Rs.400/litre	0	0	0	0
10	Eraction of new for production of disease free planting material of	Rs.1.00lakh/300sqm	5.00	5.00	5.00	5.00
11	Grapes bird net	Rs.100lakh/ha	0	0	0	0
12	Tractor mounted steam boiler	Rs.50,000/No	0	0	0	0
	b.Glorisa	Rs.30,000/ha	0	0	0	0
21	Enterprising farmers associations	Rs.25.00lakhs each	50.000	75.00	75.00	75.00
22	Community fencing	Rs.50,000/No	2.00	3.00	4.00	4.00
23	Support for betelvine	Rs.40,000 20 for cents	2.00	2.00	2.00	2.00
24	Support senna cultivation	Rs.15,000/ha	0	0	0	0
	Total		125.1	154.6	155.6	155.6

Source : Office of the Assistant Director, Horticulture, Villupuram

As could be discerned from table 6.13, a total budget outlay of Rs.590.90 lakhs is required for horticulture development during XIth plan in Villupuram district.

6.4 Animal Husbandry Development

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

Abstract

Augmentation of fodder production activity will be taken up by the Department of Animal Husbandry, Villupuram, covering a total area of 880 acres at the rate of 10 acres/block/year in all the 22 blocks of the district for a total period of 4 years through Self Help Groups and women entrepreneurs at a total cost of Rs. 206.80 Lakhs. Strengthening of sheep farm Chinnasalem fodder production at a total cost of 115.62 lakhs. The Aavin, Villupuram, will also take up fodder development activity (for production of fodder seed / slips in dairy or chilling centres and land of DDD) in 10 acres at a total cost of 21.00 lakhs. Fodder development activities in the proposed 100 Integrated Dairy Farm (IDF) villages at 5 acres / IDFV (500 acres totally for 2 years) and additional 1850 acres in farmers field.

Mineral mixture plant will be established at a total cost of Rs. 20.00. Mineral mixture will be supplied to the dairy cows through the Department of Animal Husbandry, Villupuram to the small farmers at Rs.600/- per cow per year (One kg/animal/month, 12 kg for one year, @ Rs.50/kg) at subsidized rate @ 5000 farmers per year, for 4 years. A total of 5,200 cows comprising 1300 cows from each block (Totally 4 blocks) will be supplemented with mineral mixture at a total cost of Rs.31.20 Lakhs. The Aavin, Villupuram will supply mineral mixture to the milch animals of the society members at subsidized cost (50 % subsidy) @ Rs. 500/- for 18 kg per year/cow, A total number of 12000 animals will be benefited at a total cost of Rs.60.00 Lakhs. Improvement in milk yield and fertility rates is expected from these 17,200 cows benefited.

Hand operated chaff cutters will be supplied by the Department of Animal Husbandry, Kancheepuram to the SHG farmers at Rs.20,000/- per unit (50% subsidy) ,

one unit per block per year, 22 units per year, 88 units in a total period of 4 years at a total cost of Rs. 8.80 Lakhs. The Aavin, Kancheepuram will supply by-pass protein feed to the milch animals of the members of the society (360 kg/animal/year) for 2400 cows @ 50% subsidy of Rs.9/- per kg. The total cost will be Rs. 79.20 Lakhs.

Budget

(Rupees in lakhs)

Sl. No.	Particulars	Amount
1.	Augmentation of fodder production (CO-3) through SHG/women entrepreneurs, Rs. 0.235 Lakhs/acre, 10 acres/block/year, 13 blocks, for 4 years, 520 acres totally (DAH)	206.80
2.	Strengthening of fodder production Chinnasalem farm	115.62
3.	Fodder development activity (for production of fodder seed / slips in dairy or chilling centres and land of DDD) in 10 acres	21.00
4.	Fodder production at 100 IDF Villages, @ Rs.0.235 Lakhs/acre, 5 acres/IDFV, totally 110 acres for two years and 1850 acres in farmers field (DDD)	25.85
5.	Establishment of mineral mixture plant – one number	20.00
6.	Supply of mineral mixture to dairy cows @ Rs.600/cow/year, for 5200 cows (DAH)	31.20
7.	Supply of mineral mixture at 50 % subsidy @ Rs. 500/- for 18 kg (one year supply) for 12000 animals (DDD)	60.00
8.	Supply of hand operated chaff cutters to SHG farmers @ Rs.0.20 Lakhs/unit, 50% subsidy, 1 unit/block/year, 22 blocks, 88 units for 4 years (DAH)	8.80
9.	Chaff cutters for IDF villages on community basis (Mechanised), 12 numbers @ 0.70 lakh/per chaff cutter	8.40
10.	Provision of hand operated chaff cutters to elite farmers @ Rs.0.20 Lakh/unit, one unit/farmer, 10 units totally for 10 farmers (DDD)	2.00
11.	Supply of by-pass protein feed to the milch animals (360 kg/animal/year) @ 50 % subsidy, Rs.9/kg, Rs.3,300/- per animal /year, for 2400 cows in a period of 4 years	79.20
	Total	**578.87**

Background / Problem Focus

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

Project Rationale

There is an acute shortage of fodder and the farmers find it difficult to maintain high producing dairy cows owing to the huge demand for green and dry fodder. Hence intensive fodder production activity has to be taken up to meet this heavy demand. Supplementation of micronutrients and by-pass protein feed to dairy cows and micronutrients to goats is not a common practice and sensitization of the farmers through supply of mineral mixture for their cows and goats for one year will help them to realize their importance. Chopping of fodder will help in the effective utilization of nutrients.

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 State Agricultural University and members who have water source alone will be selected. 10 acres of Co-3 fodder will be produced per block involving the SHGs and interested women entrepreneurs. They will be supplied with all inputs for fodder production. Training on scientific fodder production will be given to the SHGs @

Rs.0.035 Lakh/SHG. Inputs for fodder production will be provided @ Rs.0.20 Lakhs/acre. A total number of 22 Groups will be involved in fodder production in all the 22 blocks @ 10 acres/block/year for a period of 4 years. The project will be implemented by the Department of Animal Husbandry, Villupuram.

2. Fodder production (seed/ slips) through dairy or chilling centres and land of DDD for 10 acres costing Rs. 21 lakhs. It will also be taken up by Aavin, Villupuram in all the proposed 100 IDF Villages @ Rs.0.235 Lakhs/acre, 5 acres/IDFV, 500 acres totally and additional 1850 acres of fodder will be produced at the members' fields. The cost of production of fodder per acre will be Rs.0.235 Lakhs and the total cost of fodder production for 110 acres will be Rs.25.85 Lakhs.

3. 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 5200 cows will be supplied with mineral mixture. Improvement in milk yield and fertility rates is expected from the 5200 cows benefited. This project will be taken up by the Department of Animal Husbandry, Villupuram. Mineral mixture plant will be established at a cost of 20.00 lakhs. Mineral mixture will also be supplied to the milch animals of the members of the society at subsidized cost (50%), @ 18 kg/year/cow @ Rs.500/cow/year. A total number of 12000 cows will be benefited at a total cost of Rs.60.00Lakhs.

4. Hand operated chaff cutters will be supplied by the Department of Animal Husbandry, Villupuram to the SHG farmers at Rs.20,000/- per unit (50% subsidy) , one unit per block per year, 22 units per year, 88 units in a total period of 4 years at a total cost of Rs. 8.80 Lakhs.

5. Chaff cutters for IDF villages on community basis for 12 numbers costing @0.70 per chaff cutter and totaling Rs. 8.40 lakhs.

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

7. The Aavin, Villupuram will supply by-pass protein feed to the milch animals of the members of the society (360 kg/animal/year) for 2400 cows @ 50% subsidy of Rs.9/- per kg. The total cost will be Rs. 79.20 Lakhs.

Project Goals

1. Augmentation of fodder production to meet the fodder shortage (17200 acres totally)
2. Supplementation of micronutrients in the feed of dairy cows and goats to enhance production and fertility.
3. Enhancement of nutrient utilization in fodder by use of hand-operated and mechanized chaff cutters to enhance the nutrient utilization.
4. Supply of by-pass protein to 2400 milch animals to enhance production.
5. Production of fodder seeds and slips to augment fodder production (10 acres totally)
6. Establishment of mineral mixture plant-one

Project Components

1. Fodder production – 17200 acres
2. Fodder seeds and slips production – 10 acres
3. Mineral mixture supply to 17200 cows
4. Provision of hand operated chaff cutters to elite farmers – 62 units
5. provision of mechanized chaff cutter to IDF villages on community basis-8 numbers
6. Supply of by-pass protein feed to 700 milch animals.
7. Establishment of mineral mixture plant-one

Fodder Development in Chinnasalem Farm (Rs. in lakhs)

Particulars	2008- 2009
Area under fodder cultivation (irrigated) (acres)	250
Development of pasture and grazing land (acres)	1258.28
Non-recurring	
Erection of bore well 30 nos	66.10
Construction of water tank 6 nos @ Rs.1.75/tank	10.50
Preparation of fodder land, land clearance cost of seeds, sowing cost @ Rs.13600/acre for 250 acres	34.00
Land development and cost of seeds for pasture and grazing lands @	62.91

Rs.5000 per acre for 1258.28 acre	
Irrigation system including sprinklers, drip irrigation and rain guns	15.00
Rain water harvesting including 5 percolation ponds and 2 farm ponds	10.00
Total Non recurring cost	**198.51**
Recurring Cost	
Cost of maintenance of fodder plots @Rs.6400/acre	16.00
Electricity charges	3.00
Other contingencies	1.00
Total Recurring cost	**20.00**
Total	**218.51**

Project Cost and Financing

Fodder Production

1. Fodder Production by the Department of Animal Husbandry and DDD, Kancheepuram -- Rs. 0.235 Lakhs /Acre

S. No.	Name of Operation		Amount (in Rs.)
1.	**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**

2.	**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

	Financial Requirement Per Acre (DAH)		**Rs. in Lakhs**
1.	Cost of fodder cultivation	:	0.200
2.	Cost of training	:	0.035
	Total Requirement	:	0.235
	Total requirement for 22 blocks @ 10 Acres /Block/year for 4 years, 880 acres totally	**:**	**206.80**

	Financial Requirement Per Acre (DDD)		**Rs. in Lakhs**
1.	Cost of fodder cultivation	:	0.200
2.	Cost of training	:	0.035
	Total Requirement	:	0.235
	Total requirement for 110 Acres /Block/year for 4 years	**:**	**25.85**

2. Fodder Seeds and Slips Production through DDD, Kancheepuram

Sl.No	**Particulars**	**Amount (Rs. in Lakhs**
I	**Capital Investment**	
1.	Demarcation of boundary and fencing	0.60
2.	Land development	0.10
3.	Farm sheds for equipments, seeds manure etc.,	0.20
4.	Purchase of agricultural implements	0.10
5.	Creation of irrigation facilities (wells, pumps, powerline, water tanks, pump room, pipeline etc.,)	0.50
	Sub –Total (I)	**1.50**
II	**Recurring Expenditure**	
1.	Wages of supervising staff	0.20
2.	Sedds, fertilizers / manure and insecticides	0.20
3.	Cultivation charges	0.05
4.	Irrigation charges	0.05
5.	Maintenance of store / dead stock	0.05
6.	Miscellaneous	0.05
	Sub-Total (II)	**0.60**
	Grand Total (I + II)	**2.10**

Rs. 2.1 lakhs/acre for 10 acres. Totally for 10 Acres – Rs. 21.00 Lakhs

II. Supplementation of Micronutrients and By-pass Protein Feed to Dairy Cows and Goats

(Rs. in Lakhs)

Sl. No.	Particulars	Amount
1.	Supply of mineral mixture to dairy cows @ Rs.600/cow/year, for 5,200 cows. The cost of mineral mixture per kg is Rs.50/- The requirement is 1kg/cow/month, 12 kg/cow/year, for 20,000 cows (DAH)	31.20
2.	Supply of mineral mixture to the milch animals of the members of the society at subsidized cost (50%), @ 18 kg/year/cow @ Rs.500/cow/year for a total number of 12000 cows	60.00
3.	Supply by-pass protein feed to the milch animals of the members of the society (360 kg/animal/year) for 2400 cows @ 50% subsidy of Rs.9/- per kg.	79.20

III. Supply of Chaff Cutters

Sl. No.	Particulars	Amount (Rs. in Lakhs)
1.	Provision of hand operated chaff cutters to elite farmers @ Rs.0.20 Lakh/unit, 10 units, one unit/farmer, totally for 10 farmers, 100% subsidy	2.00
2.	Provision of hand operated chaff cutters to SHG farmers @ Rs.0.20 Lakh/unit, 50 % subsidy, one unit/ block/year, 22 blocks, for 4 years, 88 units totally	8.80
3.	Provision of mechanized chaff cutters 12 numbers @0.70 per piece given IDF villages on community basis	8.40

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, 13 blocks, for 4 years, 520 acres totally (DAH)	220 acres	220 acres	220 acres	220 acres

Fodder production at IDF Villages, @ Rs.0.235 Lakhs/acre, Total 110 acres (DDD)	15 acres	60 acres	20 acres	15 acres
Fodder slips and seeds production in dairy and chilling centers @ Rs.2.1 Lakhs/acre, 10 acres totally (DDD)	10 acres	-	-	-
Supply of mineral mixture to dairy cows @ Rs.600/cow/year, for 5200 cows (DAH)	1300 cows	1300 cows	1300 cows	1300 cows
Supply of mineral mixture at 50 % subsidy @ Rs. 500/- for 18 kg (one year supply) for 12000 animals (DDD)	3000 cows	3000 cows	3000 cows	3000 cows
Establishment of mineral mixture plant @Rs.20.00 lakh	1 unit			
Supply of hand operated chaff cutters to SHG farmers @ Rs.0.20 Lakhs/unit, 50% subsidy, 1 unit/block/year, 22 blocks, 88 units for 4 years (DAH)	22 units	22 units	22 units	22 units
Provision of hand operated chaff cutters to elite farmers @ Rs.0.20 Lakh/unit, one unit/farmer, 10 units totally for 10 farmers (DDD)	10 units	-	-	-
Provision of mechanized chaff cutter to IDF villages (12 numbers)	12 units	-	-	-
Supply of by-pass protein feed to the milch animals (360 kg/animal/year) @ 50 % subsidy, Rs.9/kg, Rs.3,300/- per animal /year, for 2400 cows in a period of 4 years	600 cows	600 cows	600 cows	600 cows

***** This may vary from plan to plan

Reporting

1. Fodder and Fodder Seeds and Slips Production

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

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

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

3. Provision of Chaff Cutters to IDF Villages and Hand Operated Chaff Cutters to SHG and Elite Farmers

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

II. Genetic Upgradation of Cattle, Buffaloes, Sheep and Goats, Improvement of Livestock Health and Supply of Goat Units to SHG

Abstract

a. Tracking the Breedable Bovines in the District

It is estimated that the district has a total number of 3,07,000 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. 61.40 Lakhs. The project will be jointly implemented by the Department of Animal Husbandry, Villupuram and Aavin, Villupuram. Programmed breeding indigenous cattle and buffalo to increase conception rate of 16000 numbers @ 0.007 lakhs per animal and cost totaling Rs. 112.00 lakhs.

b. Genetic Upgradation of Sheep and Goats

Supply of crossbred bucks and Madras Red rams to the Self Help Group Women in the district for cross-breeding of the non-descript poorly performing sheep and goats to augment the mutton and chevon production. Each active SHG will be provided with one crossbred buck and one Madras Red ram @ Rs. 4,000/- per ram/buck. A total number of 40 rams and 40 bucks will be supplied at a total cost of Rs. 3.20 Lakhs.

c. Establishment of Mobile Veterinary Clinics and Mobile Input Units

Mobile veterinary clinics (5 units) will be established at a total cost of Rs. 29.16 Lakhs @ Rs.5.832 Lakhs/unit under the Department of Animal Husbandry, Villupuram for provision of health cover facilities in remote areas in the district. Mobile input routes (12 units) will be established under the Aavin, Viilupuram at a total cost of Rs. 54.00 Lakhs @ Rs.4.50 Lakhs/unit to provide additional health cover and timely insemination services to the members of the Societies. Mobile veterinary diagnostic laboratory will be established under the Department of Animal Husbandry, Villupuram at a total cost of Rs. 12.00 Lakhs to provide timely services to the farmers.

d. Strengthening of Veterinary Institutions

A total number of 51 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. 255.00 Lakhs @ Rs.5.00 Lakhs / institution. The project will be implemented by the Department of Animal Husbandry, Villupuram.

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.14.7 Lakhs per year. The total cost will be Rs. 58.8 Lakhs for 4 years. The project will be implemented by the Department of Animal Husbandry, Villupuram.

Health care for existing desi birds in the district will be carried out to reduce the mortality. The total cost will be 4.25 lakhs. The project will be implemented by the Department of Animal Husbandry, Villupuram.

g. Buffalo Calf Development Programme

The total cost for the supply of feed, vaccines and deworming will be Rs.14,800/-/buffalo calf. A total number of 500 calves will be benefited at a period of 4 years @ 125 calves per year. The total project cost will be Rs.74.00 Lakhs. The project will be implemented by the DDD, Villupuram.

h. 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, 22 blocks, 88 units totally at a total cost of Rs. 36.96 Lakhs. The project will be implemented by the Department of Animal Husbandry, Villupuram.

Popularizing technology on backyard poultry farming with 9 +1 units to 22 blocks and 20 units in each block comprising of 440 batches. The project cost is 2.20 lakhs. The project will be implemented by the Department of Animal Husbandry, villupuram.

I. Strengthening of Sheep Farm Chinnasalem

Strengthening of sheep farm at Chinnasalem by purchasing / replacing of livestock to provide superior germplasm to the farmers of the Villupuram and adjoining districts in Tamilnadu. Hence it is proposed with the outlay of Rs.218.51 for supply of good stock to the farming community.

Budget **(Rupees in Lakhs)**

1.	Tracking the breedable bovine population with an ear tag and a passbook @ Rs.20/- animal, for 3,07,000 animals (DAH and DDD)	61.40
2.	Programmed breeding of cattle buffaloes @ Rs.700/animal, for 16000 cows and buffaloes (DDD)	112.00
3.	Supply of 40 Madras Red rams and 40 crossbred bucks to the self help groups @ Rs.4,000/- per buck/ram	3.20
4.	Establishment of mobile veterinary clinics @ Rs.5.832 Lakhs/unit, 5 units totally (DAH)	29.16
5.	Mobile input units , 12 numbers @ 4.50 lakh/unit	54.00
6.	Establishment of mobile diagnostic laboratory (DAH) – one number	12.00
7.	Strengthening of 51 veterinary institutions with basic facilities like fencing, provision of bore-wells, water troughs and minor repair works @ Rs.5.00 Lakhs/unit (DAH)	255.00
8.	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. 14.7 Lakhs/year, for 4 years (DAH)	58.80

9.	Health care for existing desi birds @ Rs. 1 / bird for 4.25 lakhs brids (DAH)	4.25
10.	Buffalo calf development programme @ Rs. 14,800/- per calf, 200 calves/year, 500 calves for 4 years (DDD)	74.00
11.	Supply of stall-fed goat units (20+1) to SHG @ Rs.0.42 Lakhs/unit, one unit/block/year, for 4 years, 22 blocks, 88 units totally	36.96
12.	Popularizing technology on backyard poultry farming (9+1 unit) 200 Nos./ block total 440 batches for 4 years @ Rs. 500 / batch (DAH)	2.20
13.	Strengthening of sheep farm at chinnasalem – one	218.51
	Total	**921.48**

Background/ Problem Focus

a. Tracking the Breedable Bovines in the District

It is estimated that the district has a total number of 3,07,000 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. In order to improve the conception rate of indigenous cattle and buffalo by programmed breeding is proposed.

b. Synchronized Breeding of Cattle and Buffaloes

Estrus Synchronization will be Planned in Indigenous Cattle and Buffaloes to Increase Conception rate. Buffaloes Exhibit Silent Heat and Hence Become Difficult to Inseminate them for Conception

c. Genetic Upgradation of Sheep and Goats

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

d. Establishment of Mobile Veterinary Clinics, Mobile Input Units and Mobile Diagnostic Lab

There is a shortfall in the number of veterinary institutions 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 as these villages have a considerable livestock population and the farmers mainly depend on these animals for their livelihood. Mobile veterinary diagnostic laboratory unit is also proposed with the same background.

e. Strengthening of Veterinary Institutions

A total number of 55 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.

Health care for existing desi birds in the district will be carried out to reduce the mortality.

g. Buffalo Calf Development Programme

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

h. Supply of Stall-fed Goat Units

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

Popularizing technology on backyard poultry farming in Villupuram.

I. Strengthening of Sheep Farms at Chinnasalem

- Negative trend in sheep and goat population
- No recognized breed of goat in Villupuram district

Project Rationale

a. Tracking the Breedable Bovines in the District

It is estimated that the district has a total number of 3,07,000 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.

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.

b. Genetic Upgradation of Sheep and Goats

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

c. Establishment of Mobile Veterinary Clinics, Mobile Input Units and Mobile Diagnostic Lab

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. Mobile input units of 12 numbers are also utilized for this purpose. One mobile veterinary diagnostic laboratory will be established by the DAH to provide timely diagnosis of diseases. The total cost will be Rs.12.00 Lakhs.

d. Strengthening of Veterinary Institutions in the District

A total number of 55 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. 255.00 Lakhs @ Rs.5.00 Lakhs / institution.

e. 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.14.7 Lakhs per year. The total cost will be Rs. 58.80 Lakhs for 4 years. The project will be implemented by the Department of Animal Husbandry, Villupuram.

Health care for existing desi birds in the district will be carried out to reduce the mortality. The total cost will be 4.25 lakhs. The project will be implemented by the Department of Animal Husbandry, Villupuram.

f. Buffalo Calf Development Programme

The total cost for the supply of feed, vaccines and deworming will be Rs.14,800/-/buffalo calf. A total number of 500 calves will be benefited at a period of 4 years @ 125 calves per year. The total project cost will be Rs.74.00 Lakhs. The project will be implemented by the DDD, Villupuram.

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.Popularizing backyard poultry farming in Villupuram district.

h. Strengthening of Sheep Farm at Chinnasalem

- To supply buffalo calves (Murrah) to the farmers to improve the buffalo milk production in villupuram district
- To upgrade non-descript buffaloes available in the buffalo pockets
- To establish field piggery units with Large White Yorkshire breed to meet out the demand for increased pork consumption and to increase the pig entrepreneurs in the district.

Project Strategy

a. Tracking the Breedable Bovines in the District

It is estimated that the district has a total number of 3,07,000 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. 61.40 Lakhs.

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.

b. Genetic Upgradation of Sheep and Goats

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

c. Establishment of Mobile Veterinary Clinics, Mobile Input Units and Mobile Diagnostic Lab

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. One mobile veterinary diagnostic laboratory will be established by the DAH, Villupuram to provide timely diagnosis of diseases for the farmers. The total cost will be Rs.12.00 Lakhs.

d. Strengthening of Veterinary Institutions in the District

A total number of 55 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. 255.00 Lakhs @ Rs.5.00 Lakhs / institution.

e. 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.14.70 Lakhs per year. The total cost will be Rs. 58.80 Lakhs for 4 years. The project will be implemented by the Department of Animal Husbandry, Villupuram.

Health care of desi birds in this district will be carried out by adopting suitable vaccine to reduce the mortality.

f. Buffalo Calf Development Programme

The total cost for the supply of feed, vaccines and deworming will be Rs.14,800/-/buffalo calf. A total number of 500 calves will be benefited at a period of 4 years @ 125 calves per year. The total project cost will be Rs.74.00 Lakhs. The project will be implemented by the DDD, Villupuram.

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, 22 blocks, 88 units totally.

Popularizing technology on backyard poultry farming with 9 +1 units to 13 blocks and 20 units in each block comprising of 440 batches. The project cost is 2.20 lakhs.

h. Strengthening of Sheep Farm at Chinnasalem

Pure breeding of buffaloes will be carried out and the female buffalo calves will be supplied to the farmers thereby enhancing the buffalo population and milk production in the district. The unit will also act as a Bull mother farm for supply of Murrah bulls from elite dams for upgradation of non descript buffalo population. The goat breeding unit will be established to upgrade the non-descript goat population and to popularize hybrid goats (Boer crossbred) in the district.

Project Goals

- Tracing the breedable bovines in the district.
- Estrus synchronization in selected 16000 cattle and buffaloes
- Upgradation of the existing native non-descript sheep and goats through cross-breeding with Madras Red rams and Crossbred bucks (40 numbers each) to increase the mutton and chevon production.
- Establishment of 5 mobile veterinary clinics, mobile input units 12 numbers and one mobile veterinary diagnostic lab.
- Strengthening of 55 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.
- Health care of desi bids will be maintained
- To develop 500 buffalo calves through supply of feed.
- To establish 88 stall-fed goat units to promote intensive management of goats.
- Popularizing backyard poultry farming
- Increasing the milch buffalo population
- Increasing the meat production and livelihood of farmers
- To increase the pork production
- Enhancing backyard poultry farming income and employment generation

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.

Estrus synchronization will be carried out in 16000 numbers of cattle and buffaloes at a total cost of Rs. 112.00 Lakhs @ Rs.700/animal. It involves use of hormones, deworming, monitoring etc.

b. Genetic Upgradation of Sheep and Goats

1. Supply of Madras Red rams and Crossbred bucks
2. Maintenance of the animals by women SHGs in the district
3. Cross-breeding of the native non-descript sheep and goats with superior germplasm.

c. Establishment of Mobile Veterinary Clinics and Mobile Diagnostic Lab

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. Mobile input units of 12 numbers will be utilized for this purpose. One mobile veterinary diagnostic laboratory will be established by the DAH, Villupuram to provide timely diagnosis of diseases for the benefit of the farmers. The total cost will be Rs.12.00 Lakhs.

Breakup details for one mobile input unit **(Rs. in lakhs)**

Sl. No.	Details	Expenditure (Per month)	Expenditure (Per year)
1	Salary for veterinarian and one attendant, taxi hire charges	30000	**3.60**
2	Medicines	8000	
3	Veterinary equipment	66000	**0.66**
4	Registers, monitoring Administrative charges	2000	**0.24**
	Total per unit		**4.50**

d. Strengthening of Veterinary Institutions in the District

A total number of 55 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. 255.00 Lakhs @ Rs.5.00 Lakhs / institution.

e. 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.14.7Lakhs per year. The total cost will be Rs. 58.80 Lakhs for 4 years. The project will be implemented by the Department of Animal Husbandry, Villupuram. Health care for existing desi birds @ Rs. 1 / bird for 4.25 lakhs birds (DAH).

f. Buffalo Calf Development Programme

The total cost for the supply of feed, vaccines and deworming will be Rs.14,800/-/buffalo calf. A total number of 500 calves will be benefited at a period of 4 years @ 125 calves per year. The total project cost will be Rs.74.00 Lakhs. The project will be implemented by the DDD, Villupuram.

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, 22 blocks, 88 units totally.
- Popularizing technology on backyard poultry farming (9+1 unit) 200 Nos./ block total 440 batches for 4 years @ Rs. 500 / batch.

h. Strengthening of Chinnasalem Sheep Farm – Genetic Upgradation

Animal purchase	2008 - 2009
Purchase of Sheep @ 4000/Ram for 10 rams and 2000/ewe for 500 ewes	18.27
Purchase of goats @4000-/Buck for 19 bucks and 2000/Doe for 400 does	
Construction of new sheds sheds @ Rs. 300 per sq.ft. for 16286 sq.ft	48.86
Feeders and waterers	2.00
Chaff cutter @ Rs.0.45 lakh per unit for 2 units	0.90
Weighing balance @ Rs. 0.40 lakh per unit for 3 units	1.20
Lab equipment	0.95
Other equipments and Furniture	2.20
Roads @ Rs. 2.50lakh per km for 8 kms	20.00
Fencing @Rs.2.50 lakh per running km for 3km	7.50
Total Non-Recurring cost	**101.88**
II. Recurring	
i. Feed cost	11.70
ii. Medicines	0.22
iii. Animal maintenance cost	1.82
Total Recurring Cost	**13.74**
Total	**115.62**

Project Cost and Financing

(Amount in Rs. Lakhs)

Activity	2008-2009	2009-2010	2010-2011	2011-2012	Total Cost
1. Tracking the breedable bovine population with an ear tag and a passbook @ Rs.20/- animal, for 3,07,000 animals (DAH, DDD)	61.40	-	-	-	61.40
2. Programmed breeding of cattle and buffaloes @ Rs.700/animal, for 16000 animals.(DDD)	28.00	28.00	28.00	28.00	112.00
3. Supply of 40 Madras Red rams and 40 Crossbred bucks to the self help groups @ Rs.4,000/- per buck/ram (DAH)	0.80	0.80	0.80	0.80	3.2

4. Establishment of mobile veterinary clinics @ Rs.5.832 Lakhs/unit, 5 units totally (DAH)	29.16	-	-	-	29.16
5. Establishment of mobile input units, 12 nos @4.50 lakh/unit	54.00	-	-	-	54.00
6. Establishment of one mobile veterinary diagnostic laboratory (DAH)	12.00	-	-	-	12.00
7. Strengthening of 51 veterinary institutions with basic facilities like fencing, provision of bore-wells, water troughs and minor repair works @ Rs.5.00 Lakhs/unit (DAH)	255.0	-	-	-	255.0
8. 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. 14.7 Lakhs/year, for 4 years (DAH)	14.7	14.7	14.7	14.7	58.80
9. Health care for existing desi birds @ Rs. 1 / bird for 4.25 lakhs brids (DAH)	1.25	1.00	1.00	1.00	4.25
10. Buffalo calf development programme @ Rs.14,800/- per calf, The cost includes feed cost, identification, insurance, deworming, vaccination, breeding and health cover, 125 calves/year, 500 calves for 4 years (DDD)	18.50	18.50	18.50	18.50	74.00
11. Supply of stall-fed goat units (20+1) to SHG @ Rs.0.42 Lakhs/unit, one unit/block/year, for 4 years, 22 blocks, 88 units totally (DAH)	9.24	9.24	9.24	9.24	36.96
12. Popularizing technology on backyard poultry farming (9+1 unit) 200 Nos./ block total 440 batches for 4 years @ Rs. 500 / batch (DAH)	0.55	0.55	0.55	0.55	2.20
13. Strengthening of sheep farm at Chinnasalem	115.62	-	-	-	115.62
Total	**600.22**	**72.79**	**72.79**	**72.79**	**818.59**

Implementation Chart of the Project

Activity	2008-2009	2009-2010	2010-2011	2011-2012
1. Tracking the breedable bovine population with an ear tag and a passbook	3,07,000 cows	-	-	-
2. Programmed breeding of cattle and buffaloes	4000 animals	4000 animals	4000 animals	4000 animals
3. Supply of 40 Madras Red rams and 40 Crossbred bucks to the self help groups	20	20	20	20
4. Establishment of mobile veterinary clinics, 5 units totally	5	-	-	-
5. Mobile input units	12			
6. Establishment of one mobile veterinary diagnostic laboratory	1	-	-	-
7. Strengthening of 51 veterinary institutions with basic facilities like fencing, provision of bore-wells, water troughs and minor repair works	51	-	-	-
8. 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. 14.7 Lakhs/year, for 4 years	*	*	*	*
9. Health care for existing desi birds @ Rs. 1 / bird for 4.25 lakhs brids (DAH)	125000	100000	100000	100000
10. Buffalo calf development programme @ Rs. 14,800/- per calf, 125 calves/year, 400 calves for 4 years	125 calves	125 calves	125 calves	125 calves
11. Supply of stall-fed goat units (20+1) to SHG @ Rs.0.42 Lakhs/unit, one unit/block/year, for 4 years, 22 blocks, 88 units totally	22 units	22 units	22 units	22 units
12. Popularizing technology on backyard poultry farming (9+1 unit) 200 Nos./ block total 440 batches for 4 years @ Rs. 500 / batch (DAH)	110 units	110 units	110 units	110 units
13. Strengthening of sheep farm at chinnasalem	1 unit	-	-	-

Reporting

a. Tracking the Breedable Bovines in the District

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

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

b. Genetic Upgradation of Sheep and Goats

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

c. Establishment of Mobile Veterinary Clinics

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

d. Establishment of Mobile Veterinary Diagnostic Laboratory

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

e. Strengthening of 51 Veterinary Institutions with Basic Facilities like Fencing, Provision of Bore-wells, Water Troughs and Minor Repair Works

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

g. Buffalo Calf Development Programme

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

h. Supply of Stall-fed Goat Units to SHG

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

i. Strengthening of Sheep Farm at Chinnasalem

The Regional Joint Director of Animal Husbandry, Villupuram 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

Twelve milking machines will be provided to the Integrated Dairy Farms at one unit per IDF Village at a total cost of Rs. 12 Lakhs @ Rs. 1.0 Lakh/unit. Sixty portable milking machines will be supplied to the members of the society at a total cost of Rs.10.80 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 centre to improve the keeping quality of milk unit it is processed. The total cost will be Rs.30.0 Lakhs. One unit of walk-in-cooler will be established at a total cost of Rs.30.0 Lakhs. A total number of 40 dormant societies will be revived with necessary inputs @ Rs.1.0 Lakh per unit at a total cost of Rs. 40 Lakhs. Two khoa manufacturing units (@ Rs.0.77 Lakhs/ unit) and two ice-cream making units (@ Rs. 1.12 Lakhs/unit) will be established at a total cost of Rs. 3.78 Lakhs to promote value-addition of milk. A total of 312 numbers of milk weighing machines will be established at milk producers' co-operative societies for accurate weighment of milk at a total cost of 53.04 Lakhs. A total number of 22 PC-based automatic milk collection stations will be established at IDF

villages and milk producers' co-operative societies at a total cost of Rs.38.50 Lakhs @ Rs.1.75 Lakhs/unit. The quality assurance laboratory at Villupuram dairy will be strengthened at a total cost of Rs. 10.0 Lakhs. A project on energy management system will be implemented at a total cost of Rs.10.0 Lakhs. Milk pouch film manufacturing facility will be established with cost of Rs. 820.00 lakhs.

Budget **(Rupees in Lakhs)**

Sl. No.	Particulars	Amount (Rs. in Lakhs)
1.	Milking machines for ID farms @ Rs.1.0 Lakh per unit, 12 units totally (DDD)	12.00
2.	Supply of portable milking machines to members of the Society @ Rs.0.18 Lakhs, 60 Units totally (DDD)	10.80
3.	Provision of bulk milk coolers @ Rs.30.0 Lakhs/unit, 1 unit (DDD)	30.00
4.	Provision of a walk-in-cooler @ Rs. 30.0 Lakhs/unit (DDD)	30.00
5.	Revival of 40 dormant milk producers' co-operative societies @ Rs.1.0 Lakhs/unit, 40 societies (DDD)	40.00
6.	Establishment of two khoa manufacturing units @ Rs. 0.77 Lakhs/unit (DDD)	1.54
7.	Establishment of two ice-cream manufacturing units @ Rs. 1.12 Lakhs/unit (DDD)	2.24
8.	Supply of 312 milk weighing machines to milk producers' co-operative societies @ Rs. 0.17 Lakhs/unit (DDD)	53.04
9.	Provision of PC-based automatic milk collection stations to IDF villages and milk producers' co-operative societies @ Rs. 1.75 Lakhs/unit, 22 units (DDD)	38.50
10.	Strengthening of the quality assurance laboratory @ Rs. 10.0 Lakhs (DDD)	10.00
11.	Energy management system, Solar water heating unit-5000 litres- 1 unit (DDD)	10.00
12.	Milk pouch film manufacturing facility-one (DDD)	820.00
	Total	**1058.12**

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.

The processing plant at the main dairy of Aavin has a capacity of 2 lakh litres but the present handling is 2.05 lakh litres. The main dairy and all the 4 chilling centers handle more than their actual capacities. Further, the chilled milk from the chilling centers are being transported to the Main dairy at Villupuram and inturn, packaged milk is being transported from Villupuram to Chennai.

Establishment of a bulk milk coolers and walk-in-coolers will help to maintain the quality of milk until it is processed and marketed. A total number of 40 milk producers' co-operative societies are dormant. This leads to decrease in the quantity of milk procured. They have to be revived with necessary inputs to improve the quantum of milk production in the district.

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

The quality assurance laboratory at the Aavin main dairy needs to be strengthened with certain basic facilities for assessment of milk quality at different stages of processing and marketing. Energy management system in the main processing plant will save power and will be economical. Milk pouch film manufacturing facility will be established to cater the needs of dairy farmers.

Project Rationale

Milking machines will save labour, time and prevent the occurrence of mastitis in dairy cows. Bulk milk coolers and walk-in-coolers will help to keep the quality of milk until it is processed and marketed. Revival of dormant milk producers' co-operative societies will boost the milk production. Establishment of manufacturing units for khoa and ice-cream will help in value-addition of milk. Provision of milk weighing machines to societies will help in the accurate weighment of milk. Automatic PC-based milk collection stations will save time, manpower, provide accurate weighment of milk, stores the milk data for several months and provide confidence among the members of the societies. The quality assurance laboratory at the Aavin main dairy will be strengthened with certain basic facilities for assessment of milk quality at different stages of processing and marketing. Energy management system in the main processing plant will save power and will be economical. Milk pouch film manufacturing facility will be beneficial to the dairy farmers.

Project Strategy

Twelve milking machines will be provided to the Integrated Dairy Farms at one unit per IDF Village at a total cost of Rs. 12 Lakhs @ Rs. 1.0 Lakh/unit. Sixty portable milking machines will be supplied to the members of the society at a total cost of Rs.10.80 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 centre to improve the keeping quality of milk unitl it is processed. The total cost will be Rs.30.0 Lakhs. One unit of walk-in-cooler will be established at a total cost of Rs. 30.0 Lakhs. A total number of 40 dormant societies will be revived with necessary inputs @ Rs.1.0 Lakh per unit at a total cost of Rs. 40 Lakhs. Two khoa manufacturing units (@ Rs.0.77 Lakhs/unit) and two ice-cream making units (@ Rs. 1.12 Lakhs/unit) will be established at a total cost of Rs. 3.78 Lakhs to promote value-addition of milk. A total of 312 numbers of milk weighing machines will be established at milk producers' co-operative societies for accurate weighment of milk at atotal cost of 53.04 Lakhs. A total

number of 22 PC-based automatic milk collection stations will be established at IDF villages and milk producers' co-operative societies at a total cost of Rs.38.50 Lakhs @ Rs.1.75 Lakhs/unit. The quality assurance laboratory at Villupuram dairy will be strengthened at a total cost of Rs. 10.0 Lakhs. A project on energy management system will be implemented at a total cost of Rs.10.0 Lakhs.

Project Goals

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

Quality Assurance Lab

Sl. No.	Name of the equipment	Amount in lakhs
1.	Incubator	0.35
2.	Hot air oven	0.35
3.	Water bath	0.35
4.	Auto clave	0.30
5.	Microscope	0.50
6.	Laminar air flow	0.50
7.	Refrigerator	0.35
8.	Air conditioner	0.35
9.	Analytical Balance	2.00
10.	Water Distillation Plant	0.35

11.	Glass ware	0.50
12.	Chemicals & Bacteriological media	0.50
13.	Furniture and work tables	0.50
14.	Colony counter	0.10
15.	PH, TDS meter	1.00
16.	Civil work	2.00
	Total	**10.00**

- Energy conservation in the main dairy processing plant.
- Milk pouch film manufacturing facility will be established

Project Components

Twelve milking machines will be provided to the Integrated Dairy Farms at one unit per IDF Village at a total cost of Rs. 12 Lakhs @ Rs. 1.0 Lakh/unit. Sixty portable milking machines will be supplied to the members of the society at a total cost of Rs.10.80 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 centre to improve the keeping quality of milk unitl it is processed. The total cost will be Rs.30.0 Lakhs. One unit of walk-in-cooler will be established at a total cost of Rs. 30.0 Lakhs. A total number of 40 dormant societies will be revived with necessary inputs @ Rs.1.0 Lakh per unit at a total cost of Rs. 40 Lakhs. Two khoa manufacturing units (@ Rs.0.77 Lakhs/unit) and two ice-cream making units (@ Rs. 1.12 Lakhs/unit) will be established at a total cost of Rs. 3.78 Lakhs to promote value-addition of milk. A total of 312 numbers of milk weighing machines will be established at milk producers' co-operative societies for accurate weighment of milk at a total cost of 53.04 Lakhs. A total number of 22 PC-based automatic milk collection stations will be established at IDF villages and milk producers' co-operative societies at a total cost of Rs.38.50 Lakhs @ Rs.1.75 Lakhs/unit. The quality assurance laboratory at Villupuram dairy will be

strengthened at a total cost of Rs. 10.0 Lakhs. A project on energy management system will be implemented at a total cost of Rs.10.0 Lakhs.

Milk Pouch Film Manufacturing Facility will be Established with cost of Rs. 820.00 lakhs.

Breakup details

Sl. No.	Item	Unit cost (Rs)
1	CIVIL WORKS:	
	Plant 250 m² @ Rs. 20,000 / m²	50,00,000
	Office 100 m² @ Rs. 12,000 / m²	12,00,000
	Storage 300 m² @ Rs. 10,000 / m²	30,00,000
	Road @ Rs. 8,000 / m²	20,00,000
	Compound wall 1000 Rm @ Rs. 1,500 / Rm	15,00,000
	Weigh bridge - 40 Ton	18,00,000
	Sub-Total	**1,45,00,000**
2	**PLANT** Grooved Feed, Barrier, Gravimetric Feed, Liquid PIB dosing, Automatic Screen charger, On line thickness monitoring, Automatic air rings, Air compressor, Chillers Crona treater	**4,75,00,000**
	PRINTER – Rotogravure / Flex graphic printing upto (4) four colours	**1,50,00,000**
	Other items – Genset, Transformers & contingencies etc	**50,00,000**
	Total	**8,20,00,000**

8. Project Cost and Financing (Rs. in Lakhs) :

S. No.	Project	2008 -2009	2009 -2010	2010 -2011	2011 -2012	Total Cost
1.	Milking machines for ID farms @ Rs.1.0 Lakh per unit, 12 units totally (DDD)	12.0	-	-	-	12.0
2.	Supply of portable milking machines to members of the Society @ Rs. 0.18 Lakhs, 60 Units totally (DDD)	2.70	2.70	2.70	2.70	10.80
3.	Provision of bulk milk coolers @ Rs.30.0 Lakhs/unit, 1 unit (DDD)	30.0	-	-	-	30.0
4.	Provision of a walk-in-cooler @ Rs. 30.0 Lakhs/unit (DDD)	30.0	-	-	-	30.0
5.	Revival of 40 dormant milk producers' co-operative societies @ Rs.1.0 Lakhs/unit, 40 societies (DDD)	10.0	10.0	10.0	10.0	40.0
6.	Establishment of two khoa manufacturing units @ Rs. 0.77 Lakhs/unit (DDD)	0.77	0.77	-	-	1.54
7.	Establishment of two ice-cream manufacturing units @ Rs. 1.12 Lakhs/unit (DDD)	1.12	1.12	-	-	2.24
8.	Supply of 312 milk weighing machines to milk producers' co-operative societies @ Rs. 0.17 Lakhs/unit (DDD)	13.60	13.60	13.60	12.24	53.04
9.	Provision of PC-based automatic milk collection stations to IDF villages and milk producers' co-operative societies @ Rs. 1.75 Lakhs/unit, 22 units (DDD)	7.00	21.00	5.25	5.25	38.50
10.	Strengthening of the quality assurance laboratory @ Rs. 10.0 Lakhs (DDD)	10.0	-	-	-	10.0
11.	Energy management system (DDD)	10.0	-	-	-	10.0
12.	Milk pouch film manufacturing facility-one	410.00	410.00	-	-	820.00
	Total	**537.19**	**459.19**	**31.55**	**30.19**	**1058.12**

Implementation Chart of the Project

Activity	2008-2009	2009-2010	2010-2011	2011-2012
Milking machines for ID farms	12 units	-	-	-
Supply of portable milking machines to members of the Society	15 units	15 units	15 units	15 units

Provision of bulk milk coolers	1 unit	-	-	-
Provision of a walk-in-cooler	1 unit	-	-	-
Revival of 40 dormant milk producers' co-operative societies	10 societies	10 societies	10 societies	10 societies
Establishment of two khoa manufacturing units	1 unit	1 unit	-	-
Establishment of two ice-cream manufacturing units	1 unit	1 unit	-	-
Supply of 312 milk weighing machines to milk producers' co-operative societies	80 units	80 units	80 units	72 units
Provision of PC-based automatic milk collection stations to IDF villages and milk producers' co-operative societies	4 units	12 units	3 units	3 units
Strengthening of the quality assurance laboratory	1	-	-	-
Energy management system : Solar water heating unit -5000 litres capacity, 1 unit	1	-	-	-
Milk pouch film manufacturing facility	1	-	-	-

Reporting

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

IV. Training Programmes on Livestock Farming and Value-addition of Milk and Meat to the Farmers and Women SHGs under Capacity Building for Adoption of Technology and Training for Technical staff and Dairy Farmers

Abstract

The following training programmes will be conducted by the Aavin, Villupuram to the technical staff and dairy farmers at a total cost of Rs. 15.70 Lakhs:

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

Budget

Training Programmes by the Aavin, Coimbatore

(Amount in Rs. Lakhs)

Activity	2008-2009	2009 -2010	2010-2011	2011-2012	Total Cost
1. Farmers study tour @ Rs.5000/farmer, 150 farmers for 4 years	2.00	2.00	2.00	1.50	7.50
2. Skill development training for technical staff of Aavin, Coimbatore 25 staff per year, @ Rs.5000/- per staff, for 4 years	1.25	1.25	1.25	1.25	5.00
3. Orientation training/workshop for milk producers' at society level Rs.20,000 per programme, 4 programmes/year, for 4 years	0.80	0.80	0.80	0.8	3.20
Total	**4.05**	**4.05**	**4.05**	**3.55**	**15.70**

Background/ Problem Focus

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

Project Rationale

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

Project Strategy

The Training Programmes will be conducted by the DDD, Villupuram.

Project Goals

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

Project Components

The following training programmes will be conducted by the Aavin, Villupuram to the technical staff and dairy farmers at a total cost of Rs. 15.70 Lakhs:

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

Project Cost and Financing

I. Training Programmes by the Aavin, Villupuram

(Amount in Rs. Lakhs)

Activity	2008-2009	2009 -2010	2010-2011	2011-2012	Total Cost
1. Farmers study tour @ Rs.5000/farmer, 250 farmers for 4 years	2.00	2.00	2.00	1.50	7.50
2. Skill development training for technical staff of Aavin, Coimbatore 25 staff per year, @ Rs.5000/- per staff, for 4 years	1.25	1.25	1.25	1.25	5.00
3. Orientation training/workshop for milk producers' at society level Rs.20,000 per programme, 4 programmes/year, for 4 years	0.80	0.80	0.80	0.8	3.20
Total	**4.05**	**4.05**	**4.05**	**3.55**	**15.70**

Implementation Chart of the Project

1. Training Programmes by the Aavin, Coimbatore

(No. of Programmes)

Activity	2008-2009	2009 -2010	2010-2011	2011-2012	Total
Farmers study tour @ Rs.5000/farmer, 150 farmers for 4 years	40 farmers	40 farmers	40 farmers	30 farmers	150 farmers
Skill development training for technical staff of Aavin, Coimbatore 25 staff per year, @ Rs.5000/- per staff, for 4 years	25 staff	25 staff	25 staff	25 staff	100 staff
Orientation training/workshop for milk producers' at society level Rs.20,000 per programme, 4 programmes/year, for 4 years	4 programs	4 programs	4 programs	4 programs	16 programs

Reporting

The General Manager, Aavin, Villupuram will submit to periodical progress report on the training programmes conducted to the higher authorities.

V. Institutional Development : Strengthening the Facilities at TANUVAS Centres for the Effective Disease Surveillance, Monitoring and Extension Services in the District

A. Strengthening of veterinary university training and research centre at Melmaruvathur

Abstract

Veterinary university training and research centre at Melmaruvathur is functioning with the major mandate of imparting training to the rural farmers, self help groups, unemployed youth and entrepreneurs on livestock and poultry farming. It has established the linkage with the farmers of Villupuram district in order to solve their practical problems in livestock. This centre needs to be strengthened further with more infrastructure including a van (Propaganda unit for data collection and imparting training to farmers on livestock at the field level) and audio visual aids for imparting training more effectively. Hence, it is proposed to strengthen the Farmers' Training Centre with a total outlay of Rs.10.00 lakhs.

Budget : Rs. 10.00 lakhs

Background/ Problem focus

Lacunae in existing infrastructure at Farmers' Training Centre, Kancheepuram for transfer of technology at the field level

Project Rationale

Imparting training on scientific breeding, housing, management, nutrition, disease prevention and control to farmers to improve their livelihood.

5. Project Strategy :

In order to alleviate the problems faced by the farmers of the district with respect to livestock, Farmers' Training Centre, Kancheepuram will be strengthened with better infrastructure facilities so as to update the farmers with recent management techniques more effectively. The propaganda unit (van) will be used for making periodical visits to villages to collect more information about existing livestock management practices followed by farmers and giving necessary farm advisory services.

Project Goals

For effective dissemination of information from Laboratory to Land.

Project Components :

- Strengthening the Farmers' Training Centre with establishment of propaganda unit
- Field visit, collection of data regarding livestock practices and providing farm advisory services accordingly.

Project Cost and Financing

(Rs. in lakhs)

Particulars	2008-2009	2009-2010	2010-2011	2011-2012	Total cost
Non- recurring					
Propaganda unit (Van)	7,00,000	-	-	-	7,00,000
LCD projector with all necessary accessories including copier	2,50,000	-	-	-	2,50,000
Audio-Visual aids	50,000	-	-	-	50,000
Total	**10,00,000**	**-**	**-**	**-**	**10,00,000**

Implementation Chart of the Project

2008-09 - Strengthening the university Training Centre with propaganda unit and audio-visual aids

2009-12 - Dissemination of latest scientific knowledge on various animal husbandry practices including breeding, housing, management, feeding and disease control to farmers of Kancheepuram district

Reporting

The project reports will be reviewed by TANUVAS

B. Empowerment of Self-help group Women / Unemployed Rural Youth through Skill Based Livestock and Poultry Training for Income Generation

Abstract

Self help group women / unemployed rural youth in Kancheepuram district are performing various agriculture and non-farming activities for their livelihood. In addition, wide spectrum of livestock and poultry farming activities provide ample opportunity for SHG members / unemployed rural youth for round the year employment and income. Imparting skill based training on livestock and poultry farming to 1200 SHG women / unemployed rural youth (5 batches of 20 beneficiaries in a year each at KVK, Kattupakkam and FTC, Kancheepuram) will help the beneficiaries to undertake the enterprise in an efficient manner, thereby improving their standard of living.

Budget : Rs. 13.65 lakhs

Background/ Problem Focus

Lack of awareness on latest scientific techniques in livestock and poultry sectors

Project Rationale

Skill based training to women SHGs / unemployed rural youth will help them in managing their livestock and poultry farming activities successfully.

Project Strategy

The knowledge of beneficiaries will be updated with latest scientific farming practices

Project Goals

Empowerment of SHG women and rural youth for income and employment generation

Project Components

- Strengthening of Infrastructure
- Identification of beneficiaries and imparting training

Project Cost and Financing

Financial Requirement for VUTRC, Melmaruvathur (TANUVAS)

(Rs. in lakhs)

Particulars	2008-2009	2009-2010	2010-2011	2011-2012	Total cost
Non- recurring					
Computer, Printer and AV aids	1,00,000	-	-	-	1,00,000
Copier	75,000	-	-	-	75,000
Sub-total	**1,75,000**	**-**	**-**	**-**	**1,75,000**
Recurring					
Allowance @ Rs 200 for 100 beneficiaries	20,000	20,000	20,000	20,000	80,000
Transport and field visit (@ Rs.500/- beneficiary)	50,000	50,000	50,000	50,000	2,00,000
Training manual and other printing materials	1,00,000	1,00,000	1,00,000	1,00,000	4,00,000
Honorarium to resource persons	10,000	10,000	10,000	10,000	40,000

Establishment and maintenance of integrated farming system model unit	2,00,000	50,000	50,000	50,000	3,50,000
Miscellaneous expenses	30,000	30,000	30,000	30,000	1,20,000
Sub-total	**4,10,000**	**2,60,000**	**2,60,000**	**2,60,000**	**11,90,000**
Total	**5,85,000**	**2,60,000**	**2,60,000**	**2,60,000**	**13,65,000**

Implementation Chart of the Project

2008-12 -Infrastructure strengthening, Beneficiary identification and imparting training.

Reporting

1. The Vice-Chancellor, TANUVAS, Madhavarm Milk Colony, Chennai – 51.
2. The Commissioner and Director of Veterinary Services, Department of Animal Husbandry, Chennai – 6

Table. 6.14 Animal Husbandry Sector for the Year 2008-2012

(Rs. in Lakhs)

Sl. No	Project Title	Unit Cost	2008-2009		2009-2010		2010-2011		2011-2012		Grand Total	
			Units	Cost	Units	Cost	Units	Cost	Units	Cost	Total Units	Total Cost
	Cattle & Buffalo											
I	**FEED AND FODDER DEVELOPMENT**											
1	Augmentation of fodder production (Co-3) through SHGs/women entrepreneurs, Rs. 0.235 Lakh/acre, 10 acres / Block /year, 22 blocks, for 4 years, 220 acres /year, 880 acres / 4 years (DAH)	0.235	220	51.70	220	51.70	220	51.70	220	51.70	880	206.80
3	Supply of mineral mixture to dairy cows @ Rs.600/cow/year, 1 kg / cow / month @ Rs.50/kg,12 kg/year, 1300 cows/year, 5,200 cows/years- 4 Blocks (DAH)	0.006	1300	7.80	1300	7.80	1300	7.80	1300	7.80	5200	31.20
4	Supply of hand operated chaff cutters to SHG farmers @ Rs.0.20 Lakh /unit, 50% subsidy, 1 unit / block/year, 22 blocks, for 4 years, 88 units totally, 50 % subsidy (DAH)	0.1	22	2.20	22.00	2.20	22.00	2.20	22	2.20	88	8.80
II	**GENETIC UPGRADATION**											
1	Identification and traceability of breedable bovines @ Rs.20/animal, for 3,07,000 animals (DAH)	0.0002	307000	61.40							307000	61.40
III	**IMPROVEMENT OF LIVESTOCK HEALTH**											
1	Establishment of mobile veterinary clinics @ Rs.5,832 Lakhs/unit, one unit/taluk, 8 taluks, 8 units, (DAH)	5.832	5	29.16							5	29.16

Table. 6.14 contd..

Sl. No	Project Title	Unit Cost	2008-2009		2009-2010		2010-2011		2011-2012		Grand Total	
			Units	Cost	Units	Cost	Units	Cost	Units	Cost	Total Units	Total Cost
2	Institutional Development-Strengthening of veterinary institutions with basic facilities like fencing, bore-wells, water troughs, minor repairs etc. @ Rs.5.0 Lakh /Institution, for 51 units (DAH)	5	51	255.00						0.00	51	255.00
3	Control of parasitic diseases through treatment to enhance vaccine response @ Rs.1/sheep or goat and Rs.3/ calf, 4 times per year, Rs. 14.70 Lakhs/year, for 4 years (DAH)			14.70		14.70		14.70		14.70		58.80
4	Mobile Veterinary diagnostic laboratory (DAH)	12	1	12.00						0.00	1	12.00
IV	**GENETIC UPGRADATION - Sheep & Goats**											
1	Supply of Cross bred bucks (40 nos) and Madras Red rams (40 nos) to women SHG farmers @ Rs.4000/buck or ram (DAH)	0.04	80	3.20						0.00	80	3.20
2	Strengthening of Sheep farm, Chinnasalem Augmenting Fodder production (DAH)			218.51							1	218.51
3	Strengthening of Sheep farm, Chinnasalem Genetic upgradation of livestock (DAH)			115.62							1	115.62

Table. 6.14 contd..

Sl. No	Project Title	Unit Cost	2008-2009		2009-2010		2010-2011		2011-2012		Grand Total	
			Units	Cost	Units	Cost	Units	Cost	Units	Cost	Total Units	Total Cost
V	**OTHERS**											
1	Supply of stall-fed goat units (20+1 unit) to SHGs @ Rs.0.42 Lakhs/unit, one unit/block/year, 22 blocks, 4 years, 80 units (DAH)	0.42	22	9.24	22.00	9.24	22.00	9.24	22	9.24	88	36.96
2	Popularizing technology on backyard poultry farming (9+1 unit) 200 Nos./ block total 440 batches for 4 years @ Rs. 500 / batch (DAH)	0.005	110	0.55	110.00	0.55	110.00	0.55	110	0.55	440	2.20
3	Health care for existing desi birds @ Rs. 1 / bird for 4.25 lakhs brids (DAH)	0.00001	125000	1.25	100000	1.00	100000	1.00	100000	1.00	425000	4.25
	DAH-Total			**782.33**		**87.19**		**87.19**		**87.19**		**1043.90**
1	Programmed breeding indigenous cattle & buffalo to increase conception rate (DDD)	0.007	4000	28.00	4000	28.00	4000	28.00	4000	28.00	16000	112.00
2	Buffalo calf development programme (2000 calves / year) (DDD)	0.148	125	18.50	125	18.50	125	18.50	125	18.50	500	74.00
3	Mobile input units (one per 50 dcs) (DDD)	4.50	12	54.00					0	0.00	12	54.00
4	Establishment of mineral mixture plant (DDD)	20.00	1	20.00					0	0.00	1	20.00
5	Supply of mineral mixture to the milch animals at subsidised cost (50%) @ 18 kg/ year (DDD)	0.005	3000	15.00	3000	15.00	3000	15.00	3000	15.00	12000	60.00
6	Supply of by-pass protein feed to the milch animals (360kgs/ year/animal @ 50% subsidised cost of Rs.9/- per kg.) (DDD)	0.033	600	19.80	600	19.80	600	19.80	600	19.80	2400	79.20

Table. 6.14 contd..

Sl. No	Project Title	Unit Cost	2008-2009		2009-2010		2010-2011		2011-2012		Grand Total	
			Units	Cost	Units	Cost	Units	Cost	Units	Cost	Total Units	Total Cost
7	Milking machines for id farms (DDD)	1.00	12	12.00							12	12.00
8	Portable milking machines for farmers (DDD)	0.18	15	2.70	15	2.70	15	2.70	15	2.70	60	10.80
9	Chaff cutters for IDF villages on community basis (mechanised) (DDD)	0.70	12	8.40							12	8.40
10	Chaff cutters for elite farmers (small type) @Rs.20,000 as 100% grant (DDD)	0.20	4	0.80	2	0.40	2	0.40	2	0.40	10	2.00
11	Bulk milk cooler (DDD)	30.00	1	30.00					0	0.00	1	30.00
12	Walk-in coolers (DDD)	30.00	1	30.00					0	0.00	1	30.00
13	Revival of dormant MPCS (DDD)	1.00	10	10.00	10	10.00	10	10.00	10	10.00	40	40.00
14	Fodder development activities (for production of fodder seed/ slips in dairy or chilling centres & land of DDD) 10 acres (DDD)	2.10	10	21.00					0	0.00	10	21.00
15	Fodder development activities (110 acres in IDF villages (DDD)	0.235	15	3.525	60	14.10	20	4.70	15	3.525	110	25.85
16	Manufacturing facilities for milk khoa (DDD)	0.77	1	0.77	1	0.77					2	1.54
17	Manufacturing facilities for ice cream (DDD)	1.12	1	1.12	1	1.12					2	2.24

Table. 6.14 contd..

Sl. No	Project Title	Unit Cost	2008-2009		2009-2010		2010-2011		2011-2012		Grand Total	
			Units	Cost	Units	Cost	Units	Cost	Units	Cost	Total Units	Total Cost
18	Milk weighing machine for milk producers co-op. societies (DDD)	0.17	80	13.60	80	13.60	80	13.60	72	12.24	312	53.04
19	PC.based automatic milk collection stations to IDF villages milk producers cooperative societies (DDD)	1.75	4	7.00	12	21.00	3	5.25	3	5.25	22	38.50
20	Quality assurance lab strengthening (DDD)	10.00	1	10.00					0	0.00	1	10.00
21	Farmers study tour @ rs.5000/- per farmer (DDD)	0.05	40	2.00	40	2.00	40	2.00	30	1.50	150	7.50
22	Skill development for technical staff (DDD)	0.05	25	1.25	25	1.25	25	1.25	25	1.25	100	5.00
23	Energy management system 5000 litres -1 unit (DDD)	10.00	1	10.00						0.00	1	10.00
24	Orientation training / workshop for milk producers at society level (DDD)	0.20	4	0.80	4	0.80	4	0.80	4	0.80	16	3.20
25	Milk pouch film manufacturing facility (DDD)	820.00	1	410.00	0	410.00					1	820.00
	DDD-TOTAL			**730.265**		**559.04**		**122.00**		**118.965**		**1530.27**
1	Strengthening of VUTRC, TANUVAS Centre at Melmaruvathur with a mobile disease investigation cum training unit @ Rs.10.00 Lakhs/unit, one unit, Van (Rs. 7 Lakhs) , Microscope (0.2 Lakhs), LCD Projector (Rs.2.5 Lakhs) and AV Aids (Rs.0.3 Lakhs) (TANUVAS)	10	1	10.00						0.00	1	10.00
2	Empowerment of SHG women through skill based livestock and poultry training for income generation (TANUVAS)		5	5.85	5	2.60	5	2.60	5	2.60	20	13.65
	TANUVAS - Total			**15.85**		**2.60**		**2.60**		**2.60**		**23.65**
	Grand total			**1528.45**		**648.83**		**211.79**		**208.76**		**2597.82**

6.5 Fisheries Sector

i) Project Goal

- To increase good quality fish Seed and fish production capacity
- To expand fish culture in hitherto unutilised water bodies
- To promote cage rearing of fish seeds
- To develop Infrastructure facilities for marketing and storage in key areas
- To provide fish transport facilities
- To improve the fishing efficiency by providing fishing gears

(ii) Project Rationale

Unpredictable monsoon leads to water scarcity at times. Many water bodies receive water only during north east monsoon. Mismatch of major carp breeding season and water availability in tanks. Lack of proper infrastructure facilities for seed rearing, fish landing and marketing. The average present fish production in long seasonal tanks being 360 kg/ha against its potential of 2000 kgs/ha. Fish culture in natural small water system is being practiced by stock and harvest system and not by scientific culture method. Unstable export price for shrimps. Non-availability of alternate species for shrimp aquaculture. Over fishing pressure for limited inshore coastal resources.

(iii) Project Components and Costs

A) Marine

1. (a) Sea Ranching Programme

To Enhance the Inshore Fishery Wealth of the Sea Ranching of Quality Shrimp Seeds in to the Sea will be Taken up in the District as follows

Total Requirement	:	30 millions seeds
Total cost	:	Rs. 2.10 crores @ Rs. 7.00 lakh per million
Duration	:	3 years
Area of Implementation	:	Villupuram District
Implementing agency	:	Department of Fisheries
Plan of action	:	2008-09 : 10 million ; 2009-10 – 10 million; 2010-11 – 10 million.
Expected output	:	Increase the fish catch while fishermen engaged fishing in the sea

(b) Installation of Artificial reefs

To Attract all the Reef Fishes and also act as Fish Habitat for Many Fishes in Coastal aReas of villupuram District which are as follows

Total Requirement	:	3 units
Total cost	:	Rs. 45 lakh @ Rs. 15 lakh per unit
Duration	:	3 years
Area of Implementation	:	Suitable available areas in Villupuram District
Implementing agency	:	Department of Fisheries
Plan of action	:	2008-09 : 1 unit; 2009-10 – 1 unit; 2010-11 – 1 unit.
Expected output	:	To enhance the reef fish catches in Villupuram district

B) Inland

1. Assistance to Private Fish Seed Rearing / Fish Seed Production with 50 Per cent Subsidy

The fish farmers in Villupuram district are progressive and evincing interest in adopting modern technologies in fish seed production / fish production. The resources can be utilised to expand the inland fisheries activities in the district. The potential can also be tapped to cater to the needs of other districts. Hence, it is proposed to encourage private participation in fish seed production / fish seed rearing by extending subsidy assistance of 50 per cent of the capital cost with a production capacity of 10 million early fry / one million fingerlings. The total cost of one unit will be Rs. 10.00 lakh. The unit cost is given below:

Total Requirement	:	15 units
Total cost	:	Rs. 150 lakh @ Rs. 10 lakh per unit
subsidy	:	50%
Subsidy amount	:	Rs.75.00 lakh
Duration	:	3 years
Area of Implementation	:	Suitable areas available in Villupuram District
Implementing agency	:	Department of Fisheries

Mode of Implementation	:	Back ended subsidy
Plan of action	:	2008-09 : 5 units 2009-10 – 5 units 2010-11 – 5 units

The expected output of the project is about 2.2 million fingerlings within the span of three years can be reared.

2. Repairs to Existing Nurseries to Increase Fish Seed Production

At present, 2 fish seed rearing centres located at Gomukhi and Vidur are functioning in the district. The fish seed rearing centre at Gomukhi can be repaired and put into use for fish seed rearing activities. In this project, it is proposed to repair the existing 180 Sq.M. area at an estimated cost of Rs.2.70 lakh.

Total Cost	:	Rs.2.70 lakh
Total area to be repaired	:	180 Sq.M.
Expected fingerling production	:	1.10 lakh fingerlings

The expected output will be quality fish seeds stocked in reservoir will increase the fish production.

.

3. Creation of Additional Fish Seed Rearing Facility

At Manimuktha Dam and Gomukhi Departmental lands are well suited for establishing fish seed rearing facilities. Under the project, it is proposed to construct a fish seed rearing unit in a total of 1820 Sq.M. area (Gomukhi 820 Sq.M., Manimuktha 1000 Sq.M.) at an estimated cost of Rs.54.60 lakh.

Total Cost	:	Rs.54.60 lakh
Total area to be repaired	:	1820 Sq.M.
Expected fingerling production	:	10.92 lakh fingerlings
Duration	:	1 year
Implementing Agency	:	Department of Fisheries

The expected output of the project can be about 10 million quality fish seeds can be produced in a year and it can be stocked in to the reservoir and this will increase the fish production.

4. Supply of Mopeds Fitted with Ice Box to Retail Fish Vendors (50% subsidy)

The Fish Landing Centres in the inland side are located in remote places. The fish vendors are transporting the fish catches by bicycles which often leads spoilage of fishes. In order to transport the fishes quickly to the retail markets, it is proposed to distribute 100 units of Mopeds fitted with ice box to retail vendors. The unit cost of one Moped fitted with ice box is Rs.30,000/-. It is proposed to distribute Moped with ice box at 50% subsidy.

Unit cost	:	Rs. 15000
Total units proposed	:	50
Total cost	:	Rs.7.5 lakh
Subsidy	:	50%
Subsidy amount	:	Rs.3.75lakh
Beneficiary	:	Rs.3.75.00 lakh
Duration	:	3 Years
Area of Implementation	:	Villupuram District
Implementing Agency	:	Department of fisheries

The expected output of the project is the fish vendors can easily reach the fish sales centres and sell the fish in good rate without any spoilage and public will also get quality fishes.

5. Supply of Fishing Implements (Nets) (50% subsidy)

To improve the fishing efficiency of the fisher folk it is proposed to distribute 100 units of gill nets (20 Kgs. gill net). The fishing implements will be supplied at 50% subsidy to the beneficiaries. The total estimated cost is Rs.20.00 lakh and the subsidy component will be Rs.10.00 lakh as detailed below.

Unit cost	:	Rs. 5000
Total units proposed	:	100
Total cost	:	Rs.5.00 lakh
Subsidy	:	50%
Subsidy amount	:	Rs.2.5 lakh
Beneficiary	:	Rs.2.5 lakh
Duration	:	3 Years
Area of Implementation	:	Villupuram District
Implementing Agency	:	Department of fisheries

The expected output of the project is quantum of fish catch will be increased and thereby enhance the socio economic status of the fishermen.

6. Expansion of fish culture in open water system (50% subsidy)

It is proposed that each farmer will be supplied quality seeds @ 2500 nos./ha (each seed cost Rs.0.50 lakh) for 7500 ha in three years

Unit cost	:	Rs. 1000
Total units proposed	:	500 (7500 ha)
Total cost	:	Rs.9.38 lakh
Subsidy	:	50%
Subsidy amount	:	Rs.4.69 lakh
Beneficiary	:	Rs.4.69 lakh
Duration	:	3 Years
Area of Implementation	:	Villupuram District
Implementing Agency	:	Department of fisheries

The expected output of the project is fish production will be increased in the rural area and poor people can purchase quality fishes.

7. Infrastructure Development in pre harvest for effective conservancy in three reservoirs for increasing the fish production in Villupuram District (FRP Boats with Engine)

Unit cost	:	Rs. 2.50 lakh
Total units proposed	:	3
Total cost	:	Rs.7.50 lakh
Duration	:	Ist Year (One time)
Area of Implementation	:	Villupuram District
Implementing Agency	:	Department of fisheries

This project is facilitate effective conservancy and this will help to prevent illegal fish poaching and will create more fish production in the reservoirs.

8. Capacity building and training to the fish farmers

Unit cost	:	Rs. 0.10 lakh
Total units proposed	:	300
Total cost	:	Rs.30.00 lakh
Duration	:	3 Years
Area of Implementation	:	Villupuram District
Implementing Agency	:	Department of Fisheries

The expected output of the project is training to the fish farmers will create awareness in fish culture and will help the fish farmers to gain the technology in the modern method of fish culture and they can earn more .

9. Establishment of three Fish Landing Centres for three reservoirs existing in this district

Unit cost	:	Rs. 10.00 lakh
Total units proposed	:	3
Total cost	:	Rs.30.00 lakh

Duration	:	1 Year
Area of Implementation	:	Villupuram District
Implementing Agency	:	Department of Fisheries

Construction of Fish Landing Centre will help the public to purchase fish without any hindrance.

10. Establishment of ornamental fish farming 500 Sq.mts. area backyard type of ornamental fish breeding unit to the private entrepreneurs (75 % subsidy)

There is no ornamental fish breeding units available in Villupuram District. Hence to meet out the demand for Aquarium keeping fishes, there are five ornamental fish farming units proposed to install in Villupuram District.

Unit cost	:	Rs. 1.65lakh
Total units proposed	:	5
Total cost	:	Rs.8.25 lakh
Subsidy	:	75%
Subsidy amount	:	Rs.11.00lakh
Beneficiary	:	Rs.6.19lakh
Duration	:	3 Years
Area of Implementation	:	Villupuram District
Implementing Agency	:	Department of fisheries

Ornamental fish production will create awareness to the public to establish the aquarium in their homes, offices and other public places.

11. Installation of modern fish stall at Villupuram

Unit cost	:	Rs. 10.00 lakh
Total units proposed	:	1
Total cost	:	Rs.10.00 lakh
Subsidy	:	100%
Subsidy amount	:	Rs.10.00lakh

Beneficiary	:	Rs.10.00 lakh
Duration	:	1 Year (one time)
Area of Implementation	:	Villupuram District
Implementing Agency	:	TamilNadu Fisheries Development Corporation

Installation of modern fish stall will help the public to get quality fish.

12. Development of Marakkanam Backwater

Consultancy for marking potential water bodies and finding out suitable species like crab and chanos and mullet for stocking and increasing the fish growth and fish catches in Marakkanam backwaters. Pen culture of the above species will be attended.

Unit cost	:	Rs. 25.00 lakh
Total units proposed	:	1
Total cost	:	Rs.25.00 lakh
Duration	:	1 Year (one time)
Area of Implementation	:	Marakkanam in Villupuram District
Implementing Agency	:	Department of Fisheries & TANUVAS

This project will help to identify suitable site for fish culture and this will increase the fishery potentiality in Marakkanam backwaters. The details of the proposed activities and the associated financial outlay are given in Table 6.15. Abstract of cost of fisheries development has been attached in Table 6.16. Total cost of the project under DAP makes out to Rs.537.43 as can be noted from Table.6.15.

Table 6.15 Components and Budget details of Fisheries Development in Villupuram District

(Rs.in lakh)

Sl. No.	Components	Implementing Agency	Unit cost	2008-09		2009-12		Total units	Total cost
				Units	cost	Units	cost		
I	**Marine Fisheries**								
1	(a) Sea ranching programme	Fisheries Department	7.00	10.00	70.00	20.00	140.00	30.00	210.00
2	(b) Installation of Artificial reefs	Fisheries Department	15.00	1.00	15.00	2.00	30.00	3.00	45.00
II	**Inland Fisheries**								
1	50% subsidy assistance to private fish seed rearing / fish seed production	Fisheries Department	5.00	5.00	25.00	10.00	50.00	15.00	75.00
2	Repair to the existing dept. nurseriers to increase fish seed production (180sq.m/unit)	Fisheries Department	2.70	1.00	2.70			1.00	2.70
3	Creation of addition fish seed rearing facilities (1820 sq.m)	Fisheries Department	54.60	1.00	54.60			1.00	54.60
4	Supply of moped fitted with ice box to retail fish vendors (50% subsidy)	Fisheries Department	0.15	15.00	2.25	35.00	5.25	50.00	7.50
5	Supply of fishing implement (net) (50%subsidy)	Fisheries Department	0.05	30.00	1.50	70.00	3.50	100.00	5.00
6	Expansion of fishculture in open water system (50% subsidy) 500 tanks 750ha)	Fisheries Department	0.01	2500ha	15.63	5000ha	31.25	7500ha	46.88
7	Infrastructure development in pre harvest for effective conservancy in reservoir to increase fish production	Fisheries Department	2.50	1.00	2.50	2.00	5.00	3.00	7.50
8	Establishment of three landing fish centre for three reservoir existing in Villupuram district	Fisheries Department	10.00	1.00	10.00	2.00	20.00	3.00	30.00
9	Establishment of ornamental fish farming 500 sq.m area backyard type of ornamental fish breeding unit (75% subsidy)	Fisheries Department	1.65	2.00	3.30	3.00	4.95	5.00	8.25
10	Installation of modern fish stall at Villupuram	TNFDC	10.00	1.00	10.00			1.00	10.00
	Fisheries Total				**212.48**		**289.95**		**502.43**
1	Development of Marakkanam backwater	TANUVAS	25.00	1.00	25.00			1.00	25.00
2	Capacity building and training to the fish farmers	TANUVAS	0.10	30.00	3.00	70.00	7.00	100.00	10.00
	TANUVAS - Total				**28.00**		**7.00**		**35.00**
	Grand Total				**240.48**		**296.95**		**537.43**

Source : Office of the Department of Animal Husbandry, Villupuram

Table 6.16 Abstract of the Fisheries Department

(Rs in lakhs)

S.No	Components	2008-09	2009-010	2010-11	2011-12	Total
1.	Marine Fisheries	85.00	170.00			255.00
2.	Inland fisheries	127.48	119.95			247.43
3.	TANUVAS	28.00	7.00			35.00
	Total	240.48	296.95			537.43

Source : Office of the Department of Animal Husbandry, Villupuram

In overall, the budget outlay required for fisheries development is Rs.537.42 lakhs

6.6 Agricultural Engineering Sector

The details of the Projects proposed under Stream I and Stream II are furnished below.

Project Proposals under Stream - I

Project I

(i) Project Title: Agricultural Mechanisation Programme for Farmers' Associations.

(ii) Project Rationale

The farmers, particularly the small and marginal find difficulty in getting the machineries and equipments on reasonable hire charges to carry out their farm operations. Therefore, group action is aimed at in this project through farmers associations.

(iii) Project Goal

To provide machine labour to the farmers especially the small and marginal, at affordable hire charges.

(iv) Project Components

Type of machinery/implements proposed for distribution to Farmers Associations during XI plan period are as follows.

1. Combine Harvester (Chain type)
2. Combine Harvester (Tyre Type - Tractor operated)
3. Power Tiller (with Rotavator)
4. Rotavators for tractors
5. Post Hole Digger (tractor operated)
6. Seed Drill for Maize & Ground nut
7. Maize and Millet dehusker
8. Paddy transplanter
9. Paddy thrasher
10. Paddy reaper
11. Cono weeder
12. Animal Drawn Puddler
13. Animal Drawn Wooden leveller
14. Chaff cutter for Oil palm.

Eligibility: Farmers' Associations (FA) registered under Societies Act/Water Users' Associations (WUA) registered under Societies Act or TNFMIS Act (Tamil Nadu Farmers' Management of Irrigation Systems Act) are basically eligible under this Project. Two or more number of Associations will form a cluster for a particular area / locality. A Memorandum of Understanding (M o U) will be signed by the member Associations among themselves in terms sharing of services, formation of an executive committee for day-to-day operations, hiring methods, maintenance of machinery, selection of Men SHGs' for operating the machinery and things that are otherwise necessary for smooth functioning etc., Such Association clusters alone are eligible for assistance under this project. For every block, one or more clusters will be selected based on certain indicators such as area under a particular crop, no. of small, marginal and SC/ST farmers , labour force availability, Men SHGs' availability, past performance of the Association if already existing etc., or as per norms fixed by the Government from time to time.

Registration of Machinery: Machinery will be registered wherever necessary in the name of the Association cluster consisting of Associations registered under Societies Act/TNFMIS Act.

Subsidy Pattern: As the implements and machinery are going to be supplied only to the association clusters consisting of Farmers' Associations registered under Societies Act/Water Users' Associations registered under Societies Act or TNFMIS act, 100per cent subsidy will be given.

Hire Charges: The main idea of supplying advanced user friendly implements to an Association Cluster is to ensure that the small or marginal farmers get a machine or implement for agricultural purpose on hire at a very reasonable rate as and when required. Therefore, hire charges should be fixed only on non- profit basis. Freedom may be given to Association clusters to fix the hire charges, but never above the market rates, at any circumstances.

Preference should be given for agricultural purpose only. Only during lean seasons and when there is no demand absolutely for agricultural purpose, the machinery may be hired out for other purposes. The machinery should be hired out on "FIRST COME FIRST SERVE BASIS". Under extra ordinary circumstances, this may be deviated with valid reasons and withstanding the provisions of MoU. The responsibility of collection of hire charges also vests with the Association Cluster. Any credit /tie up with approved financial institutions may be decided by the concerned Associations. But at any cost, no amount will be allotted by the government or any other agencies for maintenance.

The hire charges must be deposited in to a bank account. The bank account must be jointly operated as prescribed in the MoU. As far as possible, all main transactions must be through bank only. Proper receipts must be given for the hirers collected and

other vouchers for expenditure must be maintained for audit. A person may be appointed exclusively for maintaining accounts as prescribed in the MoU with the own funds of the Association Clusters.

Men SHGs': Self Help Groups preferably Men SHGs' may be involved in the day to day activities. If SHGs' are not available or existing SHG's are not interested, exclusive Men SHGs' may be formed for day -to -day operations. Members of Men SHG groups may be trained and their services may be utilized for the operation and maintenance of machinery. By this, a group of people in a particular locality will get employment and services to farmers will be ensured.

Maintenance: The machinery will be maintained by the Association Cluster consisting of Farmers' Associations/Water Users' Associations from the hire charges earned and deposited in the bank. On the maintenance side for repairs beyond Rs.5000/- at a time and engine repairs/major repairs, technical feasibility certificate should be obtained from AED. AED should expedite requests of Association Clusters on "first come first serve basis", within two days from the date of receipt of a written request. Ratifications on unavoidable circumstances may also be permitted and no amount will be allotted to the Association Clusters under any circumstances by the Government.

Audit and Accounting: As AED has necessary expertise in custom hiring of machinery over four decades, the Association Cluster should produce accounts for every quarter to AED for perusal and comments. This mechanism will help to know about the functioning of the system and condition of the machineries supplied. However the accounts are subject to audit by a Chartered Accountant appointed or any other agency/department designated by the Government.

Purchase Procedure: As per Tamil Nadu Transparencies in Tenders Act 1997 and as decided by the Government.

Specifications: Tamil Nadu Agricultural University will finalize the specifications in consultation with AED before inviting tenders for each District.

Evaluation: Concurrent evaluation at randomly selected places may be taken up by TNAU in association with AED. Post - evaluation may be taken up by an agency designated by the Government of Tamil Nadu.

Additional Allotment: The Associations already availing assistance under the scheme may be required to contribute 10 per cent of the cost of machinery /implement or an amount as fixed by Government from time – to - time if an additional machinery is supplied to them.

(v) Project Cost: An amount of Rs.1028.80 lakhs has been phased out for four years, as could be seen from Table 6.17 .Depending on the reception and evaluation any, changes in components/pattern of assistance may be incorporated.

Project -II

(i) Project Title : Creation of Farm Ponds For Water Harvesting and Fish Culture On Private Lands/

(ii) Project Rationale

Villupuram District receives the major portion (about 50 per cent) of rainfall only during North East Monsoon i.e with in three months. Rainy days in a year normally comes only to 45 days. Erratic pattern and ill distribution are the characteristic features of the rainfall received in the district. Realizing the need for water harvesting, many programmes of the government are being implemented in this district. On the other hand there are only limited avenues for small / marginal farmers, i.e., farmers have to depend only on the produce from their lands. If there is poor yield due to vagaries of monsoon or for any reasons, farmers have limited options for earning. It thus becomes necessary to provide the small and marginal farmers some other way of earnings with the available resource i.e. land.

Keeping this view in mind and with the experience gained so far, FARM PONDS preferably of size 30 m X 28.50 m X 1.5 m (around 40000cuft. capacity) may be created at suitable locations for water harvesting. Water harvested will be used for supplemental/life irrigation in dry tracts. In areas where water could be available for more than 100 days, fish culture could be carried out. Fruit trees may be planted wherever possible around the area. This will fetch additional revenue to small /marginal farmers.

(iii) Project Goal

To enable the small and marginal farmers to earn more and assured farm income.

(iv) Project Components

Based on the feedback received from Agriculture Department, AED and Fisheries Department officials it may be possible to construct 3000 farm ponds in five years. The unit cost for construction of farm pond may be fixed as Rs.40,000/-.

Selection of Sites: Selection of sites will be decided by joint inspection by a team consisting of Agriculture Department, AED and Fisheries Department officials.

Subsidy Pattern: Considering the financial status of a small and marginal farmer 100 per cent subsidy may be given.

(iv) Project Cost: An outlay of Rs.1080 lakhs for four years has been proposed. Depending on the reception and evaluation any changes in components/pattern of assistance may be incorporated. Fisheries and Horticulture Department component will be provided by the respective departments.

Project –III

(i) Project Title: Installation of Drip Irrigation System For Oil Palm

(ii) Project Rationale

Oil Palm is considered to be an alternative commercial oilseed crop. At least for 25 years the income to the farmers is guaranteed. There is also buy-back facility by Cauvery Oil Palm ltd. Perambalur for this crop. As this is a new crop for this district, famers expect higher incentives. Based on the deliberations had with the Agriculture Department officials, it could be assessed that more farmers will come forward for diversification with this crop, if higher incentives are introduced. Drip Irrigation system installation helps not only in saving water and labour but also helps in improving quality and productivity. DIS Installation for Oil palm at a higher subsidy is proposed in this project.

(iii) Project Goal

Ro provide alternative employment opportunities through crop diversification so as to earn more income by the farmers**.**

(iv) Project Components

Selection of sites: Sites proposed by Agriculture Department will be considered for the installation of DIS system.

Subsidy pattern: Generally Oil Palm are planted at 8M X 8 M spacing. 143 plants are planted on one hectare. Taking the unit cost fixed for a 8 M X 8 M spacing crop, the unit cost may be fixed at Rs.19,900/- and a subsidy of 90 per cent subject to a ceiling of Rs.17910/- may be given.

(iv) Project Cost

Financial provision of Rs 35.84lakhs has been phased out for four years, as indicated in Table.6.17 Depending on the reception and evaluation, any changes in components/pattern of assistance may be incorporated. Other components for this crop will be provided by the agricultural department.

Project based Proposals under Stream - II

Project - I

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

Agricultural growth in the recent years go against the general economic trend. Among the many reasons attributed for this deceleration in agricultural growth, main reason could be non-availability of labour and under utilization of machinery/implements in various areas of agricultural sector. Realising the need of Agricultural mechanisation, Government of India have allotted funds for popularisation of Agricultural mechanisation through conventional machinery/equipments under a Centrally Sponsored Scheme. Under this Scheme subsidy is allowed at the rate of 25targets subject to individual ceilings fixed to conventional machinery / implements / equipments which are popular to certain extent among farmers. National Agricultural Development Programme provides scope for dovetailing funds for the existing Schemes under Stream II. As there is high demand for certain implements such as Rotavators, if funds are allotted sufficiently to fill the existing gaps it would be a boon to small/marginal farmers who are actually in need of assistance. Considering the prevailing demand in Villupuram District and keeping the interest of Small/marginal farmers who have small land holdings dovetailing of existing Centrally Sponsored Scheme is proposed for certain agricultural machinery/implements under NADP with subsidy rates upto 25 per cent.

Villupuram District is the largest District in Tamil Nadu. There are 8 Taluks and 22 Panchayat Unions in this District. This District is relatively backward in Education which reflects also considerably in Agriculture. Villupuram District is one of the six districts in which TNREGS was first introduced. Such employment generation Schemes and Govt. policies have opened new areas of employment for agricultural labourers in the rural areas. Migration of Agricultural labourers to nearest cities for construction works and other works is another prevailing problem in this area. As a result there is shortage and non availability of labour during needy days of farm operations i.e., during

transplanting, weeding, harvesting etc., Simultaneous Agricultural operations in a particular area also could not be possible. As a result the advantages due to a Season could not be ensured particularly by a small/marginal farmer.

At present there is a Centrally Sponsored Scheme which target mainly individual farmers, particularly small and marginal farmers. Under this Scheme 25 per cent subsidy is allowed subject to specified ceiling for Tractors, Power Tillers and other specified implements. Rs.84.371 lakhs was the final allotment for the year 2007-2008. Targets have been fixed implement wise and due weightage has been given to each implement. But there is demand for Power Tillers and Rotavators in particular. But with the allotment made it was not possible to extend assistance to all needy farmers. As such demand of the farmers could not be met immediately. A farmer has to wait for some time if he wants assistance from the Government. Implements / machinery envied by a small / marginal farmer may not be available to a farmer's use immediately.

Additional allotment to an existing Scheme will solve this problem to a considerable extent.

(i) Project Rationale

It is needless to say that the only viable alternative before all (viz., farmers, scientists, engineers and others who associated directly or indirectly with agriculture) is Agricultural Mechanisation for Agricultural Operations. Though Agricultural Mechanisation has been the thrust area and have intervened to popularize certain machinery/implements, the present allotment under the existing Centrally Sponsored Scheme is not sufficient to meet the demand of all farmers particularly small/marginal farmers. A farmer has to wait for a considerable time if he wants assistance from Government. Such time delays reduce the interest of a small/marginal farmer. As there is provision to dovetail existing schemes with NADP, additional allotment for the existing Scheme could fulfill the aspirations of needy farmers.

Villupuram District is relatively nearer to Chennai and Bangalore and there are no big industries in this area. As a result migration of agricultural labourers has been continuing for a quite long period. Another interesting fact is area under Sugarcane and Groundnut is more in this District. Ground Water Exploitation is also on the higher side. However productivity for many crops does not match with national average productivity. Resources are in a way remain underutilized. One way to overcome this problem is increasing the machinery strength in required areas which could not be possible only if individual farmers are made to own machinery. Farmers can also hire out machinery to their relatives and friends at a cheaper rate matching Government Department rates.

As a vital supplement, agricultural mechanisation will ensure timely agricultural operations. As a result productivity could be increased. Increase in Productivity results in more income per unit area. Any phenomenal increase in the per capita income of a farmer will help in Agricultural growth at State level, ultimately at a national level. Agricultural Mechanisation help farmers in taking up timely Agricultural operations.

(ii)Project Strategy

AED implements the existing Centrally Sponsored Scheme on Agricultural Mechanisation on "ACTION PLAN MODE" only. Therefore the same strategy will be followed.

Implements / Machinery already approved under the existing Scheme are also eligible under this Scheme naturally. SC/ST farmers, Women farmers and Small/marginal farmers will be preferred. Block-wise targets will be fixed based on actual demand and in consultation with field level officers. For four years i.e. 2007-2008 to 2011-12 year wise requirement have been worked out. All the 22 blocks will be given due weightage.

(iii) Project Goals

- To achieve total agricultural mechanization, funds should not be constraint.
- To make available all eligible User friendly implements/machinery to needy farmers immediately.
- To make Small/Marginal farmers self reliant by providing assistance at the needy time.
- As agricultural mechanisation is a vital supplement, agricultural growth at desired level (4 per cent) could be possible.

(iv) Project Components

Under this intervention, popularisation of agricultural mechanisation through conventional machinery / equipments as per the existing guidelines of Centrally Sponsored Scheme with subsidy pattern as proposed below.

Out of total cost 25 per cent subsidy may be allowed to machinery/implements subject specific ceiling fixed for each implement. The balance amount will be met by the farmer as his/her contribution.

Type of Machinery/Implements Proposed

- Power Tiller with rotavator
- Rotavator
- Possthole Digger
- Cultivator
- Off-set Disc Harrow
- Disc Plough
- Power Thrasher
- Maize Husker cum Sheller

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

(v) Project Cost

The budget outlay for this project is Rs.548.40 as given in Table, 6.17.

Project II

(i) Project Title: Soil Conservation Works

Agricultural growth in the recent years go against the general economic trend. Among the many reasons attributed for this deceleration in agricultural growth, soil erosion is one important reason in Villupuram District. Due to unchecked soil erosion fertile top soil is carried away. Loss of top soil leads to poor productivity. As a result area under cultivation has been reduced in certain pockets of this District. Government has at the right time intervened and Government of Tamil Nadu has been implementing Soil Conservation Scheme since 1960. But Soil conservation is a continuous process, i.e., our interest must to be protect all susceptible lands from degradation for better productivity. Though Soil Conservation works have been taken up on demonstration mode since 1960s' still certain pockets are susceptible to Soil erosion. Compartmental bunding and Land shaping are two proven Soil conservation measures suitable for this area.

National Agricultural Development Programme provides scope for dovetailing funds for the existing Schemes under Stream II. As land shaping and Compartmental bunding prove to more effective, if funds are allotted sufficiently to fill the existing gaps financially it would be a boon to Agriculture in terms of Soil conservation and water retention. Considering the scope for Soil Conservation works and feed back from field level officers dovetailing of existing State Plan Scheme (Soil Conservation Scheme) is proposed for carrying out Soil Conservation works under NADP with Government contribution upto 90 per cent.

Villupuram District is the largest District in Tamil Nadu. There are 8 Taluks and 22 Panchayat Unions in this District. The average rain fall ranges around 900-1000 mm. Soil conservation measures were taken up in almost all vulnerable places of this District

on “Demonstration mode”. But in many places Soil Conservation measures have not been replicated by farmers. Also high intensity storm is repeatedly witnessed in many areas. This has led to loss of top soil in many places. This is a clear indication that farmers still need motivation and demonstration. Evaluation studies have proved that water stored in Percolation Ponds can recharge wells/borewells down below it to a radius of about 900m. In other words a Percolation pond can help in recharging ground water for about 900m radius. AED is the pioneer in constructing Percolation Ponds from 1975 onwards.

Through various watershed programmes of Government of India and Government of Tamil Nadu Soil conservation measures are being taken up regularly, still we need funds to fill existing gaps in existing Schemes. Soil conservation and in-situ moisture conservation could be possible only through proven Soil Conservation measures. Therefore in needy areas at least important Soil Conservation measures should be demonstrated.

Though funds are allotted under State Plan Scheme, still additional funds are required to undertake Soil Conservation works particularly in private lands. Therefore additional allotment is required for this Scheme. If additional allotment is made under NADP small/marginal farmers will get assistance in larger number.

(ii) Project Rationale

Soil is a vital input for Agriculture. Fertile top soil loss due to erosion affects productivity adversely. Government of Tamil Nadu has been implementing Soil conservation scheme since 1960s. Though Government have intervened long back also at the right time, it was possible to take all measures on Demonstration mode only. As life of a Soil conservation measure such as bunding is estimated to be only around ten years it could not be possible to treat all the areas in the State. As such Demonstration mode alone could be followed. However Demonstration of Soil Conservation measures must be a continuous one. Land shaping is adjudged as the best form of Soil Conservation as the lands is nearly leveled. Milder slope within a field affects movement of soil particles.

Also water harvested in a field is retained in itself. In the same way Compartmental bunding helps to store water with in a field itself. Demonstration in one farmer's field will be easily accepted by other farmers. The benefits of Soil Conservation could not be quantified fully as the benefits are indirect in nature. By conserving precious top soil water is stored in situ which will influence Groundwater table Therefore Demonstration of Soil Conservation measures are important in the interest of Nation as a whole. Production may increase because of conservation of precious top soil. Production increase will fetch additional revenue to a small/marginal farmer besides contributing to Agricultural growth.

(iii) Project Strategy

AED has been implementing Soil Conservation works since 1960. AED has been implementing Soil Conservation works on demonstration mode since 1980s'. Soil Conservation measures could be taken up only on "Demonstration mode' as it involves time AED being a Government Department, has the prime role of execution of Soil Conservation works. Therefore it would be appropriate to take up this Scheme on "DEMONSTRATION MODE**.**

Suitable areas will be identified in consultation with field level officers of AED for execution of Soil Conservation measures such as Land shaping and Compartmental bunding. Field level feed back will be used to identify willing farmers. For four years i.e. 2007-2008 to 2011-12 year wise requirement have been worked out..Coastal area will be given due weightage.

.

(iv) Project Goals

- To prevent soil loss through Soil conservation.
- To ensure in situ moisture conservation.
- To avoid siltation of water storage structures down below.
- As soil is an important input, agricultural growth at desired level(4 per cent) could be possible.

(v) Project Components

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

1. Compartmental bunding
2. Percolation ponds

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

(vi) Project Costs

The project cost works out to Rs. 238 lakhs as could be visualized from Table. 6.17.

Project III

(i) Project Title: Run Off Control Structures

Agricultural growth in the recent years go against the general economic trend. Among the many reasons attributed for this deceleration in agricultural growth, water scarcity is the prime reason in certain areas. As a result area under cultivation has been reduced in certain pockets of this District. Government have at the right time intervened and Water Harvesting structures like Percolation Ponds have already been constructed in almost all the blocks Villupuram District. But water harvesting is a continuous process i.e. Our endeavor must to be harvest as much water as possible within a watershed and also to maintain/upscale the water harvesting structures already constructed in a locality. Realising this long back, Government of Tamil Nadu has been implementing “Soil Conservation Scheme” since 1960. In the recent days the main thrust is on “Water harvesting”.

National Agricultural Development Programme provides scope for dovetailing funds for the existing Schemes under Stream II. As Water harvesting has to be promoted at field level more effectively, if funds are allotted sufficiently to fill the existing gaps financially it would be a boon to Agriculture in terms of Water availability. Considering the scope for the construction of water harvesting structures and feed back from dovetailing of existing State Plan Scheme (Soil Conservation Scheme) is proposed for construction of certain water harvesting structures under NADP with Government contribution upto 100 per cent.

Villupuram District is the largest District in Tamil Nadu. There are 8 Taluks and 22 Panchayat Unions in this District. The average rain fall ranges around 900-1000 mm. There is ample scope for harvesting rainwater in this District. Checkdams, are predominant type of water harvesting structures constructed in this District. Soil erosion control and water harvesting are concurrently achieved by construction of these structures. Efficacy of these structures have been proved beyond doubt through many studies. But water harvesting is a day to day activity and more no. of structures has to be constructed wherever possible. Community lands are generally given preference under the existing State Plan Scheme. Now assistance is extended to private farmers who are willing to construct Water harvesting structures like farm ponds in private lands. Though funds are allotted under State Plan Scheme, still additional funds are required to undertake works simultaneously as well to undertake works in private lands. Therefore additional allotment is required for this Scheme. If additional allotment is made under NADP small/marginal farmers will get assistance in larger number.

(ii) Project Rationale

Tamil Nadu is a water starved state. Community lands have been utilized for the construction of Water harvesting Structures like Percolation Ponds in almost all the places. Still there is scope for construction of Water harvesting structures like Checkdams in community lands. These structures are exclusively constructed to store runoff water for recharging ground water. Also a small/marginal farmer will get additional income

through Fish culture. Needless to say, managing the available water resources is very much essential in the present context. A viable solution for augmenting groundwater is construction of new Water harvesting structures. Additional water harvested in a micro watershed can be recycled for all irrigation uses. Area under cultivation can be stabilized. Production may increase because of water availability. Production increase will fetch additional revenue to a small/marginal farmer besides contributing to Agricultural growth.

(iii)Project Strategy

AED implements the existing State Plan Scheme on "Soil Conservation" "ACTION PLAN MODE "only. Though farm ponds construction in private lands could be considered on demonstration mode, small/marginal farmers can not replicate for want of initial investment. Only for this reason additional allotment is required under NADP. Therefore it would be appropriate to take up this work under "ACTION PLAN MODE ". AED proposes to take up Construction of Checkdams and in suitable locations identified by field level officers and in willing farmers' fields. For five years i.e. 2007-2008 to 2011-12 year wise requirement have been worked out. All the 22 blocks will be given due weightage. .

(iv) Project Goals

- To harvest rainwater as much as possible with in a Water shed.
- To ensure water availability with in a watershed without affecting the existing chain.
- Ground water recharge will be put to maximum level thereby wells in the influence zone will be benefited**.**
- As water is an important input, agricultural growth at desired level(4 per cent) could be possible.

(v) Project Components

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

- Checkdam-Minor
- Checkdam-Medium
- Checkdam-Major

All community works will be executed with 100 per cent Government assistance. Farm pond constructed in individual fields will be carried out with 90 per cent Government assistance. The balance 10 per cent amount will be met by the farmer as his/her contribution.

Educating, motivating and training of Watershed community in terms of maintenance will also be taken up.

(vi) Project Cost

The budget outlay is Rs.347 lakhs for the whole plan period as could be evidenced from the Table 6.17.

Project - IV

(i)Project Title : Water Management Works/Improvement of Conveyance Efficiency

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

National Agricultural Development Programme provides scope for dovetailing funds for the existing Schemes under Stream II. As better conveyance and better

recycling are necessary, if funds are allotted sufficiently to fill the existing gaps financially it would be a boon to Agriculture in terms of Water availability. Considering the scope for dovetailing of existing State Plan Scheme (Soil Conservation Scheme) laying of PVC pipes and construction of Ground level reservoirs are proposed under NADP with Government assistance upto 90 per cent.

Villupuram district is the largest District in Tamil Nadu. There are 8 taluks and 22 Panchayat Unions in this District. The average rain fall ranges around 900-1000 mm. There are fragmented landholdings. In dry tracts water availability is confined to a particular area. Water being conveyed through pipelines even for about 1-2 km is a common sight in this District. But this is affordable only by big farmers. Water harvesting is a day to day activity but recycling of harvested water at critical stages is equally important. Ground level reservoirs will be highly useful for such prolonged recycling. .Small and marginal farmers could not afford to high investments. Storage of water for prolonged period so as to use water in critical stages and better conveyance will ensure crop production. Farmers expect Government assistance to adopt PVC pipe laying and construction of Ground level reservoirs.

Though funds are allotted under State Plan Scheme , still additional funds are required to undertake such works in large number also to all needy small/marginal farmers. Therefore additional allotment is required for this Scheme. If additional allotment is made under NADP small/marginal farmers will get assistance in larger number.

(i) Project Rationale

Tamil Nadu is a water starved state. Government attach prime importance for water harvesting. Programmes are being implemented to ensure Water harvesting at every field level. But water harvested must be recycled to the right place. Recycling involves two phases viz,, prolonged storage for use at the required time and conveyance. Prolonged storage of water is possible to a greater extent through Ground level Water

Reservoirs. Better conveyance is possible only by a PVC pipe line. By encouraging both the activities, a small/marginal farmer will be able to irrigate his/her field at the critical stage. The very purpose of Water harvesting thus can be achieved. Ground level reservoir also meets other water requirements at field level. Water can be recycled for cattle use as well as domestic use at field level .Also a small/marginal farmer will get additional income through Fish culture. Thus the concept of 'Integrated Agriculture' could also be achieved in a farmer's land by way of construction of Ground level reservoir. Needless to say, managing the available water resources is very much essential in the present context. "Water saved is water stored". Additional water harvested in a micro watershed can be recycled for all irrigation uses. Area under cultivation can be stabilized. Production may increase because of water availability. Production increase will fetch additional revenue to a small/marginal farmer besides contributing to Agricultural growth.

(ii) Project Strategy

AED implements the existing State Plan Scheme for these works on "ACTION PLAN MODE "only. Small/marginal farmers can not replicate for want of initial investment. Only for this reason additional allotment is required under NADP. Therefore it would be appropriate to take up this work under "ACTION PLAN MODE".

AED proposes to take up these works identified by field level officers and in willing farmers' fields..For four years i.e. 2007-2008 to 2011-12 year wise requirement have been worked out. All the 22 blocks will be given due weightage.

(iii) Project Goals

- To recycle the harvested rainwater judiciously.
- To ensure water availability even during critical stages of irrigation.
- As water is an important input, agricultural growth at desired level (4 per cent) could be possible.

(iv) Project Components

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

- PVC Pipe laying ground level reservoir

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

(v) Project Costs

In sum, the detailed budget allocations for the above said interventions are given in Table 6.17.

Table 6.17 Project Based Proposals for the Agricultural Engineering Department

Department: Agricultural Engineering

Sl. No	Type of Machinery and Implements	Pro-posed subsidy pattern	Max. eligible subsidy Rs. In lakhs	2008-2009			2009-2010			2010-2011			2011-2012		
				No. of units	Cost/ unit	Total cost	No. of units	Cost/ unit	Total cost	No. of units	Cost/ unit	Total cost	No. of units	Cost/ unit	Total cost
Project - I															
	A. MACHINERY														
1	Combine Harvester (Chain type)	100%	17.00	2	17.00	34.00	..	..		..	..		..	..	
2	Combine Harvester (Tyre Type - Tractor operated)		10.00	4	10.00	40.00	3	10.00	30.00	3	10.00	30.00	3	10.00	30.00
3	Power Tiller (with Rotavator)		1.20	40	1.20	48.00	40	1.20	48.00	40	1.20	48.00	40	1.20	48.00
Total				46		122.00	43		78.00	43		78.00	43		78.00
	B. IMPLEMENTS														
1	Rotavator for tractors	100%	0.90	20	0.90	18.00	20	0.90	18.00	20	0.90	18.00	20	0.90	18.00
2	Post Hole Digger		0.90	10	0.90	9.00	10	0.90	9.00	10	0.90	9.00	10	0.90	9.00
3	Seed Drill for Maize & Ground nut	100%	0.35	20	0.35	7.00	20	0.35	7.00	20	0.35	7.00	20	0.35	7.00
4	Maize and Millet thresher		2.00	20	2.00	40.00	20	2.00	40.00	20	2.00	40.00	20	2.00	40.00
5	Paddy transplanter		1.25	20	1.25	25.00	20	1.25	25.00	20	1.25	25.00	20	1.25	25.00
6	Paddy thrasher		2.00	20	2.00	40.00	20	2.00	40.00	20	2.00	40.00	20	2.00	40.00
7	Paddy reaper		0.80	10	0.80	8.00	10	0.80	8.00	10	0.80	8.00	10	0.80	8.00
8	Cono weeder		0.010	1000	0.01	10.00	1000	0.01	10.00	1000	0.01	10.00	1000	0.01	10.00

Table 6.17 contd…

Department: Agricultural Engineering

Sl. No	Type of Machinery and Implements	Pro-posed subsidy pattern	Max. eligible subsidy	2008-2009			2009-2010			2010-2011			2011-2012		
				No. of units	Cost/ unit	Total cost	No. of units	Cost/ unit	Total cost	No. of units	Cost/ unit	Total cost	No. of units	Cost/ unit	Total cost
9	Animal Drawn Puddler		0.0060	1000	0.0060	6.00	1000	0.0060	6.00	1000	0.0060	6.00	1000	0.0060	6.00
10	Animal Drawn Wooden leveller		0.0050	400	0.0050	2.00	400	0.0050	2.00	400	0.0050	2.00	400	0.0050	2.00
11	Chaff cutter for Oilpalm		0.40	8	0.40	3.20	8	0.40	3.20	8	0.40	3.20	8	0.40	3.20
Total				**2528**		**168.20**	**2528**		**168.20**	**2528**		**168.20**	**2528**		**168.20**
Grand Total for Project I				**2574**		**290.20**	**2571**		**246.20**	**2571**		**246.20**	**2571**		**246.20**
PROJECT II															
1	Creation of Farm Ponds	100%	0.40	500	0.40	200.00	600	0.40	240.00	700	0.40	280.00	900	0.40	360.00
PROJECT III															
1	DIS for Oil Palm	90%	0.1791	50	0.18	8.96	50	0.18	8.96	50	0.18	8.96	50	0.18	8.96

Table 6.17 contd…

Department: Agricultural Engineering

Sl. No	Type of Machinery and Implements	Pro-posed subsidy pattern	Max. eligible subsidy Rs. In lakhs	2008-2009			2009-2010			2010-2011			2011-2012		
				No. of units	Cost/ unit	Total cost	No. of units	Cost/ unit	Total cost	No. of units	Cost/ unit	Total cost	No. of units	Cost/ unit	Total cost
Project Based Proposals under Stream - I Total				**3124**		**499.16**	**3221**		**495.16**	**3321**		**535.16**	**3521**		**615.155**
Project Based Proposals Under Stream II (For Five Years From 2007-2008 To 2011-12															
Agrl.Mechanisation -Machinery															
1	Power Tiller (with Rotavator)	25%	0.30	220	0.30	66.00	220	0.30	66.00	220	0.30	66.00	225	0.30	67.50
Ii. Implements															
a	Rotavator	25%	0.20	300	0.20	60.00	300	0.20	60.00	300	0.20	60.00	280	0.20	56.00
b	Posthole Digger	25%	0.10	20	0.10	2.00	20	0.10	2.00	20	0.10	2.00	25	0.10	2.50
c	Cultivator	25%	0.10	20	0.10	2.00	20	0.10	2.00	20	0.10	2.00	20	0.10	2.00
d	Disc Plough	25%	0.10	30	0.10	3.00	30	0.10	3.00	30	0.10	3.00	30	0.10	3.00
e	Power thresher	25%	0.10	4	0.10	0.40	4	0.10	0.40	4	0.10	0.40	4	0.10	0.40
f	Maize husker cum sheller	25%	0.50	6	0.50	3.00	6	0.50	3.00	6	0.50	3.00	6	0.50	3.00
g	Offset disc harrow	25%	0.10	12	0.10	1.20	12	0.10	1.20	12	0.10	1.20	12	0.10	1.20
	Total					**71.60**			**71.60**			**71.60**			**68.10**

Table 6.17 contd…

Department: Agricultural Engineering

Sl. No	Type of Machinery and Implements	Pro-posed subsidy pattern	Max. eligible subsidy Rs. In lakhs	2008-2009			2009-2010			2010-2011			2011-2012		
				No. of units	Cost/ unit	Total cost	No. of units	Cost/ unit	Total cost	No. of units	Cost/ unit	Total cost	No. of units	Cost/ unit	Total cost
iii. Soil and Water conservation works															
a	Compartmental bunding (ha)	90%	0.025	700	0.025	17.50	700	0.025	17.50	700	0.025	17.50	700	0.025	17.50
b	Percolation Ponds	90%	3.000	14	3.000	42.00	14	3.000	42.00	14	3.000	42.00	14	3.000	42.00
	Total					**59.50**			**59.50**			**59.50**			**59.50**
Run off control structures															
c	Major Checkdam	90%	1.000	50	1.000	50.00	50	1.000	50.00	50	1.000	50.00	64	1.000	64.00
d	Medium Checkdam	90%	0.500	60	0.500	30.00	60	0.500	30.00	60	0.500	30.00	55	0.500	27.50
e	Minor Checkdam	90%	0.250	15	0.250	3.75	15	0.250	3.75	15	0.250	3.75	17	0.250	4.25
	Total					**83.75**			**83.75**			**83.75**			**95.75**
Improvement of conveyance efficiency															
a	Groundlevel collection tanks	90%	0.750	50	0.750	37.50	50	0.750	37.50	50	0.750	37.50	50	0.750	37.50
b	PVC conveyance (Ha)	50%	0.150	600	0.150	90.00	600	0.150	90.00	600	0.150	90.00	600	0.150	90.00
	Total					**127.50**			**127.50**			**127.50**			**127.50**

Table 6.17 contd…

Department: Agricultural Engineering

Sl. No	Type of Machinery and Implements	Pro-posed subsidy pattern	Max. eligible subsidy Rs. In lakhs	2008-2009			2009-2010			2010-2011			2011-2012		
				No. of units	Cost/ unit	Total cost	No. of units	Cost/ unit	Total cost	No. of units	Cost/ unit	Total cost	No. of units	Cost/ unit	Total cost
	Project based proposals under Stream II Total			2101		408.35	2101		408.35	2101		408.35	2102		418.35
ABSTRACT															
Stream I Total				3124		499.16	3221		495.16	3321		535.16	3521		615.16
Stream I Link RoadsTotal				91.8		778.950	91.8		778.950	91.8		778.950	55.0		467.434
Stream II Total				2101		408.35	2101		408.35	2101		408.35	2102		418.35
Grand Total				**5316.8**		**1686.46**	**5413.8**			**5513.8**		**1722.46**	**5677.989**		**1500.94**

Table 6.18 Abstract of Agricultural Engineering Department

(Rs in lakhs)

S. No	Components	2008-09	2009-2010	2010-2011	2011-2012	Total
	STREAM - I Project 1					
1.	A Machinery	122.00	78.00	78.00	78.00	356
2.	B Implements Projects total	168.20	168.20	168.20	168.20	672.8
	Total	290.20	246.20	246.20	246.20	**1028.8**
	Project 2					
3.	Creation of farm ponds	200.00	240.00	280.00	360.00	1080
	Project 3					
4.	DIS for Oil Palm	8.96	8.96	8.96	8.96	35.84
	Total	**499.16**	**495.16**	**535.16**	**615.16**	**2144.64**
5.	Link roads	778.950	778.950	778.950	467.434	2804.284
	Stream I Total	1278.11	1274.11	1314.11	1082.594	4948.924
	Stream II					
1.	Power Tiller (with Rotavator)	66.00	66.00	66.00	67.50	265.5
2.	Implements	71.60	71.60	71.60	68.10	282.9
3.	Soil and water conservation works	59.50	59.50	59.50	59.50	238
4.	Run off control measures	83.75	83.75	83.75	95.75	347
5.	Improvement of conveyance efficiency	127.50	127.50	127.50	127.50	510
	Stream II Total	**408.35**	**408.35**	**408.35**	**418.35**	**1643.4**
	Total	**1686.46**	**1682.46**	**1722.46**	**1500.94**	**6592.32**

6.7. Agricultural Marketing Sector

Project I

(i) Project Title: Project Establishment/ organization of commodity groups for marketing in the state with financial assistance from NADP

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

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

(ii) Project Strategy

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

(iii) Project Goals

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

(iv) Project Components

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

(v) Project Cost and Financing

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

In this project it is proposed to organize eight commodity groups in paddy, ragi, maize, coconut, pulses, tomato, potato and cut flowers are those commodities for marketing of agricultural commodities in Villupuram district over the period of four years. This will require resources of Rs 170.2 Lakhs for the period of four years.

(vi) Reporting

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

Project - I

(i) Project Title: Facilitation of Contract Farming between farmers and bulk buyers in the state with financial assistance from NADP

(ii) Project Rationale

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

At more macro economic level, contracting can help to remove market imperfections in produce, capital (credit), land, labour, information and insurance markets; facilitate better coordination of local production activities which often involve initial investment in processing, extension etc.; and can help in reducing transaction costs. It has also been used in many situations as a policy step by the state to bring about crop diversification for improving farm incomes and employment. CF is also seen as a way to reduce costs of cultivation as it can provide access to better inputs and more efficient production methods. The increasing cost of cultivation was the reason for the emergence of CF in Japan and Spain in the 1950s and in the Indian Punjab in the early

1990s. Though there are concerns about the ability of the small farms and firms to survive in the changing environment of agribusiness, still there are opportunities for them to exploit like in product differentiation with origin of product or organic products and other niche markets. But, the major route has to be through exploitation of other factors like external economies of scale through networking or clustering and such other alliances like CF.

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

(iii) Project Strategy

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

(iv) Project Components

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

(v) Project Cost 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 Villupuram district for marketing of agricultural commodities in Tamil Nadu over the period of four years. This will require resources of Rs 15.18 lakhs for the period of four years.

(vi) Reporting

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

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

Project - III

(i) Project Title. Dissemination of Market intelligence

(ii) Project Rationale

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

India with 70 percent of its population living in about 6.25 lakhs villages and depending on agriculture as their main occupation, accurate and timely information about the market prices of the agricultural commodities is of extreme significance.

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

(iii) Project Strategy

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

(iv) Project Components

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

(v) Project Cost 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 Villupuram district over the period of four years. This will require resources of Rs. 64.40 Lakhs for the period of four years. The details are presented in the Table 6.20 A.

(vi) Reporting

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

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

Project - IV

(i) Project Title : Arrangement of Buyers - Sellers Meet

(ii) Project Rationale

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

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

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

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

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

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

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

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

(iii)Project Cost and Financing

In this project it is proposed to arrange for 30buyers sellers meet in Villupuram district over the period of four years. This will require resources of Rs. 27.60 Lakhs for the period of four years. The details are presented in Annexure I..

Project – V

(i) Project Title: Organizing the exposure visits to important markets with in the state and out side the state by commodity groups / farmers and extension functionaries.

(ii) Project Rationale

The goal of 4 per cent growth in agriculture can only be achieved by increasing productivity per unit of land. Considering the costs and constraints of resources such as water, nutrients and energy, the genetic enhancement of productivity should be coupled with input use efficiency. This can be made possible only by creation and utilization of new and improved technology. Since new technology creation and development is a slow process, for attaining the desired 4 per cent growth during the XIth Plan period, we will have to rely more on known and proven technology. Agriculture research system claims to have a large number of promising technologies to achieve high growth and promote farming systems that improve natural resource base. However, these are not seen at farmers' fields at large. Visit of other areas, where new technologies are implementing successfully i.e., exposure visits is an important thing to enlighten the farmers for implementing those technologies in their areas also. It is easy to know the new technology through demonstration. Farmers will be selected to visit different places within the State where the technologies are well adopted. Therefore it is proposed to organize the exposure visit to important markets with in the state and out side the state by commodity groups / farmers and extension functionaries in the state for marketing of agricultural commodities in Tamil Nadu over the period of four years.

(iii) Project Strategy

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

(iv) Project Goals

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

(v) Project Components:

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

(vi) Project cost and Financing

Visit of important markets, where new opportunity for marketing of the commodity and consumer preference i.e., exposure visits SAFAL market Bangalore is an important thing to enlighten the farmers for marketing their produce as well as consumer preference. It is easy to know the marketing of the commodity through observation and participation in the well developed markets. Farmers will be selected to visit different market places within the State where the new opportunities for marketing of commodities exist. This will require resources of Rs. 6.96 Lakhs for the period of four years. The details are presented in Table 6.20 A.

(vii) Reporting

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

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

Project -VI

(i)Project Title: Strengthening of market extension centre at each district/ block level for capacity building and dissemination of marketing information.

(i) Project Rationale

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

(ii) Project Strategy

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

(iii) Project Goals

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

(iv) Project Components

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

(vii) 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 Villupuram district over the period of four years. This will require resources of Rs. 11.50 Lakhs for the period of four years. The Details are presented in Table. 6.20 A.

(viii) 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) .

Project - VII

(i) Project Title: Capacity building of farmers' skill

(ii) Project Rationale

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

The role of the market as knowledge and information exchange amongst the converging farmers needs to be appreciated and harnessed. Farmers get benefit from deregulation of markets, minimum guaranteed price scheme, contract farming, and crop/income insurance, only to the extent they organize in marketing groups, self-help groups, cooperatives or companies and learn skills suited to the new marketing environment. Understanding quality standards (including FAQ), learning the terms of contract and insurance, and choosing and preparing the produce for the market are going to be essential skills for farmers. There is a need for greater synergy between extension services and market. State Marketing Departments and Boards, APMCs, Krishi Vigyan Kendras (KVKs), Marketing Cooperatives, NGOs and PRIs should pay increasing attention to train the farmers in marketing related skills. All stakeholders in the Supply Chain (i.e. from farmers to consumers) should be exposed to the following characteristics and complexities of the marketing system to make it more efficient. Hence in this project the following training programmes are proposed with budget requirement of Rs. 36.8 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.

(iii) Project Strategy

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

(iv) Project Components

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

(v) Project Cost and Financing

In this project it is proposed to organize about 80 trainings under Capacity Building of Farmers Skill titles for marketing of agricultural commodities in Villupuram district over the period of four years. This will require resources of Rs 36.80 Lakhs for the period of four years. The Details are presented in Table 6.20 A.

(vi) Reporting

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

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

Project – VIII

(i) Project Title: Strengthening of selected Market Infrastructure (equipments) through NADP Funding

(ii) Project Rationale

Considering the importance of different Markets, there is an urgent need to develop these markets in a phased manner with necessary infrastructural amenities to have a strong base of the marketing channel. Suitability and adequacy of marketing infrastructure depends on the type and quantity of marketed surpluses of agricultural produce in the State. The estimated marketed surpluses of various commodities are given in the Table 6.19. reflected the need for improvement in the market infrastructure in coming years.

Table 6.19 Estimates of Marketed Surpluses of Various Commodities

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

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

(iii)Project Components

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

(iv) Project cost and Financing

In this project it is proposed to strengthen market infrastructure in Villupuram district over the period of four years. This will require resources of Rs. 2.65 Lakhs for the period of four years. The Details are presented in Table 6.20 A.

(v) Reporting

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

Project - X

(i) Project Title : Strengthening of Regulated Market and Uzhavar Shandies Publicity through NADP Funding

(ii) Rationale

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

(iii) Project Components

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

(iv) Project cost and Financing

In this project it is proposed to have the publicity programmes with the above components in this district with a financial outlay of Rs. 23 Lakhs over the period of four years.

(v) Reporting

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

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

(vi) Project cost

The total cost for development of agricultural marketing so as to increase the profitability of farmers would be Rs. 1377.55 lakhs for this district for the eleventh five year plan period.

(vii) 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.

(viii)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.

(xi). 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. The detailed budget provisions are given in Table 6.20 A given below.

Table 6.20 A. Original Project Proposals for Agricultural Marketing and Agri-Business

Components	2009			2010			2011			2012		
	Unit cost	Phy	Fin	Unit cost	Phy	Fin	Unit cost	Phy	Fin	Unit cost	Phy	Fin
Commodity group formation												
Pulses	20000	50	1000000	22000	50	1100000	24000	50	1200000	26000	50	1300000
Groudnut	20000	50	1000000	22000	50	1100000	24000	50	1200000	26000	50	1300000
Gingelly	20000	50	1000000	22000	50	1100000	24000	50	1200000	26000	50	1300000
Maize	20000	25	500000	22000	25	550000	24000	25	600000	26000	25	650000
Sunflower	20000	10	200000	22000	10	220000	24000	10	240000	26000	10	260000
Market Intelligence dissemination			0			0			0			0
Ground nut Training	10000	35	350000	11000	35	385000	12000	35	420000	13000	35	455000
Gingelly Training	10000	35	350000	11000	35	385000	12000	35	420000	13000	35	455000
Pulses Training	10000	35	350000	11000	35	385000	12000	35	420000	13000	35	455000
Maize Training	10000	15	150000	11000	15	165000	12000	15	180000	13000	15	195000
Sunflower Training	10000	15	150000	11000	15	165000	12000	15	180000	13000	15	195000
Purchase of marketing materials	10000	5	50000	11000	5	55000	12000	5	60000	13000	5	65000
Facilitation of contract farming			0			0			0			0
Training to farmers	15000	22	330000	16500	22	363000	18000	22	396000	19500	22	429000
Trainings			0			0			0			0
Market Intelligence	10000	20	200000	11000	20	220000	12000	20	240000	13000	20	260000
Value addition	10000	15	150000	11000	15	165000	12000	15	180000	13000	15	195000
Post Harvest	10000	40	400000	11000	40	440000	12000	40	480000	13000	40	520000
Export promotion	10000	5	50000	11000	5	55000	12000	5	60000	13000	5	65000
Exposure visit to markets			0			0			0			0
Visit to national market	150000	1	150000	165000	1	165000	181500	1	181500	199650	1	199650

Table 6.20 A contd…

Components	2009			2010			2011			2012		
	Unit cost	Phy	Fin	Unit cost	Phy	Fin	Unit cost	Phy	Fin	Unit cost	Phy	Fin
Arrangement of buyer seller meetings	20000	30	600000	22000	30	660000	24000	30	720000	26000	30	780000
Streng. Of market extension centre	250000	1	250000	275000	1	275000	300000	1	300000	325000	1	325000
Streng. Of village shandies	0		0			0			0			0
Market price surveillance	10000	0	0	11000	0	0	12000	0	0	13000	0	0
Publicity - regulated market	500000	1	500000	550000	1	550000	600000	1	600000	650000	1	650000
Market infrastructure activities	100000	5	500000	110000	5	550000	120000	5	600000	130000	5	650000
Audio system	100000	1	100000			0			0			0
I T equipments	100000	1	100000			0			0			0
Interface Xerox	150000	**1**	150000			0			0			0
Total			**8580000**			**9053000**			**9877500**			**10703650**

Table.6.20 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	2	60.00	2	70.00	2	80.00	6	210.00
2	Storage godowns for storing produce under lock and key for few days	3	15.00	3	18.00	2	14.00	8	47.00
3	Construction of new drying yards/renovation of dilapidated ones	1	5.00	1	6.00	1	7.00	3	18.00
4	Construction of new auction halls/modernizing the existing ones	3	30.00	3	30.00	3	30.00	9	90.00
5	Construction of money disbursement halls/counters	1	5.00	1	6.00	1	7.00	3	18.00
6	Construction of office buildings and staff quarters	1	30.00	1	30.00	1	30.00	3	90.00
7	Installation of processing units/purchaswe of new instruments in the premises of the regulated markets								
	(i) Mechanical drier	0	0.00	0	0.00	0	0.00	0	0.00
	(ii) Mechanical winnower	0	0.00	0	0.00	0	0.00	0	0.00
	(iii) Groundnut decorticator	0	0.00	0	0.00	0	0.00	0	0.00
	(iv) Sieving machine	0	0.00	0	0.00	0	0.00	0	0.00
	(v) Cotton Ginning Unit / Pressing Unit	0	0.00	0	0.00	0	0.00	0	0.00
	(vi) Coconut Kernel drying and oil processing units	0	0.00	0	0.00	0	0.00	0	0.00
	(vii) Packaging Units	0	0.00	0	0.00	0	0.00	0	0.00

Table.6.20B 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	1	10.00	0	0.00	0	0.00	1	10.00
11	Construction of cold storage facilities in Uzhavar Shandies and in rural godowns	1	6.00	2	13.00	2	14.00	5	33.00
12	Office automation with computer facility for billing etc. in regulated markets	3	2.40	3	2.40	3	2.40	9	7.20
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	10	2.00	10	2.20	8	1.80	28	6.00
15	Provision of Oil testing machines	0	0.00	0	0.00	0	0.00	0	0.00
16	Provision of Electronic weighing machines	51	2.60	51	2.60	51	2.60	153	7.80
17	Others if any (Specify) Purchas of land for	0	0.00	2	100.00	0	0.00	2	100.00
II.	**Publicity and Propaganda**							0	0.00
1	Market committee-wise strengthening of the Publicity and Propaganda units	0	0.00	1	5.00	0	0.00	1	5.00
2	Market committee-wise purchase of extension education aids	4	1.60	4	1.60	4	1.60	12	4.80
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

Table.6.20B Contd.,

Sl. No.	Possible Development Interventions	2009-10		2010-2011		2011-2012		Total	
		Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
4	Pre-harvest campaigns on large scale	20	1.00	20	1.00	20	1.00	60	3.00
5	Others if any (Specify) DDA(AB) office	0	2.00	0	0.00	0	2.00	0	4.00
III.	**Public relations**							0	0.00
1	Construction of bus-stop shed un front of the regulated markets and in selected villages	1	0.50	1	0.50	1	0.50	3	1.50
2	Taking up public relations activities in the villages	120	1.20	120	1.20	120	1.20	360	3.60
3	Construction of common village threshing floors	20	60.00	20	70.00	20	80.00	60	210.00
4	Construction of village common discussion (Chavadi) hall	3	6.00	3	6.00	3	6.00	9	18.00
5	Distribution of tarpaulins to small and marginal farmers	150	7.50	150	7.50	100	5.00	400	20.00
6	Installation of electric light facilities including solar lights in the community threshing floors	20	2.00	20	2.00	20	2.00	60	6.00
7	Construction of over head tanks, laying of street pipelines and provision of public drinking water taps in a village or two wherein the market arrivals are more	1	10.00	1	10.00	1	10.00	3	30.00
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)	0	0.00	0	0.00	0	0.00	0	0.00
10	Others if any (Specify)	0	0.00	0	0.00	0	0.00	0	0.00

Table.6.20B Contd.,

Sl. No.	Possible Development Interventions	2009-10		2010-2011		2011-2012		Total	
		Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
IV.	**Facilities to farmers / Stakeholders**							0	0.00
1	Construction of rest/stay rooms for farmers I regulated markets	3	15.00	3	15.00	3	15.00	9	45.00
2	Construction/modernization of the common toiletry facilities in the regulated markets	3	1.50	3	1.50	3	1.50	9	4.50
3	Provision of parking lot facilities in the needy centers	0	0.00	0	0.00	0	0.00	0	0.00
4	Providing drinking water facilities to animals	0	0.00	0	0.00	0	0.00	0	0.00
5	Provision of transport facilities/routing the vehicle to transport commodities to the regulated markets	0	0.00	0	0.00	0	0.00	0	0.00
6	Creating farm inputs retailing facilities	0	0.00	0	0.00	0	0.00	0	0.00
7	Others if any (Specify)	0	0.00	0	0.00	0	0.00	0	0.00
V.	**Any other innovative interventions (specify)**	0	0.00	0	0.00	0	0.00	0	0.00
	Grand Total	**429**	**277.30**	**435**	**402.50**	**379**	**315.60**	**1246**	**995.40**

Budget Abstract

(Rs.in lakhs)

Sl.No.	Particulars	2008-09	2009-10	2010-11	2011-12	Total
A.	Original Project	85.800	90.530	98.780	107.040	382.150
B.	Additional Project DDA(AB) and Market Committee	-	277.30	402.50	315.60	995.40
	Grand Total	**85.800**	**367.830**	**501.280**	**422.640**	**1377.550**

Table 6.21 Abstract of the Agrl Marketing Development

S. No.	Components	2008-09	2009-10	2010-11	2011-12	Total
1.	Commodity group formation	37.00	40.70	44.40	48.10	170.20
2.	Market Intelligence dissemination	14.00	15.40	16.80	18.20	64.40
3.	Facilitation of contract farming	3.30	3.63	3.96	4.29	15.18
4.	Trainings	8.00	8.80	9.60	10.40	36.80
5.	Exposure visit to markets	1.50	1.65	1.815	1.9965	6.96150
6.	Arrangement of buyer seller meetings	6.00	6.60	7.20	7.80	27.60
7.	Strength of market extension centre	2.50	2.75	3.00	3.25	11.50
8.	Publicity - regulated market	5.00	5.50	6.00	6.50	23.00
9.	Market infrastructure activities	8.50	5.50	6.00	6.50	2.65
	Total	**85.80**	**90.53**	**98.775**	**107.03650**	**382.14150**

6.8 Irrigation Sector (PWD)

List of works proposed under National Agricultural Development programme (NADP) / Rashtriya Krishi Vikas Yojana (RKVY) for the years 2007 -2012 (Five Year Programme) in Manimuktha Nadhi Sub Basin of Villupuram district is discussed below.

Project - I

Project Title : Vellar Basin Development

This Sub division is incharge for 205 tanks and 70 Anicuts with two Reservoirs namely Gomukhi Nadhi Dam and Manimukthanadhi Dam. All these above tanks and Anicuts are coming under Gomukhi , Manimuktha and Gadilam Sub basins having with a total Ayacut acre of 18205 Ha.

Manimuktha Nadhi Sub basin Development

Gomukhi and Gadilam sub basins' irrigation tanks, anicuts and canal Rehabilitation Works will be taken up for execution under IAMWARM during 2009-10. Therefore, manimuktha sub basin's , tanks, anicuts and canal works alone are proposed to take up for rehabilitation under NADP/RKVY Scheme. The selection and prioritizing strategies for listing out the Rehabilitation Works of Manimuktha sub basin are followed under the accepted principle of IAMWARM Project.

The present stage of works proposed in the list

Anicuts

The main components of anicuts are body wall, abutments ,cutoff wall,head regulator and apron. .Many of the anicuts found in mani nadhi, muktha nadhi and manimuktha nadhi are not functioning because of damages occurred in all components/many components/ few components/ single component. These damages do not allow water into the feeder channel and thus system tanks are not receiving the assured water. Regulators, in general were not provided at the off take point of supply channel in the anicut. This leads to breaching of bunds of supply channel.

Supply Channels

Due to non - availability of funds, many of the supply channels /feeder channels have not been maintained periodically. This amounted in silting up of the supply channel feeder channels. In some stretches (turnings etc.,) the bunds are often getting breached due to flood during rainy seasons.

Tanks

Though many tanks were rehabilitated in WRCP / NABARD / PART-II Scheme. Some of the tanks are yet to be rehabilitated. In tanks, bunds which are holding water are in weak condition. Many of the Sluices, (Water Regulators to the field) in tanks are in dilapidated condition and hence water is badly wasted due to this condition. Surplus Weirs

of tanks which are in damaged conditions are not holding the water to the required capacity,and hence reduces the cultivation of ayacuts.

Field Channel

Water flowing through field channel to the irrigated lands is wasted through percolation in soils due to non-lining of channels.

Manimukthanadhi Dam

This Dam with a Capacity of 737 Mcft irrigates to an ayacut area of 4250 acres. This Reservoir is with one Main Canal on right flank and with three distributaries. Due to non availability of fund, the Main canal was lined for a length of 12500 m on left side only but not on right side. All three distributaries (3281 m +5830m+1800m) with a length of 10911m were not lined and bunds are also in weak condition. Jeep tracks provided along the main canal are only earthen roads. These mud roads are often getting damaged due to rain and flood.

Some of the sluices and drops etc. are to be reconstructed, since damaged.

New Proposals Under RKVY

Anicuts, Tanks and Canals which are in damaged conditions are identified and listed. The priorities were given as per the norms proposed in IAMWARM. These Anicuts,Tanks, Canals are proposed for rehabilitation in four years i.e. from 2008 to 2012.

The details of expenditure for the interventions in Vellar Basin Sub division, Kallakurichi , are given in Table 6.22, below

Table 6.22 Budget provisions for the Vellar Basin Sub Division Kallakurichi

Year 2008-09

Sl. No	Taluk	Name of Tank	Ayacut in 'Ha'	Estimate Rs in Lakhs
1	Sankarapuram	Rehabilitation to Poottai Anicut	-	99.00
2	Sankarapuram	Rehabilitation to Chellampattu Anicut	-	30.00
3	Kallakurichi	Rehabilitation to Thavadipattu Anicut	48.94	15.00
4	Kallakurichi	Rehabilitation to Kongarayapalayam Anicut	145.69	25.00
5	Sankarapuram	Rehabilitation Work and formation of road Manimuktha Nadhi Dam Main Canal from Ls. 0m to 5920m	178.21	90.00
6	Kallakurichi	Rehabilitation work and formation of road Mani muktha Nadhi Dam main Canal from l.s 5920 m to 12500m	368.82	75.00
7	Kallakurichi	Rehabilitation of Padarampallam Tank	51.02	10.00
8	Sankarapuram	Rehabilitation of NattarMangalam Tank	22.00	10.00
9	Sankarapuram	Rehabilitation of Vaniyandal Tank Supply Channel	31.05	7.00
10	Sankarapuram	Rehabilitation of Kallipattu Tank	11.00	3.00
11		Rehabilitation of Gudalur Seranthangal Tank	30.01	4.00
12	Sankarapuram	Rehabilitation of Moongilanthangal Tank	13.85	3.00
13	Sankarapuram	Rehabilitation of Pallagacherri Anicut	191.90	20.00

Table 6.22 contd….

Year 2008-09

Sl. No	Taluk	Name of Tank	Ayacut in 'Ha'	Estimate Rs in Lakhs
14	Sankarapuram	Rehabilitation of Mani muktha Nadhi Dam Distributory No. 1 from l.S 0m to 3200m	519.85	45.00
15	Sankarapuram	Rehabilitation of Urangani Tank	89.07	18.00
16	Kallakurichi	Rehabilitation of Karadichittur Tank	73.25	15.00
17	Sankarapuram	Rehabilitation of Alathur Tank	312.95	30.00
18	Sankarapuram	Rehabilitation of Gurupeedapuram Tank	41.86	17.00
19	Ulundurpet	Rehabilitation of Parindal Tank	41.53	10.00
20	Sankarapuram	Rehabilitation of Pali Tank	71.54	10.00
21	Sankarapuram	Rehabilitation of Pullur Tank	74.53	12.00
22	Kallakurichi	Rehabilitation to Panayangal Anicut	176.04	20.00
23	Sankarapuram	Rehabilitation of Mani muktha Nadi Dam Distributory No.2 from L.S. 0m to 3067m	278.66	40.00
24	Sankarapuram	Rehabilitation of Manimuktha Nadhi Dam distributory No.2 From L.s 3067m to 5833m	232.80	40.00
25	Sankarapuram	Rehabilitation to Koothakudi Anicut	93.08	25.00
26	Kallakurichi	Rehebilitation of manimuktha Nadhi dam Distributory No.3 from L.S 0 m to 1800m	122.34	27.00
	Total			**700.00**

Table 6.22 contd….

Year 2009-10

SI.No	Taluk	Name of Tank	Ayacut in 'Ha'	Estimate Rs in Lakhs
1	Sankarapuram	Rehabilitation of Padanthangal tank	35.48	7.00
2	Sankarapuram	Rehabilitation of Andiyur Sethu Verayankuppam Tank	25.58	4.00
3	Sankarapuram	Rehabilitation of Palayanur Tank	25.97	5.00
4	Sankarapuram	Rehabilitation of Kallerikuppam Tank	8.72	5.00
5	Kallakurichi	Rehabilitation of Thavadipattu Tank	68.42	7.00
6	Kallakurichi	Rehabilitation of Vaniyandal Tank	31.05	10.00
7	Kallakurichi	Rehabilitation of Veeracholapuram Tank	142.23	12.00
8	Sankarapuram	Rehabilitation of Pallagacherry Large	134.78	50.00
9	Sankarapuram	Rehabilitation of Pallagacherry Small	46.68	10.00
10	Sankarapuram	Rehabilitation of Ninnaiyur Tank	49.08	10.00
11	Kallakurichi	Rehabilitation of Udiyanatchi Tank	59.91	7.00
12	Kallakurichi	Rehabilitation of Chittatur Tank	48.60	7.00
13	Kallakurichi	Rehabilitation of A. Mazhararayanur Tank	44.72	10.00
14	Kallakurichi	Rehabilitation of Asanur Tank	60.73	10.00
	Total			**154.00**

Table 6.22 contd….

Year 2010-11

SI.No	Taluk	Name of Tank	Ayacut in 'Ha'	Estimate Rs in Lakhs
1	Sankarapuram	Rehabilitation work and formation of road in Pallagacherry Tank supply chanal L.S 0m to 6200m	191.90	90.00
2	Sankarapuram	Rehabilitation to Vadachethyanandal Anicut	139.45	10.00
3	Sankarapuram	Rehabilitation of Kosapadi Tank	59.73	12.00
4	Sankarapuram	Rehabilitation of Valayampattu Tank	19.86	5.00
5	Sankarapuram	Rehabilitation of Kalayanallur Big Tank	44.92	10.00
6	Sankarapuram	Rehabilitation of Periyamampattu Tank	45.02	9.00
7	Sankarapuram	Rehabilitation ofn Kudiyanallur Tank	55.71	10.00
8	Sankarapuram	Rehabilitation of Kattunemili Tank	40.76	10.00
	Total			**156.00**

Table 6.22 contd….

Year 2011-12

SI. No	Taluk	Name of Tank	Ayacut in 'Ha'	Estimate Rs in Lakhs
1	Kallakurichi	Rehabilitation of Koothakudi Tank	87.18	12.00
2	Sankarapuram	Rehabilitation of Palayasiruvangur Tank	54.00	10.00
3	Sankarapuram	Rehabilitation of Sitheripattu Tank	19.96	7.00
4	Sankarapuram	Rehabilitation of Pallipattu Tank	21.67	5.00
5	Sankarapuram	Rehabilitation of Udayamampattu tank	46.10	8.00

Table 6.22 contd….

Year 2011-12

SI. No	Taluk	Name of Tank	Ayacut in 'Ha'	Estimate Rs in Lakhs
6	Sankarapuram	Rehabilitation of Velanandal Tank	23.69	7.00
7	Kallakurichi	Rehabilitation of Vadathorasalur Tank	50.93	10.00
8	Kallakurichi	Rehabilitation of Thiyagai Tank	54.05	10.00
9	Kallakurichi	Rehabilitation of Chittalur Tank	144.58	10.00
	Total			**79.00**

The total cost of the projects works out to Rs.79 Lakhs, as could be noted from the above table.

This proposal under NADP /RKVY will stabilize the Gap of Ayacut and therefore the benefit would be more. Proposals made towards metal roads in place of mud roads will ease the movements of the farmers and thus improve marketing and other facilities

Project - II

Project Title Middle Pennaiyar Basin Development.

List of works proposed Under National Agricultural Development programme (NADP) / Rashtriya Krishi Vikas Yojana (RKVY) for the year 2007 – 2012 (Three Year Programme) in Sathanur Left Bank Canal in Villupuram District.

Sathanur Left Bank Canal Development

Sathanur Reservoir is located across Pennaiyar river near Sathanur Village which is about 32 km from Tiruvannamalai Town of Tiruvannamalai District. The total ayacut benefited under this Reservoir project is as follows:-

1) Sathanur left bank canal : 24000 Acres.

2) Sathanur Right bank canal : 21000 Acres.

Total : 45000 Acres

The Sathanur Right bank canal is under the maintenance of Lower Pennaiyar Baisn Division, Villpuram. The Sathanur left bank canal is being maintained by this Division.

There is a pickup Anicut constructed across the river down stream of the reservoir which off takes on both the sides. The Sathanur left bank canal (SLBC) taking off from this pickup Anicut runs to a length of 35.20 km with 15 Distributaries and Direct irrigation sluices. The total ayacut covered under Villupuram District under SLBC is (10 tanks + Direct Ayacut) 1567.613 Ha.

Present stage of the system

The tanks fed by Sathanur system are all below standard and majority of the tanks requires urgent repairs and strengthening either in tank itself or to their comportments. It is necessary to improve the bund, sluice, surplus arrangements, supply channels, drainage channels, restructuring and selective lining of field channels and renovation of Distributaries. To attain maximum production from farm lands, the available water in this system tanks must be supplied and regulated in such a way that maximum production could be achieved.

Main Components of this Project

Under this Rashtriya Krishi Vikas Yojana Programme, it is planned to take up 10 Nos. of tanks and 4 Nos. of distributaires for rehabilitation for the years 2007-2008, 2008-2009, 2009-2010, at a total cost of 146.50 lakhs.In this irrigation sources the following items of works are to be carried out.

1) Strengthening of tank bund by desilting of tank
2) Repairs / Re-construction of sluice and weirs.
3) Improvements to Distributaries.
4) Improvements to field channels.
5) Desilting and repairs to supply channels.
6) Desilting of the tanks to certain extent under this scheme will help to reduce the gap in the Irrigation Area under the tank area.

Table 6.23 Middle Pennaiyar Basin Development
Summery of Proposal Stream – I

Sl. No	Name of work	Year wise Financial requirement (Unit Rs. Lakhs)					
		Exis-ting	**2008-09**	**2009-10**	**2010-11**	**2011-12**	**Total**
II	Rehabilitation 4R Distributions						
1	L.S. 3 / 300 to 4 / 300 KM. SLBC.						
2	4/400 to 5/300 Km SL BC						
3	L.S 5/350 to 6/400 KM SL BC L.S. 6/500 to L.S 7/020 KM / SLBC	60.00	54.50	32.00	--	--	146.50
4	Rehabilitation of Tanks 10 Nos.						

The budget estimate for this project is Rs.146.50 as indicated in the table above.

Project – III
Project Title : Lower Pennaiyar Basin Development

In Villupuram District there are 633 tanks are maintained by this division. The command area under the tanks is 53.118.65 Ha. The Paddy and Sugarcane is the major crop raised in the district with the production of 511931 tonnes and 6283409 tonnes respectively during the year 2005-2006 and stood first place in the state. These accounts for 9.83 per cent and 17.75 per cent respectively in the state's production during the year 2005-2006. The average irrigated area in the district is 73.52 per cent and the area left un- irrigated is 26.48 per cent which seems to be high. By bridging the gap the production go up and would contribute more to the state production.

Supply Channel

It is proposed to take up major irrigation tanks for modernization under RKVY. The tanks are receiving supply from the local hills and the lands located in the catchment areas. Whenever there is rain in the upper side of the tanks, the rain water enter into the tanks through the supply channel. Due to the encroachments in the supply channels by the local villagers the rain water is not reaching the tank sufficiently during low and normal rainy season. The farmers under the tanks getting frustrated due to shortage of water in the tank and left the fields dry even to the extent of crop failure and consequent sufferings. In order to make good the water shortage problem it is proposed to identify and delineate the supply channel area with the help of revenue department and be desilted to the required size with the boundaries of the supply channels be demarked with permanent marks.

Tank Bund

The tank bunds are below the standards and during heavy rains the tanks are getting breached or over flowed. The tank bunds are heavily infested with the growth of bushes and *Prosophis juliflora* jungle and other unwanted shrubs. Due to these the farmers are unable to use the tank bunds as the major connecting path to the farmers to reach the main road or villages. The WRO officials also find difficult to reach the sluices, weir etc for the maintenance and operation activities. Therefore it is proposed to strengthen the bunds by bringing soil from the water spread area and dumping, leveling on and finally on top of the bund shall be provided with WBM Road for easy road operation. By making the Tank bunds as Road Tracks the farmers can use the Tank bunds to transport the Agricultural Products from farm residence in the village to nearby market areas without any disruption.

Water Spread Area

The water spread area is encroached by some upper side farmers and are giving hindrance to fill the tanks not to fill water to full the tank even during normal rain fall season.. The encroached farmers are tampering the sluices, weirs breaking and reducing the level of water to avoid flooding or drowning there encroached area when the tanks are getting filled. In order to bring the tanks to fill the water to FTL it is proposed to evict the

encroachments and a fore shore bund is formed by digging deep trench along the water spread area and demarcating the water spread area with permanent marks.

Sluices

There are sluices constructed in the tanks to regulate the water for irrigation below the tanks. Due to man made mischieves i.e. breaking of sluices by the encroachers and damaging the operating shutters in the sluices. In some places the age old structures have been damaged by normal wear and tear due to natural calamities like flood hence need restructuring.. The damaged sluices are to be reconstructed with suitable shutter arrangements. The farmers can operate the sluices and the water for irrigation will be utilized effectively.

Weir

The Tanks are provided with suitable flood diversion arrangements. The flood diversion arrangements such as weir, calingula are badly damaged due to floods, normal weir and tear age old and over flooding. It is proposed to reconstruct the weirs, providing suitable length of weir as per flood adequacy. In some cases the surplus course of the tanks are acting as supply channel to the next downstream tanks. The surplus course is proposed to be desilted and suitable cross masonary works are to be repaired.

Field Channel

From the irrigation sluices, field channels are formed to supply water for irrigation below the tanks. The field channels are encroached by the farmers and it is found very difficult to the tail end farmers to irrigate lands during cultivation. It is proposed to construct masonary channels for conveying water from head reaches to tail end lands. By converting the earthen field channels into masonary channels the water will be conveyed from the head to tail without any loss.

By implementing this proposals the aim of the scheme of RKVY that using the natural resources, conservation of water, bridging the gap, stabilization of the irrigable land, getting high yield from available water, increasing the produce, raising the ground water can be achieved.

The nature of works proposed and the financial commitments are indicated below, in Table 6.24.

Table 6.24 Budget provisions for the Lower Pennaiyar Basin Division

SI. No	Taluk	Name of Tank	Ayacut in 'Ha'	Estimate Rs in Lakhs
Lower Pennaiyar Basin Sub Division,Sankarapuram				
1.	Vadakeeranur	Sankarapuram	48.64	25.00
2.	Aarur	Sankarapuram	39.99	16.00
3.	Seerpandal	Sankarapuram	145.00	40.00
4.	Atiyur	Sankarapuram	40.30	16.00
5.	Periyakolliyur	Sankarapuram	60.66	25.00
6.	Moongilthuraipatu	Sankarapuram	38.20	20.00
7.	Vadamamandur Big	Sankarapuram	44.22	20.00
Lower Pennaiyar Basin Sub Division,Tindivanam				
8.	Rayapudupakkam	Vanur	48.06	15.00
9.	Chithanapakkam	Vanur	48.99	15.00
10.	Kurur	Tindivanam	44.05	15.00
11.	Nolambur	Tindivanam	89.88	10.00
12.	Atchipakkam	Tindivanam	48.96	10.00
13.	Athur	Tindivanam	119.03	15.00
14.	Molasur	Tindivanam	96.76	15.00
15.	Kongambattu Sitheri	Villupuram	48.97	10.00
16.	Kongampattu Tank	Villupuram	74.46	15.00
17.	Nallavur	Vanur	131.17	20.00
18.	Nesal	Vanur	70.57	15.00
19.	Nagar Periya eri	Tindivanam	115.38	20.00
Lower Pennaiyar Basin Sub Division,Tirukoilur				
20.	Amoor Large	Ulundurpet	176.11	40.00
21.	Avi-Kolapakkam	Tirukoilur	71.42	15.00
22.	Ariyur	Tirukoilur	128.99	30.00
23.	Cholavandipuram	Tirukoilur	132.98	30.00
24.	Konalur	Tirukoilur	42.83	15.00
25.	Vilandai	Tirukoilur	199.19	35.00
26.	Kottamarudur	Tirukoilur	107.29	30.00
27.	Pavanoor	Tirukoilur	148.99	30.00
28.	Sithalingamadam	Tirukoilur	251.82	50.00
29.	T.Pudupalayam	Tirukoilur	188.89	40.00
	Total		**2801.80**	**652.00**
2009-010				
Lower Pennaiyar Basin Sub Division,Sankarapuram				
1.	Thiruvarangam	Sankarapuram	45.45	20.00
2.	Jambadai	Sankarapuram	54.47	25.00
3.	Atiyurthangal	Sankarapuram	53.07	20.00
4.	S.kolathur and Vadsiruvalur	Sankarapuram	108.30	30.00

Table 6.24 contd…

SI. No	Taluk	Name of Tank	Ayacut in 'Ha'	Estimate Rs in Lakhs
Lower Pennaiyar Basin Sub Division,Tindivanam				
5.	Katrampakkam	Vanur	51.42	15.00
6.	Pulichapallam	Vanur	103.17	15.00
7.	Nallur	Tindivanam	110.93	15.00
8.	Munnur	Tindivanam	183.81	15.00
9.	Pazhamukal	Tindivanam	69.64	15.00
10.	kilsithamur	Tindivanam	67.56	17.00
11.	Kiledayalam	Tindivanam	157.83	40.00
12.	Rampakkam	Villupuram	152.57	31.00
13.	Sornavur	Villupuram	235.94	47.00
14.	Vanaiper	Tindivanam	63.97	15.00
15.	Thirukanur	Tindivanam	63.56	10.00
Lower Pennaiyar Basin Sub Division,Tirukoilur				
16.	T.Konalavadi	Tirukoilur	52.57	15.00
17.	Palangur	Tirukoilur	154.25	30.00
18.	Thimmachur	Tirukoilur	57.36	15.00
19.	Vengur Large	Tirukoilur	42.55	15.00
20.	Koovanur	Tirukoilur	93.12	30.00
21.	Thagadi	Tirukoilur	114.98	40.00
22.	Arcadu	Mugaiyur	229.55	40.00
23.	Emapper	Mugaiyur	53.70	20.00
24.	Pennaivalam	Thiruvennainallur	58.70	18.00
	Total		**2378.47**	**553.00**
2010-11				
Lower Pennaiyar Basin Sub Division,Sankarapuram				
1.	Elayanarkuppam	Sankarapuram	42.29	18.00
2.	Kaduvanur	Sankarapuram	119.58	30.00
Lower Pennaiyar Basin Sub Division,Tindivanam				
3.	Konthamur	Vanur	108.91	10.00
4.	Kiliyanur peria eri	Vanur	64.78	15.00
5.	Karnavur peria eri	Tindivanam	84.17	22.00
6.	Singanur peria eri	Tindivanam	57.57	15.00
7.	Jaggampettai	Tindivanam	70.75	20.00
8.	Kolliyangunam	Tindivanam	69.50	18.00
9.	Kalinjikuppam	Villupuram	43.3.	9.00
10.	Perichampakkam	Villupuram	34.40	7.00
11.	KrishnapuramPooveli Thangal	Villupuram	26.71	5.50
12.	Krishnapuram Thatton Thangal	Villupuram	41.28	8.50

Table 6.24 contd…

SI. No	Taluk	Name of Tank	Ayacut in 'Ha'	Estimate Rs in Lakhs
Lower Pennaiyar Basin Sub Division,Tindivanam				
13.	Konthamur	Vanur	108.91	10.00
14.	Kiliyanur peria eri	Vanur	64.78	15.00
15.	Karnavur peria eri	Tindivanam	84.17	22.00
16.	Singanur peria eri	Tindivanam	57.57	15.00
17.	Jaggampettai	Tindivanam	70.75	20.00
18.	Kolliyangunam	Tindivanam	69.50	18.00
19.	Kalinjikuppam	Villupuram	43.3.	9.00
20.	Perichampakkam	Villupuram	34.40	7.00
21.	KrishnapuramPooveli Thangal	Villupuram	26.71	5.50
22.	Krishnapuram Thatton Thangal	Villupuram	41.28	8.50
23.	Pakkam big tank	Villupuram	407.97	82.00
24.	Nallapareddipalayam	Villupuram	65.97	13.50
25.	Sorappur vanakambadi	Villupuram	64.75	13.00
26.	Anumanthai	Tindivanam	55.47	15.00
27.	Kolathur	Tindivanam	106.88	10.00
Lower Pennaiyar Basin Sub Division,Tirukoilur				
	Kannarampattu	Ulundurpet	167.08	35.00
	Sirulapattu	Ulundurpet	17.59	20.00
	Parikkal	Ulundurpet	90.07	30.00
	Mettathur	Ulundurpet	84.37	30.00
	Arumpattu	Ulundurpet	77.91	25.00
	Chennakunam	Tirukoilur	147.77	30.00
	Ayandur	Tirukoilur	127.53	35.00
	V.Sithanur	Tirukoilur	47.61	20.00
	Panapakkam	Tirukoilur	27.53	10.00
	Total		**2251.74**	**546.50**
2011-12				
Lower Pennaiyar Basin Sub Division,Sankarapuram				
1.	Vanapuram	Sankarapuram	74.40	25.00
2.	Pakkampudur	Sankarapuram	43.19	20.00
Lower Pennaiyar Basin Sub Division,Tindivanam				
3.	Peramandur	Tindivanam	109.07	30.00
4.	Annambakkam	Tindivanam	72.53	20.00
5.	Sembakkam	Tindivanam	52.33	15.00
6.	Vadakalavai	Tindivanam	185.19	22.00
7.	Vairapuram	Tindivanam	123.31	30.00

Table 6.24 contd…

SI. No	Taluk	Name of Tank	Ayacut in 'Ha'	Estimate Rs in Lakhs
8.	Thengapakkam	Tindivanam	46.33	12.00
9.	Antharasipalayam	Villupuram	11.74	2.40
10.	Navamal Marudur	Villupuram	131.18	26.50
11.	V.Pudur	Villupuram	124.24	25.00
12.	Nathamdu	Villupuram	44.52	9.00
13.	Valavanur	Villupuram	1157.83	23.16
14.	Motchakulam	Villupuram	103.60	20.80
Lower Pennaiyar Basin Sub Division,Tirukoilur				
15.	Paravanadal	Ulundurpet	14.70	15.00
16.	Melamangalam	Tirukoilur	125.32	40.00
17.	Thulagampattu	Ulundurpet	64.16	20.00
18.	Erallur	Tirukoilur	3166.33	180.00
19.	Reddy main channel	Tirukoilur	669.66	75.00
20.	Perichanur	Tirukoilur	42.58	20.00
21.	Othiyathur	Tirukoilur	48.11	20.00
22.	Modernization and improvements of malattar channel from Tirukoilur Anicut off take point to 23250 M	Tirukoilur	1804.93	100.00
	Total		**8215.25**	**750.86**
	Grand Total		**15647.26**	**2502.36**

The over all budget estimate for the development of lower pennayar basin under NADP is Rs.2502.36 lakhs

Table 6.25 Abstract of the Proposal of the PWD

S.No	Basins	2008-09	2009-10	2010-11	2011-12	Total
1.	Vellar Basin – Sub Division	700	154.00	156.00	79.00	1089
2.	Middle Pennaiyar Basin Division .	54.50	32.00	0	0	86.50
3.	Lower Pennaiyar Basin Division	652.00	553.00	546.50	750.86	2502.36
	Total	**1406.50**	**739.00**	**702.50**	**829.86**	**3677.86**

In sum, the total budget cost of the activities of the Public work department during XI plan period under NADP works out to be Rs.3677.86.

6.8 The overall budget summary

The over all budget estimates for the development of Agriculture and Allied sectors in Villupuram district XI plan period under NADP are summarized below in Table.6.26.

Table 6.26 The Overall Budget Summary of Villupuram District

(Rs in lakhs)

S.No	Sectors	2008-09	2009-010	2010-11	2011-12	Total
1.	Agriculture	1723.48	1107.56	1041.56	1019.06	4891.66
2.	Horticulture	125.1	154.6	155.6	155.60	590.90
3.	Agrl Engineering	1686.46	1682.46	1722.46	1500.94	6592.32
4.	Agrl Marketing	85.80	367.830	501.280	422.640	1377.550
5.	Animal Husbandry	1528.450	648.830	211.790	208.760	2597.830
6.	Fisheries	240.48	117.90	132.90	46.15	537.43
7.	Public Works Department	1406.50	739.00	702.50	829.86	3677.86
	Total	**6796.27**	**4818.18**	**4468.09**	**4183.01**	**20265.54**

Thus, a total outlay of Rs 20265.54 lakhs is required for the development of agriculture and allied sectors in Villupuram District for the XI plan period under NADP.

Collector Meeting

The main aim of NADP project is that the provisions in the project should reach the end beneficiary. To enhance this, a meeting was conducted on **10.05.2008** in the Villupuram Collectorate.

The meeting was chaired by the then district collector Shri Brajendra Navnit, IAS. The meeting was organized jointly by the Collectorate and Tamil Nadu Agricultural university. The meeting started sharply at 10.30 am. The district collector welcomed the gathering. The coordinator for the Villupuram district from Tamil Nadu Agricultural University explained the details, objective of the NADP project and the role of TNAU in the project. Then, the officials from the line departments such as Agriculture ,Horticulture, Agrl Engineering, Aavin, Agricultural marketing, Fisheries and Public welfare department (PWD) presented the project interventions in their concerned departments. The meeting was attended by the panchayat presidents, ward members etc. The doubts raised by the representatives from the panchayat were clarified by the respective departments. The representative from Tamil Nadu Agricultural University proposed the vote of thanks and the meeting ended with a success.

NADP Sensitization Workshop and Discussion on District Agriculture Plan - Villupuram District held on 10.05.2008

Address by the Villupuram District Collector Mr Brajendra Navaneedh

Presentation by the Coordinating Scientist from TNAU

Presentation by the Line Department officials

Presentation by the Line Department officials

View of the participants

View of the participants