Vellore - District Agricultural Plan

NATIONAL AGRICULTURAL DEVELOPMENT PROGRAMME (NADP)

DISTRICT AGRICULTURE PLAN

VELLORE DISTRICT

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

2008

NATIONAL AGRICULTURAL DEVELOPMENT PROJECT – DISTRICT AGRICULTURE PLAN

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FOREWORD

Date .....

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

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

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

(C. RAM AS AMY)

Coimbatore
June 30, 2008

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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)

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EXECUTIVE SUMMARY

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) or Rashtriya Krishi Vikas Yojana (RKVY) be launched. To implement this, formulation of action plans by means of developing District Agriculture Plans (DAP) is recommended. Subsequently, a comprehensive State Agriculture Plan (SAP) would be prepared by integrating these DAPs.

The major areas of focus were integrated development of major food crops like paddy, coarse cereals, minor millets, pulses and oilseeds; Agriculture mechanization; Strengthening of Market Infrastructure and Marketing Development; Activities relating to enhancement of Horticultural Production and Popularization of Micro Irrigation Systems; Sericulture Development; and Animal Husbandry and Fisheries Development activities.

A meeting was held at Vellore to discuss the various components of the District Agriculture Plan in the presence of line department officials and panchayat leaders. The feedback received in the District Collector's Meeting was incorporated before finalization of the District Agriculture Plan.

District Agriculture Plan for Vellore District

Vellore district is located in northern part of Tamil Nadu and it falls under the North Eastern Agro Climatic Zone of Tamil Nadu. The district is bound on the north by Karnataka State and Chithoor district of Andhra Pradesh State, on the east by Thiruvallur and Kancheepuram districts, on the south by Thiruvannamalai district and on the west by Krishnagiri district. There were eight taluks and 20 blocks. Also, there were seven agricultural divisions in the district.

Average rainfall in Vellore district (967.3 mm) during 2007 was slightly lesser than the normal rainfall. Almost one – fifth of the total geographical area (19 per cent) was under problem soils in the district. The degraded and fallow lands like cultural waste, and current and other fallow lands accounted for 21.7 per cent of the total geographical area.

The cropping pattern in the district indicated that ground nut was the predominant crop with 28.4 per cent of the total cropped area and it was followed by paddy (22.8 per cent), red gram (7.2 per cent), sugar cane (5.9 per cent), ragi (5.8 per cent) in that order during 2006-07. Food grains like cereals and pulses together accounted for 64 per cent of the total cropped area.

As regards animal husbandry, five per cent of the cattle and buffalo population of the State was in the district. Sheep and goat population in Vellore district accounted for about four per cent of the sheep and goat population of the State. As Vellore district was a land locked district, only inland fisheries development was taking place. Inland fish catchments in the district accounted for 10 per cent of the State's inland fish catchments.

Strategies to Achieve the Objectives of DAP for Vellore District

- Development of suitable technologies such as varietal improvement, input management supported by a strong institutional arrangements for the supply of inputs like seed, fertilizers, plant protection chemicals, credit, etc, price support system favourable to farmers and market infrastructure for major crops like paddy, sorghum, maize, red gram, sugarcane, ground nut, gingelly, banana, vegetables, cotton and fodder crops.
- Encouraging maize as an alternate crop for paddy through contract farming.
- Development of minor irrigation with drip irrigation system.
- Mechanization of farms with tractor operated – combined harvester, paddy transplanter, ground nut decorticator, etc.
- Strengthening water harvesting structures like farm ponds and check dams.
- Reclamation of fallow and degraded lands.
- Formation of Commodity Groups for major crops like ground nut, maize, coconut and pulses.

- Training and exposure visit to the farmers, traders, and other stakeholders on grading, post harvest technologies, value addition and market intelligence.
- Strengthening the extension machinery for effective dissemination of technology.
- Establishment of food parks to create necessary infrastructure for value addition in agricultural products.
- Strengthening of rural markets with storage facilities.
- Strengthening of farmers' market with additional storage facilities.
- Establishment of cool chains for better distribution of milk.
- Establishment of cattle feed units.
- Inland fisheries development in major tanks and reservoirs and
- Development of sericulture.

District Agricultural Plan

In order to dovetail the components and magnitude of the ongoing schemes implemented by the line departments in the proposed schemes under NADP, a brief review of ongoing schemes was made. As far as agriculture was concerned, in Part I scheme, schemes like Procurement of Paddy and Millet seeds, Pulses, Green manure seeds, Biological Control in Groundnut and Coconut, Integrated Cotton Development, Increasing the Production of Oilseeds, Production and distribution of Micro Nutrient mixtures and Bio-fertilizers were taken up. Under Part II Schemes, schemes like conducting Crop Cutting Experiment, kits for Block level, strengthening of six Pesticide Testing Laboratories, Development of Infrastructure facilities in State Seed Farms, and strengthening of infrastructure at government coconut nurseries were taken up. Under centrally sponsored schemes, purchase of breeder seeds, subsidizing foundation and certified seeds, conducting demonstration and farmers' training, distribution of bio fertilizers and bio control agents and Seed Village Programme were taken up. Totally, Rs. 4.70 crores worth of agricultural development programmes were taken up in the district during 2006-07.

As regards Horticulture, Rs. 5.07 crores worth of developmental works were taken up in Vellore district in 2006-07. Agricultural Engineering development works were carried out to the tune of Rs. 4.03 crores in 2007-08.

The line departments like Agriculture, Horticulture, Animal Husbandry, Fisheries, Sericulture and Agricultural Marketing have proposed the developmental projects to be taken up during XI Plan Period in Vellore district and the financial outlay is given in the table below:

Budget Details for Activities Proposed in the District Agriculture Plan

(Rs. in lakhs)

Sl. No	Departments	2008-09	2009-10	2010-11	2011-12	Total
1	Agriculture	845.195	732.995	773.695	748.495	3100.38
2	Horticulture	285.925	268.8	269.3	262.3	1086.325
3	Animal Husbandry	662.015	191.525	191.525	186.625	1231.69
4	Fisheries	30.5625	20.5625	17.3125	12.25	80.6875
5	Agricultural Engineering	504.7925	504.7925	504.7925	504.7925	2019.17
6	Agricultural Marketing	60.79	66.405	99.16	122.7	349.055
7	Sericulture	63.75	76.875	93.75	90.75	325.125
8	Public Works Department	9132.8	0	0	0	9132.8
	Total	**11585.83**	**1861.955**	**1949.535**	**1927.9125**	**17325.2325**

A brief account of SWOT of agricultural sector is discussed below:

Agricultural development of a district can be well represented by composite indices which are used as yardsticks not only to gauge the development of each district but also to compare its performance in relation to other districts. Twenty five indicators of agricultural development which were grouped into six different 'components', viz., i) Crop-Area-Variables (10); ii) Irrigation (7); iii) Livestock (3); iv) Fisheries (1); v)

Fertilizer (3) and vi) Cultivators and Labourers (2) were used for estimating the composite index of development for the district. The analysis showed that Vellore district which was classified as 'developing' in agricultural development during 1990-91 became 'developed' in agriculture during 1995-96 to 2005-06. In terms of overall agricultural development, its rank among the 29 districts of Tamil Nadu varied from 9 to 16 between 1990-91 and 2005-06.

Vellore, the Head-Quarters of Vellore District, is well connected by rail and bus routes to major towns of the neighbouring states like Andhra Pradesh, Karnataka and Kerala. A vast area under forest with a large number of sandalwood trees is there in Javvadhu hills. As well irrigation is predominant in the district, a variety of agricultural and horticultural crops are grown round the year. Vellore district is known for the presence of leather and leather based industries.

Vellore district is a drought prone district with erratic and less than normal rainfall recorded during the past several years. Most of the rivers in this district are dry for years together, and the major irrigation tanks which are mostly system tanks which are also dry for the most part of the year. This has resulted in over exploitation of ground water through open wells and deep bore wells. The area under the waste and fallow lands in the district also was around one – fifth of the total geographical area.

As there is a heavy demand for construction materials like sand and crushed stone from Chennai, sand quarrying from Palar and stone quarrying are carried out in a large scale in the district. As there is a heavy demand for fruits, vegetables and flowers from the nearby Chennai city, farmers who cultivate these crops are much benefited. Surplus milk produced in this district is also being transported daily to Chennai from Vellore dairy unit.

Vellore District is very near to Chennai and Bangalore cities and this has resulted in the large scale migration of farm labourers and in turn has resulted in a great demand for agricultural labourers.

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) or Rashtriya Krishi Vikas Yojana (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 the development of 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 an elaborate, exhaustive and iterative process and therefore every care is taken to ensure 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 and oilseeds;
(b) Agriculture mechanization;
(c) Activities related to enhancement of soil health;
(d) Development of rain fed farming systems in and outside watershed areas, as also Integrated Development of Watershed Areas, Wastelands and 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 the 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.

With the coordination of members of the District Planning Unit, the tasks for the preparation of District Agriculture Plan 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 Tamil Nadu Veterinary and Animal Sciences University attended the workshop. Also, several meetings were held in Chennai for the National Agriculture Development

Programme under the Chairmanship of Agriculture Production Commissioner and Secretary to Government of Tamil Nadu.

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

Preparation of Draft Action Plan and Presentation in District Collector's Meeting

Based on the baseline information and proposals, draft action plan was prepared and this was presented in the District Collector's Meeting held on May 10, 2008 under the chairmanship of the Project Officer, District Rural Development Agency, Vellore District. This meeting was attended by the scientists from TNAU, officials from line departments and the representatives of local bodies and wide coverage about this meeting was given in the media also. Participants suggested several modifications in the draft plan such as strengthening of storage facilities for fruits and vegetables, additional transport facilities to transport fruits and vegetables to Chennai so as to reach Chennai at right time, strengthening of weekly shandies and so on.

Finalization

A meeting was held at Vellore to discuss the various components of the District Agriculture Plan in the presence of line department officials and panchayat leaders. The feedback received in the District Collector's Meeting was incorporated before finalization of the District Agriculture Plan. The Strategic Research Extension Plan and Agriculture Technology Management Agency reports were also reviewed and relevant details have been incorporated in the draft report.

CHAPTER II

GENERAL DESCRIPTION OF VELLORE DISTRICT

2.1.1 Map of the District

Vellore district is located in northern part of Tamil Nadu and it falls under the North Eastern Agro Climatic Zone of Tamil Nadu. The location of Vellore district is depicted in the maps (Fig. 2.1 and Fig.2.2). The district is bound on the north by Karnataka State and Chithoor district of Andhra Pradesh State, on the east by Thiruvallur and Kancheepuram districts, on the south by Thiruvannamalai district and on the west by Krishnagiri district.

2.1.2 General Statistics

The geographical area of this district is 5,920.18 sq. km. Agriculture is the major activity in the district. However, industries like Bharat Heavy Electricals Limited, Ranipet, Tamil Nadu Explosives Limited, Katpadi and so on have been set up. Besides, there had been marked growth of small scale industries and tanneries in the district. There were 24,329 industrial units in the district, of which there were 2,448 metal and metal products units, 1,004 tannery units, 818 food products units, 281 textile units, 130 machineries and equipments units, 70 rubber products units and 66 chemical units. There were also 168 granite and stone quarrying units. Also, some of the handicrafts for which the Vellore district is renowned, are still flourishing. Mats making in Walajapet, silk weaving in Arni and the traditional art of pot making in Vellore and places around were some of the handicrafts which successfully withstood challenges through ages.

Vellore district has a strong infrastructure with a road length of 2,984 kms. The district has a railway net work with a broad gauge route length of 152.4 kms and 28 railway stations.

2.1.3 Agriculture and Allied Activities

Paddy, sorghum, red gram, horse gram, ground nut, gingelly, sugarcane, cotton and brinjal are the major crops grown in the district. There are two agricultural research stations of Tamil Nadu Agricultural University at Virinjipuram and Melalathur.

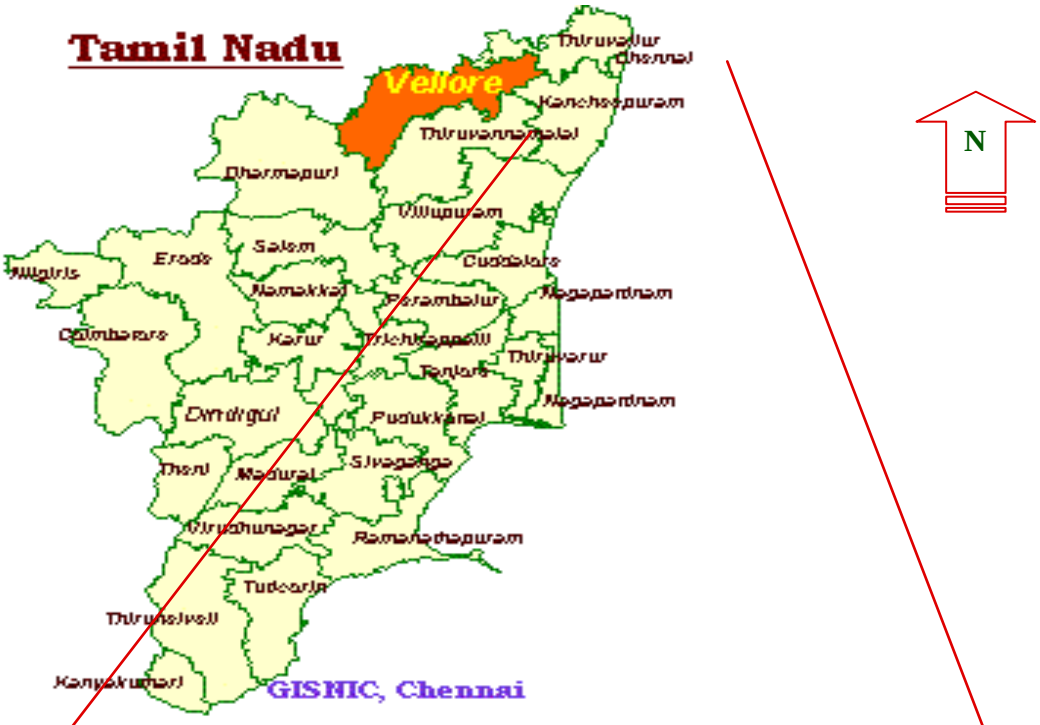

Fig.2.1: Vellore District in Tamil Nadu State

Fig.2.2: Vellore District Map

There is also one Agricultural College at Kalavai, one Veterinary University Training and Research Centre at Vellore and one Kavaloor Observatory at Thirupathur to carry out planetary research.

As regards animal husbandry, five per cent of the cattle and buffalo population of the State was in the district. Sheep and goat population in Vellore district accounted for about four per cent of the sheep and goat population of the State. As Vellore district was a land locked district, only inland fisheries development was taking place. Inland fish catchments in the district accounted for 10 per cent of the State's inland fish catchments.

2.2 District at a Glance

2.2.1 Location and Geographical Units

Vellore district lies between 12° 15' to 13° 15' North latitudes and 78° 20' to 79° 50' East longitudes in Tamil Nadu State. The geographical area of this district is 5920.18 sq. k.m. There were eight taluks and 20 blocks as listed in Tables 2.1 and 2.2 respectively. Also, there were seven agricultural divisions in the district (vide Table 2.3). The other administrative details of the district are given below.

i)	Header quarters	:	Vellore
ii)	No. of Taluks	:	8
iii)	No. of Revenue Divisions	:	3
iv)	No. of Community Divisional Blocks	:	20
v)	No. of Municipal Towns	:	14
vi)	No. of Town Panchayats	:	22
vii)	No. of Village Panchayats	:	763
vii)	No. of Revenue Villages	:	842

2.2.2 Demographic Profile

The total population, as per 2001 Census, was 34,77,317 comprising of 17,41,083 male (50.1 per cent of the total population) and 17,36,234 female populations. The decennial population growth of the district between the years 1991 and 2001 was 14.90 per cent. The density of population per square km was 813 and the number of females per 1000 male population was 997. A striking feature of the social change is that the district achieved cent percent literacy owing to the effective implementation of the Arivoli Movement. Cultivators and agricultural labourers accounted for 19.86 and 19.85 per cent of the total workers respectively.

Table 2.1 List of Taluks in Vellore District

S.No	Taluks
1	Vellore
2	Gudiyatham
3	Katpadi
4	Vaniyambadi
5	Thirupathur
6	Walajah
7	Arcot
8	Arakonam

Source: Records of Office of the Joint Director of Agriculture, Vellore.

Table 2.2 List of Blocks in Vellore District

S.No.	Blocks	S.No.	Blocks
1	Vellore	11	Jolarpet
2	Kaniyambadi	12	Kandili
3	Anaicut	13	Natrampalli
4	Gudiyatham	14	Walajah
5	K.V.Kuppam	15	Sholinghur
6	Katpadi	16	Arcot
7	Madhanur	17	Timiri
8	Pernambut	18	Arakonam
9	Alangayam	19	Nemili
10	Thirupathur	20	Kaveripakkam

Source: Records of Office of the Joint Director of Agriculture, Vellore.

Table 2.3 Number of Agricultural Divisions in Vellore District

S.No.	Agricultural Divisions	Blocks
1	Vellore	Vellore, Kaniyamabdi and Anaicut
2	Gudiyatham	Gudiyatham, KV. Kuppam and Katpadi
3	Vaniyambadi	Alangayam, Madhanur and Pernambut
4	Thirupathur	Thirupathur, Kandhili, Natrampalli and Jolarpet
5	Walajah	Walajah and Sholinghur
6	Arcot	Arcot and Timiri
7	Arakonam	Arakonam, Nemili and Kaveripakkam

Source: Records of Office of the Joint Director of Agriculture, Vellore.

2.2.3 Topography and Agro Climate Characteristics

The highest mountain in the district is the Javvadhu Hills, which covers the eastern part of Thirupathur taluk. The elevation of the Javvadhu Hills is 2500 feet above mean sea level with peaks rising upto 4200 feet. The Yelagiri Hills lie in the central part of Thirupathur taluk with an altitude of 3200 feet. The climate of the district is basically tropical. The average minimum and maximum temperature in the district are 16 degrees Celsius and 38 degrees Celsius respectively. Season wise rainfall of the district for the period from 2004 to 2007 is given in Table 2.4(a). It could be seen from the table that the average rainfall in Vellore district (967.3 mm) during 2007 was slightly lesser than the normal rainfall.

The district received maximum rainfall during South West Rainfall period (44.0 per cent of average total rainfall for the period between 2004 and 2007) which was followed by North East (40.4 per cent), Summer (15.0 per cent) and Winter (0.6 per cent) seasons in that order.

Table 2.4 (a) Season wise Rainfall in the District for the Period from 2004 to 2007

(in mm)

S. No	Season	Normal	2003	2004	2005	2006	2007	Average Rainfall
1	Winter (Jan. and Feb)	39.8	0.0	2.1	12.4	15.8	0	6.1
2	Summer (March to may)	106.6	56.2	252.7	198.1	110.4	108.5	145.2
3	South West (June to Sep)	439.1	616.0	269.3	407.1	386.8	446.9	425.2
4	North East (Oct to Dec)	385.6	318.6	281.0	680.6	309.2	364.6	390.8
	Total	**971.1**	**990.8**	**805.1**	**1298.2**	**822.2**	**920.0**	**967.3**

Source: Records of Office of the Joint Director of Agriculture, Vellore.

The month wise rainfall pattern of the district, as shown in Table 2.4 (b), revealed that maximum average rain fall was received in October (20.5 per cent of average total rainfall for the period between 2004 and 2007) and the minimum was in February (0.3 per cent).

Table 2.4 (b) Month wise Rainfall in Vellore District during 2003-07

(in mm)

S. No	Month	Normal	2003	2004	2005	2006	2007	Average
1	January	30.9	-	2.1	-	15.8	0.0	3.6
2	February	8.9	-	-	12.4	-	0.0	2.5
	Winter	**39.8**	**0.0**	**2.1**	**12.4**	**15.8**	**0.0**	**6.1**
3	March	11.5	45.8	-	27.1	33.2	0.0	21.2
4	April	24.3	-	4.3	91.6	29.3	46.5	34.4
5	May	70.8	10.4	248.4	79.4	47.9	62.0	89.6
	Summer	**106.6**	**56.2**	**252.7**	**198.1**	**110.4**	**108.5**	**145.2**
6	June	58.1	52.6	21.9	59.5	119.7	67.2	64.2
7	July	87.6	250.5	41.8	80.5	32.5	146.5	110.4
8	August	132.9	226.0	-	99.5	74.2	140.9	108.1
9	September	160.5	86.9	205.6	167.6	160.4	92.3	142.5
	South West	**439.1**	**616.0**	**269.3**	**407.1**	**386.8**	**446.9**	**425.2**
10	October	166.2	176.2	155.0	339.3	174.2	145.8	198.1
11	November	158.4	108.0	126.0	218.9	102.6	46.2	120.3
12	December	61.0	34.4	-	122.4	32.4	172.6	72.4
	North East	**385.6**	**318.6**	**281.0**	**680.6**	**309.2**	**364.6**	**390.8**
	Total	**971.1**	**990.8**	**805.1**	**1298.2**	**822.2**	**920.0**	**967.3**

Source: Records of Office of the Joint Director of Agriculture, Vellore.

2.2.3.1 Soil Type

Soil type determines the productivity of crops and hence, area under different soil types is given in Table 2.5. Maximum area in Vellore district is under red soil (47.6 per cent of the total geographical area) which is followed by sandy loam (7.3 per cent), black soil (5.0 per cent) and sandy clay loam (3.6 per cent) in that order.

In problem soils like saline and alkaline soils and eroded or degraded soil, the crop productivity is lesser. Also, only selective crops which could withstand such adverse conditions are cultivated in such soils. The area under problem soils is given in Table 2.6. In all the seven divisions of the district, such problem soils were present. As could be seen from Table 2.6, seven per cent of the total geographical area was under problem soils like saline and alkaline soil. Arakonam division had a maximum area (29.4 per cent of the total area under saline and alkaline soils in the district) under such soils and it was followed by Arcot (28.3 per cent) division.

As far as the eroded soils are concerned, the area under such soil was more than that of the saline and alkaline soils. The district had 12 per cent of its total geographical area under eroded soil. Walajah division had the largest area (21 per cent of the total area under eroded soil in the district) followed by Vaniyambadi (17.8 per cent), Thirupathur (17.2 per cent).

Table 2.5 Area under Different Soil Types in Vellore District

Symbol	Soil Series	Area (Ha)	Depth (cm)	Texture
Mng	Mangalathu Petty	127522	94	Loamy sand
Kol	Kolathur	77292	75+	Sandy clay
Etp	Ethapur	41630	75+	Sandy clay loam
Cpm	Chickarasampalayam	11243	112+	Sandy clay loam
Vdv	Vadavalam	9862	150+	Clay loams
Idp	Idayapatti	4020	105	Silty Clay
Vdp	Vadapudupattu	10093	183+	Loamy sand
Total Red Soil		**281662**		
Gur	Gurumangalam	29860	143	Clay
Total Black Soil		**29860**		
Vpt	Vannpatti	24293	27	Sandy loam
Anm	Arasanatham	7341	120	Sandy loams
Kbd	Kadambadi	6612	196	Sandy loam

Table 2.5 contd…

Symbol	Soil Series	Area (Ha)	Depth (cm)	Texture
Ppm	Pattipalayam	4778	103+	Loamy sand
Total Sandy Loam		**43024**		
Pdg	Pudugai	15163	185+	Sandy clay loam
Mlm	Mailam	5870	48+	Sandy clay loam
Total Sandy Clay Loam		**21033**		
SA	**Soil Association**	**17859**		
MLT	**Miscellaneous land**	**37351**		
	Forest	**161229**		
	Grand Total	**592018**		

Source: Records of Office of the Joint Director of Agriculture, Vellore.

Table 2.6 Area Under Problem Soils in Vellore District

S. No.	Divisions	Area under Salaine and Alkaline Soil (Ha)	Area Prone to Soil Erosion (Ha)
1	Vellore	4028	570
2	Gudiyatham	5854	9498
3	Vaniyambadi	1899	12785
4	Thirupathur	1994	12334
5	Walajah	3575	14774
6	Arcot	11570	9657
7	Arakonam	12031	12171
	Total	**40951**	**71789**

Source: Records of Office of the Joint Director of Agriculture, Vellore.

In sum, almost one – fifth of the total geographical area (19 per cent) was under problem soils in the district. If reclamation efforts were properly designed and executed, crop productivity could be enhanced in such degraded lands.

2.2.4 Land Use Pattern

A study on land use pattern would be useful to the policy makers to assess the magnitude of different usages of land and also to utilize the degraded and fallow lands to enhance the agricultural production. The land use pattern in Vellore district for the period from 2003-04 to 2006-07 is given in Table 2.7(a) through Table 2.7(c). The forest areas were predominantly found in Vellore, Tirupathur and Gudiyatham taluks.

As could be seen from Table 2.7 (a), the area under forest during 2006-07 was 25.5 per cent of the total geographical area and this was lesser than the prescribed level of 33.3 per cent level required for the maintenance of ecological balance. However, the forest area in Vellore district was more than that of the State's forest area (16.2 per cent). The net sown area in the district accounted for only 33.3 per cent, i.e., one – third of the total geographical area, while the corresponding figure for the State was 40 per cent. The degraded and fallow lands like cultural waste, current and other fallow lands accounted for 21.7 per cent. Thus, more than one – fifth of the total geographical area could not be productively utilized and proper reclamation efforts could bring these lands under net sown area.

It could be observed from Table 2.7 (b) and 2.7 (c) that the area under forest was maximum in Anaicut block (61 per cent of the total geographical area) followed by Pernambut (56 per cent), Alangayam (46 per cent), Thirupathur (40 per cent) and Gudiyatham (33 per cent) blocks in that order. However, there was no forest area in Nemili block. The net area sown was maximum in Kandili block (48 per cent of the total geographical area) and minimum in Anaicut block (22 per cent). This was due to maximum area under forest in Anaicut block and smaller area under forest in Kandili block (3 per cent). However, there were larger areas under culturable waste, current fallow and other fallow lands in blocks like Arakonam (43.3 per cent), Kandili (35.2 per cent), Walajah (32.9 per cent), Kaveripakkam (32.8 per cent), Timiri (32.8 per cent) and so on. The area under the waste and fallow lands in the district also was around one – fifth of its total geographical area during 2005-06. Proper planning and reclamation of these lands alone could enhance the net sown area in the district which was only 33 per cent of the total geographical area.

Table 2.7 (a) Land Use Pattern in Vellore District during 2003-04 to 2006-07

Classification	2003-04		2004-05		2005-06		2006-07	
	Area in Ha	%e to TGA	Area in Ha	% to TGA	Area in Ha	% age to TGA	Area in Ha	% to TGA
Forest	161229	27.2	161229	27.2	150722	25.5	150722	25.5
Barren and Uncultivable	26054	4.4	26054	4.4	24379	4.1	24358	4.1
Land put to non- agrl. Use	82388	13.9	82448	13.9	83735	14.1	84190	14.2
Cultivable Waste	6307	1.1	6509	1.1	5513	0.9	5944	1.0
Permanent pastures	3833	0.6	3833	0.6	3998	0.7	3998	0.7

Table 2.7 (a) contd…

Classification	2003-04		2004-05		2005-06		2006-07	
	Area in Ha	per cent age to TGA	Area in Ha	per cent age to TGA	Area in Ha	% age to TGA	Area in Ha	% age to TGA
Tree Crops and Grooves	3323	0.6	3323	0.6	2976	0.5	2976	0.5
Current Fallows	69431	11.7	71621	12.1	55061	9.3	60726	10.3
Other Fallows	59142	10.0	64085	10.8	55731	9.4	61746	10.4
Net Area Sown	180311	30.5	172916	29.2	209903	35.5	197357	33.3
Total Geographical Area (TGA)	**592018**	**100.0**	**592018**	**100.0**	**592018**	**100.0**	**592017**	**100.0**
Area sown more than once	41900	7.1	34230	5.8	25504	4.3	19420	3.3
Gross cropped area	222211	37.5	207148	35.0	225653	38.1	216778	36.6

Source: Records of Office of the Joint Director of Agriculture, Vellore.

Table 2.7(b): Block Wise Land Use Pattern in Vellore District during 2005-06

(Area in hectares)

S. No	Blocks	Forest Area	Not Available for Cultivation		Other Uncultivated Area			Fallow Lands		Net Area Sown	Total Geographical Area (Reported)
			Barren and Unculti-vable Land	Area under non - agricul - tural uses	Cultu-rable Waste Land	Permanent Pastures and other grazing Land	Land under Misc.Trees not incl. in NSA	Curr-ent fallow (CF)	Fallow other than CF		
1	Vellore	571	1340	3761	548	25	49	1517	561	3754	**12126**
2	Kaniyambadi	1131	1464	2278	56	63	62	337	1806	6442	**13639**
3	Anaicut	33458	1449	2116	50	32	29	1999	3319	12241	**54693**
4	Gudiyatham	10991	1537	5153	15	75	14	1618	110	13540	**33053**
5	K.V.Kuppam	3619	1269	3475	172	22	240	2293	459	10542	**22091**
6	Katpadi	5950	1586	3363	206	90	65	2705	892	6271	**21128**
7	Madhanur	5895	1331	3204	325	94	20	1034	433	9228	**21564**
8	Pernambut	31491	1700	6118	417	292	218	2376	202	13176	**55990**
9	Alangayam	19820	1455	1785	265	472	112	4685	485	13955	**43034**
10	Thirupathur	15003	340	3553	281	247	27	5046	361	12534	**37392**
11	Jolarpet	6534	2138	4603	206	371	26	3172	55	12021	**29126**
12	Kandili	864	182	3264	20	381	118	5308	4788	13819	**28744**
13	Natrampalli	5296	2444	1123	347	55	25	3572	212	9862	**22936**
14	Walajah	2221	1611	5791	269	91	16	1909	5875	6715	**24498**
15	Sholinghur	336	2262	5011	309	208	90	3799	4505	11333	**27853**
16	Arcot	3446	583	4226	634	135	274	2966	4146	8319	**24729**
17	Timiri	2514	1126	5638	878	180	670	6652	4026	13549	**35233**

Table 2.7(b) contd…

(Area in hectares)

S. No	Blocks	Forest Area	Not Available for Cultivation		Other Uncultivated Area			Fallow Lands		Net Area Sown	Total Geogra-phical Area (Reported)
			Barren and Uncultivable Land	Area under non -agricul -tural uses	Cultu-rable Waste Land	Permanent Pastures and other grazing Land	Land under Misc.Trees not incl. in NSA	Curr-ent fallow (CF)	Fallow other than CF		
18	Arakona	385	195	4517	88	195	290	1033	7267	5396	**19366**
19	Nemili	0	67	7497	99	590	327	803	7276	13054	**29713**
20	Kaveripakkam	1197	300	7259	328	380	304	2237	8953	14152	**35110**
District		**150722**	**24379**	**83735**	**5513**	**3998**	**2976**	**55061**	**55731**	**209903**	**592018**

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

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Table 2.7 (c): Block Wise Percentage Share of Different Uses of Land during 2005-06

(in percentage)

Sl. No.	Blocks	Forest Area	Not Available for Cultivation		Other UnCultivated Area			Fallow Lands		Net Area Sown	Total Geogra-phical Area (Reported)
			Barren and Unculti-vable Land	Area under non -agricul -tural uses	Cultu-rable Waste Land	Permanent Pastures and other grazing Land	Land under Misc.Trees not incl. in NSA	Curr-ent fallow (CF)	Fallow other than CF		
1	Vellore	4.7	11.1	31.0	4.5	0.2	0.4	12.5	4.6	31.0	100.0
2	Kaniyambadi	8.3	10.7	16.7	0.4	0.5	0.5	2.5	13.2	47.2	100.0
3	Anaicut	61.2	2.6	3.9	0.1	0.1	0.1	3.6	6.0	22.4	100.0
4	Gudiyatham	33.3	4.7	15.6	0.0	0.2	0.0	4.9	0.3	41.0	100.0
5	K.V.Kuppam	16.4	5.7	15.7	0.8	0.1	1.1	10.4	2.1	47.7	100.0
6	Katpadi	28.2	7.5	15.9	1.0	0.4	0.3	12.8	4.2	29.7	100.0
7	Madhanur	27.3	6.2	14.9	1.5	0.4	0.1	4.8	2.0	42.8	100.0
8	Pernambut	56.2	3.0	10.9	0.8	0.5	0.4	4.3	0.4	23.5	100.0
9	Alangayam	46.1	3.4	4.1	0.6	1.1	0.3	10.9	1.1	32.4	100.0
10	Thirupathur	40.1	0.9	9.5	0.7	0.7	0.1	13.5	1.0	33.5	100.0
11	Jolarpet	22.4	7.3	15.8	0.7	1.3	0.1	10.9	0.2	41.3	100.0
12	Kandili	3.0	0.6	11.3	0.1	1.3	0.4	18.5	16.7	48.1	100.0
13	Natrampalli	23.1	10.7	4.9	1.5	0.2	0.1	15.6	0.9	43.0	100.0
14	Walajah	9.0	6.6	23.6	1.1	0.4	0.1	7.8	24.0	27.4	100.0
15	Sholinghur	1.2	8.1	18.0	1.1	0.8	0.3	13.6	16.2	40.7	100.0
16	Arcot	13.9	2.4	17.1	2.6	0.5	1.1	12.0	16.8	33.6	100.0
17	Timiri	7.1	3.2	16.0	2.5	0.5	1.9	18.9	11.4	38.5	100.0
18	Arakonam	2.0	1.0	23.3	0.5	1.0	1.5	5.3	37.5	27.9	100.0
19	Nemili	0.0	0.2	25.2	0.3	2.0	1.1	2.7	24.5	44.0	100.0
20	Kaveripakkam	3.4	0.8	20.7	0.9	1.1	0.9	6.4	25.5	40.3	100.0
	District	25.5	4.1	14.1	0.9	0.7	0.5	9.3	9.4	35.5	100.0

The cropping intensity in the district for the triennium ending 2006-07 was 112 per cent. So, there is an urgent need to increase the area under irrigation so as to increase the area sown more than once which would in turn increase the cropping intensity.

The land holdings distribution pattern in Vellore district was highly skewed as could be seen from Table 2.8. More than 90 per cent of the total number of farmers in the district were marginal and small farmers who were holding less than two hectares of land and they operated 61 per cent of the total arable land, while 1.2 per cent of the farmers having five to 10 hectares of land were operating 11 per cent of the area. The average size of the holding in the district was only 0.82 hectare.

2.2.5 Irrigation and Ground Water

Area under irrigation would determine the area under long duration commercial crops and thereby the agricultural output. Palar and Ponnai are the major rivers flowing through the district. However they remain dry for most part of the year. The details of Ayacut projects with area and number of tanks benefited are given in Table 2.9. Palar Ayacut Project supported 148 tanks in Vellore district indirectly with an ayacut area of 13,882 hectares while Ponnai Ayacut Project indirectly supported 126 tanks with an ayacut area of 8,973 hectares. Table 2.10 would indicate the predominance of well irrigation in Vellore district.

Gross and net irrigated areas in Vellore district are given in Table 2.11 and 2.12 respectively. Contributions of well irrigation which was a major source irrigation, to gross and net irrigated areas by all sources were 70.8 and 70.3 per cent respectively and the next major source of irrigation was tanks with their shares in gross and net irrigated areas by all sources were 24.9 and 25.7 per cent respectively. Canal irrigation was insignificant as there was no perennial river in Vellore district.

The irrigation intensity in the district was only 123 per cent. The percentage of net irrigated area to net sown area was only 58 per cent for the triennium ending 2006-07. The percentage share of gross irrigated area to gross cropped area was 64 per cent for the same period. However, there was an increase in both net and gross irrigated areas in the district between 2004-05 and 2006-06.

Table 2.8 Blocks wise Distribution of Land Holding Pattern of the Farmers in Vellore District during 2005-06

Sl.No.	Name	0 -1 hectare		1.1 - 2 hectares		2.1 - 5 hectares		5.1 - 10 hectares		Total	
		Nos	Ha.	Nos	Ha.	Nos	Ha.	Nos	Ha.	Nos	Ha.
1	Vellore	7134	2551	1133	1527	382	1006	49	314	8698	5398
2	Kaniyambadi	10799	4155	1647	2075	451	3076	27	172	12924	9478
3	Anaicut	11474	5287	3345	4639	1631	4796	258	1868	16708	16590
4	Gudiyatham	16741	6160	3150	4335	1337	3959	209	1481	21437	15935
5	K.V.Kuppam	10659	4506	2892	4056	1433	4142	192	1377	15176	14081
6	Katpadi	13231	4389	1823	2521	633	1758	54	594	15741	9262
7	Madhanur	10024	4019	2381	3308	1005	2918	246	1039	13656	11284
8	Pernambut	14300	5432	3168	4449	1509	5889	262	2885	19239	18655
9	Alangayam	5426	2446	2856	3715	2069	6261	595	4879	10946	17301
10	Thirupathur	16046	5971	3129	4072	1427	6178	407	1789	21009	18010
11	Jolarpet	13225	6454	3200	4750	1700	4801	313	2286	18438	18291
12	Kandili	14287	5645	3805	5389	2026	5332	375	2777	20493	19143
13	Natrampalli	18511	5528	2679	3590	865	2466	120	1085	22175	12669
14	Walajah	10596	3654	2269	3159	813	2301	86	748	13764	9862
15	Sholinghur	20573	7528	4040	5620	1636	4550	135	927	26384	18625
16	Arcot	13830	4831	2367	3192	1056	3052	148	1070	17401	12145
17	Timiri	19289	7462	4369	6067	2030	5865	264	849	25952	20243
18	Arakonam	4410	2292	1465	2159	1067	3315	243	2074	7185	9840
19	Nemili	25039	7408	3594	5115	1699	5068	297	2210	30629	19801
20	Kaveripakkam	18891	6869	4100	5720	1924	5557	259	1928	25174	20074
District		**274485**	**102587**	**57412**	**79458**	**26693**	**82290**	**4539**	**32352**	**363129**	**296687**
Percentage to total		**75.6**	**34.6**	**15.8**	**26.8**	**7.4**	**27.7**	**1.2**	**10.9**	**100.0**	**100.0**

Source: Records of Office of the Joint Director of Agriculture, Vellore.

Table 2.9 Details of Ayacut Projects in Vellore District

River Basin		No. of Tanks	Area (in Ha)
Palar Ayacut Project			
a.	Direct	--	--
b.	Indirect Ayacut		
	1. Walajah	12	1106
	2. Arakonam	88	9863
	3. Arcot	48	2913
Total		148	13882
Ponnai Ayacut Project			
a.	Direct	--	--
b.	Indirect Ayacut		
	1. Gudiyattam	6	372
	2. Walajah	61	3732
	3. Arakonam	59	4869
Total		126	8973

Source: Records of Office of the Joint Director of Agriculture, Vellore.

Table 2.10 Irrigation Potential of Different Sources in Vellore District

Type of Irrigation Sources	Nos.	Irrigation Capacity
PWD tanks (major)	420	42567 Hectares
Minor Irrigation Tanks	1355	26005 Hectares
Wells	123086	91745 Hectares
Major rivers viz. Palar and Ponnaiyar	-	Flow of water for one month
Mordhana Anaicut	-	214.9 mcft
Raja Thoppu Canal Anaicut	-	20.5 mcft
Palar Anaicut	-	One crop
Ponnai Anaicut	-	-

Source: Records of Office of the Joint Director of Agriculture, Vellore.

Table 2.11 Gross Area Irrigated in Vellore District during 2004-07

(in Hectares)

Sl.No.	Source	2004-05	2005-06	2006-07	Triennium Average Ending 2006-07
1	Canal	0 (0.0)	3256 (2.2)	4380 (2.6)	2545 (1.8)
2	Tank	0 (0.0)	56613 (37.7)	46539 (27.8)	34384 (24.9)
3	Wells	92734 (95.5)	85138 (56.7)	115492 (69.0)	97788 (70.8)
4	Others	4374 (4.5)	5029 (3.4)	982 (0.6)	3462 (2.5)
Total		**97108 (100.0)**	**150036 (100.0)**	**167393 (100.0)**	**138179 (100.0)**

(Figures in parentheses indicate percentage to total)
Source: Records of Office of the Joint Director of Agriculture, Vellore.

Table 2.12 Net Irrigated Area in Vellore District during 2004-07

(in Hectares)

Sl.No.	Source	2004-05	2005-06	2006-07	Triennium Average Ending 2006-07
1	Canal	0 (0.0)	3042 (2.5)	4021 (2.8)	2354 (2.1)
2	Tank	0 (0.0)	46070 (37.5)	40929 (28.2)	29000 (25.7)
3	Wells	68354 (97.2)	69879 (57.0)	99223 (68.4)	79152 (70.3)
4	Others	1940 (2.8)	3688 (3.0)	803 (0.6)	2144 (1.9)
Total		**70294 (100.0)**	**122679 (100.0)**	**144976 (100.0)**	**112650 (100.0)**

(Figures in parentheses indicate percentage to total)
Source: Records of Office of the Joint Director of Agriculture, Vellore.

2.2.5.1 Ground Water Potential

Ground water potential in all the blocks of Vellore district has been assessed by Public Works Department and the details are given in Table 2.13. As listed in the table, 16 out of 20 blocks were categorized as ‘over exploited’ in terms of ground water potential, i.e., exploitation was more than 100 per cent, Nemili and Kaveripakkam blocks were categorized as ‘critical’ with the exploitation level of 90 -100 per cent and the remaining two blocks, namely, Walajah and Arakonam blocks were in ‘semi critical condition’ with the exploitation level of 70 - 90 per cent.

Table 2.13 Block wise Ground Water Potential in Vellore District

Over Exploited (More than 100%)	Critical (Dark: 90 – 100%)	Semi Critical (Grey: 70 -90%)	Safe (White: Less than 70%)
Vellore	Nemili	Walaja	NIL
Kaniyambadi	Kaveripakkam	Arakonam	
Anaicut			
Gudiyatham			
K.V.Kuppam			
Katpadi			
Madhanur			
Pernambut			
Alangayam			
Tirupathur			
Jolarpet			
Kandili			
Natrampalli			
Sholinghur			
Arcot			
Timiri			

Source: Records of Office of the Joint Director of Agriculture, Vellore.

2.2.6 Cropping Pattern

Area under different crops in Vellore district is given in Tables 2.14(a) and 214(b). As could be seen from Table 2.14(a), area under irrigated crops was slightly higher (50.2 per cent of the total cropped area) in the district than that of rainfed crops. In Table 2.14(b), proportions of area under different crops to total cropped area in the district are given. There was a tremendous increase in the area under paddy from 28,428 hectares in 2004-05 to 58432 hectares in 2005-06 and to 52,100 hectares in 2006-07. Similarly, the area under millets, pulses and oil seeds had been increased in 2006-07 as compared to that of 2004-05. Gross cropped area had increased from 1.7 lakh hectares to 2.3 lakh hectares for the same period accounting for an increase of 36 per cent. Ground nut was the predominant crop with 28.4 per cent of the total cropped area and it was followed by paddy (22.8 per cent), red gram (7.2 per cent), sugar cane (5.9 per cent), ragi (5.8 per cent) and so on during 2006-07. Food grains like cereals and pulses together accounted for 64 per cent of the total cropped area.

Production details of different crops are given in Table 2.15. Paddy production had increased from 1.1 lakh tonnes in 2004-05 to 1.9 lakh tonnes in 2006-07 accounting for an increase of 81 per cent. The increase in production of paddy was more than that of its area obviously because of increase in the productivity. The productivity of paddy was 3500 kgs per hectares in 2004-05 and it increased to 3704 kgs per hectares in 2006-07. Similarly, production of select crops in Vellore district showed increase in 2006-07 as compared to that of 2004-05. Production of all the select crops was 3.3 lakh tonnes in 2004-05 and it rose to 6.0 lakh tonnes in 2006-07. However, the production of rainfed crops was almost static between 2004-05 and 2006-07 and the increase in overall production was due to increase in the production of irrigated crops, i.e., from 3.3 to 4.5 lakh tonnes for the same period accounting for an increase of 39 per cent. Therefore, it requires greater efforts to increase the production of rainfed crops which occupied about forty per cent of the net sown area.

Table 2.14(a) Cropping Pattern (Area under each Crop - Rainfed / Irrigated) in Vellore District

(Area in Hectares)

Name of the Crop	2004-05			2005-06			2006-07			Season
	Rainfed/ Dry	Irrigated	Total	Rainfed/ Dry	Irrigated	Total	Rainfed/ Dry	Irrigated	Total	
Paddy	**0**	**28428**	**28428**	**0**	**58432**	**58432**	**0**	**52100**	**52100**	Sornawari, Samba, Navarai kharif (Rainfed) and Rabi (Irrigated)
Millets		0								
Sorghum	12877	1102	13979	12469	0	12469	10745	355	11100	Kharif (Rainfed) and Rabi (Irrigated)
Cumbu	3125	1865	4990	3125	2894	6019	3875	4860	8735	
Ragi	1115	4205	5320	1115	9579	10694	1690	11510	13200	
Maize	0	1032	1032	0	922	922	225	4555	4780	
Other Millets	6060	0	6060	5143	0	5143	6200	0	6200	
Total Millets	**23177**	**8204**	**31381**	**21852**	**13395**	**35247**	**22735**	**21280**	**44015**	
Pulses										
Red gram	13940	0	13940	15147	2	15149	16600	0	16600	
Black gram	4125	1445	5570	3943	1585	5528	4510	3490	8000	
Green gram	2950	225	3175	2537	265	2802	2995	2005	5000	
Horse gram	5715	0	5715	6620	0	6620	8900	0	8900	Rabi (Rainfed)
Cowpea and Other Pulses	4400	80	4480	5297	357	5654	5297	6353	11650	Kharif (Rainfed) and Rabi (Irrigated)
Total Pulses	**31130**	**1750**	**32880**	**33544**	**2209**	**35753**	**38302**	**11848**	**50150**	
Cotton	**2016**	**0**	**2016**	**2016**	**0**	**2016**	**2016**	**0**	**2016**	
Sugarcane	**0**	**13468**	**13468**	**0**	**13468**	**13468**	**0**	**13468**	**13468**	Kharif and Rabi (Irrigated)
Oil Seeds										
Groundnut	48540	9473	**58013**	43793	11623	**55416**	49540	15535	**65075**	Kharif (Rainfed) & Rabi(Irrigated)
Gingelly	375	1445	**1820**	246	420	**666**	410	690	**1100**	
Castor	658	0	**658**	1204	0	**1204**	985	0	**985**	Kharif (Rainfed)
Total Oil Seeds	**49573**	**10918**	**60491**	**45243**	**12043**	**57286**	**50935**	**16225**	**67160**	
Total	**105896**	**62768**	**168664**	**102655**	**99547**	**202202**	**113988**	**114921**	**228909**	
%age to Total	**62.8**	**37.2**	**100.0**	**50.8**	**49.2**	**100.0**	**49.8**	**50.2**	**100.0**	

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

Table 2.14(b) Proportion of Area under Different Crops to their Respective Total Cropped Area in Vellore District - 2004-05 to 2006-07

(in per cent)

Name of the Crop	2004-05			2005-06			2006-07		
	Rain fed/ Dry	Irrigated	Total	Rain fed/ Dry	Irrigated	Total	Rain fed/ Dry	Irrigated	Total
Paddy	**0.0**	**45.3**	**16.8**	**0.0**	**58.7**	**28.9**	**0.0**	**45.4**	**22.8**
Millets									
Sorghum	12.2	1.8	8.3	12.2	0.0	6.2	9.4	0.3	4.8
Cumbu	2.9	3.0	3.0	3.0	2.9	3.0	3.4	4.2	3.8
Ragi	1.1	6.7	3.1	1.1	9.6	5.3	1.5	10.0	5.8
Maize	0.00	1.6	0.6	0.0	1.0	0.4	0.2	4.0	2.1
Other Millets	5.7	0.0	3.6	5.0	0.0	2.5	5.4	0.0	2.7
Total Millets	**21.9**	**13.1**	**18.6**	**21.3**	**13.5**	**17.4**	**19.9**	**18.5**	**19.2**
Pulses									
Red gram	13.2	0.0	8.3	14.7	0.0	7.5	14.6	0.0	7.2
Black gram	3.9	2.3	3.3	3.8	1.6	2.7	4.0	3.0	3.5
Green gram	2.8	0.4	1.9	2.5	0.3	1.4	2.6	1.8	2.2
Horse gram	5.4	0.0	3.4	6.5	0.0	3.3	7.8	0.0	3.9
Cowpea and Other Pulses	4.1	0.1	2.6	5.2	0.3	2.8	4.6	5.5	5.1
Total Pulses	**29.4**	**2.8**	**19.5**	**32.7**	**2.2**	**17.7**	**33.6**	**10.3**	**21.9**
Cotton	**1.9**	**0.0**	**1.2**	**1.9**	**0.0**	**1.0**	**1.8**	**0.0**	**0.9**
Sugarcane	**0.0**	**21.4**	**8.0**	**0.0**	**13.5**	**6.7**	**0.0**	**11.7**	**5.9**

Table 2.14(b) contd… (in per cent)

Name of the Crop	2004-05			2005-06			2006-07		
	Rain fed/ Dry	Irrigated	Total	Rain fed/ Dry	Irrigated	Total	Rain fed/ Dry	Irrigated	Total
Oil Seeds									
Groundnut	45.8	15.1	34.4	42.7	11.7	27.4	43.5	13.5	28.4
Gingelly	0.4	2.3	1.1	0.2	0.4	0.3	0.3	0.6	0.5
Castor	0.6	0.0	0.4	1.2	0.0	0.6	0.9	0.0	0.4
Total Oil Seeds	**46.8**	**17.4**	**35.9**	**44.1**	**12.1**	**28.3**	**44.7**	**14.1**	**29.3**
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Table 2.15 Production of Major Crops in Vellore District during 2004-05 – 2006-07

(in Lakh Tonnes)

Name of the crop	2004-05			2005-06			2006-07		
	Rainfed/ Dry	Irrigated	Total	Rainfed/ Dry	Irrigated	Total	Rainfed/ Dry	Irrigated	Total
Paddy	**0.000**	**1.066**	**1.066**	**0.000**	**2.162**	**2.162**	**0.000**	**1.930**	**1.930**
Millets									
Sorghum	0.190	0.018	0.208	0.620	0.000	0.620	0.534	0.000	0.534
Cumbu	0.012	0.063	0.075	0.016	0.084	0.100	0.020	0.141	0.161
Ragi	0.020	0.059	0.079	0.006	0.280	0.286	0.009	0.336	0.345
Maize	0.000	0.015	0.015	0.000	0.027	0.027	0.009	0.132	0.141
Other Millets	0.900	0.000	0.900	0.026	0.000	0.026	0.031	0.000	0.031
Total Millets	**1.122**	**0.155**	**1.277**	**0.668**	**0.391**	**1.059**	**0.603**	**0.609**	**1.212**
Pulses									
Red gram	0.068	0.000	0.068	0.136	0.000	0.136	0.150	0.000	0.150
Black gram	0.020	0.007	0.027	0.035	0.127	0.162	0.040	0.280	0.320

Table 2.15 Contd..: Production of Major Crops in Vellore District during 2004-05 – 2006-07

(in Lakh Tonnes)

Name of the crop	2004-05			2005-06			2006-07		
	Rainfed/ Dry	Irrigated	Total	Rainfed/ Dry	Irrigated	Total	Rainfed/ Dry	Irrigated	Total
Green gram	0.010	0.006	0.016	0.023	0.002	0.025	0.027	0.015	0.042
Horse gram	0.028	0.000	0.028	0.060	0.000	0.060	0.081	0.000	0.081
Cowpea and Other Pulses	0.020	0.002	0.022	0.048	0.003	0.051	0.054	0.100	0.154
Total Pulses	**0.146**	**0.015**	**0.161**	**0.302**	**0.132**	**0.434**	**0.352**	**0.395**	**0.747**
Cotton (Lint)	**0.023**	**0.000**	**0.023**	**0.014**	**0.000**	**0.014**	**0.014**	**0.000**	**0.014**
Sugarcane (Gur)	**0.000**	**0.011**	**0.011**	**0.000**	**1.279**	**1.279**	**0.000**	**1.279**	**1.279**
Oil Seeds									
Groundnut	0.520	0.176	0.696	0.416	0.232	0.648	0.470	0.310	0.780
Gingelly	0.001	0.022	0.023	0.002	0.003	0.005	0.003	0.005	0.008
Castor	0.008	0.000	0.008	0.011	0.000	0.011	0.009	0.000	0.009
Total Oil Seeds	**0.529**	**0.198**	**0.727**	**0.429**	**0.235**	**0.664**	**0.482**	**0.315**	**0.797**
Total	**1.820**	**1.445**	**3.265**	**1.413**	**4.199**	**5.612**	**1.451**	**4.528**	**5.979**

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

2.2.7. District Income

As forty per cent of the population directly depended on agriculture as cultivators and agricultural labourers and also one – third of the total geographical area was under cultivation, economy of the district was depending on agriculture. Estimates of income generation, Compound Growth Rate and Per Capita Income for Vellore district is compared with that of the State in Table 2.16.

Table 2.16: District Income Estimates: Gross State Domestic Product (GSDP) at Constant (1993-94) Prices

District / State	1993-94 (Rs.Lakhs)	2002-03 (Rs.Lakhs)	Compound Growth Rate of GDP (%)	Per Capita GDP* (Rs)	Rank (Per Capita)
Vellore	**2,84,925 (4.95)**	**4,36,065 (4.76)**	**4.84**	**12,540**	**18**
Tamil Nadu	**57,54,902**	**91,70,326**	**5.31**	**14,695**	**-**

Note: * Pertains to GDP 2002-03 and Population 2001 Census.
(Figures in parentheses indicate percentage to the respective state total)
Source: Records of Directorate of Economics and Statistics, Chennai.

As could be seen from Table 2.16, the share of district income for Vellore district to state Gross Domestic Product slightly declined from 4.95 per cent in1993-94 to 4.76 per cent in 2002-03. The annual compound growth rate for the district was slightly lesser (4.8 per cent) than that of the State (5.3 per cent). Per capita GDP in the district was also lesser (Rs. 12,540) than that of the State (Rs.14,695). Vellore district ranked eighteenth in terms of per capita GDP among all districts in the State.

2.3 Development Vision and Strategy

Vision and the strategies required to achieve the goals set are the pre-requisites for planning. Vision and strategies for the development of the district have been finalized after having discussed with officials of line departments like agriculture, animal husbandry, fisheries, forestry, sericulture and public works. Vision for the development of Vellore district is that the

holistic development of the district could be achieved through the development of agricultural activities supported by allied activities such as animal husbandry, fisheries, forestry and sericulture activities. Major objectives of the Vellore District Agriculture Plan are :

- To generate additional income to farming community.
- To develop entrepreneurship among farmers.
- To generate employment opportunities.
- To make value addition to agricultural products.

The strategies required to achieve these objectives are:

- Development of suitable technologies such as varietal improvement, input management supported by a strong institutional arrangements for the supply of inputs like seed, fertilizers, plant protection chemicals, credit, etc, price support system favourable to farmers, and market infrastructure for major crops like paddy, sorghum, maize, red gram, sugarcane, ground nut, gingelly, banana, vegetables, cotton and fodder crops.
- Encouraging Maize as an alternate crop for paddy through contract farming.
- Development of minor irrigation with drip irrigation system.
- Mechanization of farms with tractor operated – combined harvester, paddy transplanter, ground nut decorticator, etc.
- Strengthening water harvesting structures like farm ponds and check dams.
- Reclamation of fallow and degraded lands.
- Formation of Commodity Groups for major crops like ground nut, maize, coconut and pulses.
- Training and exposure visit to the farmers, traders, and other stakeholders on grading, post harvest technologies, value addition and market intelligence.
- Strengthening the extension machinery for effective dissemination of technology.
- Establishment of food parks to create necessary infrastructure for value addition in agricultural products.
- Strengthening of rural markets with storage facilities.
- Strengthening of farmers' market with additional storage facilities.
- Establishment of cool chains for better distribution of milk.
- Establishment of cattle feed units.
- Inland fisheries development in major tanks and reservoirs.
- Development of Sericulture.

CHAPTER - III

SWOT ANALYSIS

3.1 Introduction

SWOT analysis helps in assessment and utilization of resources accurately. It also provides details on unfavourable aspects of a plan and offers a coping mechanism to overcome the problems in the execution of the plan.

3.2 Composite Index of Agricultural Development of Vellore District

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

It is assumed that there are 'n' districts and 'm' development indicators and that X_{id} is the observed value of i^{th} development indicator for the d^{th} district (i = 1,2,3 … m, and d = 1,2,3…n). First, these values of development indicators for each district are 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 have been computed by the formula:

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

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

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

The analysis showed that Vellore district which was classified as 'developing' in agricultural development during 1990-91 became 'developed' in agriculture during 1995-96 to 2005-06. In terms of overall agricultural development, its rank among the 29 districts of Tamil Nadu varied from 9 to 16 between 1990-91 and 2005-06. As far as the individual components of agricultural development are concerned, its ranks in the above periods are summarized in Table 3.2.

Table 3.2 shows that except in cultivators and labourers, in all other components its performance in the period of study is satisfactory.

Table 3.1: Selected Indicators of Agriculture Development for Vellore 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 of Share 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 tonnes)	2
	Egg Production (lakhs)	
Fisheries	Inland and Marine Fish Production in tonnes	1
Fertilizer	Consumption of Nitrogen per hectare of Gross Cropped Area (tonnes)	3
	Consumption of Phosphorus per hectare of Gross Cropped Area (tonnes)	
	Consumption of Potassium per hectare of Gross Cropped Area (tonnes)	
Cultivators-Labourers	% of Cultivators to Total Population	2
	% of Agricultural Labourers to Total Workers	
	TOTAL	25

Table 3.2: Rank of Vellore 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	Live-stock	Fisheries	Fertilizer	CultivatorsLabourers	Overall
Period	1990-91	10	15	8	-	-	18	16
	1995-96	12	11	7	12	5	23	12
	2000-01	9	16	4	14	5	20	9
	2005-06	15	12	4	14	11	21	14

3.3 SWOT analysis of the District (with focus separately on the Agricultural and Allied Sectors)

3.3.1 Strength

Vellore, the Head-Quarters of Vellore District, is well connected by rail and bus routes to major towns of the neighbouring states like Andhra Pradesh, Karnataka and Kerala. A small air port is also at Vellore. It is located on the National Highways connecting Chennai and Bangalore. A vast area under forest with a large number of sandalwood trees is there in Javvadhu hills. As well irrigation is predominant in the district, a variety of agricultural and horticultural crops are grown round the year. Vellore district is actually an industrial region with 24,329 small and large scale industries. One of the major industries of Vellore district is leather and leather based industries.

3.3.2 Weakness

Vellore District is a Drought Prone District with erratic and less than normal rainfall recorded during the past several years. Most of the rivers in this district are dry for years together, and the major irrigation tanks which are mostly system tanks are also dry for the most part of the year. This has resulted in over exploitation of ground water through open wells and deep bore wells. Hence, it is absolutely essential to recharge the ground water table which has gone very deep during the recent years. Of the 20 blocks of this district, 16 were over exploited, two were critical and the remaining two were semi

critical in terms of exploitation of ground water potential. In Arakonam block, 43.3 per cent of the total geographical area was under cultivable waste and current and other fallow lands, and it was followed by Kandili (35.2 per cent), Walajah (32.9 per cent), Kaveripakkam (32.8 per cent), Timiri (32.8 per cent) blocks and so on. The area under the waste and fallow lands in the district also was around one – fifth of the total geographical area during 2005-06. Proper planning and reclamation of these lands alone could enhance the net sown area in the district which was only 33 per cent of the total geographical area.

3.3.3 Opportunities

The industrial development is tremendous in the major towns of this district like Arakonam, Ranipet, Vellore and Thiruppathur, as there is a four lane National Highways and double line electrified rail track connectivity linking these towns with Chennai and Bangalore. As there is a heavy demand for construction materials like sand and crushed stone from Chennai, sand quarrying from Palar and stone quarrying are carried out in a large scale in the district. As there is a heavy demand for fruits, vegetables and flowers from the nearby Chennai city, farmers who cultivate these crops are much benefited. Surplus milk produced in this district is also being transported daily to Chennai from Vellore dairy unit.

3.3.4 Threats

Vellore District is very near to Chennai and Bangalore cities and this has resulted in the large scale migration of farm labourers. This has resulted in a great demand for agricultural labourers and the farmers in this district face a lot of problems in getting farm labourers.

Already Karnataka state has built a dam in Palar River and Andhra Pradesh is also taking steps to construct a dam across Palar. Hence, the irrigated lands of Vellore district depending on Palar water during monsoon season may totally become dry.As leather

industries earn huge foreign exchange through the export of leather and leather products, they may flourish more. At the same time, if the effluents produced are not properly treated and let out by them, then it would cause a wide spread soil and water pollution in the district. This in turn, would not only drastically reduce the crop productivity, but also create problems like scarcity of drinking water and skin diseases to those who live in areas polluted by the tannery effluents.

3.4 Sectoral / Regional Growth Drivers of the District

i) Formation of commodity groups.

ii) Training the farmers, traders, and other stakeholders on grading, post harvest technologies, value addition and market intelligence.

iii) Establishment of rural godowns with drying yards.

iv) Providing cold storage facility.

v) Encouraging contract farming and

vi) Establishment of "Food Park with basic infrastructure facilities".

CHAPTER IV

DEVELOPMENT OF AGRICULTURAL SECTOR

4.1 Introduction

In this chapter, issues relating to utilization of natural resources and input management for the development of agriculture sector are discussed.

4.2 Land Use

The fallow and degraded lands which are present in the district to the extent of 20 per cent of the total geographical area have to be reclaimed so that the net sown area which at present account for one third of the total geographical area in the district could be increased.

4.3 Soil Health

The taluk wise soil classification in Vellore District is given in Table 4.1. As could be seen from the table, sandy loam and red loam soils were predominantly seen in Arakonam taluk, while clay and clay loam and black cotton soils were more Gudiyatham and Arcot taluks respectively.

Table 4.1 Taluk wise Soil Classification in Vellore District - 2005-2006

(in hectares)

Sl.No.	Taluk	Sandy and Sandy Loam	Red Loam	Clay and Clay Loam	Black Cotton
1.	Arakonam	12234.0	36711.0	20495.0	1393.0
		(25.0)	(20.5)	(17.3)	(34.7)
2.	Walajah	6065.0	24539.0	13667.0	170.0
		(12.4)	(13.7)	(11.6)	(4.2)
3.	Arcot	6261.0	10852.0	17956.0	2232.0
		(12.8)	(6.1)	(15.2)	(55.5)
4.	Vellore	4902.0	12461.0	11832.0	0.0
		(10.0)	(7.0)	(10.0)	(0.0)
5.	Gudiyatham	5119.0	29997.0	24814.0	0.0
		(10.5)	(16.8)	(21.0)	(0.0)
6.	Vaniyambadi	8675.0	29228.0	9397.0	0.0
		(17.8)	(16.3)	(8.0)	(0.0)
7.	Thirupathur	5638.0	35048.0	19964.0	225.0
		(11.5)	(19.6)	(16.9)	(5.6)
	District	48894.0	178836.0	118125.0	4020.0
		(100.0)	(100.0)	(100.0)	(100.0)

(Figures in parentheses indicate percentages their respective district total)
Source: Records of Directorate of Economics and Statistics, Chennai.

Vellore soils and area in hectare

Soil Description	Area (ha)
Deep, coarse loamy, mixed, Ultisols	81482.88
Deep, fine, montmorillonitic, Vertisols	46324.64
Deep, fine, mixed, Alfisols	44105.83
Moderately deep, fine loamy, mixed, Inceptisols	39382.11
Moderately deep, clayey skeletal, mixed, Alfisols	33787.13
Deep, fine, mixed, Inceptisols	29459.29
Moderately shallow, fine, mixed, Inceptisols	20333.94
Moderately deep, coarse loamy, mixed, Inceptisols	18067.65
Moderately shallow, fine, mixed, Alfisols	17621.35
Deep, fine, montmorillonitic, Inceptisols	16138.02
Shallow, clayey, mixed, Inceptisols	13620.82
Deep, coarse loamy, mixed, Inceptisols	13136.46
Moderately deep, fine loamy, mixed, Alfisols	10782.22
Very deep, coarse loamy, mixed, Inceptisols	10642.74
Deep, fine loamy, mixed, Alfisols	10239.41
Shallow, clayey skeletal, mixed, Inceptisols	10164.60
Very deep, fine loamy, mixed, Inceptisols	9676.88
Shallow, loamy skeletal, mixed, Inceptisols	8927.60
Shallow, loamy skeletal, mixed, Entisols	7701.00
Deep, fine loamy, mixed, Ultisols	5909.31
Moderately deep, loamy skeletal, mixed, Inceptisols	4395.86
Very shallow, loamy skeletal, mixed, Entisols	4046.51
Deep, loamy skeletal, mixed, Alfisols	3876.20
Moderately shallow, coarse loamy, mixed, Entisols	3599.37
Very deep, fine, mixed, Alfisols	3551.66
Moderately deep, fine, mixed, Inceptisols	3367.48
Moderately shallow, clayey skeletal, mixed, Inceptisols	2953.30
Moderately deep, fine, mixed, Alfisols	2813.88
Very deep, clayey skeletal, kaolinitic, Alfisols	2701.94
Deep, contrasting particle size, mixed, Entisols	2650.90
Very deep, fine loamy, mixed, Alfisols	2170.62
Deep, sandy, mixed, Entisols	1521.44
Moderately shallow, loamy skeletal, mixed, Entisols	1328.32
Moderately deep, fine, montmorillonitic, Inceptisols	1260.83
Very shallow, loamy, mixed, Entisols	1050.59
Moderately shallow, fine loamy, mixed, Entisols	736.31
Shallow, clayey, mixed, Alfisols	674.09
Very deep, fine, kaolinitic, Alfisols	623.73
Very deep, fine silty, mixed, Entisols	287.76
Shallow, loamy skeletal, mixed, Alfisols	286.83
Moderately shallow, fine, montmorillonitic, Inceptisols	69.65
Very deep, fine loamy, mixed, Ultisols	28.64

4.4 Water Resources and Management

The details on Irrigation water potential are given in Table 4.2. Pernambut, Thirupathur and K.V.Kuppam blocks were much benefited by canal irrigation. As regards well irrigation, K.V.Kuppam and Thimiri blocks were having more number of irrigation wells. Nemili, Gudiyatham, Thimiri, Kaveripakkam and Kandili blocks were having more number of tanks.

Table 4.2 Block wise Sources of Water Supply in Vellore District during 2005-06

S. No	Name of the Block	Canals		No. of Wells used for Irrigation purpose only	Tube wells (Nos)	No. of Wells used for Domestic purpose only	Reser-voirs (Nos)	Tanks (Nos)
		Num-bers	Length (Kms)					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	Vellore	13	20	4152	73	2398	0	42
2	Kaniyambadi	20	30	9162	224	2892	0	17
3	Anaicut	21	65	5473	202	2267	0	63
4	Gudiyattam	50	70	3279	771	7032	0	113
5	Pernambut	96	196	8137	661	5036	1	52
6	K.V.Kuppam	112	120	9787	180	2296	0	29
7	Katpadi	12	30	3383	67	2069	0	33
8	Wallajah	26	25	3608	18	2250	0	74
9	Sholingur	108	90	6560	11	3574	0	77
10	Arcot	29	35	5780	89	2385	0	65
11	Thimiri	12	13	8846	39	3329	0	109
12	Arakonam	0	0	2665	479	1850	0	71
13	Nemili	0	0	7671	265	1680	0	132
14	Kaveripakkam	1	2	5030	202	2209	0	109
15	Thirupathur	33	124	6755	45	3307	0	84
16	Kandili	0	0	7372	140	3095	0	102
17	Natrampalli	17	77	4891	124	2442	0	52
18	Jolarpet	22	49	7840	45	3366	1	47
19	Alangayam	10	50	5657	17	2519	0	45
20	Madhanur	22	71	5596	67	9059	0	39
Total		**604**	**1067**	**121644**	**3719**	**65055**	**2**	**1355**

Source: Records of the Office of the Assistant Director of Statistics, Vellore.

Tube wells were more in number in Gudiyatham block (771) which was followed by Pernambut (661), Arakonam (479), and so on. Reservoirs were present only in Pernambut and Jolarpet blocks.

4.5 Major Crops and Varieties in the District

4.5.1 Common Varieties

Common varieties of major crops grown in Vellore district are given below:

i)	Paddy	ADT 43, ADT 37, IR50, ADT 36 and White Ponni
ii)	Sorghum	Co19
iii)	Ragi	GPU 28, Co13
iv)	Cumbu	ICMV 221
v)	Red Gram	SA 1 and VVN 2
vi)	Black Gram -	T9, TMV 1, VVN 3 and VVN4
vii)	Green Gram	VRM-GG-1 and VVN 2
viii)	Cow pea	Co 6 and Co 7
ix)	Horse Gram	PYR 1
x)	Gingelly	TMV 3 and TMV5
xi)	Groundnut	TMV 7 and JL 24
xii)	Tomato	PKM 1and US 618
xiii)	Brinjal	Local (Mullu), Pusa Purple Cluster and Ravayya
xiv)	Bhendi	Arka Anamica, US 7109 and Mahyco 10
xv)	Chillies	K1, PKM 1, US 635 and Namdhari
xvi)	Sugarcane	Co-C 6704, Co-C 771, Co-C 93003, Co– C 85061, Co– C 6304, Co-G 94077 and Co-G 93076.
xvii)	Banana	Robusta, Karpuravalli, Rasthali, Poovan and Tissue Culture – Grand 9
xviii)	Mango	Neelam, Bangalora, Sendura, Alphonsa and Kalappad
xix)	Sapota	PKM 1, Kalipathi, Cricket Ball and Oval
xx)	Cotton	Bramma, Punny, RCH 2 and DCH 32
xxi)	Jasmine	Sambac and Pitchi.

4.5.2 Cropping pattern

Cropping pattern in vogue in the district is given below:

a) Wet lands

i) Paddy - Paddy – Pulses
ii) Paddy - Paddy – Gingelly
iii) Paddy-Paddy-Maize
iv) Maize – Paddy - Pulses
v) Pulses-Paddy-Maize
vi) Sugarcane with Pulses as intercrop
vii) Banana with Pulses as inter crop

b) Garden lands

i) Paddy - Paddy - Groundnut with Pulses as Mixed crop
ii) Paddy - Paddy - Gingelly
iii) Paddy - Paddy - Pulses
iv) Paddy - Paddy – Vegetables
v) Paddy-Paddy- Maize
vi) Pulses-Paddy-Maize
vii) Sugarcane with pulses as intercrop
viii) Banana with pulses as inter crop

c) Dry lands

i) Groundnut - Sorghum- Pulses mixed crop
ii) Groundnut –Red gram-Pulses - Gingelly as second crop.
iii) Groundnut - Ragi / Horse gram
iv) Red gram-Pure Crop
v) Minor Millets – Horse gram
vi) Cotton with pulses as intercrop.
vii) Sorghum with Field Bean (Mochai) as intercrop.
viii) Bengal gram as second Crop

4.6 Input Management

Application of chemical fertilizers and pesticides would be deciding factor of the crop productivity. Hence, consumption of chemical fertilizers and pesticides in Vellore district is given in Table 4.3. As could be seen from the table, nitrogenous fertilizers were largely used and they were followed by phosphoric and potassium fertilizers. Liquid pesticide application was more than that of dust formulation of pesticide.

Table 4.3: Consumption of Chemical Fertilizers and Pesticides during 2005-06

Fertilizers (in ‘ 000 ‘ Tonnes)				Pesticides		Urea (‘000 Tonnes)
Nitrogenous (N)	Phosphoric (P_2O_5)	Potassium (K_2O)	Total (NPK)	Dust (Kgs)	Liquid (Lits)	
12.130	7.147	6.890	25.660	1808.18	8630.0	30.120

Source: Records of the Office of the Joint Director of Agriculture, Vellore-2

4.7 Farm Machinery / Farm Equipments

The number of farm machinery and equipments operated in Vellore district during 1989 and 1999 - 2000 as given in Table 4.4 would indicate that there was 74 per cent increase in the number of oil engines and the number of electric motors remained almost static between the years 1989 and 1999-2000. This would indicate that the delay in providing power connection for agricultural purpose forced the farmers in opting for oil engines though the cost of maintenance of oil engine was much higher than that of electric motor. Number of tractors also increased from 965 in 1989 to 1165 in 1999-2000.

4.8 Special Projects / Programmes on going in the District

The details on special programmes that are currently being implemented are presented in this section so that they can be dove-tailed with the proposed programmes under NADP. The programmes that are being implemented since 2006-07 by the Department of Agriculture in Vellore district are given below:

Plan schemes were implemented as i) Part I and Part II Schemes which were fully sponsored by the state and ii) Schemes sponsored by both centre and state. In Vellore district, Rs. 470 lakhs was spent for both the schemes, of which the share of state sponsored scheme was 39 per cent of the total expenditure and the remaining was shared by both state and central governments. The Abstract of Expenditure of Plan Schemes Implemented during 2006-07 is given in Table 4.5.

In Part I scheme, schemes like Procurement of Paddy and Millet Seeds, Pulses, Green Manure Seeds, Biological Control in Groundnut and Coconut, Integrated Cotton Development, Increasing the Production of Oilseeds, Production and Distribution of Micro Nutrient mixtures and Bio-fertilizers were taken up.

Table 4.4 . Agricultural Implements and Machineries in Vellore District

(in Number)

Sl. No.	Items	1989	1999-2000
1.	**Ploughs**		
a)	Wooden	80963	91203
b)	Iron	26650	27469
c)	Total	107513	118672
2.	**Water Pumps for Irrigation Purpose**		
a)	Worked by Oil Engine	8947	15563
b)	Worked by Electric Power	93048	93104
c)	Total	101995	108667
3.	**Tractors**		
a)	Government	159	159
b)	Private	806	1006
c)	Total	965	1165
4.	**Sugarcane Crushers**		
a)	Worked by Power	2279	2279
b)	Worked by Bullocks	507	281
c)	Total	2789	2560
5.	**Oil Ghanis**		
a)	5 Kg. & above	189	96
b)	Less than 5 Kg.	0	0
c)	Total	189	96

Source: District Statistical Hand Book, Vellore.

Under Part II Schemes, schemes like conducting Crop Cutting Experiment kits for Block level, Strengthening of six Pesticide Testing Laboratories, Development of Infrastructure facilities in State Seed Farms, Strengthening infrastructure at government coconut nurseries were taken up.

Table 4.5 Abstract of Expenditure of Plan Schemes Implemented during 2006-07

(Rs. in lakhs)

Sl. No	Schemes	Budget Estimate (BE)	Sanctioned Amount	Expenditure Achievement upto 31/03/07	% of Achieve-ment to BE	% of Achievement to sanctioned Amount
State Schemes						
A	I. Part I Schemes	173.7	173.7	174.9	**101**	**101**
	II. Part II Schemes	10.2	10.2	10.2	**100**	**100**
	Total	**183.9 (39.1)**	**183.9 (39.2)**	**185.1 (39.3)**	**101**	**101**
B. Schemes Shared between Centre and State						
1	Integrated Scheme for Oilseeds, Pulses, Oil palm and Maize (ISOPOM) (75:25)	120.6	120.4	118.0	**98**	**98**
Under ISOPOM -Oilseeds Rs.2.612 lakhs is unspent under staff component (Pay and allowances) as existing vacancies.						
2	Technology Mission Mode Scheme (75:25)	3.4	3.4	3.4	**100**	**100**
3	Macro Management Mode Schemes (90:10)	80.0	80.0	80.0	**100**	**100**
4	Innovative Schemes	38.2	38.2	38.2	**100**	**100**
5	Coconut Development Board Schemes (50:50)	19.8	19.5	21.5	**108**	**110**
6	Centrally Sponsored Schemes (100%)	24.2	24.2	24.2	**100**	**100**
	Total	**286.2 (60.9)**	**285.7 (60.8)**	**285.3 (60.7)**	**100**	**100**
	Grand Total (A + B)	**470.1 (100.0)**	**469.6 (100.0)**	**470.4 (100.0)**	**100**	**100**

Source: Records of Office of the Joint Director of Agriculture, Vellore.

Under centrally sponsored schemes, purchase of breeder seeds, subsidizing foundation and certified seeds, conducting demonstration and farmers' training, distribution of bio fertilizers and bio control agents and Seed Village Programme were taken up. Details of Plan Schemes and Centrally Sposored Schemes are given in Table 4.6 and Table 4.7 respectively.

Table 4.6 Plan Schemes of Government of Tamil Nadu Implemented in Vellore District - 2006-07

Sl. No	Schemes	Unit	Physical		% Achievement	Financial (Rs. In lakhs)		% Achievement w.r.t. Sanc. Amount
			Annual Target	Achievement Upto 31.03.07		Sanctioned Amt.	Achievement Upto 31.03.07	
	STATE SCHEMES – PART I SCHEME							
1	Crop Yield Competition	Nos	4	4	100	0.400	0.400	100
	State level competition	Nos	4	4	100	-		
	District level competition							
2	**Procurement of Paddy and Millet Seeds**					53.400	54.183	101
	Distribution of Paddy and Millet Seeds					17.190	17.055	99
	Paddy seed Procurement	Metric tonnes	550.0	679.0	123			
	Millet seed procurement	Metric tonnes	25.0	26.5	106			
	Paddy seed distribution	Metric tonnes	550.0	552	100			
	Millet seed distribution	Metric tonnes	25.0	26.5	106			
3	**Tribal area sub plan (Adi Dravida Dept. alloction)**					5.360	5.510	103
4	**Procurement and Distribution of Pulses Seeds (SCP)**							
	Procurement	Metric tonnes	75	98.7	132			
	Distribution	Metric tonnes	75	97.2	130			
5	**Procurement and Distribution of Green Manure Seeds(Distribution @25% subsidy)**							
	Procurement	Metric tonnes	4.000	4.000	100			
	Distribution	Metric tonnes	4.000	4.000	100	0.800	0.800	100
6	**Blue Green Algae**							
	Production	Metric tonnes	-			-		
	Distribution	Metric tonnes	10	10.0	100			
7	**Bio Conversion of Farm Waste using Pleurotus**							
	Distribution of mini kits	Nos	188	188	100	0	0	
8	Vermi-composting		3	3	100	0.116	0.116	100
	Demonstrations cum Training	Nos	3	3	100	0.036	0.036	100
	Farmers Trained	Nos	3	3	100	0.08	0.080	100

Table 4.6 Contd…

Sl. No	Scheme	Unit	Physical		% Achievement	Financial (Rs. In lakhs)		% Achievement w.r.t. Sanc. Amount
			Annual Target	Achievement upto 31.03.07		Sanc-tioned Amt.	Achievement upto 31.03.07	
9.	**Crop and Plant Protection**					6.791	6.791	100
10	**Pesticides Testing Laboratories**							
	Samples Analyzed	Nos.	-			-		
11	**Control of Cotton Bollworm using NPV**							
12	Sugarcane Release of Parasite (Area covered)	Ha	1500	1500	100	0.475	0.475	100
13	**Biological Control in Groundnut and coconut**							
	Control of pests in Groundnut using NPV	Ha.	-			-		
	Control of Rhinoceros Beetle in Coconut	Tubes	-			-		
14	**Integrated Cotton Development**					4.800	4.800	100
	Seed Production	Metric tonnes	1.750	0.3	17	0	0	
	Seed distribution		1.750	0.3	17	0	0	
15	**Groundnut Foundation Seed Production Centre**							
	Foundation seed Production	Metric tonnes	-			-		
16	**Increasing the Production of Oilseeds**					81.653	82.025	100
	Seed Procurement					-		
	Groundnut	Metric tonnes	342	341	100			
	Gingelly	Metric tonnes	0.500	0.100	20			
	Sunflower	Metric tonnes	5.500	0.000	0			
	Castor	Metric tonnes	3.000	1.563	52			
	Soyabean	-	-	-	-			

Table 4.6 Contd…

Sl. No	Scheme	Unit	Physical		% Achievement	Financial (Rs. In lakhs)		% Achievement w.r.t. Sanc. Amount
			Annual Target	Achievement Upto 31.03.07		Sanctioned Amt.	Achievement Upto 31.03.07	
	Seed Procurement							
	Groundnut	Metric tonnes	342	341	100	-		
	Gingelly	Metric tonnes	0.500	0.100	20			
	Sunflower	Metric tonnes	5.500	0.000	0			
	Castor	Metric tonnes	3.000	1.563	52			
	Soyabean	Metric tonnes	-	-				
	Seed Distribution					-		
	Groundnut	Metric tonnes	342	363	106			
	Gingelly	Metric tonnes	0.500	0.063	12.6			
	Sunflower	Metric tonnes	5.500	0.000	0			
	Castor	Metric tonnes	3.000	1.125	37.5			
	Soya bean	Metric tonnes						
17	**Integrated Coconut Development**					2.590	2.625	101
i)	**Procurement of Tall nuts**							
	a)Tall nuts	L.Nos.	0.100	0.100	100			
	b) T x D nuts	L.Nos.	-					
	c)D x T Nuts	L.Nos.	180	0.180	100			
ii)	**Distribution of seedlings**							
	a)Tall seedlings	L.Nos.	0.075	0.080	107			
	b) T x D Seedlings	L.Nos.	-	-				
	c)D x T Seedlings	L.Nos.	0.055	0.022	40			
18	**Production and Distribution of Micro Nutrient Mixtures**							
	Production	Metric tonnes	-					
	Distribution	Metric tonnes	60	60	100			
19	**Production and Distribution of Bio Fertilizers**							
	Production	Metric tonnes	-					
	Distribution	Metric tonnes	84.720	84.720	100			
20	**Remote Sensing**	L.Rs.	-					
21	**Agricultural Information service**							
22	**Documentary Films in Agriculture**							
	Total					**173.691**	**174.896**	**101**

Table 4.6 Contd…

Sl. No	Scheme	Unit	Physical		% Achievement	Financial (Rs. In lakhs)		% Achievement w.r.t. Sanc. Amount
			Annual Target	Achievement Upto 31.03.07		Sanction-ed Amt.	Achievement upto 31.03.07	
	PART II SCHEMES							
1	**Crop cutting Experiment kits for Block level**	Nos	80	80	100	1.615	1.615	100
2	Strengthening of 6 Pesticide Testing Laboratories	Nos	-					
3	Development of Infrastructure facilities in State Seed Farms	Nos	-				0	**0**
a)	Deep bore well		-					
b)	Open well		-					
c)	Oil engine	Nos.	-					
d)	Mini sprayer		-					
e)	Electric motor		2	2	100	0.400	0.400	
4	**Repair of 44 Nos. of Agricultural Extension Centres**							
5	**Additional facilities to SPU for quality seed production - Purchase of materials for Pudukottai Unit.**							
6	**Equipments and Accessories for Coconut Crossing Centres**							
a)	Desiccators	Nos	1	2	200	0.040	0.032	80
b)	Microscope	Nos	1	1	100	0.050	0.043	86
c)	Tree climber	Nos	5	4	80	0.100	0.100	100
7.	**Infrastructure Development to coconut nurseries Allotted to Agricultural Engineering Dept**							
a)	Preservation shed (Navlock)	Nos.	1	0	0	3.000	3.000	100
b)	Bore well and Pump set	Nos.	4	0	0	5.000	5.000	100
	Part II Total					**10.205**	**10.190**	**100**
	Total State Schemes (Part I & II)					**183.896**	**185.086**	**101**

Table 4.6 Contd…

Sl. No	Scheme	Unit	Physical		% Achievement	Financial (Rs. In lakhs)		% Achievement w.r.t. Sanc. Amt.
			Annual Target	Achievement Upto 31.03.07		Sanctioned Amt.	Achievement Upto 31.03.07	
A.	**ANNOUNCEMENT**							
1	National Agricultural Insurance Scheme							
	No. of farmers enrolled	Nos.	24265	6244	26			
2	Opening of New ADAs office	-	-	-	-	-	-	-
3	Soil Health Card distribution	L.Nos.	0.200	0.200	100	-	-	-
4	Coconut Wilt disease	-	-	-	-	-	-	-
a)	Cut and removal of trees	-	-	-	-	-	-	-
b)	Compensation	-	-	-	-	-	-	-
c)	Eriyophid mite	-	-	-	-	-	-	-
	No.of trees treated	-	-	-	-	-	-	-
5	Jatropha	-	-	-	-	-	-	-
	Area expansion (Ha)	-	-	-	-	-	-	-

Source: Records of the Office of the Joint Director of Agriculture, Vellore.

Table 4.7 Centrally Sponsored Schemes Implemented in Vellore District - 2006-07

Sl. No	Scheme	Unit	Physical		% Achieve-ment w.r.t. Annual Target	Financial (Rs. In lakhs)		% Achmt. w.r.t. Sanc. Amt.	Remarks
			Annual Target	Achievement Upto 31.03.07		Sanc-tioned Amt.	Achmt. Upto 31.03.07		
1	**ISOPOM - Oilseeds**								
	Purchase of Breeder seed	Qtls	18.4	44.2	240	0.803	0.803	100	Rs.2.612 lakhs is unspent under staff component because of existing vacancy position.
	Foundation seed production	Qtls	645.1	673.5	104	3.117	3.117	100	
	Certified seed production	Qtls	3196.1	3196.1	100	15.980	15.980	100	
	Certified seed distribution	Qtls	2800.0	2602	93	22.207	22.207	100	
	Distribution of Mini kits								
	Compact block Demonstration	Nos.	8	8	100	0.320	0.320	100	
	Pipe for carrying water from sources to field	Nos.	57	163	286	8.550	8.550	100	
	Block demn. in Groundnut	Nos.	2	2.0	100	0.140	0.140	100	
	IPM demonstration	No.	4	4	100	0.907	0.907	100	
	Distribution of gypsum	Ha.	2600	2600	100	13.000	13.000	100	
	Distribution of bio-fertilizer	Ha.	8000	7516	94	4.000	4.000	100	
	Distribution of bio pesticides	Ha.	400	400	100	1.000	1.000	100	
	Distribution of PP equipments	Nos.	60	60.0	100	0.480	0.480	100	
	Distribution of weedicide	Ha.	6	6	100	0.030	0.030	100	
	Farmers Training	Batch	8	8	100	1.200	1.200	100	
	Officers Training	Batch	-	-	-	-	-	-	

Table 4.7 contd…

Sl. No	Scheme	Unit	Physical		% Achieve-ment w.r.t. Annual Target	Financial (Rs. In lakhs)		% Achievement w.r.t. Sanc. Amount	Remarks
			Annual Target	Achievement upto 31.03.07		Sanctioned Amt.	Achmt. Upto 31.03.07		
	Distribution of Power sprayer	Nos.	65	65	100	2.000	2.000		
	Staff and Other contingencies	-	-	-	-	16.132	13.520	84	
	Rainfed farming	-	-	-					
	Contract farming	Nos.	500	500	100	1.800	1.800	100	
	Village Campaign	Nos.	60	60	100	0.600	0.600	100	
	Study Report on AEZ on HPS Groundnut and Gingelly	-	-	-	-				
	TOTAL OILSEEDS					**92.266**	**89.654**	**97**	
2	**PULSES**								
	Breeder seed Purchase	Kgs	600	160	27	0.300	0.078	26	
	Foundation seed production subsidy	Kgs	7500	6620	88	0.375	0.331	88	
	Certified seed production subsidy	Qtls	750	887.5	118	3.750	4.437	118	
	Certified seed distribution subsidy	Qtls	750	775	103	6.000	5.990	100	
	Compact Block Demonstration	Nos.	47	47	100	0.940	0.940	100	
	IPM Demonstration	Nos.	2	2	100	0.2463	0.24630	100	
	Distribution of Gypsum	Ha.	470	1910	406	2.350	2.344	100	
	Distribution of Bio-fertilizers	Ha.	4778	5150	108	2.389	2.280	95	

Table 4.7 contd…

Sl. No	Scheme	Unit	Physical		% Achieve-ment w.r.t. Annual Target	Financial (Rs. In lakhs)		% Achievement w.r.t. Sanc. Amount	Remarks
			Annual Target	Achievement Upto 31.03.07		Sanctioned Amt.	Achievement Upto 31.03.07		
	Distribution of Bio-pesticide	Ha.	94	94	100	0.233	0.235	101	
	Distribution of NPV virus	L.Ha.	169.3	169.3	100	0.423	0.423	100	
	Distribution of PP Chemicals	Ha.	160	160	100	0.799	0.799	100	
	Distribution of Weedicides	Ha.	47	47	100	0.235	0.235	100	
	Distribution of PP equipments	Nos.	176	176	100	1.408	1.410	100	
	Distribution of sprinkler sets	No/ set	18	29	161	2.700	2.670	99	
	Pipe for carrying water from sources to field	Nos	17	28	165	2.550	2.384	93	
	Farmers Training	Batch	4	4	100	0.600	0.600	100	
	Officers Training	Batch	-						
	Contingencies		-			0.250	0.250	100	
	Village Preseason campaign	Nos.	24	24	100	0.240	0.240	100	
	Farmers Interest Group and Stake holders forum	Nos	2	0	0	0.250	0.250	100	
	Contract farming	LS	-	-	-				
	Dry land farming	LS	-	-	-				
	Publicity	LS	-	-	-				
	TOTAL PULSES					**26.038**	**26.142**	**100**	

Table 4.7 contd…

Sl. No	Scheme	Unit	Physical		% Achieve-ment w.r.t Annual Target	Financial (Rs. In lakhs)		% Achieve ment w.r.t. Sanc. Amt	Remarks
			Annual Target	Achieve ment Upto 31.03.07		Sanc-tioned Amt.	Achieve ment upto 31.03.07		
3	**OILPALM**								
	Assistance for Planting Materials								
	I installment	Ha.	-						
	II Installment	Ha.	-						
	Area expansion	Ha.	-						
	Cultivation Maintenance Subsidy								
	II Year	Ha.	-						
	III Year	Ha.	-						
	IV Year	Ha.	-						
	Drip Irrigation		-						
	Other farmers	Nos.	-						
	SF/MF/SC/ST	Nos.	-						
	Training		-						
	Farmers Training	Nos	-						
	Officers Training	Nos	-						
	Innovative component								
	Precision farming		-						
	Contract farming 1 per district	Nos.	-						
	Evaluation of new entrepreneurs		-						
	New Components								
	Oil Palm Leaf/Chaff cutter	Nos.	-						
	Harvesting tool	Nos.	-						
	Publicity and seminar	LS	-						

Table 4.7 Contd…

Sl. No	Scheme	Unit	Physical		% Achieve-ment w.r.t. Annual Target	Financial (Rs. In lakhs)		% Achievement w.r.t. Sanc. Amt.	Remarks
			Annual Target	Achievement Upto 31.03.07		Sanc-tioned Amt.	Achievement Upto 31.03.07		
	Review, Workshop, Study Tour	Ls.	-						
	POL		-						
	TOTAL OILPALM		-						
4.	**ISOPOM – MAIZE**		-						
	Production of Breeder seed	Qtls	-						
	Production of Certified seeds through Dept.	Qtls.	5.00	5.0	100	0.025	0.025	100	
	Distribution of Certified seeds	Qtls.	5.00	5.9	118	0.040	0.047	118	
	Distribution of Mini kits	Nos.	185	485	262	0.000			
	Block demonstration by Dept.	Nos.	8	8	100	0.320	0.320	100	
	IPM by Dept.	Nos.	1	1	100	0.2268	0.2268	100	
	POL	LS	-			0.330	0.328	99	
	Officers training	Nos.	8			0.000	0.000		
	Seminar	Nos.	1	1	100	0.150	0.150	100	
	State Level Workshop	Nos.	-						
	New Components								
	Contract Farming		4			0.000			
	Training to Farmers	Nos.	1	1	100	0.150	0.150	100	
	Tour	Batch							
	Publicity	LS	0			0.030	0.030	100	
	Village Campaign	Nos.	75	75	100	0.375	0.375	100	

Table 4.7 contd …..

Sl. No	Scheme	Unit	Physical		% Achieve-ment w.r.t. Annual Target	Financial (Rs. In lakhs)		% Achievement w.r.t. Sanc. Amount	Remarks
			Annual Target	Achievement Upto 31.03.07		Sanc-tioned Amt.	Achievement Upto 31.03.07		
	Pipe line for carrying water from Water Source to the field	Nos.	4	7	175	0.500	0.507	101	
	Rain fed farming								
	Training to farmers		-						
	POL								
	Publicity		-						
	TOTAL MAIZE		-			**2.147**	**2.159**	**101**	
	GRAND TOTAL (ISOPOM)					**120.451**	**117.955**	**98**	
II	**Technology Mode Mission**								
	ICDP - COTTON								
	Supply of Breeder seed	Qtls	-	-					
	Certified seed Distribution	Qtls	5.0	3.0	60	0.100	0.102	102	
	Seed Treatment	Qtls	5.0	3.0	60	0.003	0.003	100	
	Distribution of pheromone Traps/light traps	Ha.	100	100	100	0.140	0.140	100	
	Supply of Bio agents and Bio-pesticides	Ha.	100	100	100	0.450	0.449	100	
	Manually operated sprayers	No.	30	41	137	0.240	0.242	101	
	Supply of Power sprayers	No.	20	20	100	0.400	0.400	100	
	Distribution of Drip Sets	No.	4	4	100	1.000	1.000	100	

Table 4.7 contd…

Sl. No	Scheme	Unit	Physical		% Achieve-ment w.r.t. Annual Target	Financial (Rs. In lakhs)		% Achi evement w.r.t. Sanc. Amt.	Remarks
			Annual Target	Achieve ment Upto 31.03.07		Sanc-tioned Amt.	Achieve ment Upto 31.03.07		
	Distribution of Sprinkler set	Ha.	-						
	State Level Training to Extension Officers	No.	-						
	New Interventions								
	Distribution of bio-fertilizers	Nos.	2410	2410	100	0.036	0.036	100	
	Distribution of Micro-nutrients	Kgs	-						
	Intercropping with pulses	Qtl	8	8	100	0.052	0.052	100	
	Bt Cotton /Cotton Hybrid detection kits distribution	Nos.	-						
	Contingency / staff		-			1.000	1.000	100	
	Production of 'F' seed by Department.	Qtls	-						
	Production of 'F' seed by SIMA, CD & RA	Qtls	-						
	Production of 'C' seed by Dept.	Qtls	-						
	Publicity /Seminar		-						
	TOTAL ICDP – Cotton		**-**			**3.421**	**3.424**	**100**	

Table 4.7 contd…

Sl. No	Scheme	Unit	Physical		% Achieve-ment w.r.t. Annual Target	Financial (Rs. In lakhs)		% Achieve ment w.r.t. Sanc. Amt.	Remarks
			Annual Target	Achieve ment Upto 31.03.07		Sanc-tioned Amt.	Achmt. Upto 31.03.07		
III	**Macro Management Mode Schemes**								
1	**Cereal Development (2401-00-102-UA & 2401-00-789-UA)**								
	Distribution of Certified seeds	Metric tonnes	500	506.00	101	10.000	10.120	101	
	Distribution of certified Coarse Cereals seeds	Metric tonnes	23	20.000	87	0.920	0.800	87	
	Crop Prodn. Demn. in SRI pattern	Nos.	425	425	100	8.500	8.500	100	
	Hybrid Millet crop Demn.	Nos.	24	24	100	0.240	0.240	100	
	IPM demonstration	Nos	40	40	100	6.800	6.800	100	
	Training of Farmers	Nos.	38	38	100	1.900	1.900	100	
	Publicity, Village wise Preseason Campaign/conduct of seminars/Work shops	Nos.	480	480	100	4.800	4.800	100	
	POL, Maintenance of vehicles and contingencies	Nos.				0.539	0.536	99	
	New Schemes								
	Distribution of Bio-fertilizer	Ha.	3208	3208	100	1.203	1.206	100	
	Distribution of MN Mixture (12.5kg/Ha) @25% subsidy	Ha.	642	642	100	0.256	0.256	100	

Table 4.7 contd…

Sl. No	Scheme	Unit	Physical		% Achieve-ment w.r.t. Annual Target	Financial (Rs. In lakhs)		% Achievement w.r.t. Sanc. Amount	Remarks
			Annual Target	Achievement Upto 31.03.07		Sanctioned Amt.	Achmt. Upto 31.03.07		
	Bund Cropping of Green Manure /Pulses in Paddy Field	Ha.	3208	3208	100	1.605	1.605	100	
	Training Farm Labourers at Rs.80/- per labour	Nos.	3800	3800	100	3.040	3.04	100	
	TOTAL (Cereal Dev. Programme)					**39.803**	**39.803**	**100**	
2	**Sugarcane Development**								
	Release of Parasites @ Rs.25% subsidy	Ha.	900	900	100	0.090	0.090	100	
	Farmers Training	Nos.	18	18	100	0.900	0.900	100	
	Field Demonstration	No.	10	10	100	0.500	0.500	100	
	Agricultural implements	No.	20	20	100	0.200	0.200	100	
	Contingencies					0.300	0.294	98	
	Drip cum fertigation demands (Funds Allotted to TNAU)	No.	1	1	100				
	Publicity to Headquarters								
	TOTAL					**1.990**	**1.984**	**100**	
3.	**Balanced and Integrated Use of fertilizers**								
	Technical Officers Training	Nos							
	Strengthening of Fertilizer Control Lab	Centres							

Table 4.7 contd…

Sl. No	Scheme	Unit	Physical		% Achieve-ment w.r.t. Annual Target	Financial (Rs. In lakhs)		% Achievement w.r.t. Sanc. Amount	Remarks
			Annual Target	Achievement Upto 31.03.07		Sanctioned Amt.	Achmt. Upto 31.03.07		
	Supply of Leaf Colour chart	Lakh Nos.							
	Strengthening of Fertilizer Testing infrastructure	No.							
	Printing of Soil Health Card	Lakh No.							
	Setting up of Mini Soil Testing Labs	Nos.							
	TOTAL (BIUF)								
4	**Agricultural Mechanization - assistance to Women Self Help Group**								
5	**INNOVATIVE SCHEMES**								
i)	**Farmers Interest Group**								
	Group Formation	Nos.	20	20	100	1.000	1.000	**100**	
	Sustenance of Old FIG Groups	Nos.	60	60	100	2.915	2.915	**100**	
ii)	Drip Fertigation Project for Sugarcane	Ha.							
	Total					**3.915**	**3.915**	**100**	
iii)	**Sugar beet**								
	Farmers Training @Rs.5000./training 2 days training for 50 farmers	Nos							
	State Level Training @ Rs.25000 / training 3 days training for 30 Officers to be organized by TNAU	Nos							

Table 4.7 contd…

Sl. No	Scheme	Unit	Physical		% Achieve-ment w.r.t. Annual Target	Financial (Rs. In lakhs)		% Achieve ment w.r.t. Sanc. Amount	Remarks
			Annual Target	Achieve ment Upto 31.03.07		Sanct-ioned Amt.	Achmt. Upto 31.03.07		
	Field Demn. @ Rs.5000/Demn. 10 Demn./ district	Nos	-	-					
	Total								
IV	**TANWABE**								
a)	Training and assistance to training (15 No/group) Rs.1000/group	No.	450	450	100	4.500	4.500	100	
b)	Setting of EDP skill Units for 6,000 groups Rs.3500/group	No.	450	450	100	15.750	15.750	100	
c)	Documentation & Contingencies Rs.7820/- per district per year					0.078	0.078	100	
d)	Data base/net working @Rs.70000/- district per year		2	2	100	0.700	0.700	100	
e)	Distribution of machineries to Women Self Help Groups		20	20	100	5.800	5.800	100	
h)	Production of Bio - Control agents by SHG		1	1	100	5.000	5.000	100	
	TOTAL					**31.828**	**31.828**	**100**	

Table 4.7 contd…

Sl. No	Scheme	Unit	Physical		% Achieve-ment w.r.t. Annual Target	Financial (Rs. In lakhs)		% Achievement w.r.t. Sanc. Amount	Remarks
			Annual Target	Achievement Upto 31.03.07		Sanctioned Amt.	Achmt. Upto 31.03.07		
V	Crop Diversification - Demonstration	Nos	7	7	100	1.400	1.400	100	
VI	**Additional allocation**								
a)	Training to Agrl. Labourers	Nos							
b)	Training to School children on IPM concept on Crop diversification	Nos	2100	2100		1.050	1.050	100	
c)	Production of Bio Agents through Women Self Help Group	Nos							
	Total					**1.050**	**1.050**	100	
	Total Innovative Schemes					**38.193**	**38.193**	100	
	Total Macro Management Mode Schemes					**79.986**	**79.980**	100	
VII	**Coconut Development Board Schemes (50:50)**								
1	**2401-00-108-UD**					**18.350**	**20.376**	111	
	T x D seed nut Production	Nos.	1.072	1.076	100				
	T x D seedlings distribution.	L.Nos.	0.750	0.652	87				
	Establishment of Regional Coconut Nurseries								
	Seedlings distribution	L. Nos.	0.100	0.174	174	1.105	1.103	100	
	TOTAL (CDB schemes)					**19.455**	**21.479**	110	

Table 4.7 contd…

Sl. No	Scheme	Unit	Physical		% Achieve-ment w.r.t. Annual Target	Financial (Rs. In lakhs)		% Achievement w.r.t. Sanc. Amount	Remarks
			Annual Target	Achievement Upto 31.03.07		Sanctioned Amt.	Achmt. Upto 31.03.07		
VIII	**Centrally sponsored scheme 100% assistance**								
1	**Integrated farming in Coconut holding for productivity improvement**								
a)	Maintenance of disease affected palms	Nos.	2000	2000	100	5.000	5.000	100	
b)	Demonstration Plots	Ha.							
	New	Ha.	25	25	100	4.375	4.375	100	
	Maintenance	Ha.	27	27	100	4.725	4.725	100	
c)	Organic Manure pits	Units	4	4	100	0.800	0.800	100	
	Total					**14.900**	**14.900**	**100**	
2	**Distribution of Copra Driers (Nos)**								
3	**Removal of root wilt trees (Nos)**								
5	**Development of Model Jatropha Plantation (Ha.)**								
6	**Organic Farming (100%) (component)**								
7	**Agri net**								
8	**Seed Village Programme**					**9.330**	**9.330**	**100**	
	Paddy seeds distribution	Ac	1000	1000	100				
	Pulses seeds distribution		300	300	100				
	Oilseeds seeds distribution		600	600	100				
	Training	No.	15	15	100				
B)	**Human Resources Development Scheme under Seed village programme**					5.390	5.390	100	
(a)	Farmers Training	No.	20	20	100				
(b)	Other State tour	No.	1	1	100				
	Total Centrally sponsored scheme 100% assistance		**24.230**	**24.230**					
	Grand Total (Centrally sponsored scheme)		**285.736**	**285.261**	**100**				

Table 4.7 contd…

Sl. No	Scheme	Unit	Physical		% Achieve-ment w.r.t. Annual Target	Financial (Rs. In lakhs)		% Achievement w.r.t. Sanc. Amount	Remarks
			Annual Target	Achievement Upto 31.03.07		Sanc-tioned Amt.	Achmt. Upto 31.03.07		
	Paddy seeds distribution	Ac	1000	1000	100				
	Pulses seeds distribution		300	300	100				
	Oilseeds seeds distribution		600	600	100				
	Training	No.	15	15	100				
B)	Human Resources Development Scheme under Seed village programme					5.390	5.390	100	
(a)	Farmers Training	No.	20	20	100				
(b)	Other State tour	No.	1	1	100				
	Total Centrally sponsored scheme 100% assistance					**24.230**	**24.230**		
	Grand Total (Centrally sponsored scheme)					**285.736**	**285.261**	**100**	

Source: Records of the Office of the Joint Director of Agriculture, Vellore.

4.9 Constraint Analysis

The major constraints that could adversely influence the results that are expected from the implementation of Agricultural Development Plan are briefly discussed in this section.

4.9.1 Constraints Experienced

1) Paddy

i) Yellowing of transplanted seedlings during winter season

ii) More number of chaffy grains harvested during November – December.

2) Millets

Sorghum

i) Short duration varieties suitable to rainfed cultivation are not available.

ii) Short duration varieties with ratoon capacity is required so that the same can be maintained as rain fed second crop.

Ragi

Blast resistant varieties need to be developed.

Maize

Variety with both grain and fodder quality is required.

3) Pulses

Regram

i) Wilt disease is the major problem in rain fed cultivation.

ii) Blister Beetle menace is severe – IPM Technology is required.

iii) In APK 1 and VBN 2, more pod borer attack is noticed

Blackgram

New varieties with high yield potential are to be developed for replacing T9 and TMV 1

Greengram

Yellow mosaic virus resistant varieties are required.

4) Oilseeds

Groundnut

i) Tikka leaf spot and rust resistant varieties for rainfed season are to be developed.

ii) Root Wilt resistant varieties also are required.

iii) Drought tolerant variety

iv) Suitable variety to replace TMV.7

v) Export quality Groundnut variety

Gingelly

i) Ill filled capsules is the major problem in Gingelly.

Castor

i) Short duration Castor varieties are required

ii) Slug caterpillar / Borer infestation is more – resistant varieties requested.

5) Cotton

i) Pink bollworm and American Bollworm and sucking pests are the major problems.

Hence, resistant varieties to these pests are to be developed.

ii) Black arm disease problem is severe after monsoon rains

iii) Suitable Bt cotton varieties and hybrids are to be developed by TNAU

6) Sugarcane

i) Wooly Aphid resistant varieties

ii) Red rot resistant varieties

4.9.2 Soil Related Constraints

- Developing varieties suitable for tannery effluent area
- **Soil salinity and Alkalinity:** 41,000 ha area is affected by salinity and alkalinity problems which include area affected by tannery effluents. Alkalinity problem area is with pH of more than 8.5. In these areas, the alkalinity is due to the tannery effluents, low rain fall and also continuous irrigation along with stagnation of problem water. For these areas, salt tolerant millets and paddy varieties are required.
- Problem soil pH is more than 8.5; Tannery effluent affected area has the pH of more than 8; in salinity area pH is around 3. Hence, technology is to be developed for growing coconut and millet in these areas.

- Reclamation is currently being carried out at the rate of 500 ha per year, which needs to be increased.
- **Problem water:** Due to low rainfall, the water table goes below 300 ft depth, with increased salt content. Among the erosion affected area, 75 per cent (3,03,606 ha) of the area was under slight erosion and remaining area (71,789 ha) was under modest erosion; This 25 per cent of the area with 1-3% slope has to be targeted for improving water holding capacity.

4.9.3 Research / Extension / Adoption Gap

In order to overcome the constraints, both short and long term strategies have to be incorporated in the plan. Such strategies for overcoming the production constraints of major crops in Vellore district are given in Table 4.8.

Table 4.8: Short and Long Term Strategies of the District Agricultural Plan

Short Term Strategies	Long Term Strategies
Paddy	
1. Adoption of SRI technique	1. Increasing SRR
2. Green Manuring / Green leaf manuring	2. IPM / INM Practices
3. Seed treatment with Pseudomonas	3. Bio fertilzers application
4. Optimum plant population	4. Replacement of old varieties
Millets	
1. Seed Hardening	1. Encouraging pure crop
2. Enriched FYM application	2. Cultivation of hybrid varieties
3. Micro nutrient mixture application	
4. Synchronized sowing	
Pulses	
1. DAP Foliar spray	Encouraging pure crop
2. Seed treatment with Trichoderma viridi	Bund cropping in Paddy
3. Bio fertilzer treatment	Intercropping Banana & Sugarcane
Cotton	
1. Acid delinting	1. Hybrids and Bt Cotton
2. Poly coat technology	2. IPM technologies
3. Micro irrigation	3. Growth regulators spray
Sugarcane	
1. Sett treatment	1. Single budded planting
2. IPM / INM technologies	2. Periodical training to farmers
3. Parasites / Predators usage	3. Demonstration plots
4. Promote single bud cutter	4. Replacement of old varieties

Table 4.8: (contd)

Short Term Strategies	Long Term Strategies
Oilseeds	
1. Enriched FYM	1. Replacement of old varieties
2. Usage of Bio-fertilizers	2. Drought tolerant varieties
3. Gypsum application	3. Contract Farming
4. Micro nutrient tonic spray	

In order to increase the productivity of major crops, operation wise and input wise technology packages are given below.

(i) Technology packages for Paddy Cultivation

Seed : High yielding varieties

Use of certified seeds

Use of required quantity

Nursery : Seed treatment with fungicides / Pseudomonas

Eight cents nursery

DAP application

Pest and Disease Management

Main Field : Application of Organic Manure / Green manures

Soil test based macro, micro nutrient application

Need based split application of N by LCC method

IPM / Weed Management / Water Management

Post Harvest : Proper storage

Special Thrust : i) SRI method of cultivation

ii) LCC method of N application

iii) Seed treatment with Pseudomonas

Activities for Special Thrust : i) Demonstrations
ii) Trainings
iii) Mass Media
iv) Field Days
v) Campaigns

(ii) Technology packages for Millets Cultivation

Seed	:	High yielding varieties
		Use of certified seeds
		Use of required quantity
Nursery	:	Seed treatment with fungicides / bio-fertilizers
		Seed Hardening (Rainfed)
Main Field	:	Application of Enriched FYM (Rainfed)
		Soil test based macro and micro nutrient application
		IPM / Weed Management / Water Management
		Drought management (Rainfed)
Post Harvest	:	Proper storage
Special Thrust	:	i) Seed Hardening
		ii) Soil Mulching
Activities for Special Thrust	:	i) Demonstrations ii) Trainings
		iii) Mass Media
		iv) Campaigns

(iii) Technology packages for Pulses Cultivation

Seed	:	High yielding varieties
		Use of certified seeds
		Use of required quantity
		Seed treatment with fungicides / bio-fertilizers
		Seed treatment with Trichoderma viridi

Main Field	:	Application of Organic Manure
		Soil test based macro and micro nutrient application
		IPM practices to control Pod borers
		DAP foliar spray (2%)
Post Harvest	:	Proper storage
Special Thrust	:	i) Seed treatment with Trichoderma viridi
		ii) DAP foliar spray
Activities for Special Thrust	:	i) Demonstrations
		ii) Trainings
		iii) Mass Media
		iv) Campaigns

(iv) Technology packages for Cotton Cultivation

Seed	:	Hybrids / Bt Cotton
		Poly coat treatment (Designer seed)
Main Field	:	Application of Organic Manure / Bio-fertilizers
		Soil test based macro and micro nutrient application
		IPM practices to control Bollworms
Special Thrust	:	i) Poly coat treatment
		ii) Use of Bio-agents to control pests
Activities for Special Thrust:		i) Demonstrations ii) Trainings iii) Mass Media iv) Campaigns

(v) Technology packages for Sugarcane Cultivation

Seed	:	High yielding varieties
		Sett treatment
		Planting single budded sets

Main Field : Application of Organic Manure / Bio-fertilzers
Soil test based macro and micro nutrient application
De-trashing and Mulching
Use of Bio-agents to control Pests
Management of woolly aphid using Acephate
Pit Method of planting with Drip and Fertigation

Special Thrust : i) Single budded planting
ii) Pit method of planting

Activities for Special Thrust : i) Demonstrations
ii) Trainings
iii) Mass Media
iv) Campaigns

(vi) Technology packages for Oilseeds Cultivation

Seed : High yielding varieties
Use of certified seeds
Use of required quantity
Seed Hardening (Rainfed)
Seed treatment with fungicides / bio-fertilizers / Tviridi

Main Field : Application of Enriched FYM (Rainfed) / Bio-fertilizers
Soil test based macro and micro nutrient application
Application of Gypsum in Groundnut
IPM to control RHC in Groundnut
Drought management (Rainfed)
Sprinkler irrigation method

Post Harvest : Proper storage to reduce Aflotoxin content

Special Thrust : i) Seed Hardening
ii) Soil Mulching
iii) Enriched FYM application

Activities for Special Thrust: i) Demonstrations
ii) Trainings
iii) Mass Media
iv) Campaigns

CHAPTER V

ALLIED SECTOR

Introduction

Development of allied agricultural sectors has been incorporated as a component of District Agricultural Plan so as to ensure a holistic development of Vellore district. In this chapter, various ongoing schemes and technological interventions required for the development of agriculture allied sectors like horticulture, animal husbandry, fisheries, agricultural engineering, agricultural marketing and agri-business, sericulture and water resources (PWD) for Vellore district are discussed.

5.1 Horticulture

The on-going schemes for horticultural development in Vellore district would throw light on the current status and the priorities to be given for future horticultural development. The details about on-going schemes on horticultural development in the district are given in Table 5.1.

Table 5.1: On-going Schemes on Horticultural Development in Vellore District

S. No.	On Going Schemes	Physical (Ha)	Financial (Rs. in Lakhs)
1	National Horticulture Mission	3555	389.745
2	Integrated Horticulture Development Scheme	1595	16.510
3.	Scheme Micro Irrigation	660	100.47
	Total	**5150**	**506.725**

State Horticulture Farms				
Components	**Navlock**	**Kudapattu**	**Thagarakuppam**	**Total**
Propagation (Nos.)	370500	162000	93000	625500
Production (Nos.)	201000	98050	79400	368450
Distribution (Nos.)	201000	98050	79400	368450

Source: Records of the Office of the Assistant Director of Horticulture, Vellore.

As could be seen in Table 5.1, Rs. 507 lakhs worth of developmental works relating to horticulture was taking place in Vellore district. The basic infrastructure for the development of horticulture centres around the development of State Horticulture Farms which are located at Navlock, Kudapattu and Thagarakuppam. The main activities of these farms are given in lower part of the Table 5.1.

5.2 Animal Husbandry

Livestock enterprise is an important complementary activity to the crop activities. Basic information about cattle and poultry population (2004) in Vellore District is given in Table 5.2 below.

The cattle population in Vellore district accounted for 47 per cent of the total livestock population in the district and it also accounted for 5.5 per cent of the cattle population in the State as indicated in Table 5.3. Sheep and goat population accounted for 5.3 and 2.8 per cent of their livestock population in the State respectively. Livestock population in the district was 4.3 per cent of the total livestock population in the State.

As could be seen in Table 5.4, there were eight veterinary hospitals, 50 veterinary dispensaries and 67 veterinary sub centres. In Table 5.5, block wise number of co-operative milk producers' societies and quantity of milk produced during 2005-06 are given. In Vellore district, there were 323 cooperative societies with a maximum number of societies in Solingur block (45 societies) followed by Thimiri (42), Gudiyatham (32), Anaicut (31) and so on. Quantity of milk produced in the district was 347.4 lakh litres in 2005-06.

Average annual production of milk, egg and meat for the triennium ending 2006-07 is given in Table 5.6. Annual growth rates of productivity of egg and milk and also production of milk and egg are presented in Tables 5.7 and 5.8 respectively. Although there were increases in the productivities of milk and egg, there was a declining trend as regards the production of buffalo milk, egg and meat.

The demand and supply gap of green fodder in 2004 in Vellore district presented in Table 5.9 would indicate that there was a shortage of green fodder to the extent of 90.1 per cent in the district. As regards the demand – supply gap of dry fodder was concerned, the deficit was 19.1 per cent in Vellore district during 2004 (Table 5.10).

Table 5.2: Livestock Population in Vellore District in 2004

Sl.No	Classification	Numbers
1.	**Cattle**	
	1. Male	
	i. Under one year	32197
	ii. 1 to 2.5 years	22949
	iii. Used for Bread	4655
	iv. Used for Works	73372
	v. Used for Breeding and Work	3953
	vi. Others	3132
	Total	**140258**
	2. Female	
	i. Under one year	71506
	ii. 1 to 2.5 Years	66919
	iii. In milk	154872
	iv. Dry	74480
	v. Not yet calved once	16090
	vi. Others	6901
	Total	**390768**
	Cattle Total	**531026**
	3. Sheep	295135
	4. Goats	232315
	5. Horses and Ponies	353
	6. Pigs	12355
	7. Rabbits	1682
	8. Camels	---
	9. Donkeys	806
	10. Dogs and Domestic Dogs	64168
	11. Others	35726
	Total Livestock	**1173566**
2.	**Poultry**	
	1. Fowls	1100428
	2. Ducks	49237
	3. Others	5518
	Total Poultry	**1155183**

Source: Records of Regional Joint Director of Animal Husbandry, Vellore.

Table 5.3: Livestock Census of Vellore District and Tamil Nadu State in 2004

(Numbers)

Sl. No.	District / State	Cattle	Buffaloes	Sheep	Goats	Pigs	Others	Total
1.	Vellore	501634	29392	295135	232315	12355	1159	1071990
(a)	Percentage to Total Cattle Population in District	46.8	2.7	27.5	21.7	1.2	0.1	100.0
(b)	Percentage to respective Cattle Population in State	5.5	1.8	5.3	2.8	3.9	2.3	4.3
2.	STATE	9141043	1658415	5593485	8177420	320868	50798	24942029
(a)	Percentage to Total Cattle Population in State	36.6	6.7	22.4	32.8	1.3	0.2	100.0

Source: Records of Commissioner and Director of Animal Husbandry and Veterinary Services, Chennai

Table 5.4: Veterinary Institutions and Animals Treated Block Wise in Vellore District in 2005-06

Sl. No	Name of the Block	Veterinary Institutions				Sub Centers	Other Units		Animal Treated	Castration Performed
		Poly Clinic	Hospi-tal	Dispen saries	Clinician Centers		Animal Disease investing-ation Units	Mobile Units		
1	Vellore	--	--	3	1	3	1	--	33685	361
2	Anaicut	--	--	4	--	3	--	--	33912	365
3	Kaniyambadi	--	--	2	--	3	--	--	33796	350
4	Arakkonam	--	--	3	--	3	--	--	33695	350
5	Sholingur	--	--	3	--	3	--	--	33792	353
6	Nemili	--	--	2	--	7	--	--	33688	358
7	Kaveripakkam	--	--	2	--	4	--	--	33685	352
8	Thimiri	--	--	4	--	4	--	--	33698	352
9	Wallajahpet	--	2	3	--	4	--	1	33712	351
10	Madhanur	--	--	3	--	2	--	--	33820	358
11	Arcot	--	--	1	--	3	--	--	33912	362
12	Tirupathur	--	1	2	--	4	--	2	39000	478
13	Jolarpet	--	1	3	--	2	--	--	38120	453
14	Kandili	--	--	1	--	4	--	--	38304	472
15	Natrampalli	--	--	2	--	2	--	--	40112	495
16	Alangayam	--	--	3	--	2	--	---	37618	493
17	Pernampet	--	--	4	--	7	--	--	38787	464
18	Gudiyatham	--	2	3	--	--	--	--	38687	450
19	K.V.Kuppam	--	1	1	--	3	--	--	41132	667
20	Katpadi	--	1	1	--	4	--	--	40127	473
	Total	**--**	**8**	**50**	**1**	**67**	**1**	**3**	**619989**	**10199**

Source: Records of Office of the Joint Director of Animal Husbandry, Vellore.

Table 5.5: Dairy Development during 2005-06 in Vellore District

Sl. No	Name of the Block / Urban Town	Name and address of milk		Quantity of milk produced (in '000 liters)	Value of Milk produced (Rs.in Lakhs)
		Societies	Nos.		
(1)	(2)	(3)	(4)	(5)	(6)
1	Vellore	MILK FEDARATION CO-OPERATIVE SOCIETIES	11	1156.32	115.632
2	Kaniyambadi		17	1922.82	192.282
3	Anaicut		31	1012.875	101.2875
4	Arcot		12	1438.83	143.883
5	Thimiri		42	4263.93	426.393
6	Walajapet		15	2472.875	247.2875
7	Sholingur		45	4535.125	453.5125
8	Arakkonam		0	0	0
9	Nemili		0	0	0
10	Kaveripakkam		3	212.43	21.243
11	Gudiyatham		32	3700.37	370.037
12	K.V.Kuppam		20	2365.93	236.593
13	Pernambut		19	922.355	92.2355
14	Katpadi		17	2257.525	225.7525
15	Alangayam		9	605.17	60.517
16	Madhanur		11	1088.43	108.843
17	Thirupathur		14	1638.12	163.812
18	Natrampalli		5	1524.97	152.497
19	Kandili		4	572.32	57.232
20	Jolarpet		16	3050.67	305.067
Total			323	34741.065	3474.1065

Source: Records of Office of the Deputy Registrar (Dairy), Vellore

Table 5.6: Average Annual Production of Livestock Commodities - 2004-05 to 2006-07

Cow milk in 000 Tonnes	Buffalo milk in 000 Tonnes	Improved egg in Lakh Nos.	Desi egg in Lakh Nos.	Poultry Meat in Tonnes	Mutton in Tonnes	Chevon in Tonnes
302.08	34.49	97.51	160.82	8868.33	448.03	573.72

Source: Records of Office of the Joint Director of Animal Husbandry, Vellore.

Table 5.7: Productivity of Livestock Products - (1998 – 99 to 2006 – 07)
(Annual Compound Growth Rate in per cent)

Desi Egg	Improved Egg	Indigenous cow	Crossbred cow	Buffalo
22.00	18.62	1.41	4.02	5.19

Source: Records of Office of the Joint Director of Animal Husbandry, Vellore.

Table 5.8: Production Growth Rates (1998 – 99 to 2006 – 07)
(Annual Compound Growth Rate in per cent)

Cow Milk	Buffalo Milk	Total Milk	Desi Egg	Improved Egg	Total Egg	Total Meat
10.61	- 15.40	5.33	- 2.89	- 4.17	- 3.34	- 5.82

Source: Records of Office of the Joint Director of Animal Husbandry, Vellore.

Table 5.9: Demand and Supply of Green Fodder (2004) (Million tonnes per year)

Demand	Supply	Deficit	Deficit %
3.8511	0.3796	3.4715	90.1

Source: Records of Office of the Joint Director of Animal Husbandry, Vellore.

Table 5.10: Demand and Supply of Dry Fodder (2004) (Million tonnes per year)

Demand	Supply	Deficit	Deficit %	Excess %
1.655	1.339	0.316	19.1	NA

Source: Records of Office of the Joint Director of Animal Husbandry, Vellore.

Poultry were very less in Vellore district as indicated in Table 5.11. Only 26 farms were functioning in the district and they were concentrated in Vellore (12 Nos), Thirupathur (4 Nos) and Katpadi (4 Nos) blocks.

Table 5.11: Poultry Development in Vellore District in 2005-06

S. No.	Name of the Block	Broiler		Layer		Quail		Turkey		Others		Total No. of Farms
		No. of Farms	No. Birds	No. Farms	No. Birds	No. Farms	No. Birds	No. Farms	No. Birds	No. Farms	No. Birds	
1	Vellore	--	--	--	--	07	2500/Week	05	45	--	--	12
2	Anaicut	--	--	--	--	--	--	--	--	--	--	--
3	Kaniyambadi	--	--	--	--	--	--	--	--	--	--	--
4	Arakkonam	--	--	--	--	--	--	--	--	--	--	--
5	Sholingur	--	--	--	--	--	--	--	--	--	--	--
6	Nemili	--	--	--	--	--	--	--	--	--	--	--
7	Kaveripakkam	--	--	--	--	--	--	--	--	--	--	--
8	Thimiri	01	300 /week	--	--	--	--	--	--	--	--	01
9	Wallajahpet	--	--	--	--	--	--	--	--	--	--	--
10	Madhanur	--	--	--	--	--	--	--	---	1*	30	01
11	Arcot	--	--	--	--	--	--	--	--	--	--	--
12	Tirupattur	---	--	---	--	02	1500/Week	02	205	--	--	04
13	Jolarpet	--	--	--	--	--	--	--	--	--	--	--
14	Kandili	--	--	--	--	01	10000/batch	01	25	--	--	02
15	Natrampalli	--	--	--	--	--	--	--	--	--	--	--
16	Alangayam	--	--	--	--	--	--	--	--	--	--	--
17	Pernampet	--	--	--	--	--	--	--	--	--	--	--
18	Gudiyattam	01	6500	--	--	01	1500/Week	--	--	--	--	02
19	K.V.Kuppam	--	--	--	--	--	--	--	--	--	--	--
20	Katpadi	--	--	---	--	02	1000/Week	01	10	1*	30	04
Total		02				13		09		02		26

* Pigeon Farm Source: Professor and Head, Veterinary University Training & Research center, Vellore.

5.2.1 Strength / Gaps

(a) Dairy Cattle

i) Strength

- Availability of barren lands for conversion it into grazing area.
- Enhanced marketing potential in the neighbourhoods
- Large scale participation of private players

ii) Weakness

- Fodder scarcity
- Inadequate health care
- Endemic for Anthrax and Foot and Mouth Disease

(b) Sheep and Goat

i) Strength

- Nomadic rearing – Vast uncultivable land – Rainfed area
- Sizeable number of breedable population – Madras Red / Nellore
- Consumer's preference – By-product (leather) is efficiently utilized

ii) Weakness

- Non-availability of superior Rams and Bucks
- Unorganized marketing resulting in wild price fluctuations
- Absence of mechanism to promote the sector (Financial assistance)

(c) Poultry

i) Strength

- Availability of dry land – conducive atmosphere (Layer)
- Contract farming (Broiler)
- More scope for backyard poultry

ii) Weakness

- Depopulation of layers
- Increase in the input (feed) cost
- Bird flu threat due to unregulated farms

(d) Piggery

i) Strength

- Availability of germ plasm from University Livestock Farm
- Marketing facility to near-by Metropolitan cities
- Low maintenance cost through garbage feeding – Farmer's Interest Groups

ii) Weakness

- Unscientific management practices
- Religious taboo
- Unorganised sector

Interventions Required Areas

- Green fodder development
- Financial Assistance for Animal component
- Incentive to farmers through cards
- Improved livestock health care
- Hygienic utilization of offal
- Capacity building protocols

5.3 Fisheries Development

In Vellore district, there could be only inland fisheries development as there was no scope for marine fisheries development. The details about the fisheries development in the district are given below:

- Inland Fishermen Cooperative Societies - 26
- Active inland fishermen – 1846
- Active inland fisherwomen – 500
- In the inland sector, three fish seed rearing centres were owned by private sector
- Lot of scope for developing inland fish farming
- In the inland side, major carps such as Catla, Rohu, Mrigal, Common Carp and fresh water prawns are harvested.

Fisheries development and production details are presented in Table 5.12. As there is no perennial water resources, fisheries development is restricted to a very few tanks. Most of the tanks were system tanks and most of these tanks were dry for most part of the year. As water is available in moat of the Vellore Fort, fish culture is being taken up. Also, in Mordana dam of Guditatham block, fish production is carried out.

Table 5.12: Fisheries Development and Production in 2005-06 in Vellore District

SL. No	Name and address of fishing centres	Inland fish Catch (Tonne)	Marine Fish Catch (Tonne)	Number of Fisherman engaged
1	Vellore Fort & Vellore	6.0175	--	10
2	Kaniyambadi	--	--	-
3	Anaicut	--	--	--
4	Arcot	--	--	--
5	Timiri	--	--	--

Table 5.12: contd…

SL. No	Name and address of fishing centres	Inland fish Catch (Tonne)	Marine Fish Catch (Tonne)	Number of Fisherman engaged
6.	Walajapet	--	--	--
7	Sholingur	--	---	--
8.	Arakkonam	--	---	--
9.	Nemili	--	---	--
10	Kaveripakkam	---	---	--
11	Gudiyatham-Mordana dam	1.1875	---	13
12	K.V.Kuppam	---	---	--
13	Peranampet	---	--	--
14	Katpadi	--	--	--
15	Alangyam	--	--	--
16	Madhanur	--	--	--
17	Thirupathur	--	--	--
18	Natrampalli	--	--	--
19	Kandhili	---	---	--
20	Jolarpet	--	--	--
District Total		**7.2050**	**---**	**23**

Source: Records of the Office of Inspector of Fisheries, Fort, Vellore.

5.3.1. Gaps Identified

- 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
- Average unit fish production of long season tanks at present is 300 kg/ha as against its potential of 1800 kg/ha.
- Stock and harvest system of Fish culture is practiced in natural small water bodies and not scientific method of culture and
- Lack of post harvest facility like cold store/ fish processing unit

5.3.2. Intervention Required Areas

- Infrastructure development to attain self sufficiency in fish seed production through private and government participation.
- Expansion of fish culture in all water bodies
- Infrastructure development to modernize the existing marketing facilities in key areas and
- Capacity building training to the fish farmers.

5.4 Agricultural Engineering

Vellore District is a Drought Prone District with erratic and less than normal rainfall recorded during the past several years. Most of the rivers in this district are dry for years together and the major irrigation tanks which are mostly system tanks are also dry for the most part of the year. This has resulted in over exploitation of ground water through open wells and deep borewells. Hence it is essential to recharge the ground water table which has gone very deep during the recent years. Of the 20 blocks in this district, 16 were over exploited, two were critical and the remaining two were semi critical in terms of ground water potential.

Vellore District is very near to Chennai and Bangalore cities which have resulted in the large scale migration of farm labourers. This has resulted in a great demand for agricultural labourers and the farmers in this district face a lot of problems in getting farm labourers. Therefore, there is a vast scope for mechanization of farm operations. To overcome the above problems, several soil and water conservation measures to recharge the ground water potential and mechanization of farm operations were being implemented in the district.

On going schemes being implemented by the Department of Agricultural Engineering in Vellore district include subsidizing the purchase of modern equipments and machineries, construction of water harvesting structures, soil conservation measures, etc. The details of on going schemes implemented in 2007-08 are furnished in Table 5.13.

As could be seen from the table, developmental works by the Department of Agricultural Engineering were carried out in Vellore district to the extent of Rs. 403.465 lakhs. NABARD sponsored Rural Infrastructure Development Fund contributed a maximum share of 46.8 per cent followed by soil conservation through rain water harvesting and replacement of old pumpsets (15.6 per cent each), agricultural mechanization (10.6 per cent), improving two acre waste lands distributed to landless labourers (8.4 per cent) and centrally sponsored drip irrigation scheme (3.0 per cent).

Table 5.13: Details of On Going Schemes for the Development of Agricultural Engineering in Vellore District

Sl No.	Scheme	Components	Subsidy Pattern	Achievement during 2007-08
1	Agricultural Mechanization	1.Power Tillers 2.Tractors 3. Rotavators 4. Paddy transplanter 5. Zero Till Seed Drill 6. Power Thrashers 7. Implements like disc plough, cultivator, chisel plough etc., 8. Gender friendly Equipments	25% of the cost of the machinery / equipment or maximum Rs.30,000/- as per GOI guidelines.	Power Tillers - 135 Nos – Rs.36.69 lakhs Tractors - 8 Nos - Rs.2.40 lakhs Rotavators - 22Nos - Rs.3.49 lakhs Disc plough - 1 No - Rs.0.10 lakhs Total 166 Nos - Rs.42.68 lakhs
2.	NABARD – Rural Infrastructure Development Fund - Rain Water Harvesting Programme (in 23 Micro Watersheds of Tirupathur Taluk, Pambar Watershed)	1. Minor Check dam 2. Major Check dam 3. Medium Check dam 4. Percolation Pond 5. Farm Pond 6. Rejuvenation of wells	100% for community works and 75% for individual works.	Minor Check dam- 162 Nos – Rs.16.20 lakhs Major Check dam – 38 Nos – Rs.28.50 lakhs Medium check dam– 85 Nos – Rs.42.50 lakhs Percolation pond – 39 Nos – Rs.78.00 lakhs Farm pond - 63 Nos – Rs.18.90 lakhs Rejuvenation of Wells - 23 Nos – Rs.4.585 lakhs Total - 410 Nos –Rs.188.685 lakhs
3.	Soil Conservation - Rain Water Harvesting	1. Minor Check dam 2. Major Check dam 3. Medium Check dam 4. Percolation Pond 5. Farm Pond 6. Rejuvenation of wells 7. New Village Ponds	90% for others and 95% for SC/ST farmers.	Minor Check dam – 19 Nos – Rs.4.75 lakhs Major Check dam- 10 Nos –Rs.10.00 lakhs Medium Check dam- 15 Nos – Rs.7.50 lakhs Percolation Pond - 5 Nos - Rs.14.60 lakhs Farm Pond - 37Nos – Rs.14.80 lakhs Rejuvenation of wells-20Nos –Rs.5.20lakhs New Village Ponds – 4 Nos – Rs.6.00 lakhs Total 110 Nos – Rs.62.85 lakhs

Table 5.13 contd…

Sl No.	Scheme	Components	Subsidy Pattern	Achievement during 2007-08
4.	Replacement of old pump sets scheme	Below 5 HP Special Component Others 5 HP and above Special Component Others Accessories	50% or Rs.3500/- whichever is less 25% or Rs.2500/- whichever is less 50% or Rs.6000/- whichever is less 25% or Rs.5000/- whichever is less 50% or Rs.1500/- whichever is less	Below 5 HP Special Component -54 Nos- Rs.2.69 lakhs Others - 231 Nos- Rs.9.24 lakhs 5 HP and above Special Component -104 Nos– Rs.7.71 lakhs Others 701 Nos- Rs.43.44 lakhs Total 1090 Nos - Rs. 63.08 lakh
5.	Centrally Sponsored Micro Irrigation	Drip Irrigation	50% subject to the maximum limit fixed by the GOI as per the spacing of the crop.	Drip Irrigation – 110.30Hec – Rs.12.08 lakhs
	Sub-Total			369.375
Sl. No.	**Hiring of Machinery Scheme**	**Components**	**Hire charges**	**Achievement during 2007-08**
1.	**Land development**	Bulldozer – 2 Nos	Rs.670- per hour	Bulldozers – 2331 Hours
		Tractor - 6 Nos	Rs.265/- per hour	Tractors – 4870 Hours
		Combined Harvestor – 1 No	Rs.780/- per hour	Combined Harvestor – 90 Hours
2.	**Minor Irrigation**	Rock Blasting Units – 5 Nos	Rs.250/- per day	Rock Blasting Units – 755 Blastings
		Hand Boring Set – 1 No	Rs.40/- per meter	Hand Boring Set – 338 Meters
		Geo physical survey	Rs.500/- per point	Geo Physical Survey – 172 Points
	Distribution of 2 Acres Wastelands	Jungle Clearance, land shaping, Tractor Ploughing, Bund formation,	Rs.2600/per Acre 100% subsidy	Phase.I – 172.07 Acres – Rs.4.73 lakhs Phase.II – 254.84 Acres –Rs. 6.39 lakhs Phase.III – 580.82 Acres – Rs.14.67 lakhs Phase.IV – 381.13 Acres – Rs. 8.30 lakhs Phase.V – 65.34 Acres - Under progress
	Sub-Total			34.09
	Total			**403.465**

Source: Records of Office of the Executive Engineer, (AED), Vellore.

5.5. Agricultural Marketing and Agri-Business

The success of agricultural enterprises would depend not only on efficient production but also on the efficient marketing infrastructure which would ensure remunerative prices to farmers. The details of regulated markets functioning in Vellore district are given in Table 5.14. As could be seen from the table, there were 12 regulated markets in the district transacting mainly paddy, cane gur and ground nut. Table 5.15 would indicate the functioning of co-operative marketing societies in the district.

Table 5.14: Regulated Markets Functioning in Vellore District -2005-06

No.of Regulated Markets	No.of Sub - Regulated Markets	Name of Crops	Quantity arrivals (Metric Tonnes)	Receipts (Rs in lakhs)
(1)	(2)	(3)	(4)	(5)
		1. Ground nut	311	68
12	NIL	2. Paddy	65512	3435
		3. Ginglly	35	12
		4. Cane gur	1516	164
		5. Chilly	31	3
		6. Raggi	271	24
		7. Cholam	112	11
		8. Cumbbu	51	4
		9. Horse gram	14	1
		10.Tamarind	21	17
		11.Coconut	--	--
		12.Cotton	--	---
		13.Red gram	32	4
		14.Castor	4	1
		Total	**67910**	**3744**

Source: Records of Office of the District Market Committee, Vellore

Table 5.15: Co-operative Marketing Societies in Vellore District in 2005-06

(Rupees in Lakhs)

Sl. No	Type of the Societies	No.of Societies	Member-ship	Share Capital	Working Capital	No.of Employees
1.	Co-operative Marketing Society	7	51392	10.52	104.69	162
2.	Vegetables Growers Co-op Marketing Society	1	50	0.09	9.00	1
3.	Fruit Processing Co-Op. Society	1	---	1.29	41.37	Dormant

Source: Records of Joint Registrar of Co-op Societies, Vellore Region, Vellore.

5.5.1. Storage Facilities

Storage facilities available in the district are indicated in Table 5.16

Table 5.16: List of Agricultural and Non-Agricultural Storage Godowns in Vellore District

Sl.No	Taluk	Agricultural Extn. Centres	Capacity (M.T)
1.	Vellore	Vellore	90
		Usoor	45
		Kaniyambadi	90
		Anaicut	100
		Odugathur	25
		Pallikonda	10
2	Gudiyattam	Gudiyattam	30
		Paradharami	40
		Katpadi	30
		Tiruvalam	30
		K.V.Kuppam	75
		Latheri	50
3	Vaniyambadi	Alangayam	30
		Vaniyambadi	48
		Madhanur	48
		Ambur	40
		Pernampet	69
		Umarabath	48
4	Thirupathur	Thirupathur	132
		Vadacherri	7
		Kodiyur	50
		Natrampalli	65
		Ramanaicanpettai	65
		Kandili	75
		Pachal	26
		Valakalnatham	10
		Pudhupettai	10
5.	Arcot	Arcot	50
		Sakaramallur	20
		Thimiri	40
		Kalavai	30
6.	Walajah	Walajah	40
		Lalapet	48
		Sholingur	15
		Melpadi	48
7.	Arakkonam	Arakkonam	80
		Thakkolam	80
		Nemili	45
		Panapakkam	25
		Kaveripakkam	30
		Paranji	25
		Banavaram	25
		Total	1939

Source: Records of Office of the District Warehousing, Vellore

5.6 Sericulture

As silk weaving is a major commercial activity taken up in a large scale in the nearby Kancheepuram and Arani (Thiruvannamalai district), there is a vast scope for strengthening the sericulture production system in Vellore district. The area under mulberry and production of cocoon in Vellore district during 2005-06 are given in Table 5.17 below.

Table 5.17: Area under Mulberry and Production of Cocoon in Vellore District for 2005-06

Sl. No.	Name Of the Block	Area under Mulberry (in Ha)	Production of Cocoons (Tonnes)	Value (in Rs.'000)
1	Vellore	1.578	2.4	254.4
2	Kaniyambadi	0.000	0.0	0
3	Anaicut	0.971	1.2	127.2
4	Arcot	1.538	1.7	180.2
5	Thimiri	1.012	0.7	74.2
6	Walajapet	9.065	14.0	1484.0
7	Sholingur	2.347	2.8	296.8
8	Arakkonam	1.012	0.7	74.2
9	Nemili	0.000	0.0	0.0
10	Kaveripakkam	7.244	12.5	1325.0
11	Gudiyatham	9.794	11.2	1187.2
12	K.V.Kuppam	2.388	1.8	190.8
13	Pernambut	6.920	4.7	498.2
14	Katpadi	3.521	2.9	307.4
15	Alangayam	42.210	83.7	8872.2
16	Madhanur	10.279	13.7	1478.9
17	Thirupathur	43.909	83.4	8840.4
18	Natrampalli	33.023	79.0	8374.0
19	Kandili	11.170	15.4	1632.4
20	Jolarpet	8.296	15.0	1590.0
Total		**197.369**	**346.8**	**3685.1**

Source: Records of Office of the Assistant Director of Sericulture, Vaniyambadi.

As could be seen from the table, mulberry production was taken up only in 197 ha in Vellore district during 2005-06 and this area supported the production 347 tonnes of cocoons. Larger area under mulberry was seen in the block of Thirupathur followed by Alangayam and Natrampalli blocks in that order.

CHAPTER VI

DISTRICT PLAN

District plan has been prepared for Vellore district for the XI Plan period between 2007-08 and 2011-12 and this plan includes the proposals of various line departments like agriculture, horticulture, animal husbandry, fisheries, agricultural engineering, agricultural marketing and agri-business, sericulture and water resources (PWD).

6.1 Agriculture

6.1.1. Recommended Interventions for the District, with Detailed Action Plan with Costs

The abstract of financial outlay for technologies identified for the development of agriculture during XI Plan (2007-08 to 2011-12) for Vellore District is given in Table 6.1 and details on recommended interventions for the district, with detailed action plan along with costs are given in Tables 6.2 through Table 6.8

Table 6.1: Financial Outlay for Technologies Identified for Development of Agriculture XI Plan (2007-08 to 2011-12) in Vellore District

S.No.	Technologies Identified	Percentage share to total
1.	Soil Health	31.3
2.	Seed	1.2
3.	Irrigation (Drip / Sprinkler)	0.5
4.	INM	19.4
5.	IPM	18.7
6.	Machinery/Implements	7.7
7.	Marketing Support to Commodity Interest Groups at Village level	19.8
8.	Technologies	1.3
9.	**Total**	**100.0**

Source: Records of Office of the Joint Director of Agriculture, Vellore.

As could be seen from Table 6.1, the most technologies identified for implementation during XI plan in Vellore district were relating to soil health, a maximum of 31 per cent of the plan outlay was earmarked for it which was followed by marketing

support to Commodity Interest Groups at Village level with 19.8 per cent, Integrated Nutrient Management (19.4 per cent), Integrated Pest Management (18.7 per cent), Farm Mechanization (7.7 per cent) and so on.

The projected area to be covered under crops like paddy, maize, ground nut (irrigated and rainfed), cotton (rain fed), millets (irrigated) and fodder crops during XI Five Year Plan (2007-08 to 2011-12) would be 8,24, 500 Ha and the projected increase from these crops would be 26.06 lakh tonnes (Table 6.2 through Table 6.8). The abstract of physical and financial targets fixed for the development of agricultural sector through various technological interventions in the XI plan period are given in Table 6.9. The total financial outlay for the plan period has been fixed at Rs. 29.17 crores.

Table 6.2: Recommended Interventions for Paddy in Vellore District - 2007-08 to 2011-12

(Total Cost Rs.in lakhs)

Sl. No	Technologies identified	2007-08			2008-09		2009-10		2010-11		2011-12	
		Projected Area : 60000 Ha			Projected Area :62500 Ha		Projected Area :65000 Ha		Projected Area :66500 Ha		Projected Area :67500 Ha	
		Projected Production : 2.268 LMT			Projected Production : 2.375 LMT		Projected Production : 2.535LMT		Projected Production : 2.626LMT		Projected Production : 2.75 LMT	
		No. of units	Cost/ Unit (Rs)	Total Cost	No. of units	Total Cost	No. of units	Total Cost	No. of units	Total Cost	No. of units	Total Cost
I	Soil Health											
	Distribution of Soil Health Cards	1000	60	0.600	1000	0.600	1000	0.600	1000	0.600	1000	0.600
	Green manure crops Demonstration	0	1000	0.000	1000	10.000	1000	10.000	1000	10.000	1000	10.000
	Tank silt application Demonstration	1000	2000	20.000	1000	20.000	1000	20.000	1000	20.000	1000	20.000
	Gypsum application to sodic soils (50% subsidy)	5000	300	15.000	5000	15.000	5000	15.000	5000	15.000	5000	15.000
	Bio-fertilizers application (50% subsidy)	10000	150	15.000	10000	15.000	10000	15.000	10000	15.000	10000	15.000
	Micro-nutrient application (50% subsidy)	10000	200	20.000	10000	20.000	10000	20.000	10000	20.000	10000	20.000
	Sub-Total			70.600		80.600		80.600		80.600		80.600
II	Seed											
	Hybrid seed Demonstration	100	1500	1.500	100	1.500	100	1.500	100	1.500	100	1.500

Table 6.2:contd…

(Total Cost Rs.in lakhs)

Sl. No	Technologies identified	2007-08			2008-09		2009-10		2010-11		2011-12	
		Projected Area : 60000 Ha			Projected Area : 62500 Ha		Projected Area :65000 Ha		Projected Area :66500 Ha		Projected Area :67500 Ha	
		Projected Production : 2.268 LMT			Projected Production : 2.375 LMT		Projected Production : 2.535LMT		Projected Production :2.626LMT		Projected Production :2.75 LMT	
		No. of units	Cost/ Unit (Rs)	Total Cost	No. of units	Total Cost	No. of units	Total Cost	No. of units	Total Cost	No. of units	Total Cost
III	Irrigation (Drip / Sprinkler)											
IV	INM											
	INM Demonstrations	100	3000	3.000	200	6.000	200	6.000	300	9.000	200	6.000
	Farmers Training	4	10000	0.400	8	0.800	8	0.800	12	1.200	8	0.800
	Field Days	100	10000	10.000	200	20.000	200	20.000	300	30.000	200	20.000
	Total			13.400		26.800		26.800		40.200		26.800
V	IPM											
	IPM Demonstration	100	2500	2.500	200	5.000	200	5.000	300	7.500	200	5.000
	Farmers Training	4	10000	0.400	8	0.800	8	0.800	12	1.200	8	0.800
	Field Days	100	10000	10.000	200	20.000	200	20.000	300	30.000	200	20.000
				12.900		25.800		25.800		38.700		25.800
VI	Machinery/Implements											
	Green Manure Trampler @ 50 % subsidy	1000	600	6.000	1000	6.000	1000	6.000	1000	6.000	1000	6.000

Table 6.2: contd…

(Total Cost Rs.in lakhs)

Sl.No	Technologies identified	2007-08			2008-09		2009-10		2010-11		2011-12	
		Projected Area : 60000 Ha			Projected Area :62500 Ha		Projected Area :65000 Ha		Projected Area :66500 Ha		Projected Area :67500 Ha	
		Projected Production : 2.268 LMT			Projected Production :2.375 LMT		Projected Production :2.535LMT		Projected Production :2.626LMT		Projected Production :2.75 LMT	
		No. of units	Cost/ Unit (Rs)	Total Cost	No. of units	Total Cost	No. of units	Total Cost	No. of units	Total Cost	No. of units	Total Cost
	Wooden leveling Board @ 50 % subsidy	1000	1500	15.000	1000	15.000	1000	15.000	1000	15.000	1000	15.000
	SRI marker	1000	600	6.000	1000	6.000	1000	6.000	1000	6.000	1000	6.000
	Cono weeder	1000	500	5.000	1000	5.000	1000	5.000	1000	5.000	1000	5.000
				32.000		32.000		32.000		32.000		32.000
VII	Marketing											
	Support to Commodity Inter. Grps at Village level	20	400000	80.000	20	80.000	20	80.000	20	80.000	20	80.000
	Power Tiller with accessories											
	Paddy Thresher											
	Paddy Transplanter											
	Tarpaulin											
	Hand operated sprayer											

Table 6.2: contd…

(Total Cost Rs.in lakhs)

Sl. No	Technologies identified	2007-08			2008-09		2009-10		2010-11		2011-12	
		Projected Area : 60000 Ha			Projected Area :62500 Ha		Projected Area :65000 Ha		Projected Area :66500 Ha		Projected Area :67500 Ha	
		Projected Production :2.268 LMT			Projected Production :2.375 LMT		Projected Production :2.535LMT		Projected Production :2.626LMT		Projected Production :2.75 LMT	
		No. of units	Cost/ Unit (Rs)	Total Cost	No. of units	Total Cost	No. of units	Total Cost	No. of units	Total Cost	No. of units	Total Cost
VIII	Technologies											
	SRI Demonstration	50	7000	3.500	100	7.000	100	7.000	100	7.000	100	7.000
	Farmers Training	2	10000	0.200	4	0.400	4	0.400	4	0.400	4	0.400
	Educational Tour	2	25000	0.500	4	1.000	4	1.000	4	1.000	4	1.000
	Total			4.200		8.400		8.400		8.400		8.400
IX	Outsourcing											
X	Others											
	Publicity (10 % of Project)		Lump Sum									
	Total			214.600		255.100		255.100		281.400		255.100

Table 6.3: Recommended Interventions for Maize in Vellore District - 2007-08 to 2011-12

(Total Cost Rs.in Lakhs)

Sl. No	Technologies identified	2007-08			2008-09		2009-10		2010-11		2011-12	
		Projected Area :4000 Ha			Projected Area :5000 Ha		Projected Area :6000 Ha		Projected Area :7000 Ha		Projected Area :8000 Ha	
		Projected Production :0.175 LMT			Projected Production :0.185 LMT		Projected Production :0.190 LMT		Projected Production :0.195 LMT		Projected Production : 0.200 LMT	
		No. of units	Cost/ Unit (Rs)	Total Cost	No. of units	Total Cost	No. of units	Total Cost	No. of units	Total Cost	No. of units	Total Cost
I	**Soil Health**											
	Distribution of Soil Health Cards	250	60	0.150	250	0.150	250	0.150	250	0.150	250	0.150
	Coir pith compost Demonstration	50	1000	0.500	50	0.500	50	0.500	50	0.500	50	0.500
	Bio fertilizers application (50% subsidy)	250	150	0.375	250	0.375	250	0.375	250	0.375	250	0.375
	Micro-nutrient application (50% subsidy)	250	150	0.375	250	0.375	250	0.375	250	0.375	250	0.375
	Sub-Total			**1.400**		**1.400**		**1.400**		**1.400**		**1.400**
II	**Seed**											
	Hybrid seed Demonstration	100	1500	1.500	100	1.500	100	1.500	100	1.500	100	1.500
III	**Irrigation (Drip / Sprinkler)**											-
IV	**INM**											
	INM Demonstrations	100	3000	3.000	200	6.000	200	6.000	300	9.000	200	6.000
	Farmers Training	4	10000	0.400	8	0.800	8	0.800	12	1.200	8	0.800
	Field Days	100	10000	10.000	200	20.000	200	20.000	300	30.000	200	20.000
	Total			**13.400**		**26.800**		**26.800**		**40.200**		**26.800**
V	**IPM**											
	IPM Demonstration	100	2500	2.500	200	5.000	200	5.000	300	7.500	200	5.000

Table 6.3 contd…

Sl. No	Technologies identified	2007-08			2008-09		2009-10		2010-11		2011-12	
		Projected Area :4000 Ha			Projected Area :5000 Ha		Projected Area :6000 Ha		Projected Area :7000 Ha		Projected Area :8000 Ha	
		Projected Production :0.175 LMT			Projected Production :0.185 LMT		Projected Production :0.190 LMT		Projected Production :0.195 LMT		Projected Production : 0.200 LMT	
		No. of units	Cost/ Unit (Rs)	Total Cost	No. of units	Total Cost	No. of units	Total Cost	No. of units	Total Cost	No. of units	Total Cost
	Farmers Training	4	10000	0.400	8	0.800	8	0.800	12	1.200	8	0.800
	Field Days	100	10000	10.000	200	20.000	200	20.000	300	30.000	200	20.000
	Total			12.900		25.800		25.800		38.700		25.800
VI	**Machinery/Implements**											
	Seed cum fertilizer drill @ 50% subsidy	25	5000	1.250	50	2.500	50	2.500	50	2.500	50	2.500
	Wooden leveling Board @ 50 % subsidy	100	1500	1.500	100	1.500	100	1.500	100	1.500	100	1.500
	Manual weeder	100	300	0.300	100	0.300	100	0.300	100	0.300	100	0.300
	Total			3.050		4.300		4.300		4.300		4.300
VII	**Marketing**											
	Support to Commodity Interest Groups at Village level	5	200000	10.000	5	10.000	5	10.000	5	10.000	5	10.000
	Maize cob Sheller											
	Tarpaulin											
	Hand operated sprayer											
VII I	**Technologies**											
IX	**Outsourcing**											
X	**Others**											
	Total			**42.250**		**69.800**		**69.800**		**96.100**		**69.800**

Table 6.4.: Recommended Interventions for Groundnut (Rainfed) in Vellore District 2007-08 to 2011-12

(Total Cost Rs. in lakhs)

Sl. No	Technologies identified	2007-08			2008-09		2009-10		2010-11		2011-12	
		Projected Area :55000 Ha			Projected Area :57000 Ha		Projected Area :58500 Ha		Projected Area :60000 Ha		Projected Area :62000 Ha	
		Projected Production : 1.454 LMT			Projected Production : 1.584 LMT		Projected Production :1.620 LMT		Projected Production :1.666 LMT		Projected Production :1.750 LMT	
		No. of units	Cost/ Unit (Rs)	Total Cost	No. of units	Total Cost	No. of units	Total Cost	No. of units	Total Cost	No. of units	Total Cost
I	**Soil health**											
	Distribution of Soil Health Cards	0	60	0.000	2000	1.200	2000	1.200	2000	1.200	2000	1.200
	Enriched FYM Demonstration	0	1000	0.000	2000	20.000	2000	20.000	2000	20.000	2000	20.000
	Bio fertilizers application (50% subsidy)	0	150	0.000	20000	30.000	20000	30.000	20000	30.000	20000	30.000
	Micro-nutrient application (50% subsidy)	0	150	0.000	2000	3.000	2000	3.000	2000	3.000	2000	3.000
	Gypsum application (50% subsidy)	0	0	0.000	10000	60.000	10000	60.000	10000	60.000	10000	60.000
	Sub-Total			**0.000**		**114.200**		**114.200**		**114.200**		**114.200**

Table 6.4. contd…

(Total Cost Rs. in lakhs)

Sl. No	Technologies identified	2007-08			2008-09		2009-10		2010-11		2011-12	
		Projected Area :55000 Ha			Projected Area :57000 Ha		Projected Area :58500 Ha		Projected Area :60000 Ha		Projected Area :62000 Ha	
		Projected Production : 1.454 LMT			Projected Production :1.584 LMT		Projected Production : 1.620 LMT		Projected Production : 1.666 LMT		Projected Production :1.750 LMT	
		No. of units	Cost/ Unit (Rs)	Total Cost	No. of units	Total Cost	No. of units	Total Cost	No. of units	Total Cost	No. of units	Total Cost
II	**Seed**											
III	**Irrigation (Drip/ Sprinkler)** Sprinkler Distribution (90% subsidy)											
IV	INM Demonstrations	0	3000	0.000	200	6.000	200	6.000	300	9.000	200	6.000
	Farmers Training	0	10000	0.000	8	0.800	8	0.800	12	1.200	8	0.800
	Field Days	0	10000	0.000	200	20.000	200	20.000	300	30.000	200	20.000
	Total			**0.000**		**26.800**		**26.800**		**40.200**		**26.800**
V	**IPM**											
	IPM Demonstration	0	2500	0.000	200	5.000	200	5.000	300	7.500	200	5.000
	Farmers Training	0	10000	0.000	8	0.800	8	0.800	12	1.200	8	0.800
	Field Days	0	10000	0.000	200	20.000	200	20.000	300	30.000	200	20.000
	Total			**0.000**		**25.800**		**25.800**		**38.700**		**25.800**
VI	**Machinery/Implements**											
	Seed cum fertilizer drill @ 50% subsidy	0	5000	0.000	50	2.500	50	2.500	50	2.500	50	2.500
	Wooden leveling Board @ 50 % subsidy	0	1500	0.000	100	1.500	100	1.500	100	1.500	100	1.500
	Manual weeder	0	300	0.000	100	0.300	100	0.300	100	0.300	100	0.300
	Total			0.000		4.300		4.300		4.300		4.300

Table 6.4. contd…

(Total Cost Rs. in lakhs)

Sl. No	Technologies Identified	2007-08			2008-09		2009-10		2010-11		2011-12	
		Projected Area :55000 Ha			Projected Area :57000 Ha		Projected Area :58500 Ha		Projected Area :60000 Ha		Projected Area :62000 Ha	
		Projected Production : 1.454 LMT			Projected Production :1.584 LMT		Projected Production :1.620 LMT		Projected Production :1.666 LMT		Projected Production :1.750 LMT	
		No. of units	Cost/ Unit (Rs)	Total Cost	No. of units	Total Cost	No. of units	Total Cost	No. of units	Total Cost	No. of units	Total Cost
VI	**Marketing**											
	Support to CIGs at Village level	0	30000	0.000	50	15.000	50	15.000	50	15.000	50	15.000
	Groundnut Decorticator											
	Tarpaulin											
	Hand operated sprayer											
VIII	**Technologies**											
IX	**Outsourcing**											
X	**Others**											
	Total			**0.000**		**186.100**		**186.100**		**212.400**		**186.100**

Table 6.5: Recommended Interventions for Groundnut (Irrigated) in Vellore District
2007-08 to 2011-12

(Total Cost Rs.in Lakhs)

Sl. No	Technologies identified	2007-08			2008-09		2009-10		2010-11		2011-12	
		Projected Area :10000 Ha			Projected Area : 11500 Ha		Projected Area :12500Ha		Projected Area :13500 Ha		Projected Area :14000 Ha	
		Projected Production :0.28 LMT			Projected Production :0.327 LMT		Projected Production :0.362 LMT		Projected Production :0.398 LMT		Projected Production :0.410 LMT	
		No. of units	Cost/ Unit (Rs)	Total Cost	No. of units	Total Cost	No. of units	Total Cost	No. of units	Total Cost	No. of units	Total Cost
I	Soil Health											
	Distribution of Soil Health Cards	0	60	0.000	100	0.060	100	0.060	100	0.060	100	0.060
	Coir pith compost Demonstration	0	1000	0.000	100	1.000	100	1.000	100	1.000	100	1.000
	Bio-fertilizers application (50% subsidy)	0	150	0.000	200	0.300	200	0.300	200	0.300	200	0.300
	Micro-nutrient application (50% subsidy)	0	150	0.000	100	0.150	100	0.150	100	0.150	100	0.150
	Gypsum application (50% subsidy)	0	0	0.000	100	0.600	100	0.600	100	0.600	100	0.600
	Sub-Total			0.000		2.110		2.110		2.110		2.110
II	Seed											
III	Irrigation (Drip / Sprinkler)											
	Sprinkler Distribution (75% subsidy)	0	15000	0.000	25	3.750	25	3.750	25	3.750	25	3.750
IV	INM											
	INM Demonstrations	25	3000	0.750	25	0.750	25	0.750	25	0.750	25	0.750
	Farmers Training	1	10000	0.100	1	0.100	1	0.100	1	0.100	1	0.100
	Field Days	25	10000	2.500	25	2.500	25	2.500	25	2.500	25	2.500
	Total			3.350		3.350		3.350		3.350		3.350

Table 6.5 Contd….: Recommended Interventions for Groundnut (Irrigated) in Vellore District 2007-08 to 2011-12

(Total Cost Rs.in Lakhs)

Sl. No	Technologies identified	2007-08			2008-09		2009-10		2010-11		2011-12	
		Projected Area :10000 Ha			Projected Area : 11500 Ha		Projected Area :12500Ha		Projected Area :13500 Ha		Projected Area :14000 Ha	
		Projected Production :0.28 LMT			Projected Production :0.327 LMT		Projected Production :0.362 LMT		Projected Production :0.398 LMT		Projected Production :0.410 LMT	
		No. of units	Cost/ Unit (Rs)	Total Cost	No. of units	Total Cost	of units	Total Cost	No. of units	Total Cost	No. of units	Total Cost
V	IPM											
	IPM Demonstration	25	3000	0.750	25	0.750	25	0.750	25	0.750	25	0.750
	Farmers Training	1	10000	0.100	1	0.100	1	0.100	1	0.100	1	0.100
	Field Days	25	10000	2.500	25	2.500	25	2.500	25	2.500	25	2.500
	Sub-Total			3.350		3.350		3.350		3.350		3.350
VI	Machinery/Implements											
	Seed cum fertilizer drill @ 50% subsidy	10	5000	0.500	10	0.500	10	0.500	10	0.500	10	0.500
	Wooden leveling Board @ 50 % subsidy	25	1500	0.375	25	0.375	25	0.375	25	0.375	25	0.375
	Manual weeder	25	300	0.075	25	0.075	25	0.075	25	0.075	25	0.075
	Sub-Total			0.950		0.950		0.950		0.950		0.950
VII	Marketing											
	Support to CIGs at Village level	0	30000	0.000	50	15.000	50	15.000	50	15.000	50	15.000
	Groundnut Decorticator											
	Tarpaulin											
	Hand operated sprayer											
VIII	Technologies											
IX	Outsourcing											
X	Others											
	Total			**7.650**		**28.510**		**28.510**		**28.510**		**28.510**

Table 6.6: Recommended Interventions for Cotton (Rainfed) in Vellore District - 2007-08 to 2011-12

(Total Rs. in lakhs)

Sl.No	Technologies identified	2007-08			2008-09		2009-10		2010-11		2011-12	
		Projected Area :3000Ha			Projected Area :5000Ha		Projected Area :6000Ha		Projected Area :7000 Ha		Projected Area :8000 Ha	
		Projected Production : 12000			Projected Production :20000		Projected Production :22500		Projected Production :30000		Projected Production :42500	
		No. of units	Cost/ Unit (Rs)	Total Cost	No. of units	Total Cost	No. of units	Total Cost	No. of units	Total Cost	No. of units	Total Cost
I	**Soil Health**											
	Distribution of Soil Health Cards	0	60	0.000	100	0.060	100	0.060	100	0.060	100	0.060
	Enriched FYM Demonstration	0	1000	0.000	100	1.000	100	1.000	100	1.000	100	1.000
	Bio-fertilizers application (50% subsidy)	0	150	0.000	500	0.750	500	0.750	500	0.750	500	0.750
	Micro-nutrient application (50% subsidy)	0	150	0.000	500	0.750	500	0.750	500	0.750	500	0.750
	Sub-Total			**0.000**		**2.560**		**2.560**		**2.560**		**2.560**
II	**Seed**											
	BT cotton seed Distribution	0	1500	0.000	50	0.750	50	0.750	50	0.750	50	0.750
III	**Irrigation (Drip / Sprinkler)**	-										
	Sprinkler Distribution (90% subsidy)	-										
IV	**INM**											
	INM Demonstrations	0	3000	0.000	50	1.500	50	1.500	50	1.500	50	1.500
	Farmers Training	0	10000	0.000	2	0.200	2	0.200	2	0.200	2	0.200
	Field Days	0	10000	0.000	50	5.000	50	5.000	50	5.000	50	5.000
	Total			**0.000**		**6.700**		**6.700**		**6.700**		**6.700**

Table 6.6 contd…

(Total Rs. in lakhs)

Sl. No.	Technologies identified	2007-08 Projected Production : 0.375 LMT			2008-09 Projected Production :0.453 LMT		2009-10 Projected Production :0.490 LMT		2010-11 Projected Production :0.551 LMT		2011-12 Projected Production :0.586 LMT	
		No. of units	Cost/ Unit (Rs)	Total Cost	No. of units	Total Cost	No. of units	Total Cost	No. of units	Total Cost	No. of units	Total Cost
V	**IPM**											
	IPM Demonstration	0	3000	0.000	50	1.500	50	1.500	50	1.500	50	1.500
	Farmers Training	0	10000	0.000	2	0.200	2	0.200	2	0.200	2	0.200
	Field Days	0	10000	0.000	50	5.000	50	5.000	50	5.000	50	5.000
	Sub-Total			0.000		6.700		6.700		6.700		6.700
VI	**Machinery/Implements**											
	Seed cum fertilizer drill @ 50% subsidy	0	5000	0.000	50	2.500	50	2.500	50	2.500	50	2.500
	Wooden leveling Board @ 50 % subsidy	0	1500	0.000	50	0.750	50	0.750	50	0.750	50	0.750
	Manual weeder	0	300	0.000	50	0.150	50	0.150	50	0.150	50	0.150
	Sub-Total			**0.000**		**3.400**		**3.400**		**3.400**		**3.400**
VII	**Marketing**											
	Support to CIGs at Village level	0	20000	0.000	10	2.000	10	2.000	10	2.000	10	2.000
VIII	**Technologies**											
IX	**Outsourcing**											
X	**Others**											
	Total			**0.000**		**22.110**		**22.110**		**22.110**		**22.110**

Table 6.7: Recommended Interventions for Millets (Irrigated) in Vellore District 2007-08 to 2011-12

Sl. No.	Technologies identified	2007-08			2008-09		2009-10		2010-11		2011-12	
		Projected Production : 0.375 LMT			Projected Production :0.453 LMT		Projected Production :0.490 LMT		Projected Production :0.551 LMT		Projected Production :0.586 LMT	
		No. of units	Cost/ Unit (Rs)	Total Cost	No. of units	Total Cost	No. of units	Total Cost	No. of units	Total Cost	No. of units	Total Cost
I.	**Soil Health**											
	Distribution of Soil Health Cards	2000	60	1.200	2000	1.200	2000	1.200	2000	1.200	2000	1.200
	Coir pith compost Demonstration	50	1000	0.500	50	0.500	50	0.500	50	0.500	50	0.500
	Bio-fertilizers application (50% subsidy)	2000	150	3.000	2000	3.000	2000	3.000	2000	3.000	2000	3.000
	Micro-nutrient application (50% subsidy)	2000	150	3.000	2000	3.000	2000	3.000	2000	3.000	2000	3.000
	Sub-Total			**7.700**		**7.700**		**7.700**		**7.700**		**7.700**
II	**Seed**											
	Cumbu Hybrid Seed Demonstration	0	150	0.000	50	0.075	50	0.075	50	0.075	50	0.075
III	**Irrigation (Drip / Sprinkler)**											
IV	**INM**											
	INM Demonstrations	100	3000	3.000	200	6.000	200	6.000	300	9.000	200	6.000
	Farmers Training	4	10000	0.400	8	0.800	8	0.800	12	1.200	8	0.800
	Field Days	100	10000	10.000	200	20.000	200	20.000	300	30.000	200	20.000
	Total			**13.400**		**26.800**		**26.800**		**40.200**		**26.800**

Table 6.7: contd..

Sl. No.	Technologies identified	2007-08 Projected Production : 0.375 LMT			2008-09 Projected Production :0.453 LMT		2009-10 Projected Production :0.490 LMT		2010-11 Projected Production :0.551 LMT		2011-12 Projected Production :0.586 LMT	
		No. of units	Cost/ Unit (Rs)	Total Cost	No. of units	Total Cost	No. of units	Total Cost	No. of units	Total Cost	No. of units	Total Cost
V	IPM											
	IPM Demonstration	100	2500	2.500	200	5.000	200	5.000	300	7.500	200	5.000
	Farmers Training	4	10000	0.400	8	0.800	8	0.800	12	1.200	8	0.800
	Field Days	100	10000	10.000	200	20.000	200	20.000	300	30.000	200	20.000
	Sub-Total			12.900		25.800		25.800		38.700		25.800
VI	Machinery/Implements											
	Wooden leveling Board @ 50 % subsidy	100	1500	1.500	100	1.500	100	1.500	100	1.500	100	1.500
VII	Marketing											
VIII	Technologies											
IX	Outsourcing											
X	Others											
	Total			35.500		61.875		61.875		88.175		61.875

Table. 6.8. Recommended Interventions for Fodder in Vellore District - 2007-08 to 2011-12

(Total Rs. in lakhs)

Sl. No.	Technologies identified	2007-08			2008-09		2009-10		2010-11		2011-12	
		Projected Production : 0.375 LMT			Projected Production :0.453 LMT		Projected Production :0.490 LMT		Projected Production :0.551 LMT		Projected Production :0.586 LMT	
		No. of units	Cost/ Unit (Rs)	Total Cost	No. of units	Total Cost	No. of units	Total Cost	No. of units	Total Cost	No. of units	Total Cost
I	**Soil Health**											
II	**Seed**											
	Fodder Maize Demonstration	100	150	0.150	100	0.150	100	0.150	100	0.150	100	0.150
	Fodder Cholam Demonstration	100	100	0.100	100	0.100	100	0.100	100	0.100	100	0.100
	Fodder Cowpea Demonstration	100	1500	1.500	100	1.500	100	1.500	100	1.500	100	1.500
	Lucerne Demonstration	100	1500	1.500	100	1.500	100	1.500	100	1.500	100	1.500
	Stylo Demonstration	50	500	0.250	50	0.250	50	0.250	50	0.250	50	0.250
	Sub-Total			**3.500**		**3.500**		**3.500**		**3.500**		**3.500**
III	**Irrigation (Drip / Sprinkler)**											
IV	**INM**											
V	**IPM**											
VI	**Machinery/Implements**											
VII	**Marketing**											
VIII	**Technologies**											
IX	**Outsourcing**											
X	**Others**											
	Total			**3.500**		**3.500**		**3.500**		**3.500**		**3.500**

Table 6.9: Recommended Interventions for All Selected Crops in Vellore District 2007-08 to 2011-12

(Rs. in Lakhs)

Sl.No	Particulars	2007-08	2008-09	2009-10	2010-11	2011-12	Total	Percentage to total
A.	Technologies identified							
1.	Soil Health	79.700	208.570	208.570	208.570	208.570	913.980	31.3
2.	Seed	6.500	7.325	7.325	7.325	7.325	35.800	1.2
3.	Irrigation (Drip / Sprinkler)	0.000	3.750	3.750	3.750	3.750	15.000	0.5
4.	INM	43.550	117.250	117.250	170.850	117.250	566.150	19.4
5.	IPM	42.050	113.250	113.250	164.850	113.250	546.650	18.7
6.	Machinery/Implements	37.500	46.450	46.450	46.450	46.450	223.300	7.7
7.	Marketing Support to Commodity Interest Groups at Village level	90.000	122.000	122.000	122.000	122.000	578.000	19.8
8.	Technologies	4.200	8.400	8.400	8.400	8.400	37.800	1.3
9.	Total	303.5	626.995	626.995	732.195	626.995	2916.680	100.0
B.	Projected Area (Ha)	147300	157850	165900	173450	180000	824500	-
C.	Projected Production (Lakh Tonnes)	4.5274	4.9755	5.25525	5.504	5.79325	26.0554	-

Source: Records of the Office of the Joint Director of Agriculture, Vellore.

6.1.2 Innovative Schemes

Background / Problem Focus

In Vellore District, Agriculture, Horticulture, Animal Husbandry and Sericulture are the major enterprises practiced by the farming community. The major agricultural crops grown here are paddy, sugarcane and groundnut. Due to monsoon failures, the agricultural activities in terms of gross cropped area are reducing gradually, leading to low income of the farmers. To combat this and to make the farm activities sustainable, an innovative and integrated approach comprising of agriculture, horticulture, animal husbandry and other allied departments is the need of the hour, which can improve the income of the farmers.

In this connection, the potentiality of Vellore district could be explored and exploited to benefit the farming community. Special projects could be designed to optimally exploit the natural and human resources in order to generate more income and employment. Towards this direction, a few income generating but small enterprises have been proposed as discussed under:

The activities to be focussed are:

i) Formation of commodity interest groups.
ii) Training on grading, post harvest technologies, value addition and market intelligence.
iii) Establishment of rural godown with drying yards.
iv) Providing cold storage facility.
v) Encouraging contract farming and
vi) Food park with basic infrastructure facilities

i) Goal and objectives

- To generate additional income to farming community.
- To develop entrepreneurship among farmers.
- To generate employment opportunities and
- To impart value addition to agricultural products.

ii) Project Strategy

- ❖ Formation of commodity groups
- ❖ Training programme to create awareness about market intelligence among farmers.
- ❖ Encouraging maize as an alternate crop for paddy through contract farming.
- ❖ Encouraging contract farming in maize and value addition (setting up of cattle feed mixing unit)
- ❖ Training programme and Exposure visit to farmers on grading and post harvest technology.
- ❖ Setting up of agro based industries with basic infrastructure facilities - Food park (Groundnut candy making, desiccated coconut production, packed tender coconut water production, coconut shell powder, spray dried coconut powder production)
- ❖ Providing storage facilities in rural area.

iii) Project Components

- ❑ Formation and strengthening of commodity based groups.
- ❑ Training to farmers on market intelligence.
- ❑ Facilitation to contact farming.
- ❑ Setting up of Mini cattle feed mixing unit maintained by Commodity group.
- ❑ Exposure visit on grading, post harvest technology and value addition.
- ❑ Establishment of Food Park with basic infrastructure facility.
- ❑ Establishment of rural godown with drying yards.
- ❑ Providing cold storage facilities.

The details of special projects along with cost are furnished in Table 6.10

Table 6.10: Special Projects under NADP during XI Plan in Vellore District

(Amount in Lakh Rs)

S. No.	Details of the Inter vention	Unit cost	2008-09		2009-10		2010-11		2011-12			Total
			Physical	Finan-cial	Phy-sical	Finan-cial	Phy-sical	Fina-ncial	Phy-sical	Finan-cial	Phy-sical	Finan-cial
1)	**Formation and strengthening of commodity groups**											
	Paddy	0.20	15	3.00	20	4.00	25	5.00	30	6.00	90	18.00
	Groundnut		10	2.00	15	3.00	20	4.00	25	5.00	70	14.00
	Maize		5	1.00	6	1.20	10	2.00	15	3.00	36	7.20
	Pulses		5	1.00	6	1.20	10	2.00	15	3.00	36	7.20
	Total		**35**	**7.00**	**47**	**9.40**	**65**	**13.00**	**85**	**17.00**	**232**	**46.40**
2)	**Training to farmers in market intelligence**											
	Village meeting Before sowing – 50 Nos.	0.05	20	1.00	30	1.50	35	1.75	40	2.00	125	6.25
	Village meeting – Prior to harvest – 50 Nos.	0.05	20	1.00	30	1.50	35	1.75	40	2.00	125	6.25
	Total		**40**	**2.00**	**60**	**3.00**	**70**	**3.50**	**80**	**4.00**	**250**	**12.50**
3)	**Facilitation of contract farming**											
	Traders meeting (5 Nos)	0.10	8	0.80	10	0.10	12	1.20	15	1.50	45	3.60
	Farmers meeting (5 Nos.)	0.10	8	0.80	10	0.10	12	1.20	15	1.50	45	3.60
	Total		**16**	**1.60**	**20**	**0.20**	**24**	**2.40**	**30**	**3.00**	**90**	**7.20**

Table 6.10 Contd…

S. No	Details of the Intervention	Unit cost	2008-09		2009-10		2010-11		2011-12		Total	
			Phy-sical	Finan-cial	Phy-sical	Finan-cial	Phy-sical	Finan-cial	Phy-sical	Finan-cial	Phy-sical	Finan-cial
4)	**Setting up of (Mini) Cattle Feed Mixing unit**											
	New machineries and godown	10.00	1	10.00	-	-	1	10.0	-	-	2	20.0
	Transport (Van)	5.00	-	-	1	5.00	-	-	-	-	1	5.00
	Additional godown	3.00	-	-	-	-	-	-	1	3.00	1	3.00
	Total		**1**	**10.00**	**1**	**5.00**	**1**	**10.0**	**1**	**3.00**	**4**	**28.0**
5)	**Exposure visit**											
	Within the State (4 visit) (2 days)	0.30	4	1.20	8	2.40	12	3.60	10	3.00	34	10.2
	Outside State (5 days)	0.75	4	3.00	4	3.00	4	3.00	4	3.00	16	12.0
	Visit to National Market (officer)	2.00	1	2.00	-	-	-	-	1	2.50	2	4.50
	Total		**9**	**6.20**	**12**	**5.40**	**16**	**6.60**	**15**	**8.50**	**52**	**26.70**

Table 6.10 Contd….

S. No	Details of the Intervention	Unit cost	2008-09		2009-10		2010-11		2011-12		Total	
			Phy-sical	Finan-cial	Phy-sical	Finan-cial	Phy-sical	Finan-cial	Phy-sical	Finan-cial	Phy-sical	Finan-cial
6)	**Establishment of Food park with Basic infrastructure facilities**											
	Land 5 (ac)	3.00/ac.	5	15.00	-	-	-	-	-	-	5	15.00
	Buildings cost	5.00	15	75.00	-	-	-	-	-	-	15	75.00
	Road/ Water /drainage electricity	5.00	1	5.00	-	-	-	-	-	-	1	5.00
	Cold storage	10.00	1	10.00	-	-	-	-	-	-	1	10.00
	Refrigerator van	8.00	-	-	1	8.00	-	-	-	-	1	8.00
	Additional building	5.00	-	-	-	-	1	5.00	2	10.00	3	15.00
	Total		**22**	**105.00**	**1**	**8.00**	**1**	**5.00**	**2**	**10.00**	**26**	**128.00**
7)	**Establishment of Rural Godowns**											
	Godown 500 (MT) capacity	75.00	1	75.00	1	75.00	-	-	1	75.00	3	225.00
	Drying yard	1.00	1	1.00	-	-	1	1.00	1	1.00	4	3.00
	Total		**2**	**76.00**	**1**	**75.00**	**1**	**1.00**	**2**	**76.00**	**7**	**228.00**

Source: Records of Office of the Joint Director of Agriculture, Vellore.

As could be seen from Table 6.11, a maximum share of 44 per cent of the total outlay allocated for the implementation of special projects was during 2008-09.

Table 6.11: Year wise Budget Requirements for Special Projects under NADP

Sl.No.	Year	Budget Requirement (Rs. In Lakhs)	Percentage to Total
1)	2008- 09	207.8	43.6
2)	2009-10	106.0	22.2
3)	2010-11	41.5	8.7
4)	2011-12	121.5	25.5
	Total	**476.8**	**100.0**

Project wise physical and financial targets during 2008 -09 to 2011-12 as given in Table 6.12 would indicate that establishment of rural godowns was given more importance with a maximum allocation of 48 per cent and it was followed by establishment of food park (27 per cent), formation and strengthening of commodity groups (10 per cent) in that order.

6.1.3 DAP Spray to Pulses

It has been proposed to undertake DAP 2% spraying to pulses in Vellore district in an area of 2,200 ha with an outlay of Rs. 4.40 lakhs.

Table 6.12: Project wise Physical and Financial Targets during 2008 -09 to 2011-12

S. No.	Details of intervention	Physical Targets	Allocation to	Financial Outlay (L.Rs.)	Percentage to Total
1)	Formation and strengthening of commodity groups	232	Joint Director of Agriculture	46.40	9.7
2)	Training to farmers in Market intelligence	250	Joint Director of Agriculture	12.50	2.6
3)	Facilitation of contract farming	90	Joint Director of Agriculture	7.20	1.5
4)	Setting up of Mini cattle feed Mixing Unit	4	Commodity groups	28.00	5.9
5)	Exposure visit	52	Joint Director of Agriculture	26.70	5.6
6)	Establishment of Food park	26	Joint Director of Agriculture / PWD	128.00	26.9
7)	Establishment of Rural godowns	7	Joint Director of Agriculture / PWD	228.00	47.8
	Grand total	**-**		**476.80**	**100.0**

Source: Records of Office of the Joint Director of Agriculture, Vellore.

6.1.4. Establishment of Seed Testing Laboratory at Vellore District

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

National Agricultural Development Programme (NADP) aims in bringing about quantifiable changes in production and productivity of various components of Agriculture and allied structure in a holistic manner. The purchase of equipments for New Seed Testing Laboratories is not covered under the components under NADP (a to p) and hence, the purchase of equipments for the Vellore Seed Testing Laboratory is proposed under component (q) innovative schemes.

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

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

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

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

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

i) Objectives of Seed Testing

The main objective of Seed Testing in these laboratories will be to obtain accurate and reproducible results regarding the purity composition, moisture content, the occurrence of weed seeds and the percentage of germination to produce normal seedlings under favourable conditions. In some instances, such additional information such as the presence of seed borne diseases and pests and varietal purity is desired. Seed testing will

be a guide to the person who will plant the seed and for seed quality control purposes. In all these cases, the ultimate purpose of making the test is to determine the value of seed for planting.

ii) Role of Seed Testing Laboratories in Seed Quality Control

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

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

iii) Seed Quality Control Activities

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

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

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

iv) Need for Establishing Seed Testing Laboratory

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

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

v) Seed Distribution

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

Seed Testing Laboratory is not available in the district, the seed producers, seed dealers and farmers find it very difficult to send the seed samples for analysis. Hence, facilitating the seed producers, seed dealers and farmers by establishing Seed Testing Laboratory in the district will be of much use. Accordingly, a Seed Testing Laboratory is proposed to be established in Vellore district.

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

6.1.4.1. Requirement of Equipments for Establishing Seed Testing Laboratory

i) Mixing and Dividing Equipments

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

ii) Moisture Testing Equipment

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

iii) Weighing Equipments

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

iv) Purity Analysis Equipment

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

v) Germination Equipment

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

vi) Storage Equipment

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

vii) General

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

viii) Computers with Accessories

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

ix) Cost Aspects

The Seed Testing Laboratory that is to be established should have the following equipments (Table 6.13) for the purpose of analyzing seed samples for moisture, physical purity, germination and Other Distinguishable Varieties.

Table 6.13: Establishment Cost of Seed Testing Laboratory

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

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

x) Operation and Maintenance Cost of the Laboratory

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

xi) Benefits

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

xii) Expected Date of Completion

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

xiii) Monitoring and Evaluation

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

6.2 Horticulture

The project proposals for the development of horticultural activities in Vellore district to be taken up during XI plan period are discussed in this section.

The project components and justification for taking up such projects relating to horticultural development in Vellore district are given below.

6.2.1. Net House Structure

Protected Cultivation of Vegetables

Protected cultivation of vegetables offers distinct advantages of quality, productivity and favourable market price to the growers. Vegetable growers can substantially increase their income by taking protected cultivation of vegetables in off-season, as the vegetables produced during the normal season generally do not fetch good returns due to availability of large quantity of these vegetables in the markets. Off season cultivation of cucurbits under low plastic tunnels is one of the most profitable technologies. Insect proof net houses can be used for virus-free cultivation of tomato, chilli, sweet pepper and other vegetables mainly during the rainy season. These low cost structures are also suitable for growing pesticide-free green vegetables. Low cost green houses can be used for high quality vegetable cultivation for long duration (6-10 months) mainly in sub -urban areas of the country to fetch remunerative price to the producers. A few low cost technologies available for horticultural development are discussed in what follows.

i) Pandhal for Vegetable Production

Disease incidence is minimized because of proper aeration and better sanitary condition.

ii) Plastic Crates for Vegetable Handling

Careful harvesting, handling and transporting of fruits and vegetables to packing houses become necessary to preserve product quality.

iii) Mango Harvester

This equipment would be useful to prevent damage to the fruits when they are dropped from high trees.

iv) Humic acid / Effective E-microbes

This is used for removal of metals and organic contaminants.

v) Banana Bunch Cover

This provides protection from mechanical damage (leaf rub, etc.) in the field and during harvesting and transporting to the packing shed. Temperature under the cover can be from 2^0 C to 6^0 C warmer and during cool times of the year this can increase fruit length and hasten fruit filling (harvest 4 to 14 days earlier). The yield benefits are much less during the warmer months and special care needs to be taken to avoid sun-burn under the covers during the warmer months. This involves the use of reflective silver covers and pulling down a leaf over the cover. Perforated covers are commonly used to reduce sun-burn damage for export production. At times, early bunch covering is necessary to protect the fruit from scarring caused by nectar-feeding birds and bats during the flowering phase. Applying heavier gauge bunch covers (150um) before any bracts lift on the bunch can overcome this problem.

vi) Community Fencing

Assistance is provided to the group of farmers for laying of barbed fencing around the fields to demarcate.

vii) Bore Well with Casing Pipe

Laying out bore-wells with casing pipes is done for improving the efficiency of irrigation.

viii) Tractor-Mounted Steam Boiler

This equipment is used for the purpose of curing turmeric effectively and economically.

ix) Package for Plant Protection

The Horticultural crops are prone to several diseases and pests which partially or completely damage the crops. So plant protection becomes essential. Assistance for Bio-Pesticides and Bio-control agents / Sex pheromones is also necessary.

The technologies identified for horticultural development under NADP in Vellore district during 2008-09 - 2011-12 are furnished in Table 6.14. Further, the deatails of strengthening of infrastructure facilities of horticultural farms at Kudappattu, Navlock and the abstract of the same are furnished in Table 6.15, Table 6.16 and Table 6.17 respectively.

Table 6.14: Technologies Identified for Horticultural Development under NADP in Vellore District 2008 - 2009 to 2011 – 2012

Amount Rs.in Lakhs)

S. No	Details	Unit Cost	2008-2009		2009-2010		2010-2011		2011-2012		Total	
		Rs. Per Unit	Phy	Fin.	Phy	Fin.	Phy	Fin.	Phy	Fin.	Phy	Fin.
1	Precision Farming	All details will be provided by DEE, TNAU, Coimbatore										
2	Net House structure - Nursery & Vegetable Production	100000 / 300 Sqm	900	1.500	900	1.500	1200	2.000	1200	2.000	4200	7.000
3	Pandal for Vegetable Production	100000 /Ha	3	1.500	5	2.500	5	2.500	5	2.500	18	9.000
4	Package for plant protection	3,000 /Ha	500	7.500	1000	15.000	1000	15.000	1000	15.000	3500	52.500
5	Plastic crates for vegetable handling and transport	250 /Crate	500	0.625	1000	1.250	1000	1.250	1000	1.250	3500	4.375
6	Bore well with casing pipe	150000 / No.	200	150.000	200	150.000	20	150.000	20	150.000	440	600.000
7	Banana bunch cover	10 /Piece	50	6.250	100	12.500	1000	12.500	100	12.500	1250	43.750
8	Humic acid / Effective e-microbes	400 / Litre	500	1.000	500	1.000	500	1.000	500	1.000	2000	4.000
9	Tractor mounted steam boiler	50,000 /No.	2	0.500	2	0.500	2	0.500	2	0.500	8	2.000
10	Support system for crops – Banana	150000 / Ha	20	15.000	30	22.500	30	22.500	20	15.500	100	75.500

Table 6.14: contd…

(Amount Rs.in Lakhs)

S. No.	Details	Unit Cost	2008-2009		2009-2010		2010-2011		2011-2012		Total	
		Rs. Per Unit	Phy	Fin.	Phy	Fin.	Phy	Fin.	Phy	Fin.	Phy	Fin.
11	Banana forming injection	300 / No.	500	0.750	500	0.750	500	0.750	500	0.750	2000	3.000
12	Mango harvester	500 / No.	200	0.500	200	0.500	200	0.500	200	0.500	800	2.000
13	District level farmers workshop	400 / Farmer	200	0.800	200	0.800	200	0.800	200	0.800	800	3.200
14	Interstate exposure visit (5 days)	5000 / Farmer	50	2.500	50	2.500	50	2.500	50	2.500	200	10.000
15	10 ha Mega demo plot for district	25 Lakhs / Each	1	25.000	1	25.000	1	25.000	1	25.000	4	100.000
16	Enterprising farmers associations	25 Lakhs / Each	1	25.000	1	25.000	1	25.000	1	25.000	4	100.000
17	Community fencing	5 Lakhs /	1	5.000	1	5.000	1	5.000	1	5.000	4	20.000
18	Support system to tomato crop	15000 / Ha	20	1.500	20	1.500	20	1.500	20	1.500	80	6.000
19	Support for betel vine	40000 / 20 Cent	100	1.000	100	1.000	100	1.000	100	1.000	400	4.000
	Total			**245.925**		**268.800**		**269.300**		**262.300**		**1046.325**

Source: Records of the Office of the Assistant Director of Horticulture, Vellore.

Table 6.15 Strengthening of Infrastructure facilities of State Horticulture Farm at Kudapattu of Vellore District

S. No.	Description of Work	Financial Assistance Required (Rs. in Lakhs)	Justification of the Proposal
1	Construction of Overhead Tank - 1 No. (25,000 Ltr. Capacity)	1.500	For the Nursery area, one over head tank is required. Water could be stored in the tank and watering can be done through hose pipes even if the electricity is not available. The Electricity charges and labourers charges can be minimized.
2	Sinking of New Bore wells 2 Nos. of 6" and 7.5 H.P. submersible motors with pump and pump house	3.000	To improve the irrigation facility of the farm and to increase the area under mother plants, it is essentially required.
3	Construction of Compound Wall for 200 metres length	3.000	The farm is fenced with barbed wire. The fencing is now in damaged condition. If the compound wall is provided, the tress-passers can be controlled.
4	Construction of a shed for Power tiller	0.500	For keeping the power tiller and accessories safely, one shed is required
5	Drip Irrigation for Mother Plants for 1 Ha	1.000	To save the water from wastage and minimise the labour cost, it is essentially required
6	Repairing of existing shade net house	1.000	It has to be repaired to meet out the production of soft wood grafts.
7	Rest room for labourers	2.000	Since the female labourers are working more in this farm, one rest room with toilet facility is essentially required for their daily use.
	Total	**12.000**	

Source: Records of the Office of the Assistant Director of Horticulture, Vellore.

Table 6.16 Strengthening of Infrastructure facilities of State Horticulture Farm at Navlock of Vellore District

S. No.	Description of Work	Financial Assistance Required (Rs. in Lakhs)	Justification of the Proposal
1	Construction of Office room	5.000	The office is functioning under asbestos sheet roof of very old building. Hence a new office building is essentially required to keep the records and office things safely.
2	Construction of Overhead Tanks	1.500	The farm doesn't have any over head tank. For the Nursery area and shade net area two water tanks are required. Water could be stored in these tanks and watering can be done through hose pipes even if the electricity is not available. The Electricity charges and labour charges can be minimized.
3	Sinking of New Bore wells 2 Nos of 6" and 7.5 H.P. submersible motors with pump and pump house	3.000	To improve the irrigation facility of the farm and to increase the area under Mother plants it is essentially required.
4	Construction of Compound Wall for 400 metre length	6.000	The farm is fenced with barbed wire fencing. The fencing is now in damaged condition. If the compound wall is provided the tress-passers can be controlled.
5	Construction of a shed for Power tiller	0.500	For keeping the power tiller and accessories safely, one shed is required
6	Drip Irrigation for Mother Plants for 3 Ha	3.000	To save the water from wastage and minimize the labour cost, it is essentially required
7	Repairing of existing Poly green house of 500 sq metres.	0.500	Since newly constructed Poly green house is available, it can be converted into propagation chamber for the production of ornamental plants.
8	Repairing of Staff Quarters 'A' type 1 No. @ Rs.1.50 Lakh 'B' type 4 Nos. @ Rs.1.25 Lakhs	6.500	Totally, 13 staff quarters are available and all are in damaged condition. According to the sanctioned strength now 5 quarters have to be repaired immediately for the stay of Farm staff in the farm.
9	Rest room for labourers	2.000	Since the female labourers are working more in the farm, one rest room with toilet facility is essentially required for their daily use.
	Total	**28.000**	

Source: Records of the Office of the Assistant Director of Horticulture, Vellore.

Table 6.17: Strengthening of State Horticulture Farms in Vellore District - Budget Abstract

(Rs. in Lakhs)

S. No.	Intervention	Financial Assistance Required		
		SHF, Navlock	SHF, Kudapattu	Total
1	Construction of Office room	5.000		5.000
2	Construction of Overhead Tanks	1.500	1.500	3.000
3	Sinking of New Bore wells	3.000	3.000	6.000
4	Construction of Compound Wall	6.000	3.000	9.000
5	Construction of a shed for Power tiller	0.500	0.500	1.000
6	Drip Irrigation for Mother Plants	3.000	1.000	4.000
7	Repairing of existing Poly house / Shade Net House	0.500	1.000	1.500
8	Repairing of Staff Quarters	6.500	-	6.500
9	Rest room for labourers	2.000	2.000	4.000
Total		**28.000**	**12.000**	**40.000**

Source: Records of the Office of the Assistant Director of Horticulture, Vellore.

Table 6.18: Year-wise Budget Outlay for Horticultural Development

S.No	Year	Financial (L.Rs)
1	2008-09	245.925
2	2009-10	268.800
3	2010-11	269.300
4	2011-12	262.300
	Total	**1046.325**

In Vellore district, an outlay of Rs.1046 lakhs has been earmarked for horticultural development for the period from 2008-09 to 2011-12. Additionally, an amount of Rs. 40.0 lakhs has been proposed for the improvement of facilities in state horticultural farms at Navlock and Kudapattu.

6.3 Animal Husbandry

Increasing fodder production, control of cattle and poultry diseases, supply of subsidized mineral mixtures, establishment of bulk milk coolers, strengthening of manufacturing facilities for milk products, etc were focused in the proposals of the Department of Animal Husbandry under NADP in Vellore district. As regards the fisheries development, it has been proposed to subsidize the private fish seed rearing, supply of fishing implements, capacity building to the farmers, establishment of fish landing centres, installation of modern fish stalls at Vellore and so on.

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

Abstract

This project aims to reduce the pressure on green fodder requirement by utilizing the sugarcane tops, develop micro-level fodder units and increase the efficiency of nutrient utilization in the consumed feed and fodder. The project proposes to commercialize fodder production by involving the SHG, adoption of the technology of SCT ensiling and feeding and increase the efficiency of nutrient utilization by popularizing chaff cutters, supplementing mineral mixture and supplementing By-pass protein feed to milch animals. The project will be implemented by the Department of Animal Husbandry and the Department of Dairy Development at a total cost of Rs. 459.80 lakhs in four years

Budget (Rs. in Lakhs)

Title	Agency	Total amount
Popularizing chaff cutter @1No./Block/yr for SHGs/elite farmers (0.10 Lakhs through NADP & 0.10 Lakhs farmer's share)	DAH	8.00
Fodder production by SHGs @ 10 acre/Bl/yr	DAH	188.00
Establishment of 6 x 6 x 4 feet silo to ensile sugarcane tops at 75 % of total cost of Rs 15,000	DAH	22.52
Popularizing mineral mixture to improve livestock production @ 1kg/month at 100 % subsidy	DAH	93.48
Supply of mineral mixture to the milch animals at subsidised cost (50%) @ 18 kg / year	DDD	65.00
Supply of by-pass protein feed to the milch animals (360kgs / year/animal @ 50% subsidised cost of Rs.9/- per kg.)	DDD	33.00
Chaff cutters for elite farmers (small type) @Rs.20,000 as 100% grant	DDD	20.00
Fodder Development Activities (for production of fodder seed/ slips in dairy or chilling centres & land of DDD) 3 acres	DDD	6.30
Fodder Development Activities (100 acres in 100 IDF villages)	DDD	23.50
Total		**459.80**

Problem Focus

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

Project Rationale

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

Project Strategy

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

Project Goal

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

Project Components

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

Popularizing chaff cutters by providing to SHG / Elite farmers at 50% of the total cost of Rs.0.20 lakh each. A total of 80 chaffers will be distributed at the rate of one per block per year to the total cost of Rs.8.00 lakhs.

Encouraging fodder production in irrigated condition by SHG at the rate of 10 acre per block per year with 100% subsidy on the total cost of Rs.0.20 lakh per acre. The SHG resorting to fodder production will be given training at the cost of Rs.3.500. This component will be implemented in 800 acres at the total cost of Rs.188.00 lakhs.

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

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

II.	**Fodder Cultivation of Fodder**		
S.No.	**Name of Operation**		**Amount (in Rs.)**
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**

The sugarcane farmers will be encouraged to ensile the Post- harvested green sugarcane tops to supplement their animals during summer. For digging the 6x6x4 cubic feed silo, 75% subsidy on the total cost of Rs.0.15 lakh will be provided. A total of 200 sugarcane farmers will be involved this project in 4 years at the total cost of Rs.22.50 lakhs.

To popularize mineral mixture supplementation 18 kg mineral mixture per year at the rate of 1.5 kg per month will be supplied to a total of 13,000 cows in four years with 50% subsidy. The total cost for this proposal is Rs.65.00 lakhs. This programme will be implemented by the Dairy Development Department.

The Department of Animal Husbandry will distribute 233700 kgs of mineral mixture to dairy cattle for four years. The total cost will be Rs.93.48 lakhs.

The Department of Dairy Development will distribute bypass protein feed to high yielding milch animals(360kg/animal/year) at 50% subsidized cost of Rs 9/kg. A total of 1000 animals will be covered in 4 years at the total cost of Rs.33.00 lakhs.

The Department of Dairy Department will distribute small sized 100 chaff cutters to elite farmers at 100% subsidy in the unit cost of Rs. 0.20 lakh each. The total cost will be Rs.20.00 lakh.

The Department of Dairy Department will establish fodder seed/slips production units in dairy or chilling centres and land of DDD @ Rs.2.1 lakh/unit during the year 2008 – 09, the amount totaling to Rs.6.3 lakhs in the implementation of the project.

Breakup Details for Fodder Seed / Slips per acre

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**

Project Cost and Financing

Title	Agency	2008-2009	2009 - 2010	2010 - 2011	2011 - 2012	Grand total
Popularizing chaff cutter @ 1/Bl/yr for SHGs/elite farmers at 50 % of total cost of Rs 20,000	DAH	2.00	2.00	2.00	2.00	8.00
Fodder production by SHGs @ 10 acre/Bl/yr	DAH	47.00	47.00	47.00	47.00	188.00
Establishment of 6 x 6 x 4 feet silo to ensile sugarcane tops at 75 % of total cost of Rs 15,000	DAH	5.63	5.63	5.63	5.63	22.52

Popularizing mineral mixture to improve livestock production @ 1kg/month for one year in one block	DAH	23.37	23.37	23.37	23.37	93.48
supply of mineral mixture to the milch animals at subsidised cost (50%) @ 18 kg/ year	DDD	16.25	16.25	16.25	16.25	65.00
Supply of by-pass protein feed to the milch animals (360kgs/ year/animal @ 50% subsidised cost of Rs.9/- per kg.)	DDD	8.25	8.25	8.25	8.25	33.00
Chaff cutters for elite farmers (small type) @rs.20,000 as 100% grant	DDD	5.00	5.00	5.00	5.00	20.00
Fodder seed/slips production units in dairy or chilling centres & land of DDD for 3 acres	DDD	6.30	-	-	-	6.30
Fodder Development Activities(100 acres in 100 IDF villages	DDD	5.875	5.875	5.875	5.875	23.50
Total		**119.68**	**113.38**	**113.38**	**113.38**	**459.80**

Implementation Chart

Title	Agency	2008-2009	2009-2010	2010-2011	2011-2012
Popularizing chaff cutter for SHGs/elite farmers	DAH	20	20	20	20
Fodder production by SHGs	DAH	200	200	200	200
Establishment of 6 x 6 x 4 feet silo to ensile sugarcane tops	DAH	50	50	50	50
Popularizing mineral mixture to improve livestock production	DAH	58425	58425	58425	58425
supply of mineral mixture to the milch animals	DDD	3250	3250	3250	3250
Supply of by-pass protein feed to the milch animals	DDD	250	250	250	250
chaff cutters for elite farmers (small type)	DDD	25	25	25	25
Fodder seed/slips production units in dairy or chilling centres & land of DDD for 3 acres	DDD	3	-	-	-
Fodder Development Activities (100 acres in 100 IDF	DDD	25	25	25	25

Reporting

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

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

Abstract

The population of buffalo is dwindling in this district due to reproductive problems and long intercalving period as farmers often fail to identify the animals in heat. This causes heavy economic loss. The buffalo calves are also neglected resulting in malnutrition, stunted growth and attainment of late maturity. This project aims to demonstrate 100% conception rate through programmed breeding in buffaloes and indigenous cows, popularize supplemental feed strategy to buffalo calves to attain early sexual maturity apart from maintaining data base on breedable bovines in this district. The Project proposes to demonstrate heat synchronization in buffaloes, followed by AI, popularize concentrate feed supplementing strategy to buffalo calves of both sexes and maintain data base on breedable bovines for future planning. The project will be implemented by both the Department of Dairy Development and Department of Animal Husbandry at a total cost of Rs.139.54 lakhs in four years.

Budget (Rs. in Lakhs)

Title	Agency	Total Amount
Identification and traceability of breedable bovine population	DAH	46.74
Programmed breeding indigenous cattle & buffalo to increase conception rate	DDD	33.60
Buffalo calf development programme (2000 calves / year)	DDD	59.20
Total		**139.54**

Problem Focus

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

Project Rationale

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

Project Strategy

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

Project Goals

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

Project Components

i. All the breedable bovines that are brought for insemination will be tagged and the cow Index card (data base) for each tagged bovine will be maintained. A total of 2,33,700 breedable bovines will be thus identified and included in data base in 4 years. The project will be continued even after the completion of NADP. The cost per animal will be Rs.12 to cover the cost of Tag and Rs.8 for the issue of Blue Index card. The total cost will be Rs.46.74 lakh for 1 year. This component will be implemented by the Department of Animal Husbandry.

ii. The cost per animal is estimated as below.

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

The Indigenous cattle and buffaloes numbering 4800 will be covered at the rate of 1200 per year to heat synchronization and subsequent A.I to achieve 100% conception rate. At the unit cost of Rs.700/- per animal a total of Rs.33.60 lakhs will be utilized in 4 years.

iii. The cost per calf is estimated as below.

S. No	Item	Grant in (Rs.)	Beneficiary contribution (Rs.)	Total (Rs.)
1	Feed cost @ Rs.10 per Kg for 1740Kg	12200.00	5200.00	17400.00
2	Identification & Insurance of calves	700.00	0.00	700.00
3	De-worming, Vaccination, breeding and health cover	1000.00	0.00	1000.00
4	Miscellaneous & administrative charges	900.00	0.00	900.00
	Total	**14800.00**	**5200.00**	**20000.00**

In the Buffaloe calves development programme at the rate of 100 calves per year a total of 400 calves of either sex will be supplied with supplemental concentrate feed upto 32 months age at 100% subsidy. The total cost will be Rs.59.20 lakhs.

These components will be implemented by the Department of Dairy Development.

Project Cost and Financing

Title	Agency	2008-2009	2009-2010	2010-2011	2011-2012	Grand total
Identification and traceability of breedable bovine population	DAH	46.74	0	0	0	46.74
Programmed breeding indigenous cattle & buffalo to increase conception rate	DDD	8.4	8.4	8.4	8.4	33.60
Buffalo calf development programme (2000 calves / year)	DDD	14.80	14.80	14.80	14.80	59.20
Total		**69.94**	**23.2**	**23.2**	**23.2**	**139.54**

Implementation Chart of the Project

S. No.	Project	Agency	2008-2009	2009-2010	2010-2011	2011-2012
1.	Identification and traceability of breedable bovine population	DAH	2,33,700	0	0	0
2.	Programmed breeding of Indigenous cattle and Buffalo to increase conception rate	DDD	1200	1200	1200	1200
3.	Buffalo calves Development Programme	DDD	100	100	100	100

Reporting

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

II. A. Improving Livestock Health

Abstract

This project aims to achieve fool proof and timely disease diagnosis and treatment even in inaccessible remote areas, better surveillance of disease outbreak etc., The project purposes to give major emphasis in controlling parasite diseases, establishment of Mobile Veterinary Clinic for off – campus treatment in remote areas, upgrading the existing Animal Disease Investigation Unit as Mobile Veterinary Diagnostic Laboratory and renovation of existing Veterinary dispensaries to provide better on-campus treatment. The total cost of this proposal is Rs. 277.54 lakhs in 4 years and will be implemented by the Department of Animal Husbandry.

Budget

Title	Agency	Total amount
Control of parasitic diseases through treatment to enhance vaccine response	DAH	33.56
Mobile veterinary clinics	DAH	34.98
Strengthening of veterinary Institutions (DAH)	DAH	155.00
Mobile input units (one per 50 DCS)	DDD	54.00
Total		**277.54**

Problem Focus

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

Project Rationale

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

Project Strategy

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

Project Goal

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

Project Components

Control of parasitic diseases through treatment to increase vaccine response.

In order to avoid such suffering and loss to the farmers and to provide veterinary services and breeding support in time at the doorsteps of the farmers, Mobile Veterinary Clinics are proposed at the block headquarters of all the districts except in places where the units are already functioning.

- Each unit will consist of one Veterinary Assistant Surgeon, and 1 driver. The staff for the Mobile Veterinary Clinic will be sourced from the available staff in the department.

- One Veterinary Assistant Surgeon will be in charge of the vehicle. The vehicle will cover the remote and inaccessible villages on a scheduled programme of operation and render Veterinary Services.
- The unit will be provided with one vehicle at a cost of Rs.4.75 lakh.
- Medicines will be sourced from the Veterinary institutions available in the block itself and thus no additional funds are required to each unit to carryout treatment, deworming, vaccination etc.
- Necessary equipments like surgical and obstetrical kits, microscope, AI guns, etc apart from LN2 containers sheath will be provided to each unit.
- Diesel worth Rs.45,000/- will be provided per year to each unit for running the vehicle.
- The unit will prepare a scheduled tour programme on 6 days a week basis mentioning the villages that are being covered on each day about which the farmers will be intimated well in advance.
- The units will go around the area of operation as per the programme and carryout the activities providing breeding support and veterinary health care.

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

Non-recurring expenditure

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

Recurring Expenditure:

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

List of Equipments and Instruments Required for One Mobile Veterinary Unit

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

Establishment of mobile veterinary clinics (six numbers) having equipments like surgical kit, Obstetrical kit, Binocular microscopes, Liquid Nitrogen container, Thermos flask and a Bolero jeep. For each unit diesel worth of Rs 45000 will be provided. The total cost will be Rs 5.832 lakhs to each unit and the total cost will be Rs.34.98 lakhs. The staff for this will be sourced from the available manpower in the department.

The cost per mobile veterinary unit is estimated as Rs.4.50 lakh per annum. This involves salary for veterinarian and one attendant, taxi hire charges, medicines, veterinary equipment, registers, monitoring etc.

(Rs. in lakhs)

Expenditure on establishment of one mobile Input Unit					**Total amount involved in establishment of 100 mobile units in the state**
Sl. No	**Details**	**Per month expenditure in Rupees**	**Per Year**	**Expenditure by the Milk Union Rs. In lakh**	
1	Salary for veterinarian and one attendant, taxi hire charges	30000	**3.60**		360
2	Medicines	8000		0.96	0
3	Veterinary equipment	66000	**0.66**		66
4	Registers, monitoring Administrative charges	2000	**0.24**		24
	Total per unit		**4.50**	**0.96**	**450**

Establishment of mobile input units (12 numbers) for providing livestock health care during the 1st year each costing Rs.4.5 lakhs, totaling to Rs.54.00 lakhs.

Renovation of existing 31 Veterinary dispensaries with basic facilities like fencing, bore wells water troughs and minor repair works at the cost of Rs 5.00 lakhs for each dispensary at a total cost of Rs 155.00 lakhs.

Project Cost and Financing

Title	Agency	2008-2009	2009-2010	2010-2011	2011-2012	Total cost
Control of parasitic diseases through treatment to enhance vaccine response	DAH	33.56	0	0	0	33.56
Mobile veterinary clinics	DAH	34.98	0	0	0	34.98
Mobile input units (one per 50 dcs)	DAH	54.00	0	0	0	54.00
Strengthening of veterinary Institutions	DAH	155.00	0	0	0	155.00
Total		**277.54**	**-**	**-**	**-**	**277.54**

Implementing Chart of the Project

Project	Agency	2008-2009	2009-2010	2010-2011	2011-2012
Control of parasitic disease through treatment	DAH				
Mobile Veterinary Clinic	DAH	6	0	0	0
Mobile input units (one per 50 DCS)	DDD	12	0	0	0
Strengthening of veterinary Institutions	DAH	31	0	0	0

Reporting

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

B. Enhancement of Milk Production by Improving the Infrastructure required for Milk Procurement

Abstract

This project aims at increasing the milk procurement in Co-operatives, avoid unhygienic milk handling by milkmen, introduction of transparency in milk weighment and automation in milk Co-operative societies. The project proposes to provide portable milking machine to continuous milk pourers to the milk co-operatives at 100% subsidy. A total of 100 machines will be supplied to the milk pourers 4 years.

For milk weighment electronic balances will be provided to 117 milk Co-operatives with 100% subsidy. P.C. based Automatic Milk collection Station will be installed in 15 milk Co-operatives. A total 20 dormant milk Co-operatives will be revived by providing basic essential infrastructure. The Project will be implemented by the Department of Dairy Development at a total cost of Rs.84.14 lakhs.

Budget

Title	Agency	Total amount
Portable milking machines for farmers	DDD	18.00
Milk weighing machine for milk producers co-op. societies	DDD	19.89
P.C.based automatic milk collection stations to IDF villages milk producers cooperative societies	DDD	26.25
Revival of dormant MPCS	DDD	20.00
Total		**84.14**

Problem Focus

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

i) The milk pricing depends on total solid content and hence any problem in milk weighment badly affects the return to farmers.

ii) Not – so – Transparent activities at milk collection centres and problem in maintaining summary of milk supplied on daily, monthly and yearly basis affects the confidence of milk pourers.

iii) Non-functional, dormant but potential milk societies for want of certain basic infrastructure forces the farmers to depend on private vendors resulting in exploitation.

Project Rationale

Introduction and popularization of simple machine milking will not only minimize milkmen problem but also avoid in unhygienic milk handling.

Introduction of electronic weighing machines at the milk procuring societies and vis-a -vis transparency will not only reduce man power involvement and pilferage but also improve efficiency in milk procurement

Installation of Automatic Milk collection Stations (AMS) will automatically measure weight of milk, fat content and total solid and give print out of payment slip to farmers. The AMC with personal computer will maintain complete record of the Dairy Co-operative together with all transactions.

By providing essential milk procuring equipments and other infrastructure for record maintenance etc. the hitherto dormant milk societies could be revived and milk procurement increased. It will also free the farmers from the clutches of exploiting private vendors.

Project Strategy

- Popularizing machine milking by providing portable milking machine to a total of 50 milk pourers in 4 years period with 100% subsidy.
- Providing electronic milk weighing machines to a total of 117 Co-operative milk societies procuring more than 500 lt milk per day.
- Providing P.C. based Automatic Milk collection Station facility to a total of 15 milk producers Co-operative societies procuring more than 1000 lt per day.
- Revival of a total of 20 hitherto dormant but potential milk societies by providing basic and essential milk procuring infrastructure.

Project Goals

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

Project Components

- Supply of Portable simple milking machine costing Rs.0.18 lakh each to 100 milk pourers at 100% subsidy.
- Supply of electronic milk weighing machines costing Rs.0.17 lakh each to 117 Co-operative milk societies.
- Installation of PC based AMS having integrated milk weighing system, Electronic milk testing, Personal Computer with printer and battery with a capacity to analyze 120 – 150 milk samples per hour costing Rs.1.75 lakh to each of 15 Co-operative milk societies.
- Reviving 20 dormant but potential milk societies each at the cot of Rs.1.00 lakh.

Project Cost and Financing

Title	Agency	2008-2009	2009-2010	2010-2011	2011-2012	Grand total
Portable milking machines for farmers	DDD	4.50	4.50	4.50	4.50	18.00
Milk weighing machine for milk producers co-op.societies	DDD	5.10	4.93	4.93	4.93	19.89
P.C.based automatic milk collection stations to IDF villages milk producers cooperative societies	DDD	7.00	7.00	7.00	5.25	26.25
Revival of dormant MPCS	DDD	5.00	5.00	5.00	5.00	20.00
Total		**21.6**	**21.43**	**21.43**	**19.68**	**84.14**

Implementation Chart of the Project

S. No.	Project	Agency	2008-2009	2009-2010	2010-2011	2011-2012
1.	Supply of Portable Milking machine for farmers.	DDD	25	25	25	25
2.	Provision of electronic milk weighing machine for Co-operative milk societies	DDD	30	30	30	27
3.	Provision of P.C based AMS for Co-operative milk societies	DDD	4	4	4	3
4.	Revival of dormant Co-operative milk societies	DDD	5	5	5	5

Reporting

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

C. Enhancement of Milk Production by Improving the Infrastructure Required for Milk Processing

Abstract

The unhygienic handling of milk by the milk men and unclean milk production by few milk pourers due to lack of awareness introduces bacterial contamination in fluid milk. Further the odd hour milking and more time taken for transporting the contaminated milk to processing unit increases the bacterial load in milk and escalate the processing cost. This project aims to check the bacterial load in procured fluid milk at the milk collection centres and processed packed milk at retail ends. It further aims at converting the excess fluid milk to value added products. This project proposes to improve the infrastructure facilities both at Co-operative milk societies and District Co-operative Milk Producers Federation Dairy to achieve the above aims.

The proposal includes establishing 5000 litre capacity bulk milk cooler at villages, walk –in cooler at retail end, facility to manufacture ice-cream, milk khoa and energy management system at a total cost of Rs.80.27 lakh. The Department of Dairy Development will implement this project.

Budget

Title	Agency	Total amount
Bulk milk cooler	DDD	30.00
Walk-in coolers	DDD	30.00
Manufacturing facilities for milk khoa	DDD	3.85
Manufacturing facilities for paneer	DDD	3.06
Manufacturing facilities for ice cream	DDD	3.36
Energy management system	DDD	10.00
Total		**80.27**

Problem Focus

- The District of Vellore produces 3.36 lakh tonnes of milk annually through large number of Co-operative Societies spread over the district.
- The milk procured from Co-operative Societies has to be chilled within half an hour of milking to check further multiplication of bacterial load. More over customary odd hour milking in late evening by the farmers necessitate storing of procured milk at the milk co-operatives transportation next day.
- It is also necessary to convert the excess fluid milk into products which are in demand.

Project Rationale

In the District of Vellore about 3.36 lakh tonnes of milk is collected annually from in rural areas. By establishing milk coolers the fluid milk could be chilled and stored at milk collection centres and walk -in -coolers will store the processed and packed milk. These measures will keep the bacterial load at minimum and reduce the processing cost.

Project Strategy

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

Project Goal

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

Project Components

- Establishing one number of 5000 lt capacity bulk milk cooler in one of the milk collection centres of milk co-operative at the total cost of Rs.30.00 lakh.
- Establishing a Walk – in – Cooler in urban retail end at the total cost of Rs,.30.00 lakh.
- Establishing five Milk Khoa manufacturing units at the total cost of Rs. 3.85 lakhs in 4 years period at the District Co-operative Milk Producers Union Dairy.

- Establishing three numbers of paneer making units at a unit cost of Rs.1.02 lakhs totaling Rs.3.06 lakhs in four years period at the District Co-operative Milk Producers Union Dairy.
- Establishing three ice cream manufacturing units at the total cost of Rs.3.36 lakhs in 4 years period at the District Co-operative Milk Producers Union Dairy.
- Establishing one energy management system at a unit cost of Rs.10 lakhs (Solar water heating unit-5000 litres capacity).

Project Cost and Financing

Title	Agency	2008-2009	2009-2010	2010-2011	2011-2012	Grand total
Bulk milk cooler	DDD	30.00	0	0	0	30.00
Walk-in coolers	DDD	30.00	0	0	0	30.00
Manufacturing facilities for milk khoa	DDD	1.54	0.77	0.77	0.77	3.85
Manufacturing facilities for paneer	DDD	1.02	1.02	1.02	0	3.06
Manufacturing facilities for ice cream	DDD	1.12	1.12	1.12	0	3.36
Energy management system	DDD	10.00	0	0	0	10.00
Total		**73.68**	**2.91**	**2.91**	**0.77**	**80.27**

Implementing Chart of the Project

S.No.	Project	Agency	2008-2009	2009-2010	2010-2011	2011-2012
1.	Establishing Bulk Milk Cooler	DDD	1	0	0	0
2.	Establishing Walk in Cooler	DDD	1	0	0	0
3.	Manufacturing facility for Milk Khoa	DDD	2	1	1	1
4.	Manufacturing facilities for paneer	DDD	1	1	1	0
5.	Manufacturing facility for ice-cream	DDD	1	1	1	0
6.	Energy management system	DDD	1	0	0	0

Reporting

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

D. Sheep and Goat Production

Abstract

Inbreeding and non-availability of quality germplasm are the major reasons for low productivity in small ruminants. The Government farms which are the major sources of germplasm input do not cope up with the demand. The Project aims at establishing germplasm production centres day SHG for distribution to needy farmers at nominal rates. The Project proposes to supply quality rams / bucks to organized farms at the rate of 2 animals per block at 100% subsidy which will be rotated for every 2 years @ cost of Rs.4000/- animal. The Department of Animal Husbandry will implement the project at the total cost of

Rs. 107.7 lakhs.

Budget

Title	Agency	Total amount
Intensive Sheep / Goat farming to improve meat production by SHGs @ 20 + 1 unit / Block / Year	DAH	33.60
Supply of rams / bucks to SHGs / Elite farmers @ 2/Bl (DAH)	DAH	6.40
Fodder development in Mukundarayapuram Sheep farm	DAH	22.15
Genetic upgradation of Livestock in Mukundarayapuram Sheep farm	DAH	45.55
Total		**107.70**

Problem Focus

The district of Vellore possesses 2.58 lakhs sheep and 2.40 lakh goats. However the economic traits in the small ruminants are poor due to heavy inbreeding and poor nutrition resulting in decreased meat production.

Project Rationale

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

Project Strategy

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

Project Goals

i. To supply quality Germplasm to needy farmers.

ii. To avoid inbreeding.

iii. To increase meat production.

Project Component

Supply of Rams / Bucks at 100% subsidy to SHG / Elite farmers / Tribes having sheep or goat farm at the rate of 2 per block. The cost of each animal is Rs. 4,000 and a total of 160 animals will be supplied in four year of the project itself at the total cost of Rs.6.40 lakhs

It is proposed to provide, sheep/Goats each unit comprising of 20 ewes/buck and one Ram/ Doe, by formation of Self Help Groups. The cost per unit (20 females and 1 male) will be Rs.42,000/-

Model Intensive Sheep/Goat farming units will be established through SHGs at a unit size of 20 + 1 / Unit per Block / Year. The unit cost is Rs. 0.42 lakhs for the total number of units of 80, the amount totaling to Rs. 33.60 lakhs.

Fodder Development in Mukundarayapuram Farm

Particulars	2008-09
Area under fodder cultivation (acres)	51
Fodder trees in hillock (acres)	118
Non-recurring	**(in lakh)**
Borewell motor with pump houses, 3 nos @ 2.50 lakh per unit	7.50
Drip irrigation for 5 acres	1.00
Sprinklers system for 51.58 acres	5.00
Agriculture farm accessories	0.20
Total Non recurring cost	**13.70**
Recurring Cost	
Tree fodder cultivation	5.90
Cost of maintenance of fodder plots @Rs.6400/acre for 51 acres	2.55
Total Recurring cost	**8.45**
Total	**22.15**

Genetic Upgradation of Livestock at Mukundarayapuram Farm

Non-Recurring Cost	2008-09
Construction of animal sheds @ Rs.175/sq.ft for 5000sq.ft	8.75
Construction of treatment room @ Rs.300 per sq.ft. for 300 sq.ft	0.90
Erection of borewells @ Rs.2.50 lakh per borewell for 3 borewells	7.50
Mini feed mill	5.00
Purchase of 25 rams and 500 ewes	18.54
Generator with room	1.50
Purchase of surgical items	0.50
Other contingencies	1.75
Total Non-Recurring Cost	**44.44**

Recurring Cost	
Cost of feed	0.25
Animal Maintenance cost	0.61
Miscellaneous	0.25
Total Recurring Cost	**1.11**

Project Cost and Financing

Title	Agency	2008-09	2009-10	2010-11	2011-12	Grand total
Supply of rams / bucks to SHGs / Elite farmers @ 2/Bl (DAH)	DAH	1.60	1.60	1.60	1.60	6.40
Intensive Sheep / Goat farming to improve meat production by SHGs @ 20 + 1 unit / Block / Year	DAH	8.40	8.40	8.40	8.40	33.60
Fodder development in Mukundarayapuram Sheep farm	DAH	22.15	-	-	-	22.15
Genetic upgradation of Livestock in Mukundarayapuram Sheep farm	DAH	45.55	-	-	-	45.55
Total		**77.70**	**10.00**	**10.00**	**10.00**	**107.70**

Implementing Chart of the Project

S.No.	Project	Agency	08-09	09-10	10-11	11-12
1.	Supply of rams / bucks to SHG/ elite farmers / Tribes	DAH	40	40	40	40
2.	Intensive Sheep / Goat farming to improve meat production by SHGs @ 20 + 1 unit / Block / Year	DAH	20	20	20	20
3.	Fodder development in Mukundarayapuram Sheep farm	DAH	1	-	-	-
4.	Genetic upgradation of Livestock in Mukundarayapuram Sheep farm	DAH	1	-	-	-

Reporting

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

E. Strengthening of Infrastructure to Promote Extension Services

Abstract

The Project proposes to adopt one village each year to establish it as Model Livestock Village which will act as an open –air laboratory for other farmers to visit and learn. The model village will be developed to have self – sufficiency in fodder production and adopt new scientific technologies in farming systems. The Livestock in this village will have optimum and commendable Productive and Reproductive traits with zero disease outbreak. The entire household possessing Livestock will be trained on livestock farming. The project also proposes to strengthen the existing audio visual aids in the training centre with modern, updated gadgets to articulate the message effectively to farmers. The project further proposes to improve the learning atmosphere in the existing training centres by undertaking essential renovation works. While the model Livestock villages establishment will be for all the four years, other infrastructural developments will be completed in the first year itself. The Tamil Nadu Veterinary and Animal Sciences University will implement this project through its Training Centre located at Vellore with total cost of **Rs.35.00** lakhs for 4 years.

Budget

Title	Agency	Total amount
Creation of infrastructure facilities for conduct of farmer's meet at VUTRC, Vellore	TANUVAS	25.00
Propaganda Van with Audio Visual aids for VUTRC, Vellore	TANUVAS	10.00
Total		**35.00**

Problem Focus

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

Project Rationale

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

Project Strategy

- Strengthening the training equipments in the existing Training centres with modern updated electronic gadgets.
- Renovating the existing training hall to provide comfort and conducive environment for learning by farmers.

Project Goal

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

Project Components

Strengthening of Training equipments for conducting capacity building and Technology dissemination programmes at the Veterinary University Training Centre, Vellore with following gadgets: Slide Projector, Projection screen, Digital camera, Lap Top, LCD Projector, DVD Player, Vehicle mounted with Television and other audio visual aids for conducting off-campus Training and village level campaigns at a cost Rs. 10.00 Lakhs.

The second floor with conference hall facilities will be made available at the Veterinary University Training and Research Centre, Vellore for the conduct of farmers/ NGO's /SHG's technical meet at a total cost of Rs. 25.00 lakhs.

Implementation Chart

Project	Agency	08-09	09-10	10-11	11-12
Creation of infrastructure facilities for conduct of farmer's meet at VUTRC, Vellore	TANUVAS	1	0	0	0
Propaganda Van with Audio Visual aids for VUTRC, Vellore	TANUVAS	1	0	0	0

Reporting

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

III. 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 project aims to update the livestock growers with recent scientific interventions and develop their skill to adopt them. This project proposes to conduct year – round off-campus and on- campus training programmes, village level campaigns on scientific system of Livestock farming, conducting skill development programmes to technical staff, workshops and exposure visit. All the programmes proposed will be implemented for 4 years at a total cost of Rs.47.70 lakh. While all the trainings to farmers and study tour to Research Stations will be conducted by the Tamil Nadu Veterinary and Animal Sciences University through its training centre at Vellore, the skill developmental programmes, study tour for milk pourers of Co-operative societies and workshop for milk producers at society level will be implemented by the Department of Dairy Development.

Budget

Title	Agency	Total amount
Farmers Study Tour @ Rs.5000/- Per Farmer	DDD	7.50
Skill development for technical staff	DDD	5.00
Orientation Training / Workshop For Milk Producers At Society Level	DDD	3.20
Capacity building component	TANUVAS	8.00
District Level Livestock Farmers Workshops	TANUVAS	20.00
Study tour of farmers to livestock and poultry research station (TANUVAS) @ 50 person/batch	TANUVAS	4.00
TOTAL		**47.70**

Project Focus

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

Project Rationale

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

Project Strategy

- Off and on -campus training program and village level campaigns on Livestock farming.
- Conducting skill development programmes for Technical staff.
- Conducting farmers study tour to expose them to various organized farms and research Stations.
- Providing orientation Training / Workshop for milk pourers at society level.

Project Goal

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

Project Components:

i. Conducting study tour to 40 continuous milk pourers annually to organized dairy farms and Dairies at a total cost of Rs.7.50 lakh.

ii. Conducting skill development programmes for 100 Technical staff of milk societies in four years at a total cost of Rs.5.00 lakh

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

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

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

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

Project Cost and Financing

Title	Agency	2008-09	09-10	10-11	11-12	Grand total
Farmers study tour @ Rs.5000/- per farmer	DDD	2.00	2.00	2.00	1.50	**7.50**
Skill development for technical staff	DDD	1.25	1.25	1.25	1.25	5.00
Orientation training / workshop for milk producers at society level	DDD	0.80	0.80	0.80	0.80	3.20
Capacity building component	TANUVAS	2.00	2.00	2.00	2.00	8.00
District Level Livestock Farmers Workshops	TANUVAS	5.00	5.00	5.00	5.00	20.00
Study tour of farmers to livestock and poultry research station (TANUVAS) @ 50 person/batch	TANUVAS	1.00	1.00	1.00	1.00	4.00
Total		**12.05**	**11.88**	**11.88**	**11.89**	**47.70**

Implementation Chart of the Project

Project	**Agency**	**08-09**	**09-10**	**10-11**	**11-12**
Farmers study tour @ rs.5000/- per farmer	DDD	40	40	40	30
Skill development for technical staff	DDD	25	25	25	25
Orientation training / workshop for milk producers at society level	DDD	4	4	4	4
Capacity building component	TANUVAS	20	20	20	20
District Level Livestock Farmers Workshops	TANUVAS	1	1	1	1
Study tour of farmers to livestock and poultry research station (TANUVAS) @ 50 person/batch	TANUVAS	4	4	4	4

Reporting

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

Table 6.19 Vellore District – Action Plan under NADP - Animal Husbandry Sector

(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
1	Popularizing chaff cutter @1No./Block/yr for SHGs/elite farmers (0.10 Lakhs through NADP & 0.10 Lakhs farmer's share) (DAH)	0.1	20	2.00	20	2.00	20	2.00	20	2.00	80	8.00
2	Establishment of 6 x 6 x 4 feet silo to ensile sugarcane tops at 75% subsidy (Total cost: Rs. 0.15 Lakhs/Unit) (DAH)	0.1125	50	5.625	50	5.625	50	5.625	50	5.625	200	22.50
3	Control of parasitic diseases through treatment to enhance vaccine response (DAH)	-	-	8.39	-	8.39	-	8.39	-	8.39	-	33.56
4	Fodder production by SHGs @ 10 acre/ Block/year (DAH)	0.235	200	47.00	200	47.00	200	47.00	200	47.00	800	188.00
5	Intensive sheep/goat farming to improve meat production by SHGs @ 20+1 unit / Block / year (DAH)	0.42	20	8.40	20	8.40	20	8.40	20	8.40	80	33.60
6	Popularizing mineral mixture to improve livestock production @ Rs. 40 / Unit (DAH)	0.0004	58425	23.37	58425	23.37	58425	23.37	58425	23.37	233700	93.48
7	Fodder Development (Mukundarayapuram Sheep farm) (DAH)	-	1	22.15	-	-	-	-	-	-	1	22.15
8	Mobile Veterinary clinics (DAH)	5.83	6	34.98	-	-	-	-	-	-	6	34.98
9	Identification and Traceability of breedable bovines @ Rs. 20 / Unit (DAH)	0.0002	233700	46.74	-	-	-	-	-	-	233700	46.74
10	Strengthening of veterinary Institutions (DAH)	5	31	155.00	-	-	-	-	-	-	31	155.00
11	Genetic Upgradation of Livestock in Mukundarayapuram sheep farm (DAH)		1	45.55	-	-	-	-	-	-	1	45.55
12	Supply of Rams / Bucks to SHG / Elite farmers @ 2/Block (DAH)	0.04	40	1.60	40	1.60	40	1.60	40	1.60	160	6.40
	DAH-Total			**400.805**		**96.385**		**96.385**		**96.385**		**689.96**

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
1	Programmed Breeding Indigenous Cattle & Buffalo to increase conception rate (DDD)	0.007	1200	8.40	1200	8.40	1200	8.40	1200	8.40	4800	33.60
2	Buffalo Calf Development Programme (2000 calves / year) (DDD)	0.148	100	14.80	100	14.80	100	14.80	100	14.80	400	59.20
3	Mobile Input Units (one per 50 DCS) (DDD)	4.50	12	54.00	-	-	-	-	-	-	12	54.00
4	Supply of Mineral mixture to the milch animals at subsidised Cost (50%) @ 18 Kg/ Year (DDD)	0.005	3250	16.25	3250	16.25	3250	16.25	3250	16.25	13000	65.00
5	Supply of by-pass protein feed to the milch animals (360kgs/ year/animal @ 50% subsidised cost of Rs.9/- per kg.) (DDD)	0.033	250	8.25	250	8.25	250	8.25	250	8.25	1000	33.00
6	Portable Milking Machines for farmers (DDD)	0.18	25	4.50	25	4.50	25	4.50	25	4.50	100	18.00
7	Chaff cutters for elite farmers (small type) @ Rs.20,000 AS 100% grant (DDD)	0.20	25	5.00	25	5.00	25	5.00	25	5.00	100	20.00
8	Bulk Milk Cooler (DDD)	30.00	1	30.00	-	-	-	-	-	-	1	30.00
9	Walk-In Coolers (DDD)	30.00	1	30.00	-	-	-	-	-	-	1	30.00
10	Revival of Dormant MPCS (DDD)	1.00	5	5.00	5	5.00	5	5.00	5	5.00	20	20.00
11	Fodder Development Activities (For Production Of Fodder Seed/ Slips In Dairy or Chilling Centres & Land Of DDD) FOR 3 Acres (DDD)	2.10	3	6.30	-	-	-	-	-	-	3	6.30
12	Fodder Development Activities (100 acres in 100 IDF villages (DDD)	0.235	25	5.875	25	5.875	25	5.875	25	5.875	100	23.50
13	Manufacturing Facilities For Milk Khoa (DDD)	0.77	2	1.54	1	0.77	1	0.77	1	0.77	5	3.85
14	Manufacturing Facilities For Panneer (DDD)	1.02	1	1.02	1	1.02	1	1.02	-	-	3	3.06
15	Manufacturing Facilities For Ice cream (DDD)	1.12	1	1.12	1	1.12	1	1.12	-	-	3	3.36
16	Milk Weighing Machine For Milk Producers co-op. Societies (DDD)	0.17	30	5.10	30	5.10	30	5.10	27	4.59	117	19.89
17	P.C.Based Automatic Milk Collection Stations To Idf Villages Milk Producers Cooperative Societies (DDD)	1.75	4	7.00	4	7.00	4	7.00	3	5.25	15	26.25

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	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
19	Skill Development For Technical Staff (DDD)	0.05	25	1.25	25	1.25	25	1.25	25	1.25	100	5.00
20	Energy Management System (DDD)	10.00	1	10.00							1	10.00
21	Orientation Training / Workshop For Milk Producers At Society Level (DDD)	0.20	4	0.80	4	0.80	4	0.80	4	0.80	16	3.20
	DDD-TOTAL			**218.205**		**87.135**		**87.135**		**82.235**		**474.71**
1	Creation of infrastructure facilities for conduct of farmer's meet at VUTRC, Vellore (TANUVAS)	25	1	25.00							1	25.00
2	Propaganda Van with Audio Visual aids for VUTRC, Vellore (TANUVAS)	10	1	10.00							1	10.00
3	Capacity building component (TANVUAS)	0.1	20	2.00	20	2.00	20	2.00	20	2.00	80	8.00
4	District Level Livestock Farmers Workshops (TANUVAS)	5	1	5.00	1	5.00	1	5.00	1	5.00	4	20.00
5	Study tour of farmers to livestock and poultry research station (TANUVAS) @ 50 person/batch (TANUVAS)	0.25	4	1.00	4	1.00	4	1.00	4	1.00	16	4.00
	TANUVAS - Total			**43.00**		**8.00**		**8.00**		**8.00**		**67.00**
	Grand total			**662.015**		**191.525**		**191.525**		**186.625**		**1231.67**

6.5.1. Fisheries

Inland

1. 50% Subsidy Assistance to Private Fish Seed Rearing / Fish Seed Production

Abstract

The fish farmers in Vellore district are progressive farmers and evince 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 need of other districts. Hence, it is proposed to encourage private participation in fish seed production

Budget : Rs. 5.00 lakhs (50% Subsidy)

Background / Problem Focus

- Inadequate infrastructure development causing problems to attain self sufficiency in seed production
- Fish seed production / Rearing is not adequate.
- Fish seed production / rearing in private sector has been not encouraged to minimize intake from neighbouring States.
- Fish culture activity shall be encouraged by extending 50% subsidy on inputs.

Project Rationale

- Infrastructure development to attain self sufficiency in seed production
- Fish seed production / rearing in private sector should be encouraged to minimize import from other States.
- Fish culture activity shall be encouraged by extending 50% subsidy on inputs.

Project Strategy

- Major carp breeding in accordance to water availability in tanks. Inadequate infrastructure facilities for seed rearing and fish marketing. Private fish seed producers are to be encouraged with subsidy.
- Encouraging private fish seed producers with subsidy for fish seed rearing and production

Project Goals

- To increase good quality fish Seed and fish production capacity
- To expand fish culture in hitherto unutilized water bodies.
- To produce 10 lakh carp seeds every year.

Project Components

Repair / Renovation of Carp nurseries, Provision of bore well, Water supply arrangement, Carp seeds.

Project Cost and Financing

Seed Production under Subsidy 50%

S. No.	Particulars	Rs. In Lakhs
1.	Renovation work the strengthening of carp nursery walls, bottom and to arrest the leaking	Rs.1.25
2.	Plastering inside the nursing task	Rs.0.25
3.	Provision of bore well	Rs.0.50
4.	Water supply – pipe line,	Rs.0.25
5.	Overhead tank	Rs.0.25
Total		**Rs.2.50**

Project cost - Rs. 5.00 lakhs for 2 units

Financing - NADP

Implementation Chart of the Project

Number of unit	2
Unit cost	Rs.5.00 lakhs (Nursery construction and seed production)
Total cost (2 x 2.5)	Rs.5.00 lakhs

Implementation Chart of the Project

Particulars	2008-09	2009-10
Selection of farmer and implementation of project	√	√

Reporting

The project will be implemented and evaluated by Department of Fisheries.

2. Rearing of Fish Seeds in Cages (50% Subsidy)

Abstract

In Vellore District nearly 200 seasonal and non seasonal tanks are available. In these tanks the fish seeds are reared in cages. The cages will be exploited by the fish farmers at 50% subsidy.

Budget : Rs. 1.50 lakhs

Background / Problem Focus

Irrigation ponds and wild water bodies can not be used directly for fish seed studies and rearing. Enclosed structures life cages/ hapas would encourage fish seed rearing and best recovers of fish fingerling

Project Rationale / Project Strategy / Project Goals

- ❖ Introduce cage based fish seed production
- ❖ Utilization of reservoirs and tanks for fish seed rearing and production

- ❖ Taping the natural live food organisms for fish seed rearing
- ❖ Enhanced and sustained fish seed availability

Unit cost (3 cages)	Rs.0.0750 lakhs
Total units proposed	20
Total cost	Rs.1.5 lakhs

Implementation Chart of the Project

Particulars	2008-09	2009-10
Selection of farmer and implementation of project	√	√

Reporting

The project will be implemented by Department of Fisheries.

3. Supply of Mopeds fitted with Ice box to retail fish vendors (50% subsidy)

Abstract

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 to spoilage of fishes. In order to quickly transport the fishes 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.

Budget : Rs. 4.50 lakhs

Background / Problem Focus

For transporting and processing fish hygienically.

Project Rationale

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

Project Strategy

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

Project Goals

To promote sale of fish of high quality with hygiene

Project Components

Supply of 30 units of mopeds with ice box at 50% subsidy

Project Cost and Financing

Sl.No.	Components	Rs in lakhs
1.	Cost of unit	0.15
2.	Cost of the moped	0.25
3.	Ice box	0.05
4.	Total cost	0.3
5.	Subsidy	0.15(@ 50 **%)**
6.	No of units	50 units
7.	Total cost 50 x .15	7.5

Implementation Chart of the Project

S.No	Particulars	2008-09	2009-10	2010-11	2011-12
1.	Supply of moped with ice box	√	√		

100% financing will be done by NADP

Rs. 4.50 lakhs for 30 units

Duration will be 3 years (2008-2009; 2009-10; 2010-11)

Implementation Chart of the Project

TAFCOFED will implement this project.

Reporting

Progress of the project will be reported periodically.

1. Supply of fishing implements (Nets) (50% subsidy)

Abstract

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

Budget **:** Rs. 7.50 lakhs

Background / Problem Focus

To provide gillnets to the fishermen at 50% subsidy

Project Rationale

To enhance fish production through capture fisheries.

Project Strategy

To provide 100 nos. of gillnets to the inland fishermen.

Project Goals

To intervene fishing in natural water bodies.

Project Components

Supply of gillnets at 50% subsidy (Rs.2.50 lakhs)

Project Cost and Financing

Subsidy for

1. Cost of moped	:	Rs.12,500
2. Cost of ice box	:	Rs. 2,500
Total cost	**:**	**Rs.15,000**

(Rs. 0.15 lakh for 30 units)

Implementation Chart of the Project

The project will be implemented by the Department of Fisheries.

Reporting

The progress of the project will be reported periodically.

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

Abstract

The fish culture and fish production can be improved in open water system through 50% subsidy to the fish farmers.

Budget : Rs 4.69 lakhs

Background / Problem Focus

To utilize open waters for freshwater fish culture.

Project Rationale

To enhance fish production through fish culture.

Project Strategy

To increase the fish production in open water systems.

Project Goals

- To increase the fish production in open water systems.
- To utilize 750 ha for fish production

Project components

Utilization of open water bodies.

Project Cost and Financing

Project cost	:	Rs. 4.69 lakhs
Financing	:	NADP
Subsidy	:	50% (Rs.2.745 lakhs)

Implementation Chart of the Project

Duration : 3 years (2008-2009; 2009-2010, 2010-2011)

The project will be implemented by the Department of Fisheries.

Reporting

The progress of the project will be reported periodically.

6. Capacity building and training to the fish farmers

Abstract

To train the trainees in the Dept. of fisheries in the advanced fisheries technologies and to enhance the technical knowledge of the scientist involved in fisheries development who formulate and implement new projects.

Budget : Rs. 10.00 lakhs

Background / Problem Focus

The fisheries staff of TANUVAS and State fisheries officials have to be trained in recent advances of fisheries techniques for dissemination to the field level staff, fisherfolk and entrepreneurs. So they have to be educated with adequate knowledge by the exposure. It will also help in formulation of new project proposals.

Project Rationale

Educating the fisheries staff, official and the field level staff in modern fisheries techniques for updating.

Project Goals

To educated the fisheries staff and officials.

Project Components

Fisheries staff of TANUVAS, State Fisheries Department officials and scientist will disseminate new techniques to various fish folks like aquaculture old fish culture, value added fishery products, net, seer application, raceways, cage culture.

Project cost and financing

S.No.	Particulars	App. Budget
1.	Stipend@ Rs. 100/ participant for 25 participants/ 3days	Rs. 7500
2.	Extension materials	Rs. 2000
3.	Miscellaneous	Rs. 500
Total		**Rs. 10000**

Implementation Chart of the Project

Sl. No.	Particulars	2008 to 2012			
		I Qtr	II Qtr	III Qtr	IV Qtr
1.	Identification of trainices	√			
2.	Imparting training programme		√	√	√
3.	Feed back / evaluation				√

The project will be implemented with in the time frame of four years.

Reporting

The progress of work will be implemented by the Fisheries Department

7. Establishment of one Fish Landing Centre for three reservoirs existing in Vellore district

Abstract

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

Budget : Rs. 10.00 lakhs

Project Rationale

To increase the sale of freshwater fishes caught from seasonal and irrigational tank in order to increase the sale of fishes.

Project Strategy

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

Project Goals

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

Project Components

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

Project Cost and Financing

a.	Repair and renovation work in the 3 landing centers	Rs.7.5 Lakhs
b.	Lighting, water line, temp. Shed and weighing scales	Rs.2.5 Lakhs
Total		**Rs.10.00 Lakhs**

Implementation Chart of the Project

S. No.	**Particulars**	**I Qtr**	**II Qtr**	**III Qtr**	**IV Qtr**
1.	Repair and renovation work	√	√		
2.	Providing support facilities		√	√	
3.	Operation of the landing centre			√	√

Reporting

Quarterly progress will be reported to the monitoring agency by the implementing agency. In addition to this, the annual progress can be reviewed with regard to construction of fish landing centre.

8. Installation of Modern Fish Stall at Vellore, Gudiyatham, Arcot and Thirupathur

Abstract

Modal fish stalls with facilities like ice boxes, crates, electronic balance and dressing table are provided along with electricity, drainage and water facilities

Budget : Rs. 40.00 lakhs

Background / Problem Focus

The retail market at present are poorly maintained. The essential market infrastructure like electricity, water, drainage and civic amenities in most of the retail fish markets are inadequate. The installation of modern fish stall at Vellore, Gudiyatham, Arcot and Thirupathur will be done.

Project Rationale

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

Project Strategy

The retail market will be located in the above mentioned four places in Vellore district based on the marketing potential.

Project Goals

- To provide quality fishes at reasonable price.
- To enhance revenue for the fisherfolk engaged in fish marketing

Project Components

Construction of stall, ice boxes, crates, etc.

Project Cost and Financing

S. No.	Particulars	Amount (in lakhs)
a.	Cost of constrictions of stalls	Rs.7.00 Lakhs
b.	Providing water lines, electrical fittings, weighting scales etc.	Rs.2.00 Lakhs
c.	Providing waste disposal, and central storage facility	Rs.1.00 Lakhs
Total		**Rs.10.00 Lakhs**

Implementation Chart of the Project

S. No.	Particulars	2008 to 2012			
		I Qtr	II Qtr	III Qtr	IV Qtr
1.	Construction of stalls	√			
2.	Purchase of equipments		√		
3.	Installation and operation			√	√

Reporting

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

Table 6.20 Vellore District – Action Plan under NADP - Fisheries Sector

(Rs. in Lakhs)

Sl. No.	Components	Implementing Agency	Unit cost	Total units	2008-09		2009-10		2010-11		2011-12		Total cost
					Units	cost	Units	cost	Units	cost	Units	cost	
1	50% subsidy assistance to private fish seed rearing / fish seed production	Fisheries Department	2.5	2	1	2.50	1	2.50					5.00
2	Rearing of fish seeds in cages (50% subsidy)	Fisheries Department	0.0750	20	10	0.75	10	0.75					1.50
3	Supply of mopeds fitted with Ice box to retail fish vendors (50% subsidy)	TAFCOFED	0.1500	30	10	1.50	10	1.50	10	1.50			4.50
4	Supply of fishing implements (50%subsidy)	Fisheries Department	0.05	100	25	1.25	25	1.25	25	1.25	25	1.25	5.00
5	Expansion of fishculture in open water system 500 tanks (750ha) (50% subsidy)	Fisheries Department	0.00625	750ha	250ha	1.5625	250	1.5625	250	1.5625			4.6875
7	Capacity building and training to the fish farmers	Fisheries Department	0.10	100	30	3.00	30	3.00	30	3.00	10	1.00	10.00
8	Establishment of three fish landing centre for three reservoirs existing in Vellore District	Fisheries Department	10.00	1	1	10.00							10.00
9	Installation of modern fish stalls at Vellore	TAFCOFED	10.00	4	1	10.00	1	10.00	1	10.00	1	10.00	40.00
	Fisheries Total					**30.5625**		**20.5625**		**17.3125**		**12.25**	**80.6875**

6.4 Agricultural Engineering

The developmental works to be carried out by the Department of Agricultural Engineering for Vellore district under NADP for XI plan period have been proposed here.

i) Project Rationale

Due to the depletion of ground water and shortage of agricultural labour, agriculture in Vellore District has become very difficult and uneconomical. Measures to improve the ground water potential and mechanization of agriculture to solve the labour demand have become essential to make agriculture viable and remunerative.

ii) Project Strategy

To improve the ground water potential and to mechanize agriculture, the following components are proposed in this project.

1. **Stream I**

a) Introduction of newly developed Agricultural machineries / Implements

b) Innovative Water Harvesting Structures and

c) Promoting concept of Mechanized Villages

2. Stream II

a) Popularization of Agricultural Mechanization through conventional machinery / equipments

b) Conventional Water Harvesting Structures

c) Soil Conservation Works and

d) Water Management Works

To popularize the conventional Agricultural Machineries / equipments, a subsidy of 25 per cent of the cost of machinery has been proposed. To introduce newly developed Agricultural Machinery/Equipments, a subsidy of 50 per cent of the cost of machinery has been proposed whereas a subsidy of 75 per cent has been proposed for gender

friendly equipments. Similarly, 100 per cent subsidy has been proposed for community Water Harvesting Structures and 90 per cent subsidy has been proposed for individual Water Harvesting Structures, soil conservation works and water management works.

iii) Project Goals

1. Mechanizing agriculture through popularization of existing machinery/implements and introduction of new machinery/implements thereby making agriculture viable and remunerative.
2. Harvesting rainwater and developing ground water potential
3. Control of soil erosion and management of runoff.
4. Controlling of silt deposition in major reservoirs and
5. Improving agriculture thereby increasing food production.

iv) Project Components

1. Stream I

1. Introduction of Newly Developed Agricultural Machinery / Implements like Mini Combined Harvester, Multi Crop Thrasher, Paddy Transplanter / Maize Husker Sheller,
2. Coconut De-husker, Groundnut Decorticator, Chisel plough, Tractor Operator combined Harvester, etc.,
3. Innovative Water Harvesting Structures like Lined Farm Ponds and Rejuvenation of Percolation Ponds with Recharge shafts,
4. Promoting the concept of Mechanized Villages through Distribution of crop based package of Agricultural Machinery.

2. Stream II

1. Popularization of conventional machinery/equipments like Power Tiller, Rotavator, Cultivator, Offset Disc Harrow, Disc Plough etc.
2. Water Harvesting Structures like Farm Ponds, Check dams, Percolation Ponds, Recharge shaft, New Village Tanks, etc.
3. Soil Conservation Works like Compartmental bunding, Land shaping, Terrace support wall etc.
4. Water Management works like laying PVC Pipes, Ground level Reservoir, Fertigation Assembly, etc.

Abstract of Agricultural Engineering Development Programmes under NADP

1. Name of the District : Vellore
2. State : Tamil Nadu
3. Name of the Department : Agricultural Engineering Department
4. Types of works proposed :

1. Stream I

a) Introduction of newly developed Agricultural Machinery/Implements
b) Innovative Water Harvesting Structures
c) Promoting concept of mechanized villages

2. Stream II

a) Popularisation of Agricultural Mechanisation through Conventional machinery/equipments
b) Water Harvesting Structures
c) Soil Conservation Works
d) Water Management works

5. Total cost of the project : Stream I - Rs. 1491.29 lakhs
Stream II - Rs. 527.88 lakhs
Total - Rs. 2019.17 lakhs

The budget of the development of Agricultural Engineering activities is given in Table 6.22.

Table 6.21 Budget of the Development of Agricultural Engineering Programmes in Vellore District during XI Plan

Sl.No.	Project Component	Total Cost (Rs.in lakhs)
1.	**Stream I**	
a.	Introduction of Newly Developed Agricultural Machinery / Implements	53.00
b.	Innovative Water Harvesting Structures	443.20
c.	Promoting concept of Mechanized villages	31.68
	Total	527.88
2.	**Stream II**	
a.	Popularization of Agricultural Mechanization through conventional machinery/equipments	216.69
b.	Water Harvesting Structures	773.00
c.	Soil Conservation Works	190.80
d.	Water Management Works	310.80
	Total	1491.29
	Grand Total	**2019.17**

Source: Records of Office of the Executive Engineer, (AED), Vellore.

The proposals for the development of Agricultural Engineering activities in Vellore district are furnished in Table 6.23 (for Sream I) and in Table 6.24 (for Stream II).

Table 6.22 Proposal for Agricultural Engineering Development – Stream I

Sl. No.	Project component	Unit cost Rs. Lakhs	Sub sidy %	2008-2009		2009-2010		2010-2011		2011-2012		Total	
				Nos.	Cost Rs. lakhs	Nos	Cost Rs. lakhs	Nos	Cost Rs. lakhs	Nos	Cost Rs .lakhs	Nos	Cost Rs. lakhs
	Stream I												
1.	**Introduction of Newly Developed Agricultural Machinery/Implements**												
1.	Mini Combined Harvester TNAU model	2.50	50%	-	-	-	-	-	-	-	-	-	-
2.	Multi Crop Thrasher(High Capacity)	2.10	50%	1	1.05	1	1.05	1	1.05	1	1.05	4	4.20
3.	Power weeder with attachment (all models)	1.00	50%	-	-	-	-	-	-	-	-	-	-
4.	Power Thrasher	1.00	50%	-	-	-	-	-	-	-	-	-	-
5.	Paddy transplanter	1.40	50%	1	0.70	1	0.70	1	0.70	1	0.70	4	2.80
6.	Post Hole digger	0.85	50%	-	-	-	-	-	-	-	-	-	-
7.	Shredder (Heavy)	1.00	50%	-	-	-	-	-	-	-	-	-	-

Table 6.22 contd…

Sl. No	Project component	Unit cost Rs. Lakhs	Sub-sidy %	2008-2009		2009-2010		2010-2011		2011-2012		Total	
				Nos	Cost Rs. lakhs	Nos	Cost Rs. lakhs	Nos	Cost Rs .lakhs	Nos	Cost Rs. lakhs	Nos	Cost Rs.lakhs
8.	Shredder (Medium)	0.40	50%	-	-	-	-	-	-	-	-	-	-
9.	Maize Husker Sheller	0.90	50%	2	0.90	2	0.90	2	0.90	2	0.90	8	3.60
10.	Coconut De-husker	0.60	50%	1	0.30	1	0.30	1	0.30	1	0.30	4	1.20
11.	Ground nut decorticator	0.35	50%	4	0.70	4	0.70	4	0.70	4	0.70	16	2.80
12.	Chisel plough	0.12	50%	10	0.60	10	0.60	10	0.60	10	0.60	40	2.40
13.	Power Weeder-Oeomac	0.65	50%	-	-	-	-	-	-	-	-	-	-
14.	Ratoon Manager	1.00	50%	-	-	-	-	-	-	-	-	-	-
15.	Multi crop thrasher (Tractor PTO)	1.25	50%	-	-	-	-	-	-	-	-	-	-
16.	Knapsac Power operated Hydraulic sprayer	0.20	50%	-	-	-	-	-	-	-	-	-	-
17.	Shredder (Tractor PTO operated)	0.85	50%	-	-	-	-	-	-	-	-	-	-

Table 6.22 contd…

Sl. No.	Project component	Unit cost Rs. lakhs	Sub-sidy	2008-2009		2009-2010		2010-2011		2011-2012		Total	
				Nos	Cost Rs. lakhs	Nos	Cost Rs. lakhs	Nos	Cost Rs. lakhs	Nos	Cost Rs. lakhs	Nos	Cost Rs. lakhs
18.	Power operated Chaff Cutter	0.30	50%	-	-	-	-	-	-	-	-	-	-
19.	Japanese Yanmar 6 row transplanter with nursery raising system	7.50	50%	-	-	-	-	-	-	-	-	-	-
20.	Japanese Yanmer 8 row transplanter with nursery raising system	10.50	50%	-	-	-	-	-	-	-	-	-	-
21.	Korean 4- row walk behind transplanter	2.00	50%	-	-	-	-	-	-	-	-	-	-
22.	Combine Harvester Tractor operated	12.00	50%	1	6.00	1	6.00	1	6.00	1	6.00	4	24.00
23.	Combine Harvester Self propelled	16.00	50%	-	-	-	-	-	-	-	-	-	-
24.	Maize combine harvester	16.00	50%	-	-	-	-	-	-	-	-	-	-
25.	Gender friendly equipments	0.08	75%	50	3.00	50	3.00	50	3.00	50	3.00	200	12.00
	Total												**53.00**

Table 6.22 contd…

Sl. No.	Project component	Unit cost Rs. lakhs	Sub-sidy	2008-2009		2009-2010		2010-2011		2011-2012		Total	
				Nos	Cost Rs. lakhs	Nos	Cost Rs. lakhs	Nos	Cost Rs. lakhs	Nos	Cost Rs. lakhs	Nos	Cost Rs. lakhs
II	**Innovative Water Harvesting Structures**												
1.	Lined farm pond with mobile sprinkler	3.00	90%	4	10.80	4	10.80	4	10.80	4	10.80	16	43.20
2.	Rejuvenation of Percolation ponds with 2 recharge shafts	1.00	100%	100	100.00	100	100.00	100	100.00	100	100.00	400	400.00
	Total												**443.20**
III	**Control of sea Water Intrusion**												
1.	Recharge shafts to prevent sea water intrusion in coastal areas	0.50	100%	-	-	-	-	-	-	-	-	-	-
IV	**Promoting the concept of Mechanised villages**												
1.	Distribution of crop based package of Agrl. Machinery on cluster basis in the adopted villages	Varried 75%											
	1. Paddy	-	-	-	-	-	-	-	-	-	-	-	-
	2. Groundnut	3.52	75%	3	7.92	3	7.92	3	7.92	3	7.92	12	31.68
	3. Maize	-	-	-	-	-	-	-	-	-	-	-	-
	Total												**31.68**
	Grand Total				**131.97**		**131.97**		**131.97**		**131.97**		**527.88**

Source: Records of Office of the Executive Engineer, (AED), Vellore.

Table 6.23: Proposal for Agricultural Engineering Development – Stream II

Sl. No.	Project component	Unit cost Rs.in lakhs	Sub sidy %	2008-2009		2009-2010		2010-2011		2011-2012		Total	
				Nos	Cost Rs. lakhs	Nos	Cost Rs. lakhs	Nos	Cost Rs.lakhs	Nos	Cost Rs.lakhs	Nos	Cost Rs.lakhs
	Stream II												
1.	**Popularization of Agricultural Mechanization through Conventional Machinery / Equipments**												
a.	Power Tiller	1.16	25%	150	43.50	150	43.50	150	43.50	150	43.50	600	174.00
b.	Rotavator	0.90	25%	40	9.00	40	9.00	40	9.00	40	9.00	160	36.00
c.	Cultivator	0.16	25%	25	1.00	25	1.00	25	1.00	25	1.00	100	4.00
d.	Off-set Disc Harrow	0.47	25%	2	0.235	2	0.235	2	0.235	2	0.235	8	0.94
e.	Disc Plough	0.35	25%	5	0.4375	5	0.4375	5	0.4375	5	0.4375	20	1.75
	Total											888	216.69
2.	**Water Harvesting Structures**												
a.	Farm pond – Unlined	0.50	90%	75	33.75	75	33.75	75	33.75	75	33.75	300	135.00
b.	Check dam – Minor	0.30	100%	100	30.00	100	30.00	100	30.00	100	30.00	400	120.00
c.	Check dam – Medium	0.75	100%	20	15.00	20	15.00	20	15.00	20	15.00	80	60.00
d.	Check dam – Major	1.00	100%	10	10.00	10	10.00	10	10.00	10	10.00	40	40.00

Sl. No	Project component	Unit cost Rs.in lakhs	Sub-sidy %	2008-2009		2009-2010		2010-2011		2011-2012		Total	
				Nos	Cost Rs.lakhs	Nos	Cost Rs. lakhs	Nos	Cost Rs. lakhs	Nos	Cost Rs. lakhs	Nos	Cost Rs. lakhs
e.	Percolation pond	3.25	100%	16	52.00	16	52.00	16	52.00	16	52.00	64	208.00
f.	Recharge Shaft	0.30	100%	150	45.00	150	45.00	150	45.00	150	45.00	600	180.00
g.	New Village Tank	1.50	100%	5	7.50	5	7.50	5	7.50	5	7.50	20	30.00
h.	Collection well	0.40	90%	-	-	-	-	-	-	-	-	-	-
	Total											1504	773.00
3.	**Soil Conservation Works**												
a.	Compartmental bunding (ha)	0.03	90%	1000	27.00	1000	27.00	1000	27.00	1000	27.00	40000ha	108.00
b.	Land shaping (in ha)	0.10	90%	200	18.00	200	18.00	200	18.00	200	18.00	800ha	72.00
c.	Terrace Support wall (in ha)	0.30	90%	10	2.70	10	2.70	10	2.70	10	2.70	40 ha	10.80
	Total											4840 ha	190.80
4.	Water Management Works												
a.	PVC pipe laying	0.15	90%	500	67.50	500	67.50	500	67.50	500	67.50	2000 ha	270.00
b.	Ground level Reservoir	0.80	90%	10	7.20	10	7.20	10	7.20	10	7.20	40 no	28.80
c.	Fertigation assembly	0.12	50%	50	3.00	50	3.00	50	3.00	50	3.00	250 no	12.00
	Total												**310.80**
	Grand total				**372.8225**		**372.8225**		**372.8225**		**372.8225**		**1491.29**

Source: Records of Office of the Executive Engineer, (AED), Vellore.

6.5 Agricultural Marketing

Strengthening of Agricultural Marketing and Agribusiness development in Tamil Nadu through NADP funding is discussed in this section.

1. Current Status of Agribusiness

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

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

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

2. Agribusiness and the National Development Goals

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

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

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

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

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

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

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

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

Small farms produce more than 35 percent of State total grain, and over half of total fruits and vegetables despite being resource constrained. The marginal holdings have higher cropping intensity compared with that of the small, medium and large

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

4. Sector Problem Analysis

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

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

Entrepreneurs have weak linkages with farmers through contacts and vertical integration arrangements and are distant from consumers because of the absence of organized retail chains. Linkages with service providers are characterized by a lack of confidence particularly in the case of research and extension organizations. The absence

of proper certification, quality assurance systems and inadequate infrastructure continues to limit the integration of production with international markets.

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

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

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

5. Project Rationale

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

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

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

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

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

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

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

6. Project Strategy

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

7. Project Approach

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

8. Project Goals

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

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

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

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

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

9. Project components

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

10. Project Components Description

10.1 Establishment/ organization of commodity groups for marketing in the state with financial assistance from NADP

i) Project Rationale

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

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

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 is the project goal.

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 210 commodity groups in four (ground nut, maize, coconut and pulses) commodities for marketing of agricultural commodities in Vellore district over the period of four years. This will require resources of Rs 50.36 lakhs for the period of four years. The details are presented in Table 52.

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)

10.2 Facilitation of Contract Farming between farmers and bulk buyers in the state with financial assistance from NADP

i) Project Rationale

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

At more macro economic level, contracting can help to remove market imperfections in produce, capital (credit), land, labour, information and insurance markets; facilitate better coordination of local production activities which often involve initial investment in processing, extension etc.; and can help in reducing transaction costs. It has also been used in many situations as a policy step by the state to bring about crop diversification for improving farm incomes and employment. 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 learnt in case of sugarcane, cotton and other commodities have to be taken into account during formulation of the project. For this in this NADP programme facilitation contract farming between the traders and producer is proposed.

ii) Project Strategy

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

iii) Project Components

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

iv) Project cost and Financing

Arranging / organising Commodity Groups involve several rounds of meeting with large number of farmers and traders, train them in 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 Vellore district for marketing of agricultural commodities in Tamil Nadu over the period of four years. This will require resources of Rs. 15.87 lakhs for the period of four years. The Details are presented in Table 6.25.

v) Implementation Chart of the project

Implementation chart of the project is given in Table 6.25.

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)

10. 3. Dissemination of Market intelligence

i) Project Rationale

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

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

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

ii) Project Strategy

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

iii) Project Components

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

iv) Project cost and Financing

In this project it is proposed to disseminate Market intelligence of agricultural commodities to all the Stake holders through different mass media in Vellore district over the period of four years. This will require resources of Rs.31.26 lakhs for the period of four years. The details are presented in Table 6.25.

v) Implementation Chart of the project

Implementation chart of the project is given in Table 6.25.

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).

10.4. Arrangement of Buyers - Sellers Meet

i) Project Rationale

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

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

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

The most important aspect of the agricultural market intelligence is to create awareness about the demand and quality requirements for various agricultural produce

among farmers and also to build knowledge on the availability of various agricultural commodities among the traders.

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

Buyers and sellers meet functions as platform linking agribusiness community namely farmers, traders, commission agents, agricultural processed food organizations, millers, 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.

ii) Project cost and Financing

In this project it is proposed to arrange for 14 buyers sellers meet in Vellore district over the period of four years. This will require resources of Rs.3.28 lakhs for the period of four years. The details are presented in Table 6.25.

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

i) 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 4per 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 being implemented 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 within the state and outside the state by commodity groups / farmers and extension functionaries in the state for marketing of agricultural commodities in Tamil Nadu over the period of four years.

ii) Project Strategy

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

iii) Project Goals

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

iv) Project Components

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

v) Project cost and Financing

Visit of important markets, where new opportunity for marketing of the commodity and consumer preference i.e., exposure visits 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.72.74 lakhs for the period of four years. The details are presented in Table 6.24.

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)

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

i) Project Rationale

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

is used widely in the entire developmental sector except in agricultural sector. Use of interactive multimedia and such other tools will help the extension workers to serve the farmers better. Similarly, extension systems have to utilize the existing print and electronic mass media for faster dissemination of information to farmers. The technological advancement in telecommunication and space technology has to be fully tapped for devising appropriate programs for farmers. Hence there is 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.

v) Project cost and Financing

Over the last few years mass media has seen a phenomenal growth in the country both in terms of reach and advance in technology. This medium has not been exploited to its full potential for the purpose of agricultural extension specifically market led extension. A concerted and well-coordinated effort now needs to be made to use the electronic media in the Extension strategy by strengthening infrastructure facility. In this project it is proposed to strengthening market extension centre in Vellore district over the period of four years. This will require resources of Rs. 5.0 lakhs for the period of four years. The Details are presented in Table 6.24.

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)

10.7. Strengthening of selected village shandies with financial assistance from NADP

i) Project Rationale

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

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

ii) Project Strategy

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

iii) Project Components

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

iv) Project cost and Financing

In this project it is proposed to strengthen Village Shandies in Vellore district over the period of four years. This will require resources of Rs. 1.62 lakhs for the period of four years. The Details are presented in Table 6.25.

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)

10.8. Capacity Building of Farmers' Skill

i) Project Rationale

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

The role of the market as knowledge and information exchange amongst the converging farmers needs to be appreciated and harnessed. Farmers get benefit from deregulation of markets, minimum guaranteed price scheme, contract farming, and crop/income insurance, only to the extent they organize in marketing groups, self-help groups, cooperatives or companies and learn skills suited to the new marketing environment. Understanding quality standards (including FAQ), learning the terms of contract and insurance, and choosing and preparing the produce for the market are going to be essential skills for farmers. There is a need for greater synergy between extension

services and market. State Marketing Departments and Boards, APMCs, Krishi Vigyan Kendras (KVKs), Marketing Cooperatives, NGOs and PRIs should pay increasing attention to train the farmers in marketing related skills. All stakeholders in the Supply Chain (i.e. from farmers to consumers) should be exposed to the following characteristics and complexities of the marketing system to make it more efficient. Hence in this project the following training programmes are proposed with budget requirement of Rs. 139.46 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.

ii) Project Strategy

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

iii) Project Components

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

iv) Project Cost and Financing

In this project it is proposed to organize about 1183 trainings under Capacity Building of Farmers Skill titles for marketing of agricultural commodities in Vellore district over the period of four years. This will require resources of Rs.139.46 lakhs for the period of four years. The Details are presented in Table 6.25.

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)

10.9. Strengthening of selected Market Infrastructure (Equipments)

i) Rationale

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

Estimates of Marketed Surpluses of Various Commodities

Commodity	Marketed surplus ratio (per cent)
Rice	51.9
Wheat	53.8
Jowar	39.7
Bajra	45.4
Maize	46.2
Other Coarse Cereals	57.1
Pulses	53.9

Estimates of Marketed Surpluses of Various Commodities contd…

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. Agricultural Statistics Division, Directorate of Economics and Statistics, Ministry of Agriculture, New Delhi).

ii) Project Components

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

iii) Project cost and Financing

In this project it is proposed to strengthen market infrastructure in Vellore district over the period of four years. This will require resources of Rs.5.515 lakhs for the period of four years. The Details are presented in Table 6.25.

iv) Reporting

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

10.10. Establishment of Price surveillance mechanism through NADP Funding

i) Rationale

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

ii) Project Components

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

iii) Project cost and Financing

In this project it is proposed to collect data at a minimum interval of one month from major assembly markets on a continuous basis in Vellore district over the period of four years. This will require resources of Rs. 0.95 lakhs for the period of four years. The details are presented in Table 6.25.

iv) Reporting

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

10.11. Strengthening of Regulated Market and *Uzhavar Shandies* Publicity

i) Rationale

Arrivals to market yards of regulated markets are only about 15 per cent of the marketed surplus in Tamil Nadu. Similarly sale through *Uzhavar Shandies* is also limited in case of fruits and vegetables. Hence it is necessary to have publicity programme on the

benefits of sale through regulated markets and *Uzhavar* Shandies so that the net price realized by the farmers could be increased. To achieve this publicity and propaganda programmes will be undertaken in this district for the next four years.

ii) Project Components

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

iii) 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. 23.0 lakhs over the period of four years. The details are presented in Table 6.25.

iv) Reporting

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

11. Project cost

The total cost for development of agricultural marketing so as to increase the profitability of farmers would be Rs.349.05 lakhs for this district for the next four years.

12. Implementation

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

13. Project Performance Monitoring System

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

14. Sustainability

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

Table 6.24: Prposals for the Development of Marketing activities in Vellore District

(Value in Rs)

S. No	Components	2009			2010			2011			2012			Total
		Unit cost	Physi-cal	Financial	Unit cost	Physi-cal	Finan-cial	Unit cost	Physi-cal	Finan-cial	Unit cost	Phy-sical	Finan-cial	
1	Commodity group formation													
	Groudnut	20000	5	100000	22000	10	220000	24000	15	360000	26000		0	**680000**
	Maize	20000	4	80000	22000	6	132000	24000	8	192000	26000	12	312000	**716000**
	Coconut	20000	5	100000	22000	10	220000	24000	20	480000	26000	25	650000	**1450000**
	Pulses	20000	5	100000	22000	15	330000	24000	30	720000	26000	40	1040000	**2190000**
2	Market Intelligence dissemination													**0**
	MI Dis Farmers Meet	10000	40	400000	11000	60	660000	12000	70	840000	13000	80	1040000	**2940000**
	MI Dis Printing Leaflets	2	10000	20000	3	10000	30000	4	10000	40000	5	10000	50000	**140000**
	Purchase of marketing materials	10000	1	10000	11000	1	11000	12000	1	12000	13000	1	13000	**46000**
3	Facilitation of contract farming													**0**
	Traders meeting	15000	8	120000	16500	10	165000	18000	12	216000	19500	15	292500	**793500**
	Farmers meetings	15000	8	120000	16500	10	165000	18000	12	216000	19500	15	292500	**793500**

S. No	Components	2009			2010			2011			2012			Total
		Unit cost	Physi-cal	Financial	Unit cost	Physi-cal	Financial	Unit cost	Physi-cal	Finan-cial	Unit cost	Phy-sical	Finan-cial	
4	Trainings on													**0**
	Post Harvest	10000	1	10000	11000	2	22000	12000	3	36000	13000	4	52000	**120000**
	Warehousing and Storage	10000	1	10000	11000	2	22000	12000	4	48000	13000	5	65000	**145000**
	Market Intelligence	10000	100	1000000	11000	200	2200000	12000	300	3600000	13000	400	5200000	**12000000**
	Grading	10000	1	10000	11000	2	22000	12000	3	36000	13000	4	52000	**120000**
	Commodity Markets	10000	1	10000	11000	2	22000	12000	3	36000	13000	4	52000	**120000**
	Value addtion Trainings	10000	125	1250000	11000	0	0	12000	2	24000	13000	0	0	**1274000**
	Export promotion	10000	2	20000	11000	2	22000	12000	5	60000	13000	5	65000	**167000**
5	Exposure visit to markets													
	Within State	20000	4	80000	22000	8	176000	24000	12	288000	26000	20	520000	**1064000**
	Outside state	75000	4	1350000	82500	4	1485000	90000	4	1620000	97500	4	1755000	**6210000**
	Visit to national market	150000	0	0	165000	0	0	181500	0	0	199650	0	0	**0**
6	Arrangement of buyer seller meetings	20000	2	40000	22000	4	88000	24000	4	96000	26000	4	104000	**328000**

S. No	Components	2009			2010			2011			2012			Total
		Unit cost	Physi-cal	Finan-cial	Unit cost	Physi-cal	Finan-cial	Unit cost	Physi-cal	Finan-cial	Unit cost	Phy-sical	Finan-cial	
7	Streng. Of market extension centre	250000	2	500000	275000		0	300000		0	325000		0	**500000**
8	Streng. Of village shandies	1000	4	4000		5	5000							**9000**
	Meetings	10000	5	50000	11000	5	55000	12000	4	48000	13000	0	0	**153000**
9	Market price sur veillance	10000	1	10000	11000	2	22000	12000	2	24000	13000	3	39000	**95000**
10	Publicity - regulated market	500000	1	500000	550000	1	550000	600000	1	600000	650000	1	650000	**2300000**
11	Market infra	125000	1	125000	137500	0	0	150000	2	300000	312500	0	0	**425000**
	Min PH Loss Tarpaulin	5000	10	50000	550	10	5500	600	20	12000	650	20	13000	**80500**
	Min PH Loss Chemicals	10000	1	10000	11000	1	11000	12000	1	12000	13000	1	13000	**46000**
Total		**1376002**	**10342**	**6079000**	**1507553**	**10372**	**6640500**	**1646104**	**10538**	**9916000**	**1936305**	**10663**	**12270000**	**34905500**

6.6 Sericulture

There is a greater demand for the raw silk from nearby the production centres of silk products like Arani and Kancheepuram. This further enhances the scope for expansion of area under mulberry and cocoon production. The development of sericulture activities under NADP in Vellore district is discussed below.

Under sericulture development, it has been proposed to expand the area under mulberry to the extent of 2,500 acres, establishment of community spinning hall, community chawkie rearing centre, community silk twisting unit, cottage basin reeling unit and so on. The budget requirement for sericulture development in Vellore district under NADP is given in Table 6.25.

Table 6.25: Proposals for the Development of Sericulture in Vellore District during XI Plan Period

(Amount in Lakhs)

S. No	Com-ponent	Unit Cost (in Rs/Acre) /Subsidy (Rs.and per cent)	2007-08			2008-09			2009-10			2010-11			2011-12			Total		
			No.	Amount	Sub-sidy	No.	Amount	Sub-sidy	No.	Amount	Subs-idy	No.	Amo unt	Subsidy	No.	Amount	Subsidy	No	Amo-unt	Subsidy
1.	**Mulberry expansion:** Area Targetted under Mulberry		500 Ac			500 Ac			500 Ac			500 Ac			500 Ac			2,500 Ac		
a)	Plantation Subsidy	5,000/3,750 (75per cent)	20 Ac	1.0	0.75	100 Ac	5.00	3.75	150 Ac	7.50	5,625	200 Ac	10.0	7.50	200 Ac	10.0	7.50	670 Ac	33.5	25.125
b)	Rearing Shed	1.2 lakhs / shed / 0.9 lakhs (75per cent)	10	12.0	9.0	20	24.0	18.0	20	24.0	18.0	40	48.0	36.0	40	48.0	36.0	130	156.0	117.0
c)	Rearing Equipments	0.4 lakhs / 0.3 lakhs (75per cent)	10	4.0	3.0	20	8.0	6.0	20	8.0	6.0	40	16.0	12.0	40	16.0	12.0	130	52.0	39.0
d)	Drip Irrigation	0.3 lakhs / 0.225 lakhs (75per cent)	-	-	-	10	3.0	2.25	30	9.0	6.75	30	9.0	6.75	30	9.0	6.75	100	30.0	22.5
e)	Vermi-Compost Shed	0.3 lakhs / 0.225	-	-	-	10	3.0	2.25	20	6.0	4.5	20	6.0	4.5	20	6.0	4.5	70	21.0	15.75

		lakhs (75per cent)																		
2.	Community Spinning Hall	2.0 lakhs / shed	-	-	-	2	4.0	-	2	4.0	-	2	4.0	-	-	-	-	6	12.0	-
3.	Community Chawkie Rearing Centre	3.5 lakhs / centre	-	-	-	2	7.0	-	2	7.0	-	2	7.0	-	2	7.0	-	8	28.0	-
4.	Community Twisting Unit	6.0 lakhs / unit	-	-	-	1	6.0	-	2	12.0	-	-	-	-	-	-	-	3	18.0	-
5 a)	**Silk Reeling** Cottage Basin Reeling unit	2.5 lakhs /unit/ 1.875 lakhs/unit (75per cent)	-	-	-	10	25.0	18.75	10	25.0	18.75	10	25.0	18.75	10	25.0	18.75	40	100.0	75.0
6.	District Sericulture Complex, Vaniambadi a) Sanitary facilities		-	-	-	-	3.0	-	-	-	-	-	-	-	-	-	-	-	3.0	-
7.	Farmers Training Centre, Minnur a)		-	-	-	-	1.925	-	-	-	-	-	-	-	-	-	-	-	1.925	-

	Barbed wire fencing																			
	b) Plastic trays for chawkie rearing, wooden racks for silk worm rearing rearing	-	-	-	-	-	0.3	-	-	-	-	-	-	-	-	-	-	-	0.3	-
	c) Estt of new improved variety mulberry in 1.0Ac -	-	-	-	-	-	0.175	-	-	-	-	-	-	-	-	--	-		0.175	-
	d) New bore well with electric motor	-	-	-	-	-	0.49	-	-	-	-	-	-	-	-	-	-	-	0.49	-
	e) Deepening of existing open well	-	-	-	-	-	0.50	-	-	-	-	-	-	-	-	-	-	-	0.50	-
	Total	**-**	**-**	**17.0**	**12.75**	**-**	**91.39**	**63.75**	**-**	**102.5**	**76.875**	**-**	**125.0**	**93.75**		**121.0**	**90.75**	**-**	**439.89**	**337.875**

Source: Records of Office of the Assistant Director of Sericulture, Vaniambadi, Vellore District.

6.7. Water Resources Organisation

Palar and Ponnai are the major rivers flowing through the district. However, they remain dry for most part of the year. The details of Ayacut projects with area and number of tanks benefited are given in Table 2.9. Palar Ayacut Project supported 148 tanks in Vellore district indirectly with an ayacut area of 13,882 hectares while Ponnai Ayacut Project indirectly supported 126 tanks with an ayacut area of 8,973 hectares.

The developmental works relating to water resources, especially canals and tanks maintained by Public Works Department in Vellore district under NADP during XI Plan Period are given in Table 6.26. As could be seen from Table. 6.26, rehabilitation and modernization of tanks and supply channels have been proposed to take up at the cost estimate of Rs 9,132.8 lakhs coveing an ayacut area of 5,812.2 hectares in Vellore, Thiruppathur, Arakkonam, Walajah, Gudiyatham, Katpadi and Arcot taluks of Vellore district.

Table 6.26: Proposal for the Development of Canals and Tanks in Vellore District in 2008-09

S. No	Taluk	Block	Name of the Work	Registered Ayacut (Ha)	Amount (Rs.in Lakhs
1.	Thiruppathur	Kandhili	Rehabilitation and Modernization of Tanks and Supply Channels		
			i) Puthagaram Tank	55.82	25.0
			ii) Periyagaram Tank	65.95	30.0
			iii) Chinnakunichi Tank	55.85	27.0
			iv) Kooratti Tank	95.10	35.0
			Sub Total	272.72	117.0
		Thiruppathur	i) Elagiri Tank	56.60	20.0
			ii) Achamangalam Tank	50.36	30.0
			iii) Achamangalam Rahid Sahib Tank	66.55	20.0
			iv) Thiriyalam Tank	51.37	15.0
			v) Madappalli Tank	137.19	30.0
			vi) Jadayanur Tank	45.63	15.0
			vii) Egileri Tank	56.60	20.0
			viii) BommiKuppam Tank	54.99	15.0
			ix) A.K.Mottur Tank	43.74	10.0
			x) Chimmana Pudur Tank	96.66	25.0
			Sub Total	659.70	200.0
			Thiruppathur Big Tank	177.34	250.0
3.	Vellore	Anaicut	Strengthening and Improvements for the Tanks and Supply Channels under Agaram Aaru Sub Basin		
			i) Gangasani Kuppam tank	6.68	88.44
			ii) Odugathur rajapalayam Tank	52.76	11.60
			iii) Kuppampattu Tank	14.89	94.84

Table 6.26 (Contd)

S. No.	Taluk	Block	Name of the Work	Registered Ayacut (Ha)	Amount (Rs.in Lakhs
3.	Vellore	Anaicut	iv) Guruvarajapalayam Tank	35.54	83.55
			v) Arimalai Tank	38.43	54.69
			vi) Kallaparai Tank	28.72	65.28
			vii) Agaram Tank	125.46	97.80
			viii) Karungali Tank	54.49	99.83
			ix) Pallikuppam Tank	26.20	113.31
			x) Gollamangalam Tank	94.74	118.71
			xi) Kil Krishnapuram Tank	27.11	118.65
			xii) Varathalampattu Tank	115.74	112.05
			xiii) Thippasamudram Tank	134.76	14.11
			xiv) Provision for Other Tanks	-	287.14
			xv) Provision for Other Deaprtments	-	640.00
			Sub Total	755.52	2000.00
4.	Arakkonam	Kaveri pakkam	i) Rehabilitation and Desilting of Kaveripakkam Tank	2671.92	5000.00
			ii) Rehabilitation of Field Channels of Kaveripakkam Tank	2671.92	600.00
			iii) Rehabilitation of Surplus Weir of Kaveripakkam Tank	2671.92	400.00
			iv) Rehabilitation of Supply Channel from Kachavadi Escape	2671.92	200.00
			Sub Total	2671.92	6200.00
5.	Walajah	Sholingur	Rehabilitation and Modernization of Tanks and Supply Channels		
			i) Kodaikkal Rajathangal Tank	6.47	
			ii) Melakuppam Tank	71.97	

Table 6.26 (Contd)

S. No.	Taluk	Block	Name of the Work	Registered Ayacut (Ha)	Amount (Rs.in Lakhs
5.	Walajah	Sholingur	iii) Maradhalam Periya Eri	41.15	
			iv) Valam Tank	55.03	
			v) Kolatheri Tank	61.43	
			vi) Kalelkuppam Chittheri	45.39	
			vii) Somasundaram Tank	45.48	
			Sub Total	326.92	57.00
6.	Arakkonam		Rehabilitation and Modernization of Tanks and Supply Channels		
			i) Ayal Chittheri Tank	3.64	
			ii) Gudalore Tank	74.57	
			iii) Gangapuram Tank	54.63	
			iv) Panavettampadi Tank	53.88	
			v) Iyappedu Tank	63.17	
			Sub Total	186.71	60.00
7.	Gudiyatham		Rehabilitation and Modernization of Tanks and Supply Channels		
			i) Paratharami Tank	43.18	
			ii) Chettikuppam Tank	21.19	
			Pakkam Tank	86.76	
			Sub Total	151.13	35.00
8.	Katpadi		Rehabilitation and Modernization of Tanks and Supply Channels		
			Melmoil	103.96	20.00
9.	Arcot	Arcot and Thimiri	Rehabilitation and Modernization of Kalavai Tank Bund, Sluices, Weirs and Supply Channels	511.27	193.80
			Grand Total	5817.19	9132.8

Source: Records of the Office of the Executive Engineer, PWD, Water Resources Organization, Upper Palar Basin Division, Vellore.

Preparation of Draft Action Plan and Presentation in District Collector's Meeting

Proceedings of the Meeting

Based on the baseline information and proposals, draft action plan was prepared and this was presented in the District Collector's Meeting held on May 10, 2008 under the chairmanship of the Project Officer, District Rural Development Agency, Vellore District. This meeting was attended by the scientists from TNAU, officials from line departments and the representatives of local bodies and wide coverage about this meeting was given in the media also.

Thiru. M.Madesan, Joint Director of Agriculture, Vellore delivered the welcome address. He also highlighted various possibilities and modalities for promoting the export of agricultural commodities. The programme was presided by Thiru.N. Aruljyotiarasan, the District Project Officer, District Rural Development Officer, Vellore. The Chief Guest emphasized the importance of participation of panchayat leaders and farmers from the grass root level in the preparation of developmental plans. Dr. K. Mani, Professor (Agricultural Economics), Centre for Agricultural and Rural Development Studies, Tamil Nadu Agricultural University, Coimbatore explained the various components of the District Agriculture Plan. He also invited suggestions from Panchayat Leaders for refining the proposed plan. Dr. D.Baskaran, Associate Professor, Veterinary University Training and Research Centre, Vellore discussed about Animal Husbandry component of the District Plan. Thiru P. Anbarasan, Assistant Executive Engineer, Uppar Palar Basin Sub Division, Public Works Department, Vellore informed about the various developmental activities relating to canal and tank irrigation in Vellore district. Thiru. A. Selvaraj, Vellore District Fishermen Co-operative Federation, Fort, Vellore discussed about the fisheries developmental programmes that are being implemented by the government in Vellore district. Sixty participants including line department officials, panchayat chairmen and farmers participated in the discussion. Participants suggested several modifications in the draft plan such as strengthening of storage facilities for fruits and vegetables, additional transport facilities to transport fruits and vegetables to Chennai so as to reach Chennai at right time, strengthening of weekly shandies and so on. Dr. V.Ravichandran, Programme Co-ordinator, Krishi Vigyan Kendra, Virinjipuram proposed the Vote of Thanks.

TAMIL NADU AGRICULTURAL UNIVERSITY

Office of the Programme Co-ordinator,
Krishi Vigyan Kendra,
Virinjipuram – 632 104,
Vellore District

Dated'12.05.2008

Proceedings

Proceedings of the Meeting on "National Agricultural Development Programme-Vellore District Agricultural Plan"

An One day district action plan meeting on **"National Agricultural Development Programme (NADP)"** was organised by **Tamil Nadu Agricultural University, Coimbatore on 10th May, 2008 at Hotel Darling Residency, Vellore** for addressing the importance of National Agricultural Development Programme to the Panchayat Presidents of Vellore district in collaboration with line departments of Agriculture, like Horticulture, Public works department, Regulated Market, Animal Husbandry, Fisheries and Sericulture.

Thiru. **M. Madesan, Joint Director of Agriculture** welcomed the gathering in his welcome address and picturised the present overall agricultural development activities in the district. He also addressed the various possibilities and modalities that could be created for promoting of export and marketing awareness among the farming masses.

The programme was presided by **Thiru. N. Aruljyotiarasan, District Project Officer, Vellore** and co-chaired by **Dr.K. Mani, Professor (Agricultural Economics), TamilNadu Agricultural University, Coimbatore**. In the presidential address, the District Project Officer, Vellore stressed upon the importance of Plan formulation, various government schemes for development of Agriculture in the Vellore district. Dr.K. Mani in his presentation upraised the various proposed plans for linking the line departments under the NADP scheme and the proposed budget allocations under individual component. He also invited suggestions for modification of the components and for revision of the budget allocation, if need arises.

Mr. Baskaran, Associate Professor, University Training and Research Centre, TANUVAS, explained the activities undertaken by Animal Husbandry department at Vellore and also arrived at a model plan for further improvement of animal husbandry in the district.

Mr. A. Selvaraj, Vellore district fishermen co-operative federation , Fort, Vellore narrated the possibilities to explore the fish farming activities of the district.

Mr. P. Anbarasan, Assistant Executive Engineer, Upper Palar basin sub-division, Vellore stressed upon the multivarious developmental activities of Public works department for feeding the drinking water and irrigational need of peoples in vellore district.

The **Panchayat Presidents** of various blocks interacted the discussions and suggested the inclusion for various modifications in the present NADP action plan proposal.

Dr. V. Ravichandran, Programme Co-ordinator, Krishi Vigyan Kendra, Virinjipuram greeted the Tamil Nadu Agricultural University for undertaking the promotional cause for improvising Agriculture and submitting the proposal to Government of India for merging the multivarious line departments under one umbrella. He also proposed vote of thanks to the delegates and the line department officials for effective participation and contribution for making the programme a grand success.

25/6/08

Programme Co-ordinator
Krishi Vigyan Kendra
Virinjipuram

NADP Sensitization Workshop and Discussion on District Agriculture Plan - Vellore District held on 10.05.08

Thiru. M.Madesan, Joint Director of Agriculture, Vellore deliveres the welcome address.

Honouring the Project Officer, DRDA, Vellore

Project Officer, DRDA, Vellore Inaugurates the Group Discussion

Dr. K.Mani, Professor, TNAU Introduces the Plan

Dr. K. Mani, Professor, TNAU, Explains the DAP

Dr.D.Baskaran, Assistant Professor, Veterinary University Training and Research Centre, Vellore Discusses about the Plan

Thiru P. Anbarasu, Assistant Executive Engineer, Public Works Department, Vellore Explains the District Plan

Thiru. A. Selvaraj, Vellore District Fishermen Co-operative Federation, Fort, Vellore Explains the Fisheries Developmental Programmes

Panchayat Chairman Speaks

Panchayat Chairman Speaks

Line Department Officials discuss with Panchayat Persons

Dr. V.Ravichandran, Prof&Head, KVK, Virinjipuram Proposes Vote of Thanks