NATIONAL AGRICULTURAL DEVELOPMENT PROGRAMME (NADP)

DISTRICT AGRICULTURE PLAN

PERAMBALUR DISTRICT

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

2008

NATIONAL AGRICULTURE DEVELOPMENT PROJECT – DISTRICT AGRICULTURE PLAN

PROJECT TEAM

Overall Coordination	**:**	**Dr. K. Palanisami, Director, CARDS and Nodal Officer (NADP)**
		Dr. R. Venkatram, Professor and Principal Coordinator (NADP)
District Level Coordination	**:**	**Dr. N. Venkatesa Palanichamy Associate Professor (Agrl. Economics) Dept. of Agrl. and Rural Management TNAU, Coimbatore-3**
		Dr. G. Kathiresan Professor and Head Cotton Research Station Veppanthattai, Perambalur District

Tamil Nadu Agricultural University

Prof. C.RAMASAMY
Vice-Chancellor

COIMBATORE-641 003
TAMIL NADU
INDIA.

FOREWORD

Date .....

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

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

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

(C. RAM AS AMY)

Coimbatore
June 30, 2008

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

Dr. K. Palanisami
Director, CARDS

Tamil Nadu Agricultural University
Coimbatore-3

PREFACE

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

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

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

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

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

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

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

Date: 30.06.2008

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

EXECUTIVE SUMMARY

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

Perambalur district is a centrally located, inland district of Tamil Nadu, spread over an area of 3690 sq.kms, which was formed on November 1, 1995, by trifurcating the erstwhile composite Tiruchirappalli district. The district is bounded by Cuddalore district in the North, Tiruchirappalli district in the South, Thanjavur in the East and Namakkal and Tiruchirappalli districts in the West. Perambalur district is a newly formed district of Tamil Nadu, carved out from the erstwhile composite Tiruchirappalli district with the head quarters at Perambalur. It lies between 10^0 53' and 11^o 31' of North latitude and 78^0 38' and 79^o 31' of East longitude. The general physiography of this district is versatile with hilly ranges, series of plains, valley bottoms, undulating upland area and broken chains of Eastern Ghats *viz*., Pachamalai hills. The district, for administrative purpose, has been divided into Three taluks (Perambalur, Veppanthattai and Kunnam) which is further sub-divided into four blocks *viz*. Perambalur, Veppanthattai, Veppur and Alathur,) The agricultural institutions are very limited in number, since it is a newly formed district. There is one office of Joint Director of Agriculture, six offices of the Assistant Director of Agriculture, 18 agricultural depots, 4 regulated markets, and 5 agro service centers catering to the needs of the farming community in the district. According to 2001 census the total population of the district is 4,93,646 of which 2,46,141 are males and 2,47,505 area females, with a literacy rate of 57.98 per cent.

1.2 Main Points of SWOT of the District

Strengths

- The farmers in the district are very progressive and innovative in adopting modern technologies and crop varieties.
- The district is one of the leading districts in the state in terms of productivity of many crops such as Maize (Rainfed), Cotton (Rainfed), pulses and Small Onion.
- The district has a good local market for its agricultural commodities especially fruits and vegetable since it is located on the National Highways connecting Chennai and Trichirapalli.

Weaknesses

- Low rainfall and heavy dependence on north-eastern monsoon.
- Fragmented holdings and more than 75 per cent of the farmers are marginal and small holders.
- Limited availability of groundwater.
- Increasing scarcity of labour due to sharp increase in migration from rural to urban areas.
- Undulated topography, which favours water logging conditions during monsoon periods.
- Most villages in the district still lack connective roads which are of utmost importance for easy transportation of agricultural produce.

Opportunities

- Opportunities to promote new crop varieties and new technologies such as precision farming and System of Rice Intensification.
- Opportunities to introduce water-saving technologies under canal irrigation systems especially in the irrigated agricultural systems in view of the huge seepage loss of water during flood irrigation of the fields.
- Dry land agriculture has a good potential in this district with appropriate combination of crops, tree crops and livestock enterprises.
- The SEZ (Special Economic Zone) proposed to be established at Perambalur will favour the over all socio-economic development of the district.

Threats

- Increasing scarcity of groundwater is a major threat to expansion of irrigated agricultural production.
- Lack of scientific knowledge on soil health management particularly in cotton and maize cultivation in dry land areas and declining productivity of major crops are the threats in the field of agriculture in the district.
- Declining interest among farmers in continuing agriculture due to increasing employment opportunities in non-agricultural sector and increasing risk in crop production coupled with stagnation in productivity and profitability of many crops.

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

Agricultural and allied sectors such as horticulture, agricultural engineering and animal husbandry are the sectors to be covered under NADP. Besides these, special programmes for water conservation and repair and maintenance of canal, tank and small irrigation structures are also proposed to be taken up under the NADP. The main focus will be on repairing the irrigation systems to prevent seepage loss of water, modernization / renovation of tanks and a few small irrigation structures and check dams and establishment of drip irrigation system in the groundwater irrigation area for efficient and effective use of water and nutrients to get a improved productivity from the crops.

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

The Agriculture Department is implementing various schemes to increase the production and productivity of a wide range of crops cultivated in the district. The schemes implemented in the district are Integrated Cereal Production Scheme, Integrated Scheme on Pulses Under – ISOPOM, Oil Seed Production Programme, ISOPOM - Maize Scheme, Coconut Development Scheme, Cotton mini mission-II, Seed Village Scheme and Oil Palm Development Programme. In addition the Department of Horticulture is implementing National Horticulture Mission, Micro irrigation scheme, Precision Farming and Integrated Horticulture Development Scheme. There is lot of scope to further strengthen these schemes and dovetail them with the schemes under NADP.

1.4 The District Plan at a Glance

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

Public Works Development have submitted proposals to conserve water and improve water conveyance efficiency under various river and tank irrigation projects in the district. The abstract of the activities and the proposed budgetary requirements are given in the following table.

Abstract of Activities Proposed and Budgetary Requirements under NADP

(Rupees in lakhs)

Sl. No.	Name of Department / Activity	Financial Proposal for N.A.D.P				
		2008-09	2009-10	2010-11	2011-12	Total
1.	Agriculture	701.25	681.70	679.35	676.70	2739.00
2.	Seed Sector	6.00	-	-	-	6.00
3.	Horticulture	326.00	338.05	350.08	362.13	1376.26
4.	Animal Husbandry *	430.14	177.52	128.37	124.53	860.56
5.	Fisheries *	8.20	16.40	8.65	-	33.25
6.	Agricultural Engineering	162.65	177.58	177.58	162.65	680.46
7.	Agricultural Marketing	16.00	221.26	213.49	255.47	706.22
8.	Public Works Department	44.55	62.11	53.21	46.50	206.37
	Grand Total	**1694.79**	**1674.62**	**1610.73**	**1627.98**	**6608.12**

* This allotment is for Perambalur District including Ariyalur District

In sum, the total budget outlay required for the XI plan period works out to Rs.6608.12 lakhs for Perambalur district under NADP.

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

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

1.6 Expected Outcomes as a Result of Implementation of the Plan

The implementation of the plan will ensure 4 per cent growth rate in agricultural sector in the district. Besides, it will substantially improve the rural employment and income of farmers as well as agricultural labour households. By developing allied sectors such as animal husbandry, sericulture, and fisheries, it will ensure rural income and nutritional security and help enhance the overall standard of living of the rural communities in a sustained way.

CHAPTER - I

INTRODUCTION

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

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

Methodology Adopted for the Preparation of District Agriculture Plan

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

Major Areas of Focus

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

(b) Agriculture mechanization;

(c) Activities related to enhancement of soil health;

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

(e) Integrated Pest Management schemes;

(f) Strengthening of Market Infrastructure and marketing development;

(g) Strengthening of Infrastructure to promote Extension Services;

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

(i) Animal husbandry and fisheries development activities;

(j) Study tours of farmers;

(k) Organic and bio-fertilizers;

(l) Innovative schemes.

Collection of Data

The preparation of district level plan involved basically collection of base line and bench mark details. So a template is developed to collect these particulars from the different districts (29 districts) of Tamil Nadu. In order to dovetail the ongoing schemes, with the action plans, the current ongoing agriculture programs were listed with their physical and financial performance and finally converged as the plan under National Agriculture Development Programme.

Formulation of District Planning Unit

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

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

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

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

Sensitization Workshop

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

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

Preparation of Draft action Plan and Presentation in District Collectors Meeting

Based on the baseline information and proposals, draft action plan was prepared and this was presented in the District Collector's Meeting held on 09-05-2008 at Perambalur under the chairmanship of District Collector. This meeting was attended by the District Revenue Officer, the scientists from TNAU, officials from line departments and the representatives of local bodies. Wide coverage was given in the media also.

Finalization

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

CHAPTER - II

GENERAL DESCRIPTION OF THE DISTRICT

2.1 Introduction

Perambalur district is a centrally located, inland district of Tamil Nadu, spread over an area of 3690 sq.kms, which was formed on November 1, 1995, by trifurcating the erstwhile composite Tiruchirappalli district. The district is bounded by Cuddalore district in the North, Tiruchirappalli district in the South, Thanjavur in the East and Namakkal and Tiruchirappalli districts in the West.

Perambalur district is a newly formed district of Tamil Nadu, carved out from the erstwhile composite Tiruchirappalli district with the head quarters at Perambalur. It lies between 10^{0} 53' and 11^{o} 31' of North latitude and 78^{0} 38' and 79^{o} 31' of East longitude. The general physiography of this district is versatile with hilly ranges, series of plains, valley bottoms, undulating upland area and broken chains of Eastern Ghats *viz.*, Pachamalai hills (Figure 1).

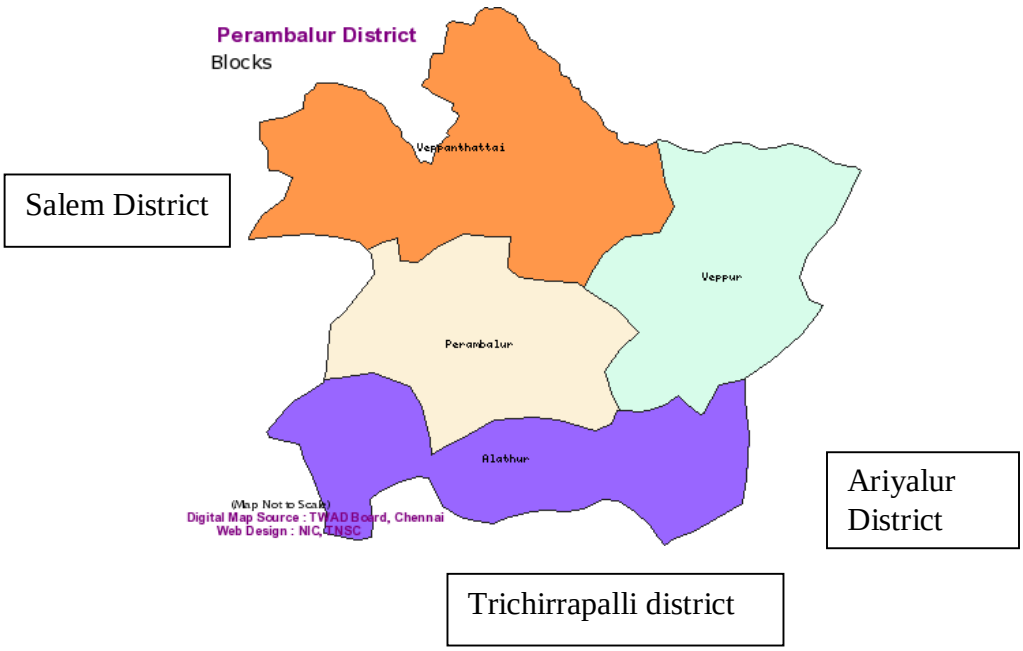


Figure 1. Map of Perambalur District with Development Blocks

2.2 District at a Glance

2.2.1 Administrative Divisions

The district, for administrative purpose, has been divided into three taluks (Perambalur, Veppanthattai and Kunnam) which is further sub-divided into four blocks *viz.* Perambalur, Veppanthattai, Veppur and Alathur. The District is further sub-divided into four blocks *viz.* Perambalur, Veppanthattai, Veppur and Alathur, comprising 27 revenue villages, 20 Village Panchayats and three Town Panchayats. The agricultural institutions are very limited in number, since it is a newly formed district. There is one office of Joint Director of Agriculture, six offices of the Assistant Director of Agriculture, 18 agricultural depots, four regulated markets, and five agro- service centers catering to the needs of the farming community in the district.

2.2.2. Demographic Profile

According to 2001 census, the total population of the district was 4, 93,646 of which 2, 46,141 were males and 2,47,505 were females, with a literacy rate of 57.98 per cent (Table 1).

Table 1. Demographic Details of Perambalur District - 2001 Census

(Numbers)

S. No.	Particulars	Total number of persons	Male	Female
1	Total population	4,93,646	2,46,141	2,47,505
2	Literates	2,86,197	1,67,406	1,18,791
3	Literacy rate	57.98	68.01	48.00

The sex ratio is 1007 female for every thousand male with the decennial birth rate at 21.6 per cent and the death rate at 7.7. The density of population in the district per sq. kms is 281 persons as against the state average of 429 persons. There are a total of 15 PHCs in the district of which 17 are additional PHCs, 3 are block and 1 are 24 hour PHCs. The number of primary schools, middle schools, high schools and higher secondary schools are 322, 58, 32, and 32 respectively.

2.2.3 Soils and Topography

The soil is predominantly red loamy and black soil (Table 2). Fine textured soils (Soils with high clay content) account for 16,595 hectares (35.28 per cent). Fine loamy soils with moderate clay content account for 27,187 hectares (7.38 per cent). Coarse loamy open textured soils spread over an area of 1,08,351 hectares (29.35 per cent). Sandy soils with open texture, comes around 63,857 hectares (17.30 per cent).

Table 2. Soil Characteristics of the District

S.No.	Name of the Taluk	Type of Soil	Description of the Soil
1	Kunnam	Kallakudi	Dark grey to very dark brown vary deep fine textured moderating well drained pH upto 8.4
2	Perambalur	Pilamedu	Dark brown to very dark grayish brown deep to very deep, calcareous, moderately alkaline soils pH upto 8.20
3	Veppathattai		

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

Major areas of the district are the plains and the north-western part of the district is the undulated hilly terrain.

2.2.4 Climate and Rainfall

Perambalur district comprises of three major agro-climatic sub-zones. The major part comes under Cauvery delta zone and the other two zones are Northeastern zone and North western zone. The district lies in the southern plateau and Hill zone of agro-climate regional planning with characteristics of semi-arid climate. It is a dry, sub humid coastal plain of Tamil Nadu including Cauvery delta zone with a growing period of 150-180 days and moderately large moisture availability. The total normal rainfall in the district is about 908 mm, little less than the state average of 946.9 mm. Out of the total rainfall, 52 per cent is received during North east monsoon (October to December) and 35 per cent during South west monsoon (June to September) and the remaining 13 per cent during winter and summer months.

The mean annual temperature is above 28^0 c and the difference between the mean summer (April to June) and mean winter temperature (November to February) is less than 5^0 C. The hot months are April, May and June with the maximum temperature ranging from 38^0 C to 40^0 C and the cool months being January and February with the minimum temperature ranging from 20^0 C to 21^0 C. Month-wise rainfall in Perambalur district during the five years period from 2002 to 2006 is given in Table 3.

Table 3. Month-wise Rainfall in Perambalur District

(in mm)

Month	Normal Rainfall	Rainfall during				
		2002	2003	2004	2005	2006
January	16.00	1.96	1.33	0.00	0.00	5.11
February	12.00	70.65	0.00	0.00	0.00	0.00
March	12.00	0.00	12.60	0.00	18.93	31.67
April	24.00	0.00	16.44	6.22	60.99	13.78
May	55.00	73.31	65.04	381.54	109.44	96.11
June	42.00	98.66	54.00	13.27	20.78	22.38
July	48.00	14.17	69.92	33.38	75.00	0.00
August	95.00	26.20	127.35	25.69	72.13	54.18
September	129.00	161.02	72.34	221.19	69.47	139.53
October	172.00	219.69	198.98	308.14	215.38	214.83
November	223.00	30.84	229.96	119.99	468.54	146.79
December	80.00	18.04	11.97	1.42	184.89	18.98
Annual Rainfall	**908.00**	**714.54**	**859.93**	**1110.84**	**1295.55**	**743.36**

Source: Assistant Director of Economics and Statistics, Perambalur

2.2.5 Land-use Pattern and Land Holdings

In this district out of the total geographical area of 1,75,736 hectares, 96,059 hectares (54.66 per cent) constitute the net sown area (Table 4). The other fallow lands

account for 13,846 hectares (7.88 per cent). The lands put to non-agricultural uses occupy 27,484 hectares (15.64 per cent). The cultivable wasteland is to the tune of 5,536 hectares (3.15 per cent). A perusal of land use pattern at district and taluk level shows that Perambalur is an intensive agriculture area with more than 50 per cent of the net sown area at taluks level.

Table 4. Land-use Pattern in Perambalur District

(Area in ha.)

S. No	Particulars	2005-06
1.	Geographical area	1,75,736 (100)
2.	Forests	16,258 (9.25)
3.	Barren & uncultivable land	2,769 (1.58)
4.	Land put to Non-Agricultural uses	27,484 (15.64)
5.	Cultivable waste	5,536 (3.15)
6.	Permanent pastures and grazing lands	156 (0.09)
7.	Miscellaneous trees and groves	1,883 (1.07)
8.	Current fallows	25,440 (14.48)
9.	Other fallow lands	13,846 (7.88)
10.	Net sown area	82,364 (46.86)
11.	Area sown more than once	21,150
12.	Gross cropped area	1,03,514
13.	Cropping intensity	125.68 percent

Source: Assistant Director of Economics and Statistics, Perambalur
Figures in parentheses are the percentages

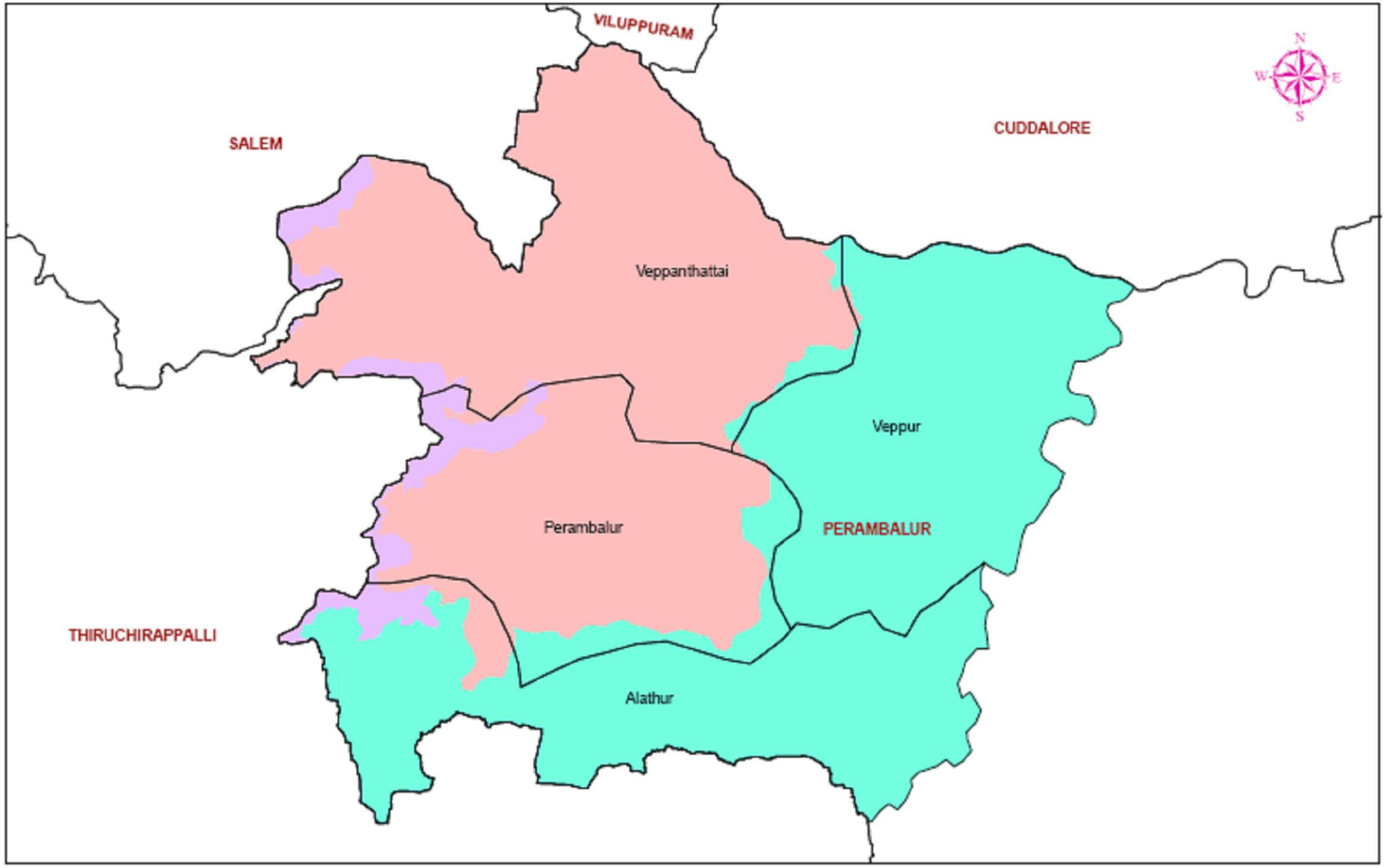
The current fallows and other fallows put together accounts for more than 22 per cent of the geographical area and hence this indicates the scope for waste land development in the district.

Table 5. Perambalur Soils and Area in Hectare

Soil Description	Area (ha)
Deep, fine, mixed, Alfisols	54009.24
Deep, fine, mixed, Inceptisols	53894.63
Very deep, fine loamy, mixed, Inceptisols	38301.55
Deep, fine, montmorillonitic, Vertisols	34739.35
Very deep, fine, montmorillonitic, Vertisols	19341.02
Very deep, fine, kaolinitic, Alfisols	18441.42
Moderately deep, fine, mixed, Alfisols	16760.94
Shallow, clayey skeletal, mixed, Alfisols	10011.91
Shallow, loamy, mixed, Inceptisols	9843.76
Deep, fine loamy, mixed, Inceptisols	9774.35
Deep, fine loamy, mixed, Alfisols	7848.13
Very deep, fine, montmorillonitic, Inceptisols	7071.89
Very deep, fine silty, mixed, Entisols	6424.10
Deep, coarse loamy, mixed, Inceptisols	6002.99
Moderately shallow, clayey skeletal, mixed, Inceptisols	5825.62
Very shallow, loamy, mixed, Entisols	5309.84
Moderately shallow, fine, mixed, Inceptisols	4431.04
Very shallow, loamy skeletal, mixed, Inceptisols	4194.01
Moderately deep, fine, montmorillonitic, Inceptisols	3642.10
Moderately deep, fine loamy, mixed, Alfisols	3590.31
Moderately deep, fine, mixed, Inceptisols	3265.31
Very deep, clayey skeletal, kaolinitic, Alfisols	2937.01
Shallow, loamy skeletal, mixed, Alfisols	2689.55

Soil Description	Area (ha)
Moderately shallow, fine loamy, mixed, Inceptisols	2688.35
Moderately shallow, fine, mixed, Alfisols	2203.99
Deep, sandy, mixed, Entisols	2169.68
Shallow, clayey, mixed, Entisols	1673.59
Very deep, coarse loamy, mixed, Entisols	1140.12
Moderately deep, fine loamy, mixed, Inceptisols	1107.49
Moderately deep, coarse loamy, mixed, Entisols	1021.07
Moderately shallow, loamy skeletal, mixed, Entisols	977.83
Moderately shallow, fine loamy, mixed, Alfisols	758.21
Shallow, clayey, mixed, Inceptisols	743.66
Moderately deep, clayey skeletal, mixed, Alfisols	678.78
Shallow, loamy skeletal, mixed, Inceptisols	576.62
Moderately shallow, fine, montmorillonitic, Inceptisols	509.99
Moderately deep, fine, montmorillonitic, Vertisols	486.24
Deep, very fine, montmorillonitic, Vertisols	449.76
Deep, contrasting particle size, mixed, Inceptisols	440.96
Moderately deep, coarse loamy, mixed, Inceptisols	419.81
Very deep, fine loamy, mixed, Alfisols	287.50
Very deep, coarse loamy, mixed, Inceptisols	237.78
Shallow, clayey skeletal, mixed, Inceptisols	139.35
Very deep, fine loamy, mixed, Ultisols	132.04
Deep, coarse loamy, mixed, Ultisols	16.03
Very deep, fine, mixed, Alfisols	3.85

AGROCLIMATIC ZONES OF PERAMBALUR DISTRICT



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

NORTH EASTERN ZONE

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

NORTH WESTERN ZONE

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

WESTERN ZONE

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

CAUVERY DELTA ZONE

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

SOUTHERN ZONE

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

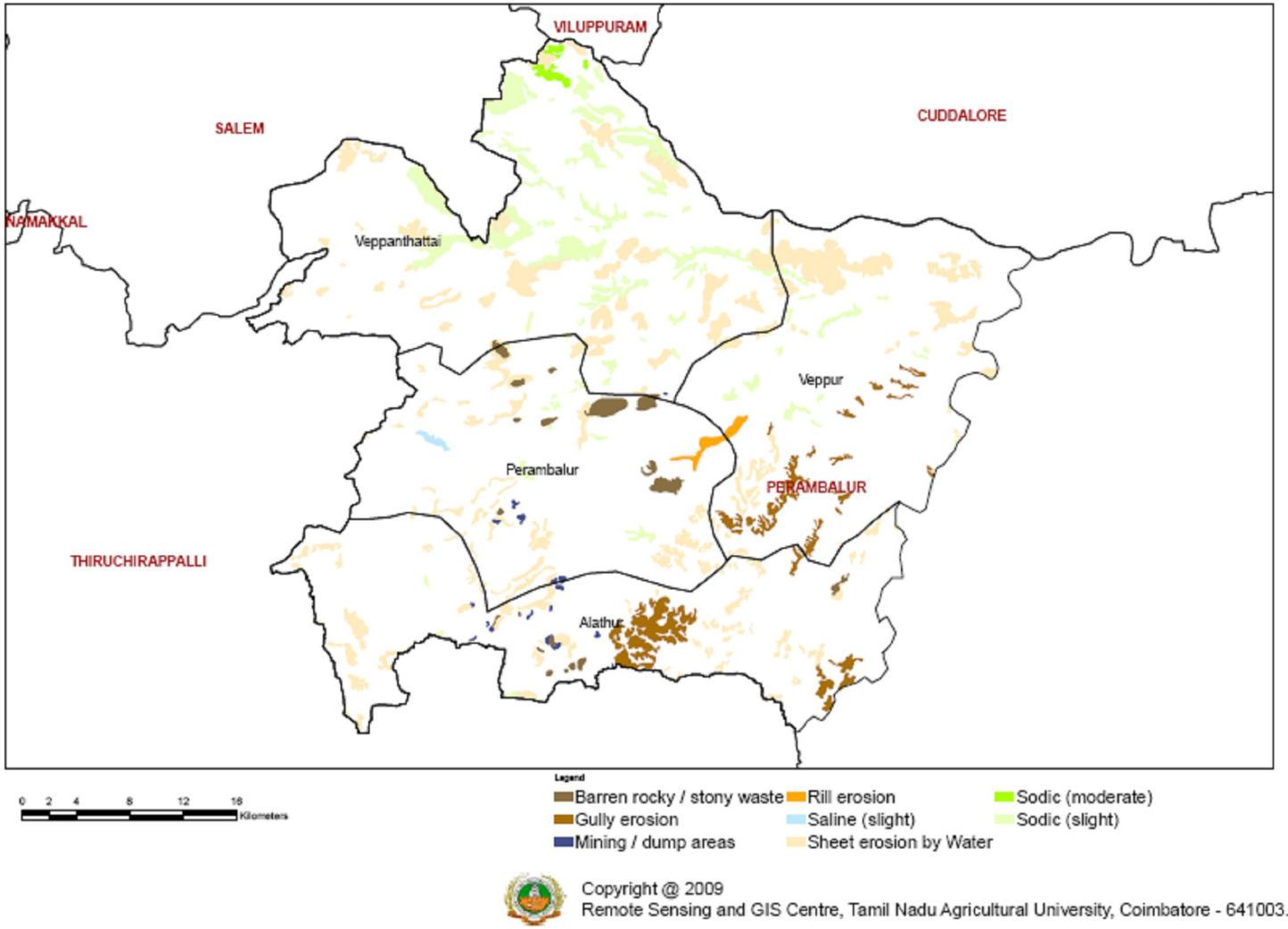
HIGH RAINFALL ZONE

Kanayakumari district.

HIGH ALTITUDE AND HILLY ZONE

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

LAND DEGRADATION MAP OF PERAMBALUR DISTRICT



EXPLANATION OF DIFFERENT LAND DEGRADATION CATEGORIES

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

Water Erosion

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

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

2. Rills

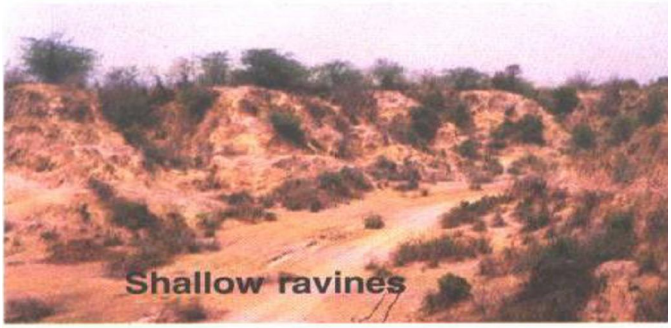
When the surface runoff goes in the form a concentric flow, a tiny water channels are formed in the field. These are small rivulets of such a size that they can be worked over with farm machinery. Rills are generally associated with the cultivated lands and are visible in the ploughed soil after first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

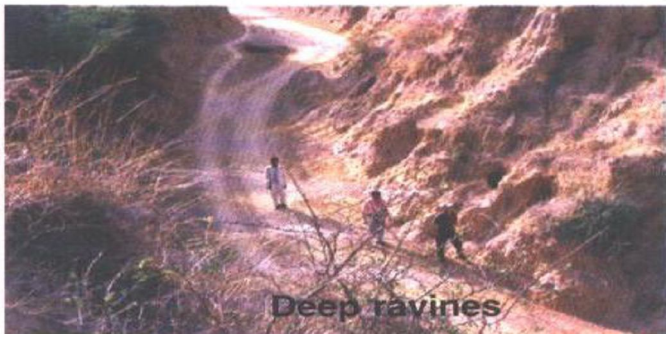
3. Gullies

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

4. Ravines

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





Wind Erosion

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

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

5. Sheet Erosion

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

6. Stabilized Dunes / Partially stabilized Dunes

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

Stabilized sandune

Partially stabilized sanddune

7. Un-stabilized dunes

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

Water logging

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

8. Surface Ponding

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

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

9. Sub-surface Water logging

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

10. Salinization / Alkalization

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

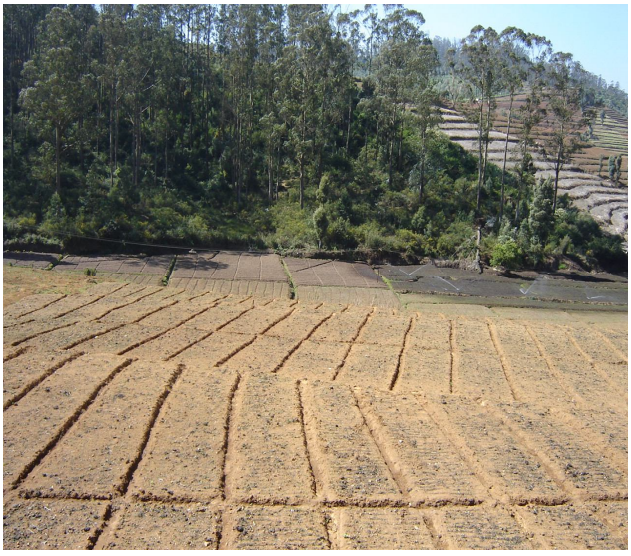
Salinity

Sodic

11. Acidification

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

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



Glacial

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

12. **Frost Heaving**

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

13. **Snow covered areas**

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

Degradation due to anthropogenic factors

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

14. **Industrial effluent affected areas**

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

15. **Mining and dump areas**

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

16. **Brick kiln areas**

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

Others

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

***17.* Mass movement/ Mass wastage**

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

***18.* Barren rocky / stony areas**

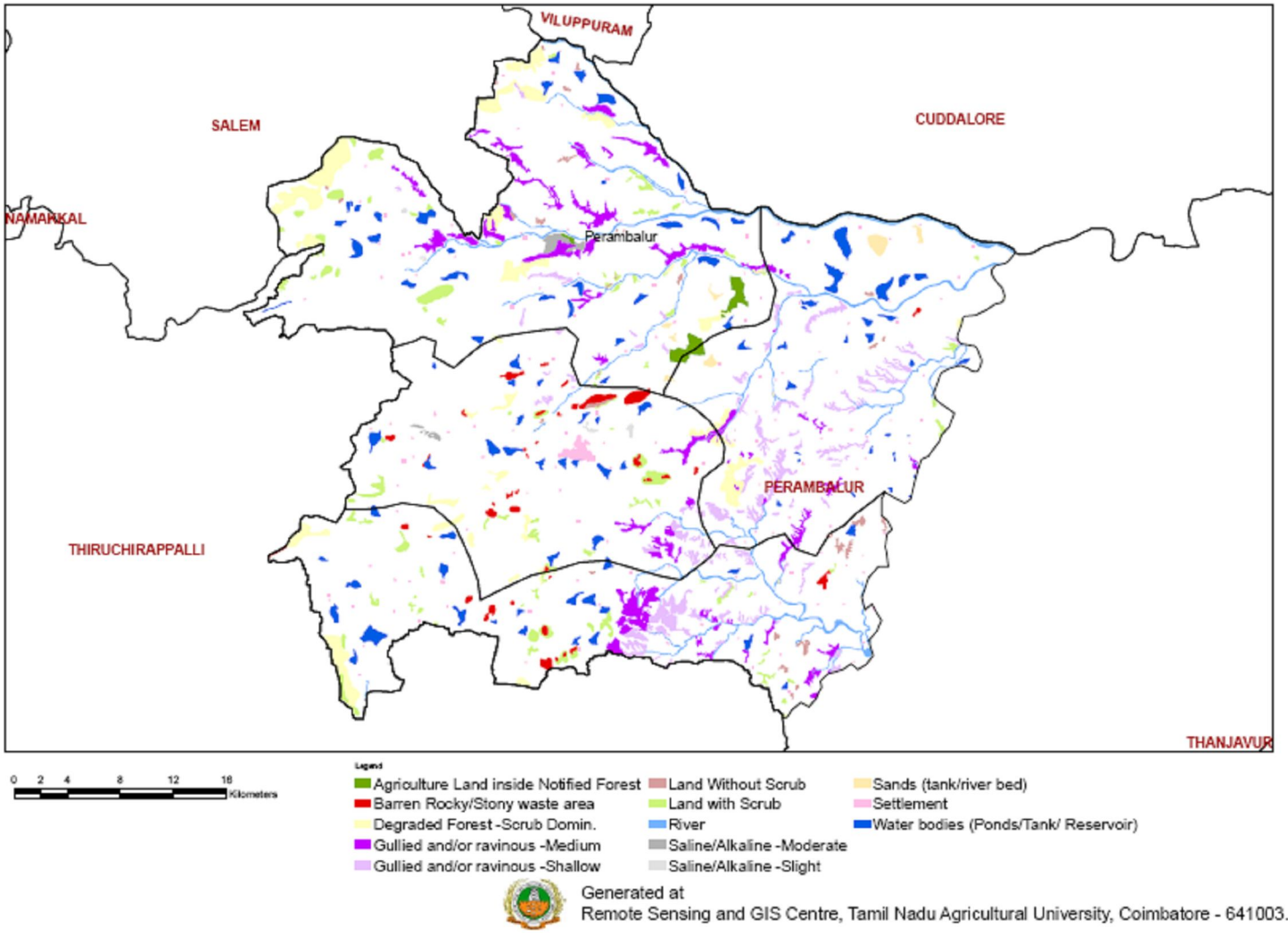
Barren / rocky / stony areas are the rock exposures of varying lithology often barren and devoid of soil and vegetal cover. They occur in hill forests as openings or as isolated exposures on plateau and plains. These can be easily delineated from other type of degraded land because of their severe nature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

19. Miscellaneous

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

Sea Ingress areas

WASTELAND MAP OF PERAMBALUR DISTRICT



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

WASTELAND CLASSIFICATION

Culturable Wastelands

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

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

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

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

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

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

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

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

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

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

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

Unculturable Wastelands

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

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

2.2.6 Crop Activities

The district is benefited from monsoon rains and most of the crops are cultivated as rainfed crop and part of the district is got irrigated by Vellar, Kallar and Coleroon rivers as well as non – system tanks. Groundwater is an important source of irrigation during non-river water season in the command areas as well as in areas outside the command areas. Given the variety of soil types and irrigation sources, a number of crops are cultivated and the pattern of crop diversification is well-suited to minimize the risks in agricultural production, given the rainfall pattern in the district. The cropping pattern of the district is given below:

The cropping pattern and area under different crops of Perambalur district is given in Tables 6 & 7. Major crops in this district are rice, groundnut, cashew and sorghum. Other major crops include cotton and sugarcane. In uplands, millets like sorghum, pearl millet, finger millet and oilseeds such as groundnut and gingelly are grown both under irrigated and rainfed conditions. Pulses like black gram, green gram and red gram are grown in rice fallow. Cotton is grown in both irrigated and rainfed conditions and the area is mainly distributed in Veppanthattai, Kunnam and Perambalur taluks. Onion is grown in irrigated conditions and its area is distributed mostly in Perambalur and Kunnam taluks. Coriander and chilly crops are cultivated in large areas in Perambalur taluk.

Table 6. Cropping Pattern of the Perambalur District

Crops	Seasons	Months
	Kuruvai	Jun-Oct
	Thaladi	Sep-Feb
Rice	Samba	Aug-Feb
Rice	Samba	Sep-Feb
Cotton	Kharif	Sep-Mar
Sugarcane	Kharif / Rabi	Jan-Dec
Sorghum	Rabi	Jan-Dec
Sorghum	Kharif	Sep-Jan

Table 6. Contd…

Crops	Seasons	Months
Groundnut	Rabi	Nov-Mar
Groundnut	Kharif	Sep-Dec
Blackgram	Rabi	Jan-Mar
Greengram	Rabi	Jan-Mar

Source : G-Return – 2006-07, Office of the Assistant Director of Statistics, Perambalur.

Table 7. Area under Crops in Perambalur District

(in hectares)

S. No	Particulars of crops	2006-2007	
		Gross cropped area	Irrigated area
1	Paddy	16833	16812
2	Sorghum	5057	4
3	Bajra	164	124
4	Maize	47545	369
5	Other cereals	644	6
6	Total cereals	70243	17315
7	Pulses	502	13
8	Condiments & species	2405	910
9	Sugar cane	6339	6339
10	Fruits & Vegetables	12974	9560
11	Total food crops	92468	37343
12	Gingelly	269	210
13	Groundnut	4293	1272
14	Other oil seeds	1047	762
15	Total oilseeds	5654	2247
16	Cotton	3892	9
17	Fodder crops	1193	101
18	Other crops	313	116
19	Total non-food crops	11046	2473
20	Gross cropped area	103514	39816
21	Area sown more than once	21150	11418
22	Net sown area	82364	28398

Source : G-Return – 2006-07, Office of the Assistant Director of Statistics, Perambalur.

In the existing cropping pattern, farmers utilize more water for paddy due to usage of more water the tank water is fully exhausted within 3-4 months period if rainfall is normal. Along with the existing cropping pattern the proposed alternative cropping pattern has also been suggested in Table 8.

Table 8. Existing Cropping Pattern and Proposed Cropping Pattern

S.No	Name of the Taluk	Existing Cropping Pattern	Proposed Cropping Pattern
1	Perambalur	Paddy – Cholam / Millets / Groundnut	Onion – Paddy Maize / Sunflower
2	Kunnam	Paddy – Groundnut / Maize crops – Sugar cane / Pulses	Paddy – Maize Sunflower / Pulses Horticultural crops
3	Veppanthattai	Paddy – Groundnut / Millet- Sugar cane	Paddy – Groundnut / Maize crops

This proposed change in cropping pattern is mainly recommended for more crops per drop of water (otherwise more productivity of crops through less water consuming crops).

2.2.7 Livestock Activities in the District

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

Dairy farming in Perambalur district rural and towns are sustainable livestock micro enterprise as it provides income of about Rs.1700 on an average per milch animal per month. Many farmers started cultivating perennial fodder such as Co 3, Guinea grass, desmanthus, etc. Govt. financial institutions encourage loan for dairy farms as the repayment is highly satisfactory. About 1.15 lakh litres of cattle milk is procured by Aavin and about 3 lakh litres by private entrepreneurs and vendors daily. Crossbred Jersey / Holstein Friesian, Upgraded Zebu / Murrah are reared.

There are so many milch breeds available throughout the district. The district is making progress in the field of Animal Husbandry; particularly the Tamil Nadu Milk Producers' Union has a milk collection center and processing plant at Perambalur from where milk is transported to different parts of the State every day.

There is limited expansion of poultry activity of broiler farms taking place in the district. It tends to occupy the major animal husbandry activity in the district in the coming years.

Animal Population (Census – 2003)

a. Plough Animals	:	46,089
b. Dairy Animals		
i. Cattle	:	1,21,150
ii. Buffaloes	:	18,039
c. Sheep	:	57,259
d. Goat	:	1,53,402
e. Poultry (Layers)	:	1,48,656

Population (2004)

White Cattle	:	322222
Buffalo	:	20011

Production (mean) Livestock Commodity

(Normal Production – 2004-05 to 2006-07)

Cow milk	:	135210 ton
Buffalo milk	:	21540 ton

Growth Rate of Production in per cent (1998 to 2007)

1.	Cow milk	:	12.10
2.	Buffalo milk	:	-7.79
3.	Total milk	:	3.91
4.	Desi egg	:	-2.76
5.	Improved egg	:	-9.08
6.	Total egg	:	-1.47
7.	Total meat	:	-1.31

Productivity (per animal / bird) (1998-99 to 2006-07)

(Annual Compound Growth Rate in per cent)

Indigenous cow	:	1.35
Crossbred cow	:	1.47
Buffalo	:	- 3.40
Desi Egg	:	22.95
Improved Egg	:	5.49

Feed Availability

Mostly grazing / fed with greens, dry fodder, oil cakes, bran, cotton seed, maize stalk.

Demand and Supply of Fodder (2004) million ton per year

	Demand	**Supply**	**Deficit**	**Deficit per cent**
Green fodder	2.5098	0.294	2.216	88.3
Dry fodder	0.963	1.250	0.287	29.9

Sheep and Goat

- Population : Sheep : 131034
  Goat : 412355

- Breeds : Tiruchy black, Mecheri, Keezakkarisal, Ramanathapuram white, vembur and crosses of sheep and in Goat, Kanni aadu, kodi aadu, Salem black, and crosses

- Production (Normal) (2004-05 to 2006-07)
  Mutton : 15.18 Tonnes
  Chevon : 187.82 Tonnes

- Productivity : Increasing trend both in sheep and goat every year
- Growth rate : Sheep >5 percent Goat >25 percent during the past decade
- Feed availability : Only grazing, migratory towards harvesting areas
- Fodder availability : **Deficit per cent**
  - Green fodder : 88.3
  - Dry fodder : +29.9

2.2.8 Fisheries

- Inland Water Bodies – 363 Nos. (2655 ha)
- Long seasonal tank – 1;
- Short seasonal tanks - 362
- Total fishermen population - 2048
- Present production - 856 tonnes against potential of 2190 tonnes
- Present fingerling production - 12.65 lakhs against requirement of 39.05 lakhs

2.2.9 Irrigation and Ground Water

Irrigation

Vellar is the important river flowing in Perambalur district and substantially benefiting agricultural activities. Vellar river rises from Salem district and forms the boundary between Perambalur and Cuddalore districts. Kallar River is flowing in Udaiyarpalayam taluk. Coleroon river is flowing through some parts of Ariyalur and Udaiyarpalayam taluks. Apart from river irrigation, rainfed tanks are scattered all over Perambalur district benefiting considerable extent of cultivated lands.

Beside rivers and tanks, the other main source of irrigation is wells. The taluk wise sources of irrigation and area irrigated by different sources are furnished in Table 9. In this district, Vellar is the important river flowing and substantially benefiting agricultural activities. Perambalur and parts of Veppanthattai fall in Swedhanadhi minor basin. The district has a canal system measuring a length of 3 kilo meters and tanks numbering 252 with 40 tanks coming under PWD control catering to an irrigated command area of 11610 hectares and 8741 hectares respectively. As per the latest data, the district has 36872 wells covering an irrigation command area of 29139 ha. The ground water resources utilized through tube wells and open wells contribute for nearly 68 per cent of irrigated area. The net sown area and net area irrigated in the district are 2,16,422 ha and 71,624 ha respectively.

Table 9. Sources of Irrigation in Perambalur District

S.No.	Taluk	Source of Irrigation		
		Tanks (Numbers)	Wells (Numbers)	Canal length (in Kilo metres)
1	Kunnam	131	14, 270	3
2	Perambalur	20	9, 687	--
3	Veppanthattai	101	12, 915	--
Total		**252**	**36, 872**	**3**

Source**:** G - Return Reports, Assistant Director of Economics and Statistics, Perambalur District, Perambalur.

The source-wise area irrigated details with reference to Perambalur district for furnished below, in Table 10.

Table 10. Source-wise Area Irrigated in Perambalur District

S.No.	Source of Irrigation	Area in Ha
1	Tube wells	18976 (25.18)
2	Filter point Tube wells	3772 (5.01)
3	Bore wells	14 (0.02)
4	Open Wells	25759 (34.19)
5	Tanks (Ayacut above 50 Ha)	7123 (9.45)
6	Tanks (Ayacut below 50 Ha)	7939 (10.54)
7	Canals	11764 (15.61)
	Total	**75347 (100.00)**

Figures in the parentheses indicate percentage to total irrigated area.

Source: G-Return -Office of the Assistant Director, Department of Statistics, Peramablur.

The major sources of irrigation in the district are open and tube wells served by groundwater source. Tanks and other source of irrigation contribute remaining percent of the total irrigated area in the district. Different types of well irrigations are accounted for about 64 percent of the total irrigated area followed by tanks and canals, which are accounted for about 20 percent and 15.60 percent respectively.

2.2.10 Infrastructure

The important categories of roads in Perambalur district are given in Table 11. Perambalur district is well connected with a network of roads and to some extent railways. The total length of roads in this district is 1397 km with metalled and non-metalled roads. The district is served by broad gauge railway line to a total length of 42 kms with 4 railway stations.

Table 11. Different Categories of Roads and their Lengths in Perambalur District

S. No.	Category	Total length (km)
1	National highways (NH 7)	41.02
2	State highways	133.20
3	Major district roads	187.80
4	Other district roads	1136.39
5	Panchayat union roads	1508.90
6	Village panchayat roads	777.40
	Total	**3784.71**

2.3 Development Vision and Strategy

The district is fairly developing in terms of both agriculture and industries after recent announcement by the state government on creation of Government sponsored Special Economic Zone (SEZ) near Perambalur. The district ranks poor position in rice productivity and did not have the developed market for maize and cotton which are an important commercial crops in the rainfed areas of the district. Wet lands are mostly concentrated in the central and southern parts of the district, with potential for rice cultivation.

Vision

To uplift the level of living of the farming community through the generation of additional income and employment by the application of science and technologies in agriculture and allied sectors.

Strategy

The main focus areas of agricultural development in the district are:

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

CHAPTER - III

SWOT ANALYSIS OF THE DISTRICT

3.1 Introduction

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

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

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

Strengths	The farmers in the district are very progressive and innovative in adopting modern technologies and crop varieties. District has potential and favorable agro-climate conditions for cultivation of Rice, Maize, Cotton, Pulses, Cashew and all other dry land crops. The district has both surface and groundwater potential for cultivation of irrigated crops. This is borne out by the fact the district is one of the leading and prominently dry land agricultural districts in the state in terms of productivity of many dry land crops such as maize, cotton, pulses, coriander and also some of the irrigated crops like small onion and vegetables. Major area of the district has black cotton soil which is highly favorable for the cultivation of maize and cotton under rainfed condition particularly during north eastern monsoon season. Even in crops where the productivity is low it is mainly due to the erratic behaviour of the monsoon, poor soils and inadequate irrigation facilities. In terms of rural infrastructure Perambalur district is not well developed as compared to the other districts in the state. The district has a good local market for its agricultural commodities especially fruits and vegetable since it is located on the National Highways connecting Chennai and Tiruchirapalli.
Weaknesses	Agriculture in the district depends on monsoon rains; hence probability of success is limited. The plains in the district receive an annual average rainfall of 900 to 950 mm which mainly occurs during south west and northeast monsoon seasons. Therefore, successful crop production

	depends heavily on the success / failure of monsoon thus making agricultural production riskier in many parts of the district. Approximately 30 per cent of the land area is undulated terrain, which favours water logging conditions in some pockets during monsoon periods. Limited availability of surface and groundwater is a major weakness plaguing the agricultural development in this district. Majority of the lands are fragmented. Increasing scarcity of labour due to sharp increase in migration from rural to urban areas is responsible for higher wage rates for agricultural labour which forces farmers to shift towards perennial crops such as coconut and other tree crops. Agricultural lands of the district are highly prone to the soil erosion due to undulated topographical reasons. Particularly in the southern parts of the district, the soils are poor in drainage and water logging; which result in deficiency of nutrients and organic matter content and hence characterized by low agricultural productivity. The area under rainfed crops in the district has been increasing over the years due to increasing scarcity of labour and stagnation in yield and profitability of crops. The area under traditional rainfed crops such as cotton and pulses, has declined over a period of time. Another problem in the agricultural front is the lack of agri-horti processing industries in the district. Most villages in the district are still lack of connective roads which is the foremost important for easy transportation of agricultural produces.
Opportunities	In view of the progressive nature of the farmers and their willingness to learn new techniques and take risks there are ample opportunities to promote new crop varieties and new technologies such as precision farming, System of Rice Intensification. There are lots of opportunities to introduce water-saving technologies in irrigated agricultural systems in view of the huge seepage loss of water during flood irrigation of the fields. There is also scope for introducing water-saving technologies at farm level especially for high water-intensive crops such as paddy, sugarcane, banana and vegetable crops. Further expansion of area under maize and cotton and horticultural crops is possible through implementation of water-saving technologies. Dryland agriculture has a good potential in this district by appropriate combination of field crops, tree crops and livestock enterprises. Institutions such as KVK, agricultural research station, banking institutions, agricultural inputs stores, farm machineries and state agricultural marketing institutions, extension functionaries for agriculture, horticulture, animal husbandry, fisheries, agricultural Engineering etc., are available for the development of the farming community. The SEZ (Special Economic Zone) proposed to be established at Perambalur will favour the over all socio-economic development of the district.

Threats	Increasing scarcity of water and labour in many parts of the district is a major threat to expansion of irrigated agricultural production. Slow implementation / progress of Government sponsored schemes for the development of water harvesting structures to harness the season rain water is another threat for sustaining irrigated agriculture in the district. Further, threats from fast urbanization and acquiring of lands for Special Economic Zones (SEZs) near Perambalur likely to become major constraints not only for increasing agricultural productivity but also for sustaining the productivity levels already reached. Lack of scientific knowledge adoption among farmers on soil health management particularly in cotton and maize cultivation in dry land areas and declining productivity of major crops needs improved farming are other foremost threats on agriculture in the district.

3.3 SWOT Analysis in Animal Husbandry Sector

Dairy Farming

Strengths

- Growing demand for milk and daily / weekly income / easy maintenance
- Procurement of milk by Govt. / Private entrepreneurs / vendors
- Conducive atmosphere for dairy farming / Loan facilities / hide export potential
- Availability of huge quantity of crop residues (mainly Maize, cotton, onion)
- Dung for organic farming, others products for panchakavya

Weaknesses

- Reluctance to grow fodder as it is uneconomical
- Insufficient veterinary institutions (required – 72, available – 35, deficit – 37)
- Low milk price offered by milk men and vendors
- Reluctance in technology adoption for increased milk production, augmenting fertility, deworming and required vaccination and reluctance to produce clean milk
- Non availability of A.I. service in time and also door to door

Opportunities

- More loan facilities with a condition to grow fodder (at least 10 cents/cow)
- Supplementing micronutrients to augment fertility
- Establishing village fodder nurseries to cater the need of fodder seeds, saplings, root slips etc. to the farmers to grow fodder
- Chaff cutter to improve nutrient utilization and minimize wastage
- Knowledge and technology empowerment of farmers / rural women (SHGs) on scientific dairy farming to increase milk production, to augment fertility, to produce clean milk and preparation/marketing of value added milk products wherever possible
- Sensitizing farmers on Ethno Veterinary Medicine and Practice as primary health care of livestock to save time, energy and money and it is eco-friendly
- Registration / updating farmers database and issuing Cards for incentives for growing fodder, tree fodder, micro nutrients, preference for farmers tour, etc.
- Establishing crop residue processing / rendering plant to supply for livestock

Threats

- Diminishing pasture land , deficit of green fodder is 88.3 per cent.
- Diminishing indigenous germplasm
- Increasing cost of dairy feed ingredients / shortage of labour due to higher labour cost
- Diseases such as Anthrax, HS, BQ, FMD often demoralize the farmers
- Mastitis and lack of will to produce clean milk

Small Ruminants (Sheep and Goat Farming)

Strengths

- Consumers most preference, growing demand, higher cost
- Easy flock management and very easy market
- Rural women is interested in goat rearing
- Availability of huge quantity of crop residues (mainly Maize, cotton, onion)
- Dung for organic farming, hide export

Weaknesses

- Reluctance to grow fodder as it is uneconomical
- Insufficient veterinary institutions (required – 72, available – 35, deficit – 37)
- Reluctance in technology adoption for health cover, augmenting fertility, deworming and required vaccination
- Improper / insufficient shelter leads to low productivity, disease problems
- Very poor slaughter hygiene, unauthorised slaughter
- Local ban on goat rearing, ban on foraging in forest
- Labour shortage , malpractices in trade

Opportunities

- More loan facilities with a condition to grow fodder (at least 10 cents/5 sheep/goat)
- Cultivation of fodder, tree fodder, agro forestry in private/community lands/wastelands with livestock integration to boost income and improve soil fertility
- Supplementing micronutrients / grains/concentrates to augment fertility, production
- Establishing village fodder nurseries to cater the need of fodder seeds, saplings, root slips etc. to the farmers to grow fodder and tree fodder
- Chaff cutter to improve nutrient utilization and minimize wastage
- Knowledge and technology empowerment of farmers / rural women (SHG) on scientific dairy farming to increase milk production, to augment fertility, to produce clean milk and preparation and marketing of value added milk products wherever possible
- Sensitizing Veterinarians and farmers on Ethno Veterinary Medicine and Practice as primary health care of livestock to save time, energy and money and it is eco-friendly
- Registration / updating farmers database and issuing Cards for incentives for growing fodder, tree fodder, micro nutrients, preference for farmers tour, etc.
- Distribution of elite rams / bucks to registered flock owners/rural women SHG
- Establishing crop residue processing / rendering plant to supply for livestock

Threats

- Diminishing pasture land , deficit of green fodder is 89.9 per cent, tree fodder
- Diminishing indigenous germplasm / unhygienic slaughter / poor shelter
- Shortage of labour due to higher labour cost
- Diseases such as Anthrax, HS,BT, sheep pox and ET, PPR demoralize the farmers

Poultry

- Population : 262330
- Breeds : Desi chicken
- Production : Improved egg in lakh : 56.52
  Desi eggs in lakh : 97.9
- Productivity (1998-99 to 2006-07) (Annual Compound Growth Rate in per cent)
- Desi egg : 22.95
- Improved egg : 5.49
- Growth rate : Declining due to heavy fluctuation in market price of eggs / meat
- Feed : only foraging for backyard poultry
- Some women, farmers rear turkeys, guinea fowls
- Ducks are nomadic and brought here for foraging soon after harvest.

SWOC Analysis - Poultry Farming

Strengths

- Growing demand for desi chicken, eggs, other poultry, products
- Premium price for desi chicken and desi eggs/Encouraging loan facilities
- TANUVAS rural women friendly technologies on low cost/high return desi chicken production, rearing and marketing
- Poultry droppings for bio gas / vermin-compost / organic farming

Weaknesses

- Reluctance to feed with nutrient rich feed, sufficient grains, etc.
- Insufficient veterinary institutions (required – 72, available – 37, deficit – 35) to cover immunization to prevent Ranikhet disease
- Reluctance in immunizing the birds due to laziness and a few number of birds

Opportunities

- Supplementing feed/grains/micronutrients to increase production of birds/eggs
- Encouraging rural women on turkey farming with inputs supply for breeding
- Establishing custom hatching units in rural women households to energise rural women economy through desi chicken production, rearing and marketing
- Knowledge and technology empowerment of farmers / rural women (SHGs) on TANUVAS rural rural women technologies on poultry production/revenue generation
- Registration / updating farmers database and issuing Cards for incentives for grains/concentrates/immunization cover and preference for tour, etc.

Threats

- Diminishing indigenous germplasm /Heavy fluctuation in broiler chicken / farm egg rate
- Unhygienic slaughter of birds
- Lack of bio-security and spread of rumours

SWOC Analysis - Others

Strengths

- TANUVAS rural women friendly technologies on poultry development through low cost/high return poultry production, rearing and marketing
- Interest of some consumers to taste other poultry meat

Weaknesses

- Reluctance to consume other bird meat /eggs
- Reluctance in immunizing the birds due to laziness and a few number of birds

Opportunities

- Supplementing feed/grains/micronutrients to increase production of birds/eggs
- Registration / updating farmers database and issuing Cards for incentives for feed/immunization cover and preference for tour, etc.
- Empowering rural women on turkey farming by supplying some inputs for breeding

Threats

- Seasonal marketing /Unhygienic slaughter/spread of rumours.

3.4 Fisheries

Strengths

- ❖ Inland Water Bodies – 363 Nos. (2655 ha)
- ❖ Long seasonal tank – 1;
- ❖ Short seasonal tanks - 362
- ❖ Total fishermen population - 2048
- ❖ Present production - 856 tonnes against potential of 2190 tonnes
- ❖ Present fingerling production - 12.65 lakhs against requirement of 39.05 lakhs

Weaknesses

- ❖ No Government fish seed farms in the district. Fish seed production is being undertaken by private in a small scale. No self sufficiency in fish seed production.
- ❖ Poor awareness on fish culture.

Opportunities

- ❖ Desilting of existing tanks can improve the water holding capacity Fish culture in dug out ponds and seasonal tanks

Threats

- ❖ Limited water source is a challenge for starting any aquaculture practice in this district.

3.5 Accommodating SWOT – Addressing Issues Emerging out of the Analysis

In view of the high productivity achieved in some crops such as paddy, cotton, bajra, maize, pulses, small onion (aggregate onion) and other major vegetables, sustaining the growth rate and further increase in productivity are possible only by continued modernization of production techniques and introduction of latest crop varieties. As labour and water are the two basic resources which are increasingly becoming scarce in the district, there is a need for introducing labour-saving and water-saving technologies. These requirements are adequately addressed in the proposed district plan. The productivity enhancement techniques such as production and distribution of quality seeds, popularization of SRI technique in paddy, hybrid rice cultivation, soil health improvement, and technology demonstration in rice and most of the other crops, as well as distribution of hybrid seeds in major crops are some of the strategies proposed to address the issue of enhancing productivity in the district. Strengthening extension activities will also be given top priority through technology demonstration, production of short films on modern technologies, farmers' training and study tours within and outside the state, strengthening Farmers' Interest Groups etc. Marketing is one of the most neglected aspects of agricultural modernization strategies. Therefore, the District Agricultural Plan for Perambalur district envisages modernization of agricultural marketing infrastructure in the district by strengthening rural shandies along with regional markets, dissemination of market intelligence, commodity group formation.

3.6 Sectoral / Regional Growth Drivers of the District

Agro-processing industries especially maize processing and cotton textiles have significant potential for further expansion in the district which is ideally placed in terms of agro-climatic conditions, raw material availability and skilled manpower supply. Further intensification of natural grazing systems is an important strategy to increase the productive potential of dry lands areas of the district. Milk and meat production could be further increased with adequate support in the form of popularization of new breeds of milch animals and sheep and goats, increased emphasis on fodder production, and increasing veterinary infrastructure. In the eastern, northern, western and southern parts

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

3.7 Composite Index of Agricultural Development of Perambalur District

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

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

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

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

The data base for the current study on Perambalur district is taken from various government publications like Season and Crops Report and Economic Appraisal of Tamil Nadu for the 4 periods 1990-91, 1995-96, 2000-01 and 2005-06. In all, 25 indicators of agricultural development as given in Table 10 were used for estimating the composite index of development for the district. The 25 indicators were grouped into 6 different 'components': i) Crop-Area-Variables (10) ii) Irrigation (7) iii) Livestock (3) iv) Fisheries (1) v) Fertilizer (3) and vi) Cultivators-Labourers (2).

The analysis showed that Perambalur district which was classified as 'very backward' in agricultural development during 90-91 and 2000-01 and was classified as 'backward' during 1995-96 and 2005-06. In terms of overall agricultural development, its rank among the 29 districts of Tamil Nadu varied from 20 to 24 during the 1990-91 to 2005-06. As far as the individual components of agricultural development are concerned, its ranks in the above periods are summarized in the following Table 12. The table shows that except in livestock, in all other components its performance in the period of study is not satisfactory. For example, in crop area variables also occupied ranks between 20th and 26th ranks and irrigation variables also varies between 23rd and 27th ranks. Similarly in livestock ranks are between 19th and 20th in all the four periods.

Table 12. Selected Indicators of Agricultural Development for Perambalur District

Component	Indicators	No. of Indicators
Crop-Area-Variables	Cropping Intensity	10
	Per cent of Gross Cropped Area to Total geographical area	
	Per cent Share of food grains to Gross Cropped Area	
	Per cent Share of food crops to Gross Cropped Area	
	Per cent Share of non food crops to Gross Cropped Area	
	Per cent Share of cultivable waste to total geographical area	
	Per cent Area under High Yielding Variety-Paddy	
	Per cent Area under High Yielding Variety-Cholam	
	Per cent Area under High Yielding Variety-Cumbu	
	Per cent Area under High Yielding Variety-Ragi	
Irrigation	Irrigation Intensity	7
	Per cent of Gross Irrigated Area to Gross Cropped Area	
	Per cent of Net Irrigated Area to net area sown	
	Per cent Area under Canal Irrigation to Gross Irrigated Area	
	Per cent Area under Tank Irrigation to Gross Irrigated Area	
	Per cent Area under Well Irrigation to Gross Irrigated Area	
	Per cent Area under other sources Irrigation to Gross Irrigated Area	
Livestock	Milk production (lakh tons)	2
	Egg production (lakhs)	
Fisheries	Inland + Marine fish production in tons	1
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	Per cent of Cultivators to total population	2
	Per cent of Agri.labourers to total workers	
	Total	25

Table 13. Rank of Perambalur District in Terms of Agricultural Development among other Districts of Tamil Nadu during 1990-91 to 2005-06

Component of Composite Index		Crop Area Variables	Irrigation	Livestock	Fisheries	Fertilizer	Cultivators-abourers	Overall
Period	1990-91	26	27	20	-	-	9	26
	1995-96	25	23	19	23	17	9	20
	2000-01	25	27	19	16	24	15	26
	2005-06	20	26	19	23	26	10	24

CHAPTER - IV

DEVELOPMENT OF AGRICULTURAL SECTOR

4.1 Introduction

The district, for administrative purpose, has been divided into three taluks (Perambalur, Veppanthattai and Kunnam) which is further sub-divided into four blocks *viz.* Perambalur, Veppanthattai, Veppur and Alathur). Vellar is the important river flowing in Perambalur district and substantially benefiting agricultural activities. Vellar river rises from Salem district and forms the boundary between Perambalur and Cuddalore districts. Kallar river is flowing in Udaiyarpalayam taluk. Coleroon river is flowing through some parts of Ariyalur and Udaiyarpalayam taluks. Apart from river irrigation, rainfed tanks are scattered all over Perambalur district benefiting considerable extent of cultivated lands.

4.2 Development Issues

4.2.1 Soil Health

In this district 88,250 hectares (23.91 per cent) of land area are with good productivity groupings soil, and 29,566 hectares (8.01 per cent) with poor productivity soil out of the total extent of 3,69,137 hectares. The poor soils are to be reclaimed for higher productivity.

The problem soils *viz.* saline and alkaline, are spotted on certain pockets of the district. To reclaim these problem soils, adequate technologies are to be popularized among the farmers.

4.2.2 Land Use Pattern

From the table given in the earlier chapter it could be seen that there is a potential for land reclamation and wasteland development in the district.

4.2.3 Irrigation Pattern in Perambalur District

Vellar is the important river, benefiting agricultural activities in Perambalur and Veppanthattai taluks. Apart from river irrigation, rainfed tanks scattered all over Perambalur district benefit considerable extent of lands. Besides river and tanks, well is the important source of irrigation. The desilting of canals and tanks are the major activities required for improving the irrigation system in the district. Well irrigation may also the encouraged in the potential areas.

4.2.4 Major Crops and Varieties in the District

The details of major crops and varieties are given in Table 14. Most of the cereal crop varieties cultivated in the district are those released by TNAU, whereas in crops such as sunflower, maize, vegetables private varieties dominate. Bt cotton is slowly gaining foothold in this district albeit in a small area. Sunflower, maize and tapioca are relatively newer crops to the district and the areas under these crops are increasing faster due to their low cost of cultivation and less labour requirement.

Table 14. Area under Crops in the District

(Area in hectares)

S. No	Crops	Total area	Irrigated	Un-irrigated	Varieties
1	Paddy	16833	16812	21	ADT 36, ASD 16, ASD 8, ADT 43, ADT 39. Co 43, IR 20, White Ponni and Bhavani
2	Sorghum	5057	4	5053	BSR 1 and APK 1
3	Bajra	164	124	40	
4	Maize	47545	369	47176	CO 1 Co Hm 4, Kargil and number of private varieties
5	Other cereals	644	6	638	
6	Total cereals	70243	17315	52928	

Table 14. Contd….. **(Area in hectares)**

S. No	Crops	Total area	Irrigated	Un-irrigated	Varieties
7	Pulses	502	13	489	
8	Condiments & species	2405	910	1495	
9	Sugar cane	6339	6339	0	
10	Fruits & Vegetables	12974	9560	3414	Private varieties
11	Total food crops	92468	37343	55125	
12	Gingelly	269	210	59	
13	Groundnut	4293	1272	3021	TMV 7, VRI 2, VRI 3
14	Other oil seeds	1047	762	285	
15	Total oilseeds	5654	2247	3407	
16	Cotton	3892	9	3883	Private varieties
17	Fodder crops	1193	101	1092	
18	Other crops	313	116	197	

G-Return – 2006-07, Office of the Assistant Director of Statistics, Perambalur.

4.2.5 Input Management

The details on fertilizer consumption in the district during the years 2002-03, 2003-04 and 2004-05 are given in Table 15. The share of fertilizer consumption in Perambalur district to total fertilizer consumption in the state is hovering around five percent which is almost on par with the share of gross cropped area in the district to that of the state. The fertilizer consumption per ha in the district was lowest among the districts as well as state level during the year 2003-04, whereas the fertilizer consumption per ha of gross cropped area in the district was very below the state level fertilizer consumption per ha during the year 2004-05.

Table 15. Consumption of Nitrogen, Phosphorus and Potassium

(in lakh tones)

Sl. No.	District	2002-03			2003-04			2004-05		
		N	P	K	N	P	K	N	P	K
1.	Perambalur	0.07	0.03	0.02	0.08	0.04	0.02	0.09	0.05	0.02

Source: Agristat, 2006

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

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 Tamil Nadu 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 in Perambalur 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 could be analyzed in the least possible time, so that seed quality control work and the need of the seed industry are effectively met.

4.2.6 Farm Mechanisation / Farm Equipments

The district has more than 1.25 lakh energized pumpsets out of the total number of about 17.70 million pumpsets in the state as a whole. Yet the exists scope for mechanization agriculture have a large scale.

4.3 Special Projects / Programmes On-going in the District

The details of special project / programmes ongoing in the district are given in Tables 16 and 17.

Table 16. Details of Special Agricultural Projects / Programmes Ongoing in the District

(Lakh Rs.)

S. No	Schemes	2007-08	
		Target	Achievement
1.	Integrated Cereal Production Scheme	10.47	10.46
2.	National Pulses Development Scheme	3.98	4.79
3.	ISOPOM - Maize Scheme	6.95	7.83
4.	Oilseed Production Programme	38.52	39.52
5.	Cotton Mini Mission – II	17.69	17.69
6.	Oil Palm Development Programme	26.35	16.15
7.	Coconut Development Scheme	0.82	-
8.	Seed village scheme	-	9.47

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

Table 17. Details of Special Horticultural Projects / Programmes Ongoing in the District

(Lakh Rs.)

S. No	Schemes	2008-09	
		Target	Achievement
1.	Integrated Horticulture Development Scheme	7.63	--
2.	National Horticulture Mission	202.03	--
3.	Centrally Sponsored Micro Irrigation Scheme	20.00	--

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

4.4 Constraints Analysis

The data on yield of major crops under irrigated and rainfed conditions in Perambalur district are compared with that of the state-level average for Tamil Nadu as well as with the highest yield obtained in the state (Table 18). In crops such as paddy, sorghum, maize (rainfed), cotton (rainfed), red gram, green gram, black gram, other pulses, sugarcane, small onion and all other vegetables the yield achieved in Perambalur district is either on par or higher than that of the state-level average. Yield of maize and small onion in Perambalur district is very close to the highest yield obtained in the state. As compared to the highest yields obtained in the state, there exists scope for improving yield levels of almost all the crops in the district.

Yield Gap Analysis of Major Crops - Reasons for Gaps

a) Reasons for the Yield Gap

1. Non availability of quality seed material in high yielding varieties/ hybrids required by the farmers

2. Lack of awareness about the latest technologies among the farmers on various crops

b) Technological Gap

Top three technologies mostly adopted

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

Top three technologies least adopted

1. Need-based plant protection measures not undertaken
2. Recommended organic manure, NPK and Micronutrients as well as fertigation through precision farming technique are not followed
3. Farm machineries implements
4. Post harvest technologies

Table 18. Comparison of Yield of Major Crops in Perambalur District and Tamil Nadu during 2006-07

(Kilograms per acre)

Crop	Irrigated/rainfed	Perambalur district	Tamil Nadu state	Highest yield in the state
Rice	Irrigated	2470	2541	4160
Jowar	Irrigated	1422	1422	4854
	Unirrigated	596	660	1979
	Combined	596	732	3244
Bajra	Irrigated	3400	2165	3777
	Unirrigated	1170	1065	2377
	Combined	1490	1157	2802
Ragi	Irrigated	2166	2166	3145
	Unirrigated	1192	1192	3027
	Combined	1402	1325	3007

Table 18. Contd….. **(Kilograms per acre)**

Crop	Irrigated/rainfed	Perambalur district	Tamil Nadu state	Highest yield in the state
Maize	Irrigated	1113	1189	1609
Red gram		540	540	1311
Green gram		336	336	713
Black gram		328	328	730
Horse gram		365	365	621
Other pulses		165	202	344
Sugarcane (in terms of cane in tonnes / ha)	Irrigated	125	105	139
Cotton	Irrigated	240	359	510
	Unirrigated	241	195	305
	Combined	241	260	508
Groundnut	Irrigated	2978	2654	3519
	Unirrigated	1188	1386	2099
	Combined	1548	1775	3161
Gingelly	Irrigated	665	665	944
	Unirrigated	320	371	677
	Combined	358	469	784
Sunflower	Irrigated	661	1240	2310
Coconut (nuts/ha)	Irrigated	7398	13782	25742

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

4.5 Recommended Interventions

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

4.6 Projected Outcome and Growth Rate during the Plan Period

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

4.7 Researchable Issues

- Reclamation of soil and water resources affected by water logging
- Design and development of cost-effective, labour-saving farm machinery and implements
- Crop varieties suitable for dry land areas of the district
- Water-saving technologies for sugarcane, coconut, vegetables and all field crop.
- Increasing the productivity of rainfed fodder and pulses crops such as sorghum, black gram, green gram and horse gram
- Development and dissemination of high yielding fodder grass varieties suitable for district

CHAPTER - V

DEVELOPMENT OF ALLIED SECTORS

5.1 Introduction

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

5.2 Horticulture Sector

5.2.1 Development Issues

Perambalur district is conducive for cultivation of a variety of horticulture crops. Most of the farmers are small land holders and cultivating less remunerative crops like paddy, maize, cotton, small onion, groundnut, gingelly and other vegetables. The farmers are very progressive and enthusiastic to adopt new technologies. After the intervention of Horticulture Department in this district, the farmers are ready to go in for cultivation of horticulture crops which prove remunerative.

5.2.2 Constraints

The constraint is the horticulture crop cultivation involves high cost and improved technologies, for which they need some support from Government in the form of subsidies and training. Lack of adequate marketing infrastructure is also a constraint in the development efforts in horticulture.

5.2.3 Interventions Recommended

1. Precision Farming

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

2. Nursery and Vegetable Production

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

3. Plastic Crates for Vegetable Handling & Transport

The estimated post-harvest loss of 30 percent of the produce is a great loss to the farmer and the nation. Cost of packing materials is unbearable by the farmers. It is proposed to supply plastic crates of standard size at 50 per cent cost to the farmers to have a safe packaging and transport.

4. Support System for Crops

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

5. District Level Farmers' Workshops

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

6. Interstate Exposure Visit

Exposure visit for four batches per year will be organized @ 50 farmers per batch to get exposed with adoption of new technologies, marketing tec., practiced in other states.

7. Ten Hectare Mega Demonstration

Like-minded farmers are organized to adopt all new technologies of horticulture from seed to market at selected places in an area of 10 hectare each, which will serve as a visual aid and model farm. For the district mega demonstration like this will be organized @ one person per year per district in NADP.

5.3 Agricultural Engineering Sector

5.3.1 Interventions Recommended

1. Agricultural Mechanization Scheme

Agricultural machineries like power tiller, tractor, paddy transplanter, self-propelled paddy thrasher will be given to farmers on subsidy. Agricultural implements like rotavator, disc plough, cultivator, sub-soiler etc, gender friendly equipments also will be given to farmers at subsidy rates.

2. Rainwater Harvesting and Run-off Management Scheme

Rainwater harvesting structures like check dams, farm ponds, sunken ponds, rejuvenation of failed wells, and formation of ooranies are carried out to harvest rainwater to and manage run-off, farm ponds/sunken ponds will be executed.

3. Replacement of Old Pumpsets

To conserve electrical energy in farm sector, old agricultural pumpsets are replaced with new energy efficient pumpsets. New pumpsets are given to farmers at 25 percent subsidy and electrical accessories are given at 50 percent subsidy. For scheduled caste farmers the subsidy for pumpsets is 50 percent and subsidy for accessories is 50 percent.

During 2007-08, 251 agricultural pumpsets were given to farmers and 43 agricultural pumpsets were given to scheduled caste farmers.

4. Tractor Hiring Scheme

Tractors and bulldozers were lent to farmers for hiring at subsidized rate on hour basis for land development works like jungle clearance, land shaping, levelling, ploughing etc. One bulldozer and two tractors with all implements are available in the district.

5. Minor Irrigation Scheme

Hand boring sets, rock blasting units will be lent to farmers for hiring for sinking of shallow borewells, Construction of open wells. One hand boring set and one rock blasting unit are available in the district. Also, drip irrigation system for horticultural crops will be laid at subsidy rate to farmers.

6. Training to Farmers

Training to unemployed rural youth will be imparted to handle, operate and maintain the agricultural machineries and implements. Demonstrations of newly developed implements will also be given to farmers.

5.4. Animal Husbandry Sector

5.4.1 Introduction

Animal Husbandry is one of the important enterprises of the district economy. The Animal Husbandry department has contributed immensely to livestock development in Perambalur district and in providing additional income to the poor farmers and agricultural labourers in the villages. It aims at augmenting the production potential of livestock and poultry, and thereby increasing the production of milk, meat and eggs in the Perambalur district. It envisages provision of timely veterinary assistance and healthcare to the livestock and poultry and provision of employment potential to the farmers of livestock farming, protects livestock and poultry against contagious and infectious

disease and provides facilities for scientific breeding of cows and buffaloes in the District. Farmers are educated on various aspects of animal husbandry and fodder production by various extension methods.

There are so many milch breeds available throughout the district. The district is making progress in the field of Animal Husbandry particularly the Tamil Nadu Milk Producers' Union has a milk collection center and processing plant at Perambalur from where milk is transported to different parts of the State every day.

There is limited expansion of poultry activity of broiler farms taking place in the district. It tends to occupy the major animal husbandry activity in the district in the coming years.

5.4.2 Development Issues

The gaps identified in the animal husbandry sector in this district are:

i) Fodder Shortage

- Green fodder shortage of about 60 per cent.
- Dry fodder shortage of about 53.6 per cent

ii) Animal Health Care Facilities

- 51 per cent of shortfall in the number of veterinary institutions as against the total livestock population in the district.

iii) Lack of awareness about feeding micronutrients in the feed of cattle

iv) Poor performance in the non-descript goats

v) Insufficient facilities in the veterinary institutions

vi) Higher nutritional demand in cross-bred cows – negative energy balance

vii) Insufficient processing and marketing facilities at Aavin, Perambalur

viii) Farmers are not aware of the latest scientific technologies in livestock production and management

ix) Insufficient disease diagnosing facilities

5.4.3 Ongoing Government Development Schemes for Livestock & Poultry (State& Central)

1) Tamil Nadu Livestock Development Agency (TNLDA) – Programmes

- Supply of frozen semen straws for A.I
- Training rural educated unemployed youth on A.I.
- Orientation program for Field veterinarians and Veterinary officers
- Conservation of indigenous breed
- Conversion of existing stationary A.I. centre to mobile practices
- Quality control of goods and services at semen station

2) Assistance to States to Control Animal Diseases (ASCAD) - Programmes

- To control endemic livestock diseases (FMD, HS, BQ, Anthrax & PPR) in intensive way.
- Farmers training on livestock diseases and their prevention and control

3) Dist. Rural Development Agency (DRDA) - SGSY Programmes

- Assisting BPL families financially for livestock micro enterprise for revenue generation, especially women SHG

4) District Industries Centre (DIC) Programmes

- Training farmers before issuing loan for livestock units

5) Tamilnadu Adi Dravidar Housing Development Corporation (THADCO) Programmes

- Economic assistance to rural poor Adi Dravidar beneficiaries for purchase of milch cows is provided to improve their socio economic status

5.5. Agricultural Credit

5.5.1. Credit Disbursement

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

I. Policy Innovations of Government of India:

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

II. Policy initiatives of Reserve Bank of India:

1. Guidelines on Priority Sector Lending (PSL) revised enlarging its scope.
2. Limits for loans under DRI scheme raised from Rs.6500 to Rs.15000 and that for housing loan under scheme from Rs.5000 to 20000.

3. CBs/RRBs to introduce on a pilot basis in one district, a simplified cyclical credit product whereby the farmers can use core component of 20 per cent of credit limit throughout the year, provided interest is serviced.
4. Banks are allowed to utilize the services of retired bank / Government employees and ex-servicemen as business correspondents.

III. Policy and Development Initiatives of NABARD:

1. NABARD to play an active and supportive role in the implementation of 'Rural Business Hub' Scheme of Ministry of Panchayat Raj envisaging Public-Private-Panchayat Partnership to develop holistic and integrated partnership between decentralized rural production units and larger corporate entities.
2. A new find "Farmers' Technology Transfer Fund" created to support programmes, workshops / seminars on technology transfer, marketing of agriculture produce and imparting training on new technologies / agriculture practices
3. NABARD in collaboration with Department of Posts, Government of India, to set up showcases in 100 post offices across the country to showcase the products of SHGs and rural artisans.
4. Krishak Saathi Scheme introduced to provide refinance to banks to provide loans to farmers to free themselves from the clutches of money lenders.
5. RIDF loan at 90 per cent of the project cost allowed for roads and social sector projects in Hill States; also, higher mobilsation advance at 30 per cent of total RIDF loans allowed for these states.

IV. Policy Initiatives of Government of Tamil Nadu:

1. Rs.1150 crores allocated in 2008-09 for compensating co-op. banks for waiver of crop loans.
2. It is proposed to disburse new crop loans to the tune of Rs.1,500 crores during 2008-09.

3. The rate of interest on crop loan reduced from five per cent to four per cent for prompt repayments in 2008-09.
4. Rs.40 crores to provide 50 per cent Insurance Premium for 25 lakhs farmers towards crop insurance.
5. SRI cultivation of paddy to be extended to all districts at an estimated cost of Rs.64 crores.
6. 25 per cent subsidy to farmers for purchasing farm machinery under NADP.
7. Afforestation Progrmme in 51,500 hectares at a cost of Rs.113 crores. 1,000 check dams and 300 percolation ponds to be constructed throughout the State. Rupees three crores provided for forest roads. Rs.10 crores allocated for planting one crore saplings in private lands.
8. Tamil Nadu Co-operative Milk Producers Federation to provide 10,000 crossbred milch animals to Women Self Help Groups in 200 villages covering 5000 women. This scheme will be implemented at a cost of Rs.22 crores for a period of two years.
9. IAMWARD Project extended to another 16 sub-basins.
10. Construction of 48,500 checkdams and perculation tanks in 232 over exploited blocks for conserving ground water at a cost of Rs.550 crores.
11. State Government to open 4 SEZs in Tirunelveli, Tiruvannamalai, Erode and Vellore Districts.
12. A sum of Rs.504 crores is allocated under “Anaithu Grama Anna Marumalarchi Scheme” for undertaking basic infrastructure related works in 2521 village panchayats.
13. Rs.50 crores provided in 2008-09 for 1625 community developmental works under ‘Namakku Naame Thittam’.

Activity wise credit disbursement and projection under agricultural and allied sectors in Perambalur district is furnished in Table 19.

Table 19. Activity Wise Credit Disbursement and Projections under Agricultural and Allied Sectors in Perambalur District

(Rs. lakh)

Sectors	2008-09	2009-10	2010-11	2011-12
Crop loan	15098.79	15853.73	16646.42	18352.67
Term loan				
Micro Irrigation	281.35	295.42	310.19	341.98
Land Development	322.1	338.21	355.12	391.51
Farm Mechanization	840.04	882.04	926.14	1021.07
Plantation & Horticulture	24.84	26.08	27.39	30.19
Forestry & Waste land Development	13.75	14.44	15.16	16.71
Dairy Development	1890.36	1984.88	2084.12	2297.74
Poultry	42.5	44.63	46.86	51.66
Sheep/Goat/Piggery	210.58	221.11	232.16	255.96
Fisheries	3	3.15	3.31	3.65
Storage Godown & Market yards	108	113.4	119.07	131.27
Bio-gas	0	0	0	0
Sericulture	0	0	0	0
Others	204.8	215.04	225.79	248.94
Sub total - Term loan	3941.32	4138.4	4345.31	4790.68
Total Agriculture Credit (1+2)	19040.11	19992.13	20991.73	23143.35
Non Farm sector	1308.29	1373.7	1442.39	1590.23
Other Priority Sector	3157.76	3315.65	3481.43	3838.28
Grand Total	**23506.16**	**24681.48**	**25915.55**	**28571.86**

From the table it could be seen the projected flow of credit disbursement for agriculture and allied sectors during 2009-10, 2010-11 2011-2012 would be Rs. 24681.48 Rs. 25915.55 and Rs. 28571.86 lakhs respectively. The total flow of agriculture credit in terms of crop loan and term loan in 2011-12 would be Rs. 23143.35 lakhs. The flow of credit for non-farm sector and other priorty sectors in 2011-12 would be Rs. 1590.23 and Rs. 3838.28 lakhs respectively.

5.4.4 Constraint Analysis

The major constraints in this sector identified are:

- Productivity gap analysis of major crops and animal products. Reasons for gaps.
- Research / Extension / Adoption gaps
- Processing / Storage / Marketing gaps
- Existing Institutional Mechanism in the Government Sector.
- Income analysis of various categories of farmers

5.4.5 Interventions Required

To fill the above gaps the following interventions are proposed:

- Popularization of scientific fodder production
- Door-to-door health cover to livestock
- Tracing of breedable bovine population
- Strengthening the processing and marketing facilities at Perambalur diary
- Strengthening the veterinary institutions with basic facilities like fencing, bore-wells, water troughs, etc.
- Genetic upgradation of goats
- Capacity building through adoption of technology – training
- Value addition of milk and meat
- Strengthening the facilities at PDDL, Perambalur

Perennial Fodder Production

- Tree fodder biomass production
- Supply of chaff cutter to improve nutrient utilization and to prevent wastage
- Programmed breeding of indigenous cattle/buffalo to increase conception rate
- Mobile input units to augment fertility, milk production/productivity-mobile veterinary clinics, control of parasitic diseases
- Immunization for Anthrax, HS, BQ, FMD
- Model sheep/goat units in intensive system to motivate farmers

- Identification and traceability of bovines for database on breedable population
- Livestock health cover through supply of mineral mixture/by-pass protein
- Augmenting clean milk production through milking machines, PC based automatic milk collection stations
- Milk processing facilities through bulk milk coolers, walk-in coolers
- Manufacturing facilities for value added milk products-revival of dormant MPCS
- Milk chilling facilities
- Supply of micro nutrients
- Farmers study tour-capacity building of officers
- Training farmers on newer technologies to augment fertility, productivity, production
- ICT tool for technology dissemination

Sheep and Goat

- Perennial fodder production
- Tree fodder biomass production
- Distribution of bucks/rams to augment fertility/ production and productivity
- Immunization for Anthrax, ET, HS, PPR, BTV, sheep pox
- Supply of micro nutrients
- Capacity building of officers
- Training farmers on newer technologies

Poultry

- Immunization against NCD door to door
- Capacity building of rural women for improved poultry husbandry practices for additional revenue generation

Knowledge Empowerment on Ethno Veterinary Medicine & Practice (EVP)

- Farmers will be sensitized on Ethno veterinary medicine and practice for primary health care of livestock and poultry.

5.6 Strengthening the Infrastructure of Existing Units and Expansion of Ongoing Development Schemes

Department of Animal Husbandry, Perambalur and Ariyalur districts requires development of infrastructure of veterinary institutions and co-operative milk producers union (TDCMPU) require strengthening of the infrastructure of existing units and expansion of ongoing development schemes pertaining to capacity building of rural farmers, study tours, workshop/conference for farmers to empower them on newer technologies for sustainable and commercially viable livestock farming, milk chilling, preparation of value added milk products, handling the excess milk during flush season, encouraging rural dairy farmers to produce more milk, clean milk, quality milk so as to earn more profit. Facilities for the above programmes are included. Automatic milk units in selected Aavin societies for producing clean milk. Revival of dormant Aavin societies will facilitate more milk handling and thereby more milk production. Providing touch screen facilities will offer quick and easy access for technologies for improved farming systems and sustainable additional revenue generation part from strengthening the critical marketing of farm produce for satisfactory returns.

5.7 Fisheries Sector

5.7.1 Development Issues

- Limited water source is a challenge for starting any aquaculture practice in this district.
- Desilting of existing tanks can improve the water holding capacity Fish culture in dug out ponds and seasonal tanks.
- There exists potential for inland fisheries development

5.7.2 On going Schemes

1. Fishermen Group Accidental Insurance – (Central scheme)
2. Fishermen savings – cum Relief scheme
3. Anna Marumalarichi Thittam – All Villages
4. IAMWARM –
5. Fisheries Development Minor programme – popularization of scampi culture
6. Interior inland fish culture & marketing schemes.

5.7.3 Gaps Identified

- No Government fish seed farms
- Fish seed production undertaken by small scale private farmers.
- No self sufficiency in fish seed production and poor awareness on fish culture.
- Lack of post harvest infrastructure facility like hygienic fish market.

5.7.4 Intervention Areas

- Private participation for inland fish culture in farm pond activities, expansion of fish culture in open water system by extending subsidy.
- Providing quick transporting facilities for fish marketing.
- Increasing fish seed production by private participation.
- Supply of fishing implements to fishermen and farmers training.
- Farmers training

5.8 Irrigation Systems (PWD)

The Irrigation tanks and feeding and distribution channels are highly silted and in dilapidated conditions. These requires renovations and modernization.

CHAPTER - VI
DISTRICT PLAN

6.1 Introduction

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

6.2 Growth Drivers

The growth drivers of agricultural sector in the district are major crops *viz.*, paddy, maize, cotton and dry land crops such as groundnut, sunflower and gingelly and improvement programmes. Livestock production and fishery also are expected to play a key role in accelerating the economic growth in rural areas.

6.3 Innovative Schemes

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

6.4 Vision of XI Plan

The 11^{th} Plan provides an opportunity to restructure policies to achieve a new vision of growth that will be more broad-based and inclusive, bringing about a faster

reduction in poverty and helping bridge the divides that are currently the focus of so much attention. One of the major challenges of the 11th Plan must be to reverse the deceleration in agricultural growth from 3.2 percent observed between 1980 and 1996-97 to a trend average of only 1.5 percent subsequently. This deceleration is undoubtedly at the root of the problem of rural distress that has surfaced in many parts of the country. To reverse this trend, corrective policies must be adopted .There is a need to raise the growth rate of agricultural GDP to around 4 percent. The district plan sector-wise is presented here under.

6.5 District Plan

6.5.1 Agricultural Sector

In Perambalur district, for agricultural development under NADP, four major projects / interventions have been formulated. The activities and the associated budget requirements/estimates have been given in detail and discussed project-wise in the pages that follow. The first intervention / project have been taken up first for a brief presentation and discussion below.

Project - I

i. Project Title: Integrated Rice Productivity Improvement Programme (IRPIP)

ii. Project Rationale

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

iii. Project Goal

To increase and sustain the productivity of paddy

iv. Project Strategy

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

v. Project Components

The various components of the projects are given in Table 20. There are 24 specific activities planned for.

vi. Project Costs

The costs involved over periods of four years are also indicated in Table 20. It could be noted from the Table 20 that a budget outlay of Rs. 575 lakhs is required for the 11^{th} five year plan.

vii. Implementation Chart

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

vii. Reporting

The block-level officials of the Department of Agriculture will implement the project and report the progress to the district-level officials. The detailed strategies and plan of action are given in the following Table 20.

Table 20. Interventions for Increasing the Productivity and Production of Paddy

(Rs. in Lakhs)

S.No	Component	Unit	2008-09		2009-10		2010-11		2011-12		Total	
			No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost
I	**NADP - IRPIP**											
Quality Seed Supply												
1	One time grant to TANWABE / FIG to undertake certified seed production and distribution @ Rs.50000/- per group (30 tonnes / Annum)	No.	44	22.00	20	10	14	7	10	5	88	44.00
2	Hybrid Seed Distribution@75 per cent or Rs.122/-Kg	Tones	10	12.20	5	6.10	5	6.10	5	6.10	25	30.50
3	Supply of Quality Certified seeds at nominal cost to enhance the SRR @ Rs.7.5/- per kg. (Public and Private seeds) 50 per cent Subsidy	Tones	100	7.5	100	7.5	100	7.5	100	7.5	400	30.00
4	Distribution of Green Manure seeds at 75 per cent subsidy of Rs.18/kg.	Tones	25	4.50	25	4.50	25	4.50	25	4.50	100	18.00

Table 20. Contd…. **(Rs. in Lakhs)**

S.No	Component	Unit	2008-09		2009-10		2010-11		2011-12		Total	
			No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost
Soil Health Enhancement												
5	Distribution of Soil Health Card @ Rs.100/- per card (Soil + Water testing)	Nos.	25000	25	25000	25	25000	25	25000	25	100000	100.00
6	Distribution of Zinc Sulphate / Micronutrient @ Rs.500 / Ha.or 50 per cent subsidy	L.Ha.	0.02	10.00	0.02	10.00	0.02	10.00	0.02	10.00	0.08	40.00
7	Gypsum 500 kg/ ha @ Rs.1875/Ha. or 100 per cent subsidy	L.Ha.	0.010	18.75	0.010	18.75	0.010	18.75	0.010	18.75	0.040	75.00
8	Bio-fertilizer @ 100 per cent subsidy @ Rs.5 per No.	L. Nos.	0.20	1	0.20	1	0.20	1	0.20	1	0.80	4.00
Integrated Pest Management												
9	Farmers Field School @17000/ No.	Nos.	10.00	1.7	10.00	1.7	10.00	1.7	10.00	1.7	40	6.80
10	Massive Rat control campaign in village @ Rs.5000/village	Nos.	25	1.25	25	1.25	25	1.25	25	1.25	100	5.00

Table 20. Contd…. **(Rs. in Lakhs)**

S.No	Component	Unit	2008-09		2009-10		2010-11		2011-12		Total	
			No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost
Farm Mechanisation												
16	Demonstratio of SRI @ Rs.10000 / Ha.100 per cent Subsidy(to be organised in cluster of 10 Ha)	Nos.	200.00	20	200.00	20	200.00	20	200.00	20	800.00	80.00
17	Transplanter to TANWABE / FIG / farmers @ Rs.75000 each or 50 per cent subsidy	Nos.	5.00	3.75	5.00	3.75	5.00	3.75	5.00	3.75	20	15.00
18	Power Tiller @ Rs.65000/- each or 50 per cent subsidy	Nos.	13	8.45	12	7.80	13	8.45	12	7.80	50	32.50
19	Power Thrasher @ Rs.50000/- per No. [or] 50 per cent subsidy	Nos.	4	2.00	4	2.00	4	2.00	4	2.00	16	8.00
Publicity & Training												
20	Publicity & Training @ Rs.50000/- per district	Nos.	1	0.50	1	0.50	1	0.50	1	0.50	4	2.00
21	Village campaigns - Kharif / Rabi @ Rs.1000/- per campaign	Nos.	55	0.55	55	0.55	55	0.55	55	0.55	220	2.20
22	Publicity / POL & Hiring of Vehicle @ Rs.100000/- per district	Nos.	1	1.0	1	1.0	1	1.0	1	1.0	4	4.00

Table 20. Contd…. **(Rs. in Lakhs)**

S.No	Component	Unit	2008-09		2009-10		2010-11		2011-12		Total	
			No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost
Other Activities												
23	Tarpaulin @ Rs.10000/- Nos. or 100 per cent subsidy	Nos.	45	4.50	45	4.50	45	4.50	45	4.50	180	18.00
24	Community Thrashing floor @ Rs.3 lakhs/- per No. (20'x20')	Nos.	5	15.00	5	15.00	5	15.00	5	15.00	20	60.00
	Total			**159.65**		**140.90**		**138.55**		**135.90**		**575.00**

Project - II

i. Project Title : Integrated Soil Health Management (ISHM) in Maize Growing Areas

ii. Project Rationale

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

iii. Project Goal

To increase the productivity and production of maize.

iv. Project Strategy

Adequate supply of improved seeds and hybrid seeds is the major strategy required to increase the productivity of maize. The seed distribution subsidy is proposed to be 50 percent for irrigated maize and 90 per cent for rainfed maize. Besides seed subsidy, it is proposed to provide 90 per cent subsidy for purchase of tarpaulins for rainfed maize. To sensitize the farmers about the importance of maintenance of soil health in the rainfed maize cultivation for sustaining the productivity following activities will be taken up under NADP.

v. Project Components

The various components of the project are indicated in Table 21. There are 10 project components / activities.

vi. Project Costs

The costs involved over a period of four years are also indicated in Table 21 for increasing the maize productivity. A total budget outlay of Rs. 684 lakhs is required for the 11th five year plan period.

vii. Implementation Chart

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

viii. Reporting

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

Table 21. Interventions for Increasing the Productivity and Production of Maize

(Rs. in Lakhs)

S.No	Name of the Components	Unit	2008-2009		2009-2010		2010-2011		2011-2012		Total	
			Tonnes	Total Cost	Tonnes	Total Cost	Tonnes	Total Cost	Tonnes	Total Cost	Tonnes	Total Cost
1	Hybrid seed distribution @ 50 per cent subsidy limited to Rs.75/Kg	Tonnes	100	75.00	100	75.00	100	75.00	100	75.00	400	300.00
2	Micronutient Mixture Distribution @ 75 per cent Subsidy Limited to Rs.35/Kg	Tonnes	25	8.75	25	8.75	25	8.75	25	8.75	100	35.00
3	Soil and Water Health Card Distribution@Rs.100/Card	No	25000	25.00	25000	25.00	25000	25.00	25000	25.00	100000	100.00
4	Distribution of Green Manure seeds@62.5 per cent Subsidy limited to Rs.15/ kg	Tonnes	25	3.75	25	3.75	25	3.75	25	3.75	100	15.00
5	Compact Block Demonstration@100 per cent Subsidy	No	200	16.00	200	16.00	200	16.00	200	16.00	800	64.00
6	Pipeline Distribution @50 per cent subsidy Rs.15000/ Ha	No	200	30.00	200	30.00	200	30.00	200	30.00	800	120.00
7	Bio-Fertiliser Distribution@100 per cent Subsidy	No	40000	2.00	40000	2.00	40000	2.00	40000	2.00	160000	8.00
8	Publicity/Hire Car/Pol/ Contingency	No	1	6.00	1	6.00	1	6.00	1	6.00	4	24.00
9	Training /Seminar/Workshop	No	1	2.00	1	2.00	1	2.00	1	2.00	4	8.00
10	Organising Maize Marketing Groups	No	25	2.50	25	2.50	25	2.50	25	2.50	100	10.00
	Total			**171.00**		**171.00**		**171.00**		**171.00**		**684.00**

Project - III

i. Project Title : Increasing the Income Generation Activities in Predominantly Rainfed Areas

ii. Project Rationale

Uncertainty in production due to fluctuations in total rainfall and changes in its distribution, decrease in relative productivity in rainfed lands etc. affect the livelihood of many poor and marginalised farmers. Considering the importance and issues of rainfed farming, specific interventions will be taken up based on the understanding of the status and issues of rainfed farming in the locations selected and identified and planned to improve the total factor productivity of rainfed farming.

iii. Project Goal

To increase the productivity and production in rainfed crops such as cotton, oil seeds and pulses.

iv. Project Strategy

Adequate production and distribution of seeds, demonstration of rainfed production technologies, seed minikit and subsidy for integrated soil-water-nutrient management are some of the strategies proposed to be implemented under NADP.

v. Project Components

The details of various components of the project are presented in Table 22. It could be noted from the table that there are 11 specific activities planned for.

vi. Project Costs

The total cost of the project for the 11^{th} five year plan works out to Rs.803.20 lakhs.

vii. Implementation Chart

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

viii. Reporting

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

Table 22. Interventions for Increasing the Productivity and Production in Rainfed Areas

(Rs. in lakhs)

S.No	Name of the Components	Unit	2008-2009		2009-2010		2010-2011		2011-2012		Total	
			No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost	No.of Units	Total Cost
1	Creation of Plastic lined Farm Pond With Portable Sprinkler Unit@6ponds / block @ Rs. 3 Lakh 20M*20M*20M	No	24	72	24	72	24	72	24	72	96	288
2	Unlined Farm Pond With Gravitational flow @ 5 Ponds/ Block @ Rs.75000/ Pond	No	20	15	20	15	20	15	20	15	80	60
3	compartmental Bunding @ Rs.3000 / Ha; 200 Ha / Block	Ha	800	24	800	24	800	24	800	24	3200	96
4	Chisel Plough @2/ Block@Rs.7500/ Unit	No	8	0.6	8	0.6	8	0.6	8	0.6	32	2.4
5	Dry Farming Implements Broad Bed furrow(BBF) At One/ Block@Rs.35000/Block	No	4	1.40	4	1.40	4	1.40	4	1.40	16	5.60
6	Maize Sheller at One/Block @ Rs. 1.5 Lakhs	No	4	4.5	4	4.5	4	4.5	4	4.5	16	18.00
7	Crop Diversification Demonstration @ 30000 / Demo / Ha 5 No / Block-Crop Husbandary-Rs.15000/-3 Crop Rotation Milch Cow or Goat rearing-Rs.15000 / Ha	No	20	6	20	6	20	6	20	6	80	24.00

Table 22. Contd….. **(Rs. in lakhs)**

S.No	Name of the Components	Unit	2008-2009		2009-2010		2010-2011		2011-2012		Total	
			No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost	No.of Units	Total Cost
8	Sinking of Bore Well in production Cluster of 25 Acres -lift Irrigation Society 75 per cent Subsidy 4 No / Block limited to Rs.1.8 Lakh/No	No	16	28.8	16	28.8	16	28.8	16	28.8	64	115.20
9	Farmers Training through FTC @ 40 training (2 Days) / year @ 50 farmers / training. Rs.20000/ training	L.Rs	40	8.00	40	8.00	40	8.00	40	8.00	160	32.00
10	Dry-farming-Pre-Season Training Rs.500/ village	No	100	0.5	100	0.5	100	0.5	100	0.5	400	2.00
11	Cultivation Expenses @ Rs.5000/Ha- 200 Ha/block	Ha	800	40	800	40	800	40	800	40	3200	160.00
	Total			**200.80**		**200.80**		**200.80**		**200.80**		**803.20**

Project - IV

i. Project Title : Pulses DAP 2 per cent Spray

ii. Project Coverage : 400 ha

iii. Project Cost : Rs.0.80 lakhs

Project - V

i. Project Title : Decision Support System to Farmers

ii. Project Rationale

To promote, decision Support to farmers and disseminate Market information Technologies.

iii. Project Goal

To increase the productivity production and to generate income to farmers, through better technology and information within the easy and quick reach.

iv. Project Strategy

Development of village information centre for providing information of market and production technologies.

v. Project Components

The details of various components of the project are indicated in Table 23. As could be seen from the table, seven activities / components have been planned for.

vi. Project Costs

The budget outlay of Rs. 676 lakhs during the 11^{th} five year plan period is required.

vii. Implementation Chart

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

viii. Reporting

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

Table 23. Interventions for Development Decision Support System

(Rs. in lakhs)

S. No	Name of the Components	Unit	2008-2009		2009-2010		2010-2011		2011-2012		Total	
			No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost
1	Establishment of Village Agricultural Information Centre (VAIC) @ 10 lakh 100 per cent subsidy -one VAIC/Block	No	4	40	4	40	4	40	4	40	16	160
2	Provision of incentive to Commodity Group for Market interventions-Handling and Processing Agricultural Produce/ Commodity marketing to agencies. Rs.100 / quintal /Commodity	No	100	20	100	20	100	20	100	20	400	80
3	Establishment of Market intelligence Cell in Regulated Market 1 / Block@Rs.10lakh/Cell with forward linkages	No	1	10	1	10	1	10	1	10	4	40
4	Establishment of Market yard with in the radius of 15 Kms @ 4 / Block-Rs.2.5 Lakh / Yard	No	16	40	16	40	16	40	16	40	64	160

Table 23. Contd….. **(Rs. in lakhs)**

S. No	Name of the Components	Unit	2008-2009		2009-2010		2010-2011		2011-2012		Total	
			No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost	No. of Units	Total Cost
5	Distribution of Combined Harvester-Paddy, Sugar .Cane, Maize Sheller Power thrasher at 75 per cent Subsidy to Village commodity Group, TANWABE,FIG @ 5 Lakhs/Group/ Block	No	8	40	8	40	8	40	8	40	32	160
6	Weights and Measurements, Packing Material @Rs.2 Lakh/block	No	8	16	8	16	8	16	8	16	32	64
7	Value addition Training Rs.3 Lakh/District	No	1	3	1	3	1	3	1	3	4	12
	Total			**169.00**		**169.00**		**169.00**		**169.00**		**676.00**

In sum, for agricultural development in Perambalur district, four projects have been formulated and the total budget outlay estimated is Rs. 2738.20 lakhs as summarized in the Table 24.

Table 24. Projected Area and Productivity of Major Crops covered under NADP

S.No	Component	2008-09	2009-10	2010-11	2011-12	Total
		Total Cost	Total Cost	Total Cost	Total Cost	Total Cost
1.	NADP - IRPIP	159.65	140.90	138.55	135.90	575.00
2.	NADP-ISHM	171.00	171.00	171.00	171.00	684.00
3.	NADP-DRY Farming	200.80	200.80	200.80	200.80	803.20
4.	Pulses DAP 2 per cent spray	0.80	--	--	--	0.80
5.	NADP-Market Led Extension	169.00	169.00	169.00	169.00	676.00
	Total	**701.25**	**681.70**	**679.35**	**676.70**	**2739.00**

6.5.2 Seed Sector - Establishment of Seed Testing Laboratory at Perambalur

i. Introduction

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

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

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

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

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

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

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

ii. Objectives of Seed Testing

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

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

iii. Role of Seed Testing Laboratories in Seed Quality Control

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

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

iv. Seed Quality Control Activities

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

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

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

v. Need for Establishing Seed Testing Laboratory

At present the certified seed samples from Seed Certification wing, Official seed samples from Seed Quality Control wing and Service samples from Seed Producers, Seed dealers and farmers are being sent to Trichy 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 Perambalur district.

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

vi. Seed Distribution

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

and farmers by establishing Seed Testing Laboratory in the district will be of much use. Accordingly, a Seed Testing Laboratory is proposed to be established in Perambalur 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 Perambalur district under National Agricultural Development Programme at a financial outlay of Rs.6.00 lakhs towards provision of laboratory equipments.

vii. Activities Proposed

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

a. 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.

b. Moisture Testing Equipment

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

c. 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.

d. Purity Analysis Equipment

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

e. 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.

f. 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.

g. General

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

h. Computers with Accessories

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

i. Cost Aspects

The Seed Testing Laboratory that is to be established should have the equipments listed in Table 25 for the purpose of analyzing seed samples for moisture, physical purity, germination and other distinguishable varieties. The total cost of the project is 6.00 lakhs incurred in the first year of the 11^{th} five year plan period under NADP.

Table 25. Details on Unit wise Cost and Estimates for Seed Testing Laboratory

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

viii. Operation and Maintenance Cost of the Running Laboratory

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

ix. 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 Perambalur 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.

x. Expected Date of Completion

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

xi. 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.

6.5.3 Horticulture Sector

i. Project Title : Promoting Horticulture in Perambalur District

ii. Project Rationale

Horticulture plays a vital role in the food and nutritional security of the people as well as in earning foreign exchange through export of raw and value added horticultural products. Since the productivity of most of the horticultural crops are low in Perambalur district, it is of paramount importance to increase the productivity of these crops by

popularizing modern production and post-harvest techniques. Perambalur district is conducive for cultivation of a variety of horticulture crops. Most of the farmers are small holders of land and cultivating less remunerative crops like paddy, maize, tapioca and groundnut. The farmers are very progressive and enthusiastic to adopt new technologies. After the intervention of Horticulture Department in this district, the farmers are ready to go in for cultivation of Horticulture crops which prove remunerative. The constraint in horticulture crop cultivation involves high cost and high-tech, for which they need some support from Government in the form of subsidies and training.

iii. Project Components

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

iv. Project Goals

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

v. Project Strategies

The following strategies will be adopted to enhance the production and marketability of horticultural crops and activity-wise budgetary allocation is given in the Table 26.

i) Precision Farming

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

ii) Nursery & Vegetable Production

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

iii) Plastic Crates for Vegetable Handling & Transport

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

iv) Banana Bunch Covers

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

v) Support System for Crops

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

vi) District Level Farmers' Workshops

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

vii) Inter-state Exposure Visit

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

viii) Ten hectare Mega Demonstration

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

ix) Community Fencing

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

x) Project Costs

The details of project components and costs are given in Table 26 The total cost of the project activities works out to Rs. 1376.26 lakhs for the remaining plan years of the 11^{th} five year plan period.

xi. Implementation Chart

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

xii. Reporting

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

Table 26. Details on Activity-wise Budgetary Allocation for Horticulture

(Rs. Lakhs)

S.No	Component	Cost/ unit	2008-2009		2009-2010		2010-2011		2011-2012		Total	
			Physical (No/ha)	Finan cial	Physical (No/ha)	Finan cial	Physical (No/ha)	Finan cial	Physical (No/ha)	Finan cial	Physical (No/ha)	Finan cial
1	Precision Farming											
2	Net House structure											
	a. Nursery & Vegetable cultivation	Rs.1.00 lakh/ 300 sq.m	2	2.00	3	3.00	4	4.00	5	5.00	14	14.00
3	Pandal for vegetable production	Rs.1.00 lakh/ ha	20	20.00	30	30.00	40	40.00	50	50.00	140	140.00
4	Package for plant protection measures	Rs.0.03 lakhs	100	3.00	100	3.00	100	3.00	100	3.00	400	12.00
5	Plastic Crates for vegetable handling and transport	Rs.0.002 5/ crate	50	0.125	50	0.125	50	0.125	50	0.125	200	0.50
6	Farm waste shredder/vegetable waste shredder	Rs.0.400 lakh/No	4	1.60	4	1.60	4	1.60	4	1.60	16	6.40
7	Cashew -High Density Planting	Rs.0.090/ ha	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
8	Bore well with casing pipes	Rs.1.50 lakh/No	50	75.00	50	75.00	50	75.00	50	75.00	200	300.00
9	Humic acid/Effective E Microbes	Rs.0.004 lakh/litre	20	0.08	30	0.12	40	0.16	50	0.20	140	0.56
10	Erection of net for production of disease free planting material in Tapioca	Rs.1.00 lakh/ 300 sq.m	2	2.00	3	3.00	4	4.00	5	5.00	14	14.00

Table 26. Contd…. **(Rs. Lakhs)**

S.No	Component	Cost/ unit	2008-2009		2009-2010		2010-2011		2011-2012		Total	
			Physical (No/ha)	Finan cial	Physical (No/ha)	Finan cial	Physical (No/ha)	Finan cial	Physical (No/ha)	Finan cial	Physical (No/ha)	Finan cial
11	Tractor mounted steam boiler	Rs.0.500 lakh/No	1	0.50	1	0.50	1	0.50	1	0.50	4	2.00
12	Support system for crops											
	a.Banana	Rs.1.500 lakhs/No	10	15.00	10	15.00	10	15.00	10	15.00	40	60.00
	b.Gloriosa	Rs.0.400 lakh/ha	0	0.00		0.00		0.00		0.00	0	0.00
13	Sales outlet points in districts (Rent and infrastructure)	Rs.2.600 lakh/No	2	5.20	2	5.20	2	5.20	2	5.20	8	20.80
14	District Level Farmers Workshop	Rs.0.004 lakh/No/ day	100	4.00	100	4.00	100	4.00	100	4.00	400	16.00
15	Inter State Exposure visit (5 days)	Rs.0.050 lakh/No	50	2.50	50	2.50	50	2.50	50	2.50	200	10.00
16	10 hectare mega demonstration plot for the districts	Rs.25.00 lakhs/No	4	100.00	4	100.00	4	100.00	4	100.00	16	400.00
17	Enterprising crop growers associations	Rs.25.00 lakhs/No	1	25.00	1	25.00	1	25.00	1	25.00	4	100.00
18	Support price for Acidlime	Rs.0.100 lakhs/ha	100	10.00	100	10.00	100	10.00	100	10.00	400	40.00
19	Support price for chillies & coriander	Rs.0.050 lakh/ha	1,000	50.00	1,000	50.00	1,000	50.00	1,000	50.00	4,000	200.00
20	Prize for Crop yield competition to the best cashew growers / vegetable growers	Rs.1.00 lakh/ ha/No	10	10.00	10	10.00	10	10.00	10	10.00	40	40.00
	Total		**1,526**	**326.00**	**1,548**	**338.05**	**1,570**	**350.08**	**1,592**	**362.13**	**6,236**	**1,376.26**

6.5.4. Agricultural Engineering Sector

Project - I

i. Project Title : Introduction of Newly Developed Agrl. Machineries / Implements and Popularization of Machineries and Equipments

ii. Project Rationale

In view of acute labour scarcity and hike in labour cost prevailing in Perambalur District, the agricultural operations nowadays have become exorbitantly costlier and to mitigate this situation, farm mechanization is the need of the hour, mostly for all crops starting from field preparation to harvest.

iii. Project Goal

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

iv. Project Strategy

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

v. Project Components

The project components include a list of 17 newly-developed machineries and five conventional machineries and equipments covering various farm operations for different crops as could be noted from a Table 27. The components under popularization of machineries are provided in Table 28.

vi. Project Costs

The total budget outlay required for this project is Rs. 291.70 lakhs during the 11th five year plan period as could be evidenced from Tables 27 & 28.

vii. Implementation Chart

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

viii. Reporting

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

Table 27. Details on machineries and equipments provided through NADP - (Stream – I)

(Rs. in Lakhs)

Sl. No.	Project Component	Unit Cost	Subsidy per cent	2008-09		2009-10		2010-11		2011-12		Total	
				Nos.	Cost	Nos.	Cost	Nos.	Cost	Nos.	Cost	Nos.	Cost
Stream : I													
1	**Introduction of Newly Developed Agrl. Machinery / Implements**												
1	Tarpaulin sheet	0.10	75%	20	1.50	20	1.50	20	1.50	20	1.50	80	6.00
2	Solar Light	0.16	50%	1	0.08	1	0.08	1	0.08	1	0.08	4	0.32
3	Portable Pumpset	0.20	50%	2	0.20	2	0.20	2	0.20	2	0.20	8	0.80
4	Tractor Trailer	1.00	50%	20	10.00	20	10.00	20	10.00	20	10.00	80	40.00
5	Tiller Trailer	0.40	50%	4	0.80	4	0.80	4	0.80	4	0.80	16	3.20
6	Multi crop Thrasher (Tractor PTO)	1.25	50%	10	6.25	10	6.25	10	6.25	10	6.25	40	25.00
7	Combine harvester - Self propelled	16.00	50%	4	32.00	4	32.00	4	32.00	4	32.00	16	128.00
8	Tractor operated ridger	0.15	50%	4	0.30	4	0.30	4	0.30	4	0.30	16	1.20
9	Leveller	0.12	50%	5	0.30	5	0.30	5	0.30	5	0.30	20	1.20
10	Gender friendly equipments	0.08	75%	20	1.20	20	1.20	20	1.20	20	1.20	80	4.80
Sub-Total				**90**	**52.63**	**90**	**52.63**	**90**	**52.63**	**90**	**52.63**	**360**	**210.52**

Table 28. Details on popularization of machineries by components wise - (Stream – II)

(Rs. in Lakhs)

S.No	Project Component	Unit cost	Subsidy per cent	2008-09		2009-10		2010-11		2011-12		Total	
				Nos.	Cost	Nos.	Cost	Nos.	Cost	Nos.	Cost	Nos.	Cost
Stream : II													
1	**Popularisation of Agricultural Mechanisation through Conventional Machinery / Equipments**												
a	Power Tiller	1.16	25%	25	7.25	25	7.25	25	7.25	25	7.25	100	29.00
b	Rotavator	0.90	25%	25	5.00	25	5.00	25	5.00	25	5.00	100	20.00
c	Cultivator	0.16	25%	10	0.40	10	0.40	10	0.40	10	0.40	40	1.60
d	Disc Plough	0.35	25%	2	0.18	2	0.18	2	0.18	2	0.18	8	0.72
Sub-Total				**62**	**12.83**	**62**	**12.83**	**62**	**12.83**	**62**	**12.83**	**248**	**51.32**
II	**Promoting the Concept of Mechanised Villages**												
1	Distribution of crop based package of Agrl. Machinery on cluster basis in the adopted villages	varied	75%										
	Maize	19.91	75%	0	0.00	1	14.93	1	14.93	0	0.00	2	29.86
Sub-Total						**1**	**14.93**	**1**	**14.93**			**2**	**29.86**
Total													**291.70**

Project - II

i. Project Title : Water Harvesting, Soil Conservation and Water Management

ii. Rationale

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

iii. Project Goal

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

iv. Project Strategy

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

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

v. Project Components

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

vi. Project Costs

The details of activities and activity-wise budgetary allocation sought under the NADP for water harvesting, soil conservation and water management at farm level are provided in Tables 29 and Table 30. The total budget outlay required for this project is Rs. 388.76 lakhs during the rest of the years of the 11^{th} five year plan period.

vii. Implementation Chart

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

viii. Reporting

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

Table 29. Activity-wise Budgetary Allocation for Soil Conservation and Water Management Works at Farm Level under the NADP

(Rs. in lakhs)

Sl. No.	Project Component	Unit Cost	Subsidy per cent	2008-09		2009-10		2010-11		2011-12		Total	
				Nos.	Cost	Nos.	Cost	Nos.	Cost	Nos.	Cost	Nos.	Cost
Stream : I													
1	**Soil Conservation works**												
a	Compartmental bunding	0.03	90%	100	2.70	100	2.70	100	2.70	100	2.70	400	10.80
b	Land Shaping	0.10	90%	25	2.25	25	2.25	25	2.25	25	2.25	100	9.00
Sub-Total				125	4.95	125	4.95	125	4.95	125	4.95	500	19.80
2	Water Management Works												
a	PVC Pipe / HDPE Pipe laying	0.15	90%	20	10.80	20	10.80	20	10.80	20	10.80	80	43.20
b	Ground level Reservoir	0.80	90%	2	1.44	2	1.44	2	1.44	2	1.44	8	5.76
Sub-Total				22	12.24	22	12.24	22	12.24	22	12.24	88	48.96
3	**Processing**												
a	Drying yard/Thrashing floor	3.00	100%	10	30.00	10	30.00	10	30.00	10	30.00	40	120.00
Sub-Total				**10**	**30.00**	**10**	**30.00**	**10**	**30.00**	**10**	**30.00**	**40**	**120.00**

Table 30. Activity-wise Budgetary Allocation for Soil Conservation and Water Management Structures at Farm Level under the NADP

(Rs. in lakhs)

Sl. No.	Project Component	Unit Cost	Subsidy per cent	2008-09		2009-10		2010-11		2011-12		Total	
				Nos.	Cost	Nos.	Cost	Nos.	Cost	Nos.	Cost	Nos.	Cost
Stream : II													
1	**Water Harvesting Structures**												
a	Farm Pond - Unlined	0.50	90%	10	4.50	10	4.50	10	4.50	10	4.50	40	18.00
b	Checkdam - Medium	0.75	100%	10	7.50	10	7.50	10	7.50	10	7.50	40	30.00
c	Checkdam - Major	1.00	100%	10	10.00	10	10.00	10	10.00	10	10.00	40	40.00
d	Recharge Shaft	0.30	100%	20	6.00	20	6.00	20	6.00	20	6.00	80	24.00
e	Sunken Pond	0.50	100%	30	15.00	30	15.00	30	15.00	30	15.00	120	60.00
f	Fish Pond with borewell with solar pumpset	3.50	100%	2	7.00	2	7.00	2	7.00	2	7.00	8	28.00
Sub-Total				**82**	**50.00**	**82**	**50.00**	**82**	**50.00**	**82**	**50.00**	**328**	**200.00**
Total													**388.76**
Grand Total													**680.46**

6.5.5. Animal Husbandry Sector

6.5.5.1 Introduction

The proposed project involving five broad area *viz.* feed and fodder development, genetic upgradation, Improvement of livestock health, processing facilities and extension facilities are included. Finance required, strengthening of existing unit and expansion of ongoing development schemes are also included. To achieve the proposed target based on the proposed project the following action plan is proposed under each broad area specified.

Project - I

i. Project Title : Feed & Fodder Development for Dairy, Sheep, Goat and Poultry Farming

ii. Project Abstract

To augment fertility, milk, meat production, clean milk production feeding the livestock with required quantity of nutrient rich perennial fodder and tree fodder is essential. Current status of 90 per cent deficit of green fodder should be given priority and hence perennial fodder and tree fodder production is proposed in 10 acres per block per year. Chaff cutter usage to enhance digestibility and to prevent wastage of feed is proposed. It is proposed to supply feed for desi chicken to improve their performance.

iii. Background / Problem Focus

Deficit of green fodder is 90 per cent and hence it is essential to feed the crossbred milch animals with nutrient rich perennial fodder and tree fodder biomass to explore full genetic potential. The present background with regard to dairy, sheep and goat farming in this district is mainly grazing wherever possible, feeding with available greens in the market and feeding the milch animals with polish, bran, oil cakes, cotton seed. Sheep and goat are taken for grazing only. No supplemental feed, grains, concentrate is given to them. Immunization against endemic diseases is carried out by Department of Animal Husbandry, ASCAD program.

Keeping this background, the action plan is proposed to focus these problems namely perennial fodder cultivation, tree fodder production, chaff cutter usage.

iv. Project Rationale

To augment fertility, productivity and production of livestock and to achieve four per cent annual growth rate during XI plan period. The action plan is prepared to achieve this target.

v. Project Strategy

Based on current background of livestock sector, project strategy is proposed involving Tamilnadu Veterinary and Animal Sciences University, Department of Animal Husbandry, Tiruchirapalli District Co-operative Milk Producers Union (the implementing agencies) to achieve the target with technical interventions for the target group namely the rural women, farmers and entrepreneurs. The project strategy is proposed to strengthen the existing infrastructure and expansion of ongoing development scheme of the implementing agencies. The strategy will be spread out for four years for project works whereas the strengthening of existing infrastructure and expansion of ongoing development scheme will be carried out during the first year i.e. II year of XI plan period.

vi. Project Goals

To improve milk yield, to improve fat and solids not fat in milk, to produce clean milk, to facilitate chilling of milk, to prepare value added milk products and immunization of livestock and poultry. Capacity building of farmers, veterinarians, NGOs for technological interventions through adoption for improving milk, meat and eggs. To empower farmers, rural women, officers on Ethno Veterinary Medicine and Practice for primary health care of livestock and Poultry extension programmes are proposed. All these proposed activities will lead to achievement of stipulated goals in stipulated time. Overall goal is to augment fertility, production, productivity through proposed perennial fodder production to bridge the huge gap in availability and demand, tree fodder cultivation to manage the milch animals effectively even during summer / draught period. All such activities will envisage revenue generation of stake holders.

vii. Project Components

The following project components (action plan) under Feed and fodder development is proposed.

- Perennial fodder cultivation
- Tree fodder production
- Popularising chaff cutter

I. Fodder Production

1. Perennial Fodder Production @ 10 acre / block / year (14 blocks) & for 4 years by the Department of Animal Husbandry and the Aavin, Perambalur - Rs. 0.235 Lakhs/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 (Co-3) per Acre

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**

	Financial Requirement Per Self Help Group	**Rs. in Lakhs**
1.	Cost of training per SHG	0.035
2.	Cost of fodder cultivation	0.20
	Total Requirement per SHG	0.235
DAH	**Total requirement for 14 blocks with 14 SHG @ 10 Acres /Block/year for 4 years, 400 acres totally by DAH**	**94.00**
DDD	**Fodder development activities (in IDF villages & in farmers field)Total requirement for 60 acres totally by DDD**	**14.10**

2. Fodder Development Activities for Production of Fodder Seed / Slips in Dairy or Chilling Centre & land of DDD (9 acres) Aavin, Perambalur at Unions, CCs, Dairies and MPCS

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

Rs. 2.10 lakhs/acre as above. Totally for 4 Acres – Rs. 8.40 Lakhs / DDD

viii. Project Cost and Financing (Budget)

(Rs. in lakhs)

Action plan / Implementing agency	Unit Cost	2008-2009		2009-2010		2010-2011		2011-2012		Grand total	
		Units	Cost	Units	Cost	Units	Cost	Units	Cost	Total Units	Total Cost
DAH											
Perennial Fodder production @ 10 acre/ block/year(10 blocks) & for 4 years / DAH	0.235	100	23.5	100	23.5	100	23.5	100	23.5	400	94.00
Popularizing chaff cutter for efficient nutrient utilization with 50 per cent subsidy/DAH	0.125	25	3.13	25	3.13	25	3.13	25	3.13	100	12.50
DDD											
Fodder development activities (for production of fodder seeds/ slips in diary or chilling centres & land of DDD) acres / DDD	2.10	4	8.40	-	-	-	-	-	-	4	8.40
Fodder development activities (in IDF villages & in farmers field)	0.235	10	2.35	20	4.70	15	3.525	15	3.525	60	14.10
Chaff cutters for IDF villages on community basis (Mechanized) / DDD	0.70	-	-	8	5.60	-	-	-	-	8	5.60
Chaff cutters for elite farmers (small type) @ Rs. 20000- as 100 per cent grant / DDD	0.20	4	0.80	3	0.60	3	0.60	-	-	10	2.00
										Total	**136.60**

In sum, the total budget outlay for the above project works out to Rs.136.60 during 11th plan period under NADP.

ix. Implementation Chart of the Project

(Year wise-2008-09; 2009-10; 2010-11; 2011-12)

Works Proposed	I Quarter	II Quarter	III Quarter	IV Quarter
Perennial Fodder production @ 10 acre/ block/year (14 blocks) & for 4 years / DAH	25-25-25-25	25-25-25-25	25-25-25-25	25-25-25-25
Popularizing chaff cutter for efficient nutrient utilization with 50 per cent subsidy/DAH	7-7-7-7	6-6-6-6	6-6-6-6	6-6-6-6
Fodder development activities (for production of fodder seeds/ slips in diary or chilling centres & land of DDD) acres / DDD	3-6-6-3	2-4-4-2	3-6-6-3	2-4-4-2
Chaff cutters for IDF villages on community basis (Mechanized) / DDD	0-2-0-0	0-2-0-0	0-2-0-0	0-2-0-0
Chaff cutters for elite farmers (small type)@ Rs.20000- as 100 per cent grant / DDD	1-1-1-0	1-1-1-0	1-1-1-0	1-0-0-0

x. Reporting

The implementing agencies *viz.* Department of Animal Husbandry, Perambalur and Ariyalur Districts, Perambalur and Ariyalur districts Co-operative Milk Producers Union and the TANUVAS, Veterinary University Training and Research Centre, Tiruchirapalli will submit periodical project report to their controlling officers.

Project - II

i. Project Title : Genetic Upgradation - Dairy, Sheep and Goat Farming

ii. Project Abstract

To augment fertility strengthening A.I. service will be of much useful at field level. To augment fertility, meat production and to offset the effect of inbreeding distribution of elite bucks and rams is proposed. Programmed breeding of cattle and buffalo will offset the declining buffalo population apart from improving its fertility, productivity and production. Indigenous cattle, now at declining trend will have more such animals apart from its improved production and productivity. Buffalo calf development programme will improve the buffalo population and also boost buffalo milk production.

iii. Background / Problem Focus

In rural areas due to lack of knowledge on recent scientific practices, traditional uneconomical livestock rearing practices followed leads to delayed age of first calving (up to 60 months), inter calving period of more than 3 years and calf mortality of 25 per cent . Full productivity is not exploited. The large number of cattle and their economic value makes imperative breeding cows and heifers with the least possible number of highest quality bulls. The present invention viz. programmed breeding provides “synchronization of estrus in a group of cows/heifers” so that A.I. may be employed for improving reproductive performance. Sheep flocks are taken for grazing to a long distance and post harvested fields. Animals breed naturally and hence every likely hood that the effect of inbreeding will affect the flock performance. Keeping this problem it is focused to distribute elite bucks and rams to upgrade the genetic performance of goat and sheep during XI plan period. To improve the local cattle and crossbred milch animals fertility, milk yield, calving rate and calving interval, strengthening of A.I. services is important. Conservation and improvement of performance of indigenous cattle and buffalo is the need of the hour and hence proposal to address these problems is included. Buffalo calf development programme will encourage farmers to rear more buffalo calves which will result in increased buffalo population and hence increased buffalo milk

iv. Project Rationale

Overall animal husbandry practices in the dairy industry including closed confinement, high energy concentrate feed stuffs and heavy density of dairy herds in milk sheds areas convenient to metros have encouraged establishment of A.I. districts and regular Aavin routes therein. Buffaloes exhibit silent heat which results in less conception rate and longer inter calving period. Farmers are demoralized, hence the buffalo population is declining. But buffaloes are good converter of feed stuffs in to milk with higher fat and total solids. Programmed breeding will motivate farmers to maintain buffaloes rather switching over. Per animal milk yield is 2.76 kg in indigenous cow and 4.22 kg in buffaloes. To arrest the fall and to stabilize the buffalo population support need to be provided to the buffalo farmers to rear female buffalo calves up to first calving. To augment fertility, productivity and production of sheep and goat. A.I will augment fertility and upgrade local cattle and establish desirable exotic blood in the cross bred cattle and buffalo. Increasing fertility in indigenous cattle and buffalo is very important to maintain their population. Thrust given to buffalo calf development will increase buffalo population and also its milk.

v. Project Strategy

To improve conception rate from 40 to 45 per cent to 65 to 70 per cent. To improve the buffalo population. To reduce the lean season of the dairy industry. By intensive system of calf rearing, the income generation will be more. Based on current background of livestock sector project strategy is proposed to distribute elite bucks and rams to farmers to augment fertility and productivity. The proposal of mobile input units will augment fertility and thereby improve genetic improvement in crossbred, indigenous and buffalo population.

vi. Project Goals

- Reduction of age at first calving from 50-60 months to 30-35 months.
- This early productivity saves cost on feed and early milk production.
- Reduces the mortality rate by 50 per cent by proper health cover.

- To increase the average number of lactations in dairy cattle and to improve the economy of the dairy business.
- To strengthen A.I. service to upgrade local cattle, buffalo and also crossbred milch animals.
- To improve fertility in crossbred cattle, indigenous cattle, buffalo.
- Overall goal is to augment fertility, production, productivity which will envisage revenue generation of stake holders.

vii. Project Components

- **Distribution of Bucks & Rams** @ Rs.4000/- per buck or ram. A total of 500 bucks and 500 rams will be distributed (DAH).

- **Programmed Breeding of Indigenous Cattle & Buffalo** to increase conception rate @ Rs.700/animal, for 1600 animals.(DDD)- will result in 3150 additional adult female buffaloes are brought in and additional revenue of Rs.3.024 lakh per day is created to the farmer through additional milk expected to be produced (DDD).

- **Buffalo Calf Development Programme** @ Rs. 14,800/- per calf, The cost includes feed cost, identification, insurance, deworming, vaccination, breeding and health cover, 50 calves/year, 200 calves for 4 years (DDD).

viii. Project Cost and Financing (Budget)

(Rs. in lakhs)

Action plan / Implementing agency	Unit Cost	2008-2009		2009-2010		2010-2011		2011-2012		Grand total	
		Units	Cost	Units	Cost	Units	Cost	Units	Cost	Total Units	Total Cost
DAH											
Distribution of Bucks @ Rs.4000/ Buck / DAH	0.04	125	5.00	125	5.00	125	5.00	125	5.00	500	20.00
Distribution of Rams @ Rs.4000/Ram / DAH	0.04	125	5.00	125	5.00	125	5.00	125	5.00	500	20.00
DDD											
Programmed breeding of indigenous cattle & buffalo to increase conception rate / DDD	0.007	400	2.80	400	2.80	400	2.80	400	2.80	1600	11.20
Buffalo calf development programme (2000 calves/year) / DDD	0.148	50	7.40	50	7.40	50	7.40	50	7.40	200	29.60
										Total	**80.80**

ix. Implementation Chart of the Project

(Year wise-2008-09; 2009-10; 2010-11; 2011-12)

Works proposed	I Quarter	II Quarter	III Quarter	IV Quarter
Distribution of Bucks (125 X 4) / DAH	30-30-30-30	30-30-30-30	30-30-30-30	35-35-35-35
Distribution of Rams (125 X 4) / DAH	30-30-30-30	30-30-30-30	30-30-30-30	35-35-35-35
Programmed breeding of indigenous cattle & buffalo to increase conception rate / DDD	100-100-100-100	100-100-100-100	100-100-100-100	100-100-100-100
Buffalo calf development programme (2000 calves/year) / DDD	10-10-10-10	10-10-10-10	15-15-15-15	15-15-15-15

In sum, the total budget outlay for the above project works out to Rs.80.80 lakhs during 11th plan period under NADP.

x. Reporting

The implementing agencies viz. Department of Animal Husbandry, Perambalur and Ariyalur Districts, Perambalur and Ariyalur districts Co-operative Milk Producers Union and the TANUVAS, Veterinary University Training and Research Centre, Tiruchirapalli will submit periodical project report to their controlling officers.

Project - III

i. Project Title : Improvement of Livestock Health - Dairy, Sheep, Goat and Poultry Farming

ii. Project Abstract

To provide comprehensive livestock health cover including immunization against important viral, bacterial diseases and to cover almost all animals including poultry required programmes are proposed. This will protect livestock and poultry from diseases

and overall improvement in health is anticipated. To maintain livestock health micronutrients and mineral mixture to be supplied. The proposal " Identification and traceability of bovines" will enable creation and maintenance of breedable bovine population which is very important for policy decision. Control of parasitic diseases will enhance vaccine response which will ensure optimum immunity. Intensive system of model sheep/goat unit will motivate the farmers to adopt such technologies for sustainable and economically viable farming wherever possible. Mobile veterinary laboratory will monitor and maintain continued health cover and disease forecasting system. Supply of mineral mixture/micro nutrients will ensure adequate health cover to animals and by pass protein will help the milch animals to utilize the nutrients effectively and economically. Mobile input units in Aavin will cover the health of animals. Milking machines will ensure quality and clean milk production. PC based milking stations will save time and encourage farmers to produce more clean, quality milk. Cold storage facilities for vaccine storage is already available.

iii. Background / Problem Focus

The TDCMPU, Perambalur is handling about 1.15 lakh litres of liquid milk daily. The quality of milk need to be improved, limited chilling milk units threatens the quality maintenance and hence it needs to be strengthened and expanded to handle excess milk during flushing season, to encourage rural dairy farmers to produce more milk, to market quality milk, to increase shelf life of milk. Artificial insemination service to livestock, immunization of animals and birds are carried out with the available manpower. Mobile veterinary clinics will help in disease diagnosis, disease mapping and disease forecasting easily and quickly. Immunization and deworming of livestock and poultry. Further almost all the domestic animals are deficient in micro nutrients since most of the animals are allowed only for grazing especially sheep and goat. For better digestibility of feed consumed and also to satisfy the micro nutrient requirements it is proposed to supplement the livestock with TANUVAS mineral mixture.

iv. Project Rationale

To provide optimum health cover of livestock through quick, effective and timely disease diagnosis one Mobile veterinary clinics facility is proposed. Supplementing livestock with micro nutrients would ensure their optimal health cover. Controlling parasitic diseases will ensure optimum immunity.

v. Project Strategy

Mobile veterinary laboratory facility will help in disease diagnosis, disease mapping and disease forecasting easily and quickly. Supplementing livestock with micro nutrients would ensure their optimal health cover. Immunization against Newcastle disease and for Ducks immunization against Duck plaque is proposed.

vi. Project Goals

To provide optimum health cover to livestock and poultry including immunization for NCD and DP. It is proposed to supplement the livestock with micro nutrients which will result in optimum performance of livestock and poultry which will ensure improved productivity and production. To increase milk production and also to produce clean, quality milk effectively and economically.

vii. Project Components

Mobile Veterinary Clinics – DAH

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 (in Rs.)
1.	Surgical Kit	5000
2.	Obstetrical Kit	5000
3.	Microscope	20000
	Total	**30,000**

Popularizing Mineral Mixture by Supplying at Subsidized Cost - DAH

Popularizing Mineral mixture to improve livestock production to dairy cows @ Rs.600/cow/year, 1 kg / cow / month @ Rs.50/kg,12 kg/year, 1000 cows/year, 4000 cows/years- 4 Blocks (DAH). Total amount Rs.24 lakhs.

Control of Parasitic Diseases - DAH

Control of parasitic diseases to enhance vaccine response @ Rs.1/- per sheep or goat and Rs.3/- per calf below one year, 4 times /year, Rs. 10.60 Lakhs/year, for 4 years (DAH) for 82,083 calves, 1,31,034 Sheep and 4,12,355 Goats/

Intensive System of Sheep/Goat Rearing - DAH

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/-.

Establishment of Animal Disease Intelligence Units - DAH

Diseases cause huge economic loss to the farming community by way of Livestock Mortality and decreased productivity which has a direct impact on food security and rural economy. Control and eradication of many diseases is a must not only for profitable Livestock production but also essential to make our Livestock & Livestock products globally acceptable. Systematic control of diseases will progressively lead to its containment first and eradication ultimately. Information about the prevalence rate and disease burden of the state's Livestock population is critical in the right against Livestock diseases and this forms the basis for planning and initiating disease prevention and control strategies. Moreover, early forecasting of diseases and surveillance is essential to provide early warning signature of outbreaks while epidemiology helps in systematic study of the distribution and determinants of health problems.

The roles of Animal Disease Intelligence Units are the following:

- Assisting field staff in disease diagnosis.
- Monitoring of disease outbreaks and helping field staff in containment of outbreak.
- Monitoring of livestock health in the district.
- Seromonitoring in vaccination programmes.
- Surveillance for bird flu.

The increased crossbred population and more susceptibility to diseases compared to native animals. Moreover emerging diseases like blue tongue and PPR in sheep, bird flu in poultry have all created an additional close look on strengthening the disease surveillance and monitoring system in the state.

Hence it has been planned to establish ADIUs in such districts that do not have an ADIU under NADP programme .The above proposed A.D.I.U.'s will function as per

the norms of the already established A.D.I.U.'s. Each unit will be provided with the necessary equipment worth Rs.9.00 lakhs and furniture worth Rs.0.50 lakhs. In addition they will be provided with necessary chemicals and glassware's at a cost of Rs.1.00 lakh. Apart from this they will be provided Rs.1.00 lakh for purchase of office equipments like computers and accessories, communication aides such as telephone, fax, etc.

For mobility and to provide diagnosis at the farmer's doorsteps, each unit will be provided with one vehicle with facilities to make on the spot diagnosis. The vehicle will be fitted with a refrigerator, a centrifuge, a microscope and equipments to conduct post mortem examinations. This will help in identification of the pathogens quickly and thus undertake disease control measures without wastage of time.

The cost of the vehicle along with equipments will be approximately Rs.12/- lakh. The cost of the vehicle is approximately Rs.11.00 lakh. The cost of microscope will be Rs.0.50 lakh, cost of refrigerator will be Rs.0.25 lakh, cost of centrifuge will be Rs.0.15 lakh, cost of post mortem kits and other chemicals and chemical reagents will be Rs.0.10 lakh. In addition, they will be provided a recurring cost of Rs.1.00 lakh towards petroleum, Oil and Lubricants, Maintenance and purchase of stationeries etc.

Thus Animal Disease Intelligence Unit will be established at a cost of Rs. 24.50 lakhs in which Rs.22.50 lakhs will be the non-recurring cost and Rs.2.00 lakhs will be the recurring cost.

The staff will be sourced by redeployment within the department.

viii. Project Cost and Financing (Budget)

(Rs. in lakhs)

Action plan / Implementing agency	Unit Cost	2008-2009		2009-2010		2010-2011		2011-2012		Grand total	
		Units	Cost	Units	Cost	Units	Cost	Units	Cost	Total Units	Total Cost
DAH											
Mobile Vety.Clinics-1/taluk. Total 10, Available -1 / DAH	5.83	9	52.47	-	-	-	-	-	-	9	52.47
Popularizing Min. mix to improve livestock production @ 1kg/ month/ Animal-1 block /year / DAH	0.006	1000	6.00	1000	6.00	1000	6.00	1000	6.00	4000	24.00
Intensive system of sheep/ goat rearing (20+1=1unit) / block / DAH	0.42	10	4.20	-	-	-	-	-	-	10	4.20
Control of parasitic diseases through treatment to enhance vaccine response / DAH	-	-	10.60	-	10.60	-	10.60	-	10.60	-	42.40
Animal Intelligence Unit for health cover - 1 / dist. / DAH	24.50	1	24.50	-	-	-	-	-	-	1	24.50
Identification & traceability of bovines / DAH	0.0002	114000	22.80	-	-	-	-	-	-	114000	22.80

(Rs. in lakhs)

Action plan / Implementing agency	Unit Cost	2008-2009		2009-2010		2010-2011		2011-2012		Grand total	
		Units	Cost	Units	Cost	Units	Cost	Units	Cost	Total Units	Total Cost
DDD											
Supply of Min.mix. to milch animals at subsidized cost (50 per cent) @18 kg per year / DDD	0.005	2000	10.00	2000	10.00	2000	10.00	2000	10.00	8000	40.00
Supply of by-pass protein feed to milch animals (360 kg / year / animal @ 50 per cent subsidised cost of Rs.9-/kg / DDD	0.033	400	13.20	400	13.20	400	13.20	400	13.20	1600	52.80
Milking machines for ID farms	1.00	-	-	8	8.00	-	-	-	-	8	8.00
Portable milking machines for farmers / DDD	0.18	25	4.50	25	4.50	25	4.50	25	4.50	100	18.00
PC based automatic milk collection stations to IDF villages, milk producers co-op. societies /DDD	1.75	4	7.00	6	10.50	5	8.75	5	8.75	20	35.00
										Total	**324.17**

For this project, a budget outlay of Rs.324.17 lakhs required in the 11th plan period under NADP.

ix. Project Benefits (Anticipated)

- Timely diagnosis and control of diseases in all districts will be ensured.
- Better surveillance and prevention of outbreak of various diseases.
- Aid in developing an efficient system of disease monitoring and surveillance of economically important diseases at the district level, which will help in evolving suitable control measures at the district level.
- This will go a long way in preventing economic loss to farmers and help in their economic upliftment.

- **Identification & traceability of bovines** @ Rs. 20 /animal. **- DAH**
- **Supply of mineral mixture to milch animals at subsidized cost** (50 per cent) @ 18 kg per year @ Rs.500/- per animal. **- DDD**
- **Supply by-pass protein feed to the milch animals of the members of the society** (360 kg/animal/year) for 1800 cows @ 50 per cent subsidy of Rs.9/- per kg. **– DDD**
- **Milking machines for ID farms** @ Rs. 1.00 lakh per unit. **- DDD**
- **Portable milking machines for farmers** @ Rs.0.18 lakh per unit - **DDD**
- **PC based automatic milk collection stations to IDF villages** @ Rs.1.75 lakhs per unit.**-DDD**

x. Implementation Chart of the Project

(Year wise-2008-09; 2009-10; 2010-11; 2011-12)

Works proposed	I Quarter	II Quarter	III Quarter	IV Quarter
Mobile Vety.Clinics-1/taluk.Total10, Available -1/DAH	3-0-0-0	3-0-0-0	2-0-0-0	1-0-0-0
Popularizing Min.mix to improve livestock production @1kg/month/ Animal-1 block/year / DAH	250-250-250-250	250-250-250-250	250-250-250-250	250-250-250-250
Intensive system of sheep/goat rearing (20+1=1unit)/block / DAH (2008-2009 only)	-	3	3	4
Control of parasitic diseases through treatment to enhance vaccine response / DAH	-	-	-	-
Animal Intelligence Unit for health cover -1/dist./DAH	Tender invitation	Tender processing	Purchase & establish ment	Started functioning
Identification & traceability of bovines / DAH	30000	30000	30000	24000
Supply of Min.mix. to milch animals at subsidized cost (50 per cent) @18 kg per year / DDD	500-500-500-500	500-500-500-500	500-500-500-500	500-500-500-500
Supply of by-pass protein feed to milch animals (360 kg / year / animal @ 50 per cent subsidised cost of Rs.9-/kg / DDD	100-100-100-100	100-100-100-100	100-100-100-100	100-100-100-100
Milking machines for ID farms	0-2-0-0	0-2-0-0	0-2-0-0	0-2-0-0
Portable milking machines for farmers / DDD	7-7-7-7	6-6-6-6	6-6-6-6	6-6-6-6
PC based automatic milk collection stations to IDF villages, milk producers co-op. societies/DDD	1-2-1-1	1-2-1-1	1-2-1-1	1-2-1-1

xi. Reporting

The implementing agencies *viz.* Department of Animal Husbandry, Perambalur and Ariyalur Districts, Perambalur and Ariyalur districts Co-operative Milk Producers Union and the TANUVAS, Veterinary University Training and Research Centre, Tiruchirapalli will submit periodical project report to their controlling officers.

Project - IV

i. Project Title : Processing Facilities - For TDCMPU (Aavin) Tiruchirapalli at Perambalur and Ariyalur

ii. Project Abstract

Facilities to handle excess milk during flush season and also making available of value added milk products to consumers are proposed. Milk weighing machines will save time and will infuse confidence among Aavin society members. Bulk milk coolers and Walk in coolers will facilitate more milk production by farmers.

iii. Background / Problem Focus

The TDCMPU, Perambaluri s handling about 1.15 lakh litres of liquid milk daily. The quality of milk need to be improved, limited chilling milk units threatens the quality maintenance and hence it needs to be strengthened and expanded to handle excess milk during flushing season, to encourage rural dairy farmers to produce more milk, to market quality milk, to increase shelf life of milk. Based on this background, the existing problems are addressed through above mentioned facilities.

iv. Project Rationale

To produce clean milk and to measure the quality (fat and SNF) and quantity of milk, save time and to collect accurate data on milk parameters. To encourage more milk production, to sustain rural family earnings, to handle the milk during flush season. To convert excess milk in to khoa, ice cream facilities are proposed and thereby encouraging the farmers to produce more milk.

v. Project Strategy

To strengthen the existing dairy plant of Aavin and to expand the development schemes to ensure quality milk for the consumers and to encourage rural dairy farmers to produce more clean milk and to increase their profit. To prepare value added milk products.

vi. Project Goals

To strengthen the existing dairy plant of Aavin and to expand the development schemes to ensure quality milk for the consumers and to encourage rural dairy farmers to produce more clean milk and to increase their profit. To prepare value added milk products.

vii. Project Components

- Bulk milk coolers
- Walk-in-coolers
- Manufacturing facilities for Milk khoa
- Manufacturing facilities for Ice cream

viii. Project Cost and Financing (Budget)

(Rs. in lakhs)

Action plan / Implementing agency	Unit Cost	2008-2009		2009-2010		2010-2011		2011-2012		Grand total	
		Units	Cost	Units	Cost	Units	Cost	Units	Cost	Total Units	Total Cost
Bulk milk coolers / DDD	30.00	1	30.00	1	30.00	-	-	-	-	2	60.00
Walk-in-coolers / DDD	30.00	1	30.00	-	-	-	-	-	-	1	30.00
Manufacturing facilities for Milk khoa / DDD	0.77	1	0.77	1	0.77	1	0.77	-	-	3	2.31
Manufacturing facilities for Ice cream / DDD	1.12	1	1.12	1	1.12	-	-	-	-	2	2.24
										Total	**94.55**

For this project, a budget outlay of Rs.94.55 lakhs required in the 11th plan period under NADP.

ix. Implementation Chart of the Project

(Year wise-2008-09; 2009-10; 2010-11; 2011-12)

Works proposed	I Quarter	II Quarter	III Quarter	IV Quarter
Bulk milk coolers / DDD (2008-2009 only)	Tender invitation	Tender processing	Purchase & establishment	Started functioning
Walk-in-coolers / DDD (2008-2009 only)	Tender invitation	Tender processing	Purchase & establishment	Started functioning
Manufacturing facilities for Milk khoa / DDD (2008-2009 only)	Tender invitation	Tender processing	Purchase & establishment	Started functioning
Manufacturing facilities for Panner / DDD (2008-2009 only)	Tender invitation	Tender processing	Purchase & establishment	Started functioning
Manufacturing facilities for Ice cream / DDD (2008-2009 only)	Tender invitation	Tender processing	Purchase & establishment	Started functioning

x. Reporting

The implementing agencies *viz.* Department of Animal Husbandry, Perambalur and Ariyalur Districts, Perambalur and Ariyalur districts Co-operative Milk Producers Union and the TANUVAS, Veterinary University Training and Research Centre, Tiruchirapalli will submit periodical project report to their controlling officers.

Project - VI

i. Project Title : Extension Facilities - For stake holders, to enrich knowledge, infuse skill, empower them to earn through self employment and to strengthen the infrastructure of implementing agencies

ii. Project Abstract

To empower knowledge of stake holders, to impart skill, to transfer technologies for adoption proved extension programmes is highly essential. It is proposed to carryout the required extension facilities to farmers, rural women, entrepreneurs, veterinarians, officers, NGOs, etc mainly by the Tamilnadu Veterinary and Animal Sciences University peripheral centre, Tiruchirapalli and also by Department of Animal Husbandry and Aavin. Revival of dormant Aavin societies.

iii. Background / Problem Focus

Capacity building exercises are offered to rural farmers, women, officers, entrepreneurs, NGOs by many agencies. To empower large sector of the stake holder and to update their knowledge on advanced, user friendly technologies, communication tools and other extension facilities are proposed for training of farmers, rural women and officers. The knowledge on Ethno veterinary medicine for primary health care of livestock and poultry will be shared with farmers and veterinarians. Field tours with farmers to motivate them is included.

iv. Project Rationale

To empower stake holders, officers on recent advances in technology, EVM and EVP and user friendly technologies like touch screen facility for easy access. To empower the farmers through field/study tours is proposed.

v. Project Strategy

For knowledge sharing, capacity building exercise for farmers, women, officers, etc. by Tamilnadu veterinary and Animal Sciences University, Department of Animal Husbandry and Aavin

vi. Project Components

- **Infra Structure Development of Veterinary Institutions - DAH**

  Fencing, borewell with water troughs, minor repair of Veterinary Institutions for 26 units @ Rs. 5.00 lakhs per unit

- **Revival of dormant Aavin milk societies** @ Rs.1.00 lakh per unit for 25 units - **DDD**

- **Milk weighing machines** @ Rs.17,000 per unit - **DDD**
- **Farmers study tour** @ Rs.5000- per farmer 150 farmers totally - **DDD**
- **Orientation training/workshop for milk producers' at society level** Rs.20,000 per programme, 4 programmes/year, for 4 years - **DDD**

- **Capacity building training officers** and village level campaigns @ Rs.5000 per officer - **TANUVAS**

- **Sensitizing Veterinarian on EVM and veterinarians on EVP** @ Rs.3000/- per head - **TANUVAS**

- **Field tours of farmers – TANUVAS.** MCP, Infertility camps, farmers workshop, conference, etc. @ Rs.25,000/- per unit for 25 to 50 farmers.

- **Touch screen facilities** @ Rs.1.00 lakh inclusive of computer and accessories – **TANUVAS.**

vii. Project Cost and Financing (Budget)

(Rs. in lakhs)

Action plan / Implementing agency	Unit Cost	2008-2009		2009-2010		2010-2011		2011-2012		Grand total	
		Units	Cost	Units	Cost	Units	Cost	Units	Cost	Total Units	Total Cost
DAH											
Vety. Institutions-Infra. dev. Fencing, bore well with water troughs, minor repair / DAH	5	26	130.00	-	-	-	-	-	-	26	130.00
DDD											
Revival of dormant MPCS / DDD	1.00	7	7.00	7	7.00	6	6.00	5	5.00	25	25.00
Milk weighing machine for milk producers co-op. societies / DDD	0.17	45	7.65	45	7.65	45	7.65	40	6.68	175	29.75
Farmers study tour @ Rs.5000- per farmer / DDD	0.05	65	3.25	65	3.25	65	3.25	55	2.75	250	12.50

(Rs. in lakhs)

Action plan / Implementing agency	Unit Cost	2008-2009		2009-2010		2010-2011		2011-2012		Grand total	
		Units	Cost	Units	Cost	Units	Cost	Units	Cost	Total Units	Total Cost
Orientation training/workshop for milk producers at society level / DDD	0.20	4	0.80	4	0.80	4	0.80	4	0.8	16	3.20
TANUVAS											
Capacity building (ToT) training for officers (TANUVAS)	0.05	10	0.50	20	1.00	10	0.50	10	0.50	50	2.50
Training farmers on EVM / TANUVAS	0.003	50	0.15	50	0.15	50	0.15	50	0.15	200	0.60
Touch screen facilities/TANUVAS	1.00	5	5.00	5	5.00	5	5.00	5	5.00	20	20.00
Field tour for farmers / TANUVAS	0.25	1	0.25	1	0.25	1	0.25	1	0.25	4	1.00
										Total	**224.55**

`For this project, a budget outlay of Rs.224.55 lakhs required in the 11th plan period under NADP.

viii. Implementation Chart of the Project

(Year wise-2008-09; 2009-10; 2010-11; 2011-12)

Works proposed	I Quarter	II Quarter	III Quarter	IV Quarter
Vety.Institutions-Infra.dev. Fencing, bore well with water troughs, minor repair / DAH	10	5	5	6
Revival of dormant MPCS / DDD	2-2-2-2	2-2-2-2	2-2-2-1	1-1-0-0
Milk weighing machine for milk producers co-op. societies / DDD	Tender invitation 15-15-15	Tender processing 10-10-10	25-10-10-10	20-10-10-5
Farmers study tour @ Rs.5000- per farmer / DDD	0-0-0	0-0-0	35-35-35-30	30-30-30-25
Orientation training/workshop for milk producers at society level / DDD	1-1-1-1	1-1-1-1	1-1-1-1	1-1-1-1
Capacity building (ToT) training for officers (TANUVAS)	0-0-0-0	0-40-0-0	0-0-40-0	40-0-0-30
Training farmers on EVM / TANUVAS	0-20-0-0	10-0-10-0	0-0-0-10	0-0-0-10
Touch screen facilities/TANUVAS	2-2-2-2	1-1-1-1	1-1-1-1	1-1-1-1
Field tour for farmers / TANUVAS	0-0-0-0	0-0-0-0	1-1-1-1	0-0-0-0

ix. Reporting

The implementing agencies *viz.* Department of Animal Husbandry, Perambalur and Ariyalur Districts, Perambalur and Ariyalur districts Co-operative Milk Producers Union and the TANUVAS, Veterinary University Training and Research Centre, Tiruchirapalli will submit periodical project report to their controlling officers.

6.5.5.2 Budget Summary

The overall budget outlay for the development of animal husbandry and dairying activities in Perambalur district (including Ariyalur) works out to Rs.860.65 lakhs as detailed in table enclosed.

Table 31. Summary of the Budget Estimate for Animal Husbandry Development in Perambalur (including Ariyalur) District

(Rs. in lakhs)

Sl. No.	Name of the Programme	Unit cost	2008-09		2009-10		2010-11		2011-12		Total	
			Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost
1	**Cattle & Buffalo**											
I	**Feed and Fodder Development**											
1	Perennial Fodder production @ 10 acre/ block/year(10 blocks) & for 4 years / DAH	0.235	100	23.50	100	23.50	100	23.50	100	23.50	400	94.000
2	Popularizing chaff cutter for efficient nutrient utilization with 50 per cent subsidy/DAH	0.125	25	3.125	25	3.125	25	3.125	25	3.125	100	12.500
3	Fodder development activities (for production of fodder seeds/ slips in diary or chilling centres & land of DDD) acres / DDD	2.1	4	8.40	-	-	-	-	-	-	4	8.400
4	Fodder development activities (in IDF villages & in farmers field) (DDD)	0.235	10	2.35	20	4.70	15	3.525	15	3.525	60	14.100
5	Chaff cutters for IDF villages on community basis (Mechanized) / DDD	0.7	-	-	8	5.60	-	-	-	-	8	5.600
6	Chaff cutters for elite farmers (small type)@Rs.20000- as 100 per cent grant / DDD	0.2	4	0.80	3	0.60	3	0.60	-	-	10	2.000

Table 31. Contd….. **(Rs. in lakhs)**

Sl. No.	Name of the Programme	Unit cost	2008-09		2009-10		2010-11		2011-12		Total	
			Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost
II	**Genetic Upgradation**											
1	Distribution of Bucks / DAH	0.04	125	5.00	125	5.00	125	5.00	125	5.00	500	20.000
2	Distribution of Rams / DAH	0.04	125	5.00	125	5.00	125	5.00	125	5.00	500	20.000
3	Programmed breeding of indigenous cattle & buffalo to increase conception rate / DDD	0.007	400	2.80	400	2.80	400	2.80	400	2.80	1600	11.200
4	Buffalo calf development programme (2000 calves/year) / DDD	0.148	50	7.40	50	7.40	50	7.40	50	7.40	200	29.600
II	**Improvement of Livestock Health**											
1	Mobile Vety.Clinics-1/ taluk. Total 10, Available -1 / DAH	5.83	9	52.47	-	-	-	-	-	-	9	52.470
2	Popularizing Min.mix to improve livestock production@1kg/ month/Animal-1 block/year / DAH	0.006	1000	6.00	1000	6.00	1000	6.00	1000	6.00	4000	24.000
3	Intensive system of sheep/goat rearing(20+1=1unit)/block / DAH	0.42	10	4.20	-	-	-	-	-	-	10	4.200
4	Control of parasitic diseases through treatment to enhance vaccine response / DAH	-	-	10.60	-	10.60	-	10.60	-	10.60	-	42.400
5	Animal Intelligence Unit for health cover -1 / dist. / DAH	24.5	1	24.50	-	-	-	-	-	-	1	24.500

Table 31. Contd….. **(Rs. in lakhs)**

Sl. No.	Name of the Programme	Unit cost	2008-09		2009-10		2010-11		2011-12		Total	
			Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost
6	Identification & traceability of bovines / DAH	0.0002	114000	22.80	-	-	-	-	-	-	114000	22.800
7	Supply of Mineral mixture to milch animals at subsidized cost (50 per cent) @18 kg per year / DDD	0.005	2000	10.00	2000	10.00	2000	10.00	2000	10.00	8000	40.000
8	Supply of by-pass protein feed to milch animals (360 kg / year / animal @ 50 per cent subsidised cost of Rs.9-/kg / DDD	0.033	400	13.20	400	13.20	400	13.20	400	13.20	1600	52.800
9	Milking machines for ID farms (DDD)	1	-	-	8	8.00	-	-	-	-	8	8.000
10	Portable milking machines for farmers / DDD	0.18	25	4.50	25	4.50	25	4.50	25	4.50	100	18.000
11	PC based automatic milk collection stations to IDF villages, milk producers co-op. socities/DDD	1.75	4	7.00	6	10.50	5	8.75	5	8.75	20	35.000
III	**Processing Facilities**											
1	Bulk milk coolers / DDD	30	1	30.00	1	30.00	-	-	-	-	2	60.000
2	Walk-in-coolers / DDD	30	1	30.00	-	-	-	-	-	-	1	30.000
3	Manufacturing facilities for Milk khoa / DDD	0.77	1	0.77	1	0.77	1	0.77	-	-	3	2.310
4	Manufacturing facilities for Ice cream / DDD	1.12	1	1.12	1	1.12	-	-	-	-	2	2.24

Table 31. Contd….. **(Rs. in lakhs)**

Sl. No.	Name of the Programme	Unit cost	2008-09		2009-10		2010-11		2011-12		Total	
			Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost
IV	**Extension Facilities**											
1	Veterinary Institutions-Infrastructure development Fencing, bore well with water troughs, minor repair / DAH	5	26	130.00	-	-	-	-	-	-	26	130.000
2	Revival of dormant MPCS / DDD	1	7	7.00	7	7.00	6	6.00	5	5.00	25	25.000
3	Milk weighing machine for milk producers co-op. societies / DDD	0.17	45	7.65	45	7.65	45	7.65	40	6.80	175	29.750
4	Farmers study tour @ Rs.5000- per farmer / DDD	0.05	65	3.25	65	3.25	65	3.25	55	2.75	250	12.500
5	Orientation training/workshop for milk producers at society level / DDD	0.2	4	0.80	4	0.80	4	0.80	4	0.80	16	3.200
6	Capacity building (ToT) training for officers (TANUVAS)	0.05	10	0.50	20	1.00	10	0.50	10	0.50	50	2.500
7	Training farmers on EVM / TANUVAS	0.003	50	0.15	50	0.15	50	0.15	50	0.15	200	0.600
8	Touch screen facilities/TANUVAS	1	5	5.00	5	5.00	5	5.00	5	5.00	20	20.000
9	Field tour for farmers / TANUVAS	0.25	1	0.25	1	0.25	1	0.25	1	0.25	4	1.000
	Total			**430.14**		**177.52**		**128.37**		**124.53**		**860.560**

6.5.6. Fisheries Sector

i. Project Title : Development of Fisheries in Perambalur District

ii. Project Rationale

- Inland Water Bodies – 363 Nos. (2655 ha)
- Long seasonal tank – 1;
- Short seasonal tanks - 362
- Total fishermen population - 2048
- Present production - 856 tonnes against potential of 2190 tonnes
- Present fingerling production - 12.65 lakhs against requirement of 39.05 lakhs.

iii. Project Components

- Subsidy assistance to private fish seed rearing / fish seed production (50 per cent subsidy)
- Expansion of fish culture by providing subsidy 50 per cent assistance to fish farmers for stocking fingerlings
- Subsidy for quick transportation (Moped with Ice Box) (50 per cent subsidy)
- Supply of fishing implements (50 per cent subsidy)

iv. Project Cost

The project cost, componentwise and yearwise having worked out and given in Table 32. The total cost of the project for fisheries development works out Rs.33.25 lakhs for 11^{th} plan period for NADP.

Table 32. Details on Action Plan and Budgetary Estimate for Fisheries

(Rs. in lakhs)

Sl. No.	Components	Implementing Agency	Unit Cost	2008-09		2009-12		Total units	Total cost
				Units	Cost	Units	Cost		
1	Subsidy assistance to private fish seed rearing / fish seed production (50 per cent subsidy)	Fisheries Department	5.00	1.00	5.00	3.00	15.00	4.00	20.00
2	Expansion of fish culture by providing subsidy 50 per cent assistance to fish farmers for stocking fingerlings	Fisheries Department	0.0025	200.00	0.50	800.00	2.00	1000.00	2.50
3	Subsidy for quick transportation (Moped with Ice Box) (50 per cent subsidy)	TAFCOFED	0.15	8.00	1.20	22.00	3.30	30.00	4.50
4	Supply of fishing implements (50 per cent Subsidy)	Fisheries Department	0.05	10.00	0.50	35.00	1.75	45.00	2.25
	Fisheries - Total				**7.20**		**22.05**		**29.25**
1	Capacity Building - Training to Farmers	TANUVAS	0.10	10.00	1.00	30.00	3.00	40.00	4.00
	TANUVAS - Total				**1.00**		**3.00**		**4.00**
	Grand - Total				**8.20**		**25.05**		**33.25**

6.5.7 Agricultural Marketing and Agribusiness Sector

With a view to develop horticulture in Perambalur district, the following eight projects having formulated and the details of the individual project are given below.

Project - I

i. Project Title : Establishment/ Organization of Commodity Groups for Marketing in the State with Financial Assistance from NADP

ii. Project Rationale

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

Based on the international experience, in view of expanding retail trade, organizing the farmers and equipping the commodity groups can facilitate the aggregation of produce and also enhance the bargaining power of the farmers. The experience in Malaysia, Thailand and Philippines indicated that the retail chains will depend on some intermediary agency for sourcing the produce. If this role can be taken by the farmers' commodity groups, the commodities can move directly to the market without any intermediary. Further, adoption of technology both in production and post-harvest management which is expected to flow from the organized retailers and other research institutions can be efficient through the farmers' commodity groups. There is no single model for organizing the farmers for the whole country. Depending on the strength of the existing farmers' institutions, various models could be adopted. The model of

farmers' marketing commodity groups cannot be the same throughout the country. It can be cooperatives, SHGs or any other form. Therefore it is proposed to organize the commodity groups for marketing of agricultural commodities in Tamil Nadu over the period of four years.

iii. Project Strategy

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

iv. Project Goals

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

v. Project Components

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

vi. Project Cost and Financing

Arranging / organizing 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 and marketing. To organize these, an amount of Rs.20000/- is provided per group.

In this project, it is proposed to organize 160 commodity groups in eight commodities for marketing of agricultural commodities in Perambalur district over the period of four years. This will require resources of Rs.24.64 lakhs over a period of four years. The details are presented in Table 33 A.

Project – II

i. Project Title : Facilitation of Contract Farming between Farmers and Bulk Buyers in the State with Financial Assistance from NADP

ii. Project Rationale

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

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

organic products and other niche markets. But, the major route has to be through exploitation of other factors like external economies of scale through networking or clustering and such other alliances like CF.

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

iii. Project Strategy

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

iv. Project Components

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

v. Project Cost and Financing

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

In this project, it is proposed to organize the meeting on various crops regarding contract farming between farmers and bulk buyers in Perambalur district for marketing of agricultural commodities in Tamil Nadu over the period of four years. This will require resources of Rs.3.45 lakhs for the period of four years. The details are presented in Table 33 A.

vi. Implementation Chart of the Project

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

Project - III

i. Project Title : Dissemination of Market Intelligence

ii. Project Rationale

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

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

iii. Project Strategy

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

iv. Project Components

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

v. Project Cost and Financing

In this project, it is proposed to disseminate market intelligence of agricultural commodities to all the stakeholders through different mass media in Perambalur district over the period of four years. This will require resources of Rs.28.34 lakhs for the period of four years. The details are presented in Table 33 A.

vi. Implementation Chart of the Project

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

Project - IV

i. Project Title : Arrangement of Buyers - Sellers Meet

ii. Project Rationale

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

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

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

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

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

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

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

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

iii. Project Cost and Financing

In this project it is proposed to arrange for 40 buyers-sellers meet in Perambalur district over the period of four years. This will require resources of Rs. 6.90 lakhs for the period of four years. The details are presented in Table 33 A.

Project - V

i. Project Title : Organizing the Exposure Visits to Important Markets with in the State and Outside the State by Commodity Groups / Farmers and Extension Functionaries

ii. Project Rationale

The goal of four percent growth in agriculture can only be achieved by increasing productivity per unit of land. Considering the costs and constraints of resources such as water, nutrients and energy, the genetic enhancement of productivity should be coupled with input use efficiency. This can be made possible only by creation and utilization of new and improved technology. Since new technology creation and development is a slow

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

iii. Project Strategy

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

iv. Project Goals

Organizing the exposure visit to important markets both with 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.

v. 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 out side the State by extension functionaries

vi. Project Cost and Financing

Visit of important markets, where new opportunity for marketing of the commodity and consumer preference i.e., exposure visits to SAFAL market, Bangalore is an important thing to enlighten the farmers for marketing their produce as well as consumer preference. It is easy to know the marketing of the commodity through observation and participation in the well developed markets. Farmers will be selected to visit different market places within the State where the new opportunities for marketing of commodities exist. This will require resources of Rs.3.00 lakhs for the period of four years. The details are presented in Table 33 A.

Project - VI

i. Project Title : Strengthening of Market Extension Centre at Each District/ Block Level for Capacity Building and Dissemination of Marketing Information

ii. Project Rationale

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

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

iii. Project Strategy

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

iv. 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.

v. Project Components

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

vi. 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 Perambalur district over the period of four years. This will require resources of Rs. 5.00 lakhs for the period of four years. The details are presented in Table 33 A.

vii. Implementation Chart of the Project

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

Project - VII

i. Project Title : Capacity Building of Farmers' Skill

ii. Project Rationale

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

The role of the market as knowledge and information exchange amongst the converging farmers needs to be appreciated and harnessed. Farmers get benefit from deregulation of markets, minimum guaranteed price scheme, contract farming, and crop/income insurance, only to the extent they organize in marketing groups, self-help groups, cooperatives or companies and learn skills suited to the new marketing environment. Understanding quality standards (including FAQ), learning the terms of contract and insurance, and choosing and preparing the produce for the market are going to be essential skills for farmers. There is a need for greater synergy between extension services and market. State Marketing Departments and Boards, APMCs, Krishi Vigyan Kendras (KVKs), Marketing Cooperatives, NGOs and PRIs should pay increasing attention to train the farmers in marketing related skills. All stakeholders in the Supply Chain (i.e. from farmers to consumers) should be exposed to the following characteristics and complexities of the marketing system to make it more efficient. Hence in this project the following training programmes are proposed with budget requirement of Rs. 8.64 lakhs.

- Training on Warehousing and storage
- Training on Grading
- Training on Market intelligence

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

iii. Project Strategy

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

iv. Project Components

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

Project - VIII

i. Project Title : Strengthening of Selected Market Infrastructure (Equipments) through NADP Funding

ii. Rationale

Considering the importance of different Markets, there is an urgent need to develop these markets in a phased manner with necessary infrastructural amenities to have a strong base of the marketing channel. Suitability and adequacy of marketing infrastructure depends on the type and quantity of marketed surpluses of agricultural produce in the State. The estimated marketed surpluses of various commodities are given below, reflected 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
Oilseeds	79.6
Sugarcane	92.9
Fruits and Vegetables**	88.2
Cotton	100.0
Fish	100.0
Milk	60.0
Mutton and Goat Meat	100.0
Beef and Buffalo Meat	100.0
Meat(Total)	100.0
Eggs	88.2

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

iii. Project Components

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

iv. Project Cost and Financing

In this project it is proposed to strengthen market infrastructure in Perambalur district over the period of four years. This will require resources of Rs. 1.50 lakhs for the period of four years.

v. Reporting

1. Quarterly progress reports to be sent to the Deputy Director (Agricultural Marketing and Agri Business) by the concerned Agricultural Marketing (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. 706.22 Lakhs for this district for the eleventh plan period.

12. Implementation

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

13. Project Performance Monitoring System

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

14. Sustainability

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

Table 33 A. Original Project Proposals for Agricultural Marketing and Agri-Business

(Rs. in lakhs)

S. No	Components	Unit cost	Physical	Financial	Unit cost	Physical	Financial	Unit cost	Physical	Financial	Unit cost	Physical	Financial	Total
1.	**Commodity Group Formation**													
	Maize	0.2	3	0.6	0.22	5	1.1	0.24	8	1.92	0.26	10	2.6	6.22
	Gingelly	0.2	1	0.2	0.22	2	0.44	0.24	3	0.72	0.26	4	1.04	2.4
	Ground nut	0.2	2	0.4	0.22	3	0.66	0.24	5	1.2	0.26	6	1.56	3.82
	Onion	0.2	3	0.6	0.22	5	1.1	0.24	10	2.4	0.26	15	3.9	8
	Pulses	0.2	3	0.6	0.22	5	1.1	0.24	5	1.2	0.26	5	1.3	4.2
	Total													**24.64**
2	Facilitation of contract farming	0.15	5	0.75	0.165	5	0.825	0.18	5	0.9	0.195	5	0.975	3.45
3	**Market Intelligence Dissemination**													
	Village level meeting - before sowing	0.1	10	1	0.22	15	3.3	0.24	18	4.32	0.26	20	5.2	13.82
	Village level meeting - before harvest	0.1	10	1	0.22	15	3.3	0.24	18	4.32	0.26	20	5.2	13.82
	Printing of leaflets	0.00002	5000	0.1	0.00003	5000	0.15	0.00004	5000	0.2	0.00005	5000	0.25	0.7
	Total													**28.34**
4	Arrangement of buyer seller meetings	0.15	10	1.5	0.165	10	1.65	0.18	10	1.8	0.195	10	1.95	6.90

Table 33 A. Contd…..

S. No	Components	Unit cost	Physical	Financial	Unit cost	Physical	Financial	Unit cost	Physical	Financial	Unit cost	Physical	Financial	Total
5	**Exposure Visit to Markets**													
	Within state	0.2	1	0.2	0.22	1	0.22	0.24	2	0.48	0.26	2	0.52	1.42
	Outside state	0.75	1	0.75	0.825	1	0.825	0.9	0	0	0.975	0	0	1.575
	Total													**3.00**
6	Streng. of market extension centre	2.5	2	5	2.75	0	0	3	0	0	3.25		0	5.00
7	Trainings on													
	Export promotion	0.1	4	0.4	0.11	5	0.55	0.12	5	0.6	0.13	5	0.65	2.2
	Minimising PH losses	0.1	13	1.3	0.11	13	1.43	0.12	13	1.56	0.13	13	1.69	5.98
	Value addition	0.1	1	0.1	0.11	1	0.11	0.12	1	0.12	0.13	1	0.13	0.46
	Total													**8.64**
8	**Market Infrastructure Activities**													
	Providing moisture meter	0.75	2	1.5	0	0	0	0	0	0	0		0	1.50
Total				**16**			**16.76**			**21.74**			**26.97**	**81.47**

Table 33 B. Additional Project Proposals for Agricultural Marketing and Agri-Business (DDA(AB) and Market Committee)

Rs.in lakhs

Sl. No.	Possible Development Interventions	2009-10		2010-2011		2011-2012		Total	
		Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
I.	**Infrastructure**								
1	Construction of rural godowns in the premises of the regulated markets	1	25.00	1	28.00	2	60.00	4	113.00
2	Storage godowns for storing produce under lock and key for few days	1	12.50	1	14.00	1	15.00	3	41.50
3	Construction of new drying yards/renovation of dilapidated ones	1	2.50	1	2.75	1	3.00	2	8.25
4	Construction of new auction halls/modernizing the existing ones	1	10.00	1	10.00	1	10.00	3	30.00
5	Construction of money disbursement halls/counters	0	0.00	0	0.00	0	0.00	0	0.00
6	Construction of office buildings and staff quarters	1	25.00	0	0.00	0	0.00	1	25.00
7	Installation of processing units/purchase of new instruments in the premises of the regulated markets							0	0.00
	(i) Mechanical drier	0	0.00	0	0.00	0	0.00	0	0.00
	(ii) Mechanical winnower	0	0.00	0	0.00	0	0.00	0	0.00
	(iii) Groundnut decorticator	0	0.00	2	2.00	0	0.00	2	2.00
	(iv) Sieving machine	0	0.00	0	0.00	0	0.00	0	0.00
	(v) Cotton Ginning Unit / Pressing Unit	0	0.00	0	0.00	0	0.00	0	0.00
	(vi) Coconut Kernel drying and oil processing units	0	0.00	0	0.00	0	0.00	0	0.00
	(vii) Packaging Units	0	0.00	0	0.00	0	0.00	0	0.00
8	Strengthening the State Ghee and Oil Grading Laboratories	0	0.00	0	0.00	0	0.00	0	0.00

Table 33 B. Contd.,

Sl. No.	Possible Development Interventions	2009-10		2010-2011		2011-2012		Total	
		Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
9	Strengthening the Commercial Grading Centres with Laboratory facilities (more numbers can also be included)	0	0.00	0	0.00	0	0.00	0	0.00
10	Strengthening the infrastructure facilities in the Uzhavar Shandies	0	0.00	0	0.00	0	0.00	0	0.00
11	Construction of cold storage facilities in Uzhavar Shandies and in rural godowns	0	0.00	0	0.00	0	0.00	0	0.00
12	Office automation with computer facility for billing etc. in regulated markets	0	0.00	0	0.00	0	0.00	0	0.00
13	Lawying and relawying of village link roads	0	0.00	0	0.00	0	0.00	0	0.00
14	Provision of Oil moisture meters	0	0.00	0	0.00	0	0.00	0	0.00
15	Provision of Oil testing machines	0	0.00	0	0.00	0	0.00	0	0.00
16	Provision of Electronic weighing machines	0	0.00	0	0.00	0	0.00	0	0.00
17	Others if any (Specify)	0	0.00	0	0.00	0	0.00	0	0.00
II.	**Publicity and Propaganda**								
1	Market committee-wise strengthening of the Publicity and Propaganda units	0	0.00	0	0.00	0	0.00	0	0.00
2	Market committee-wise purchase of extension education aids	4	4.00	4	4.00	4	4.00	12	12.00
3	Strengthening the regional Publicity and Propaganda wings of the Marketing Board and establishing more regional units	0	0.00	0	0.00	0	0.00	0	0.00
4	Pre-harvest campaigns on large scale	50	7.50	50	7.50	50	7.50	150	22.50
5	Others if any (Specify)	0	0.00	0	0.00	0	0.00	0	0.00

Table 33 B. Contd.,

Sl. No.	Possible Development Interventions	2009-10		2010-2011		2011-2012		Total	
		Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
III.	**Public relations**								
1	Construction of bus-stop shed un front of the regulated markets and in selected villages	20	2.00	20	2.00	20	2.00	60	6.00
2	Taking up public relations activities in the villages	0	0.00	0	0.00	0	0.00	0	0.00
3	Construction of common village threshing floors	20	40.00	20	45.00	20	50.00	60	135.00
4	Construction of village common discussion (Chavadi) hall	10	10.00	10	10.00	10	10.00	30	30.00
5	Distribution of tarpaulins to small and marginal farmers	1000	50.00	1000	50.00	1000	50.00	3000	150.00
6	Installation of electric light facilities including solar lights in the community threshing floors	0	0.00	0	0.00	0	0.00	0	0.00
7	Construction of over head tanks, laying of street pipelines and provision of public drinking water taps in a village or two wherein the market arrivals are more	0	0.00	0	0.00	0	0.00	0	0.00
8	Provision of Education loan to the children of a few regular customers	0	0.00	0	0.00	0	0.00	0	0.00
9	Celebrating the regulated market fortnight in each district (just like co-operative weeks/fortnight)	0	2.00	0	2.00	0	2.00	0	6.00
10	Others if any (Specify)	0	0.00	0	0.00	0	0.00	0	0.00
IV.	**Facilities to farmers / Stakeholders**								
1	Construction of rest/stay rooms for farmers I regulated markets	1	10.00	1	10.00	1	10.00	3	30.00
2	Construction/modernization of the common toiletry facilities in the regulated markets	0	0.00	1	0.50	2	1.00	3	1.50

Table 33 B. Contd.,

Sl. No.	Possible Development Interventions	2009-10		2010-2011		2011-2012		Total	
		Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
3	Provision of parking lot facilities in the needy centers	0	0.00	0	0.00	0	0.00	0	0.00
4	Providing drinking water facilities to animals	0	0.00	0	0.00	0	0.00	0	0.00
5	Provision of transport facilities/routing the vehicle to transport commodities to the regulated markets	0	0.00	0	0.00	0	0.00	0	0.00
6	Creating farm inputs retailing facilities	0	0.00	0	0.00	0	0.00	0	0.00
7	Others if any (Specify)	0	0.00	0	0.00	0	0.00	0	0.00
V.	**Any other innovative interventions (specify) office automation**	4	4.00	4	4.00	4	4.00	12	12.00
	Grand Total	**1114**	**204.50**	**1116**	**191.75**	**1116**	**228.50**	**3345**	**624.75**

Budget Abstract

(Rs.in lakhs)

Sl.No.	Particulars	2008-09	2009-10	2010-11	2011-12	Total
A.	Original Project	16.00	16.76	21.74	26.97	81.47
B.	Additional Project DDA(AB) and Market Committee	-	204.50	191.75	228.50	624.75
	Grand Total	**16.00**	**221.26**	**213.49**	**255.47**	**706.22**

6.5.8 Irrigation Systems (Public Works Department)

Title of the Scheme : Standardisation of Pubic Works Department tanks in Veppanthattai, Kunnam and Perambalur taluk in Perambalur District

ii. Project Rationale

In view of seasonal nature of rainfall in the district, poor groundwater status and inadequacies in existing practice of water management in the district, it is necessary to introduce appropriate scientific management of old tank irrigation systems through renovation and modernization practices in Perambalur District. Hence, there is ample scope for reducing the wastage of rain water from the catchments of the district.

iii. Project Goal

Renovation and modernization of the irrigation tanks is to harness the rain water.

iv. Project Strategy

The Water Resources Organization of the Public Works Department has made a number of proposals for strengthening of age old irrigation tanks to harnessing the rain water. As many of the old tank irrigation systems are in dilapidated condition and in a state of disrepair, it is absolutely necessary to rehabilitate and / or carry out repair works in these systems / projects so as to economize water use and improve water use efficiency and productivity of each drop of water. Better water control and delivery of irrigation water in the tank system could be achieved by these measures so that the productivity per unit of water could be enhanced significantly.

v. Project Components

The project component includes a strengthening of tank structures such as renovation of tank bunds and rejuvenation of water release and control structures.

vi. Project Costs

Activities and activity-wise budgetary allocations sought under the NADP for renovation and modernization of tank irrigation systems through concrete lining and special repair works by the Water Resource Organization of the Public Works Department work out to Rs. 206.37 lakhs.

vii. Implementation Chart

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

viii. Reporting

The block-level officials of the Public Works Department irrigation division will implement the project and report the progress to the district-level officials.

6.6 Overall Budget Summary

The sectorwise budget allocations and the overall budget summary for the 11th plan period in Perambalur district under NADP are summarized below, in Table 34.

Table 34. Overall Budget Summary

Sl. No.	Name of Department / Activity	Financial Proposal for N.A.D.P				
		2008-09	2009-10	2010-11	2011-12	Total
1.	Agriculture	701.25	681.70	679.35	676.70	2739.00
2.	Seed Sector	6.00	--	--	--	6.00
3.	Horticulture	326.00	338.05	350.08	362.13	1376.26
4.	Animal Husbandry *	430.14	177.52	128.37	124.53	860.56
5.	Fisheries *	8.20	16.40	8.65	-	33.25
6.	Agricultural Engineering	162.65	177.58	177.58	162.65	680.46
7.	Agricultural Marketing	16.00	221.26	213.49	255.47	706.22
8.	Public Works Department – Irrigation (Tank modernization)	44.55	62.11	53.21	46.50	206.37
	Grand Total	**1694.79**	**1674.62**	**1610.73**	**1627.98**	**6608.12**

* This allotment is for Perambalur District including Ariyalur District

The overall budget requirement for the development of agriculture and allied sector works out to Rs. 6608.12 for Perambalur district during 11th plan period under NADP.

TABLE OF CONTENTS

LIST OF TABLES

List of Tables Contd…..

LIST OF FIGURES

NADP Sensitization Workshop and Discussion on District Agriculture Plan - Perambalur District on 09.05.08

District Revenue Officer sensitize the participants

Deputy Director of Agriculture explains about the District Agriculture Plan under NADP

Participants in the meeting

Dignitaries at the Dias

Participants in the meeting