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NATIONAL AGRICULTURAL DEVELOPMENT PROGRAMME (NADP)

DISTRICT AGRICULTURE PLAN

ARIYALUR 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. R. Karthikeyan Associate Professor (Agricultural Economics) Department of Agricultural Rural Management TNAU, Coimbatore**
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Tamil Nadu Agricultural University

Prof. C.RAMASAMY
Vice-Chancellor

COIMBATORE-641 003
TAMIL NADU
INDIA.

Date……

FOREWORD

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

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

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

(C. RAM AS AMY)

Coimbatore
June 30, 2008

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Dr. K. Palanisami
Director, CARDS

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PREFACE

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

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

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

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

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

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

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

Date: 30.06.2008

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

EXECUTIVE SUMMARY

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

The new district was bifurcated from Ariyalur district on 23rd November 2007. Ariyalur district will comprise three taluks - Ariyalur, Udayarpalayam and Senthurai and three Assembly segments - Ariyalur, Andimadam and Jayankondam. The district occupies an area of 2,033.66 km². The geographical extent of Ariyalur taluk is 681.19 sq. km; Sendurai 314.82 sq. km; and Udayarpalayam 943.30 sq. km. This district has 51 per cent of males and 49 per cent of females. It is rich in limestone resources. The district is bounded on the North and North West by Cuddalore district, West and South West by Ariyalur district, on the East and North East by Tanjore district and on the South East by Coleroon river. It lies between 10^0 54' and 11^o 30' of North latitude and 78^0 40' and 10^o 30' of East longitude. It is almost a coastal district. 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 average height of the Pachamalai hill is 600 meters though a part of the peak rises to 1020 meters. The western portion of the district is 180 metres above mean sea level and tapers towards the East and reaches the sea level. There are two rivers flowing through the district namely Maruthaiyaru and Anaivari Odai. The Average annual rainfall is 949.6 mm. Ariyalur district is classified under the Agro climatic zone as Southern zone and it is semi-arid during South West monsoon and moist sub-humid during North East monsoon. The district population density per square kilometer is 358.

1.2 Main Points of SWOT of the District

Strengths

- The major river namely Kollidam flows in the district, which serves as a source for irrigation.
- Canal Irrigation is provided in Thriumanur and T.Palur blocks through Pullambadi and Nandhiyar canals from Kollidam.
- Favourable agro climatic conditions for the cultivation of Paddy, Cashew, Cholam, Ragi, etc.

- Large number of people practising farming in the district.
- Predominance of both red and block soil in a district.
- Rural women interested in goat farming.

Weakness

- Crop rotation not followed by farmers, monocropping is being adopted
- Groundwater cannot be used adequately due to salinity problem
- High pH and soluble salt concentration in Thirumanur and T. Palur blocks
- Water logging and ill drained soil conditions
- 70% of the cultivable area is under rainfed
- Dominance of poor and socio economically weaker section people in the district
- Inadequate facilitation for marketing of agricultural commodities.
- Non availability of artificial insemination services in time and also door to door.

Opportunities

- Availability of development departments namely agriculture, horticulture, agriculture marketing, forestry, animal husbandary, water resource organization, fisheries etc in the district to take care of the development of agriculture and allied activities.
- North east monsoon is benefiting the farmers of the district.
- Emergence of special economic zone in neighbouring district may provide employment opportunities and favour trade of agricultural commodities.
- Cashew fruit processing industries could be established in the district thus enhancing the value chain, employment opportunities and income of farmers.
- Rainwater could be harvested and conserved for groundwater recharging and irrigation purposes.
- Knowledge and technology empowerment of farmers/ rural women (SHGs) on scientific dairy farming to increase milk production, to augument fertility, to produce clean milk and preparation/ marketing of value added milk products.

Threats

- High scarcity of labour for performing various agricultural operations
- Seasonal variations in rainfall
- Less care for soil health management by farmers
- Low productivity of crops limiting the food grain production from the district
- Depletion of soil macro and micro nutrients due to the practice of monocropping by the farmers.

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

The development of Agricultural and allied sectors such as horticulture, agricultural engineering, fisheries, marketing and animal husbandry are the sectors to be covered under NADP. Special programmes such as augmenting the yield of rice, sustaining the soil health, reclamation of saline soils, water harvesting, market led extension, water management works, soil conservation works, introduction of newly developed agriculture machinery and implements, water conservation are also proposed to be taken up under the NADP.

1.4 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.

1.5: 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 market led extension support, farmers training as well as through strengthening the required infrastructure facilities needed to energize the growth in agricultural and rural sectors. The abstract of the activities and the proposed budgetary requirements are given in the following table.

Table 1. Abstract of Activities Proposed and Financial Support sought under NADP

(Rs. in lakhs)

Sl. No.	Name of Department / Activity	Financial Proposal under NADP				
		2008-09	2009-10	2010-11	2011-12	Total
1	Agriculture	802.81	796.81	792.06	788.71	3180.39
2	Horticulture	439.47	459.51	479.55	499.59	1878.12
3	Animal Husbandry*					
4	Fisheries*					
5	Agricultural Engineering	155.00	178.70	178.69	155.00	667.39
6	Agricultural Marketing	17.60	21.82	24.86	30.35	94.63
	Total	**1414.88**	**1456.84**	**1475.16**	**1473.65**	**5820.53**

* Budget included under Perambalur District Agriculture Plan

1.6: 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.

1.7 Expected Outcomes as a Result of Implementation of the Plan

The implementation of the plan will ensure enhanced 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 PREPARATION OF DISTRICT AGRICULTURE PLAN

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

Major Areas of Focus

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

(b) Agriculture mechanization;

(c) Activities related to enhancement of soil health;

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

(e) Integrated Pest Management schemes;

(f) Strengthening of Market Infrastructure and marketing development;

(g) Strengthening of Infrastructure to promote Extension Services;

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

(i) Animal husbandry and fisheries development activities;

(j) Study tours of farmers;

(k) Organic and bio-fertilizers;

(l) Innovative schemes.

Collection of Data

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

Formulation of District Planning Unit

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

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

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

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

Sensitization Workshop

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

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

Preparation of Draft Action Plan and Presentation in District Collectors Meeting

Based on the baseline information and proposals, draft action plan was prepared and this was presented in the Meeting held on under the chairmanship of District Collector on 8.5.2008. This meeting was attended by the scientists from TNAU, officials from line departments and the representatives of local bodies wide coverage was given in the media also.

Finalisation

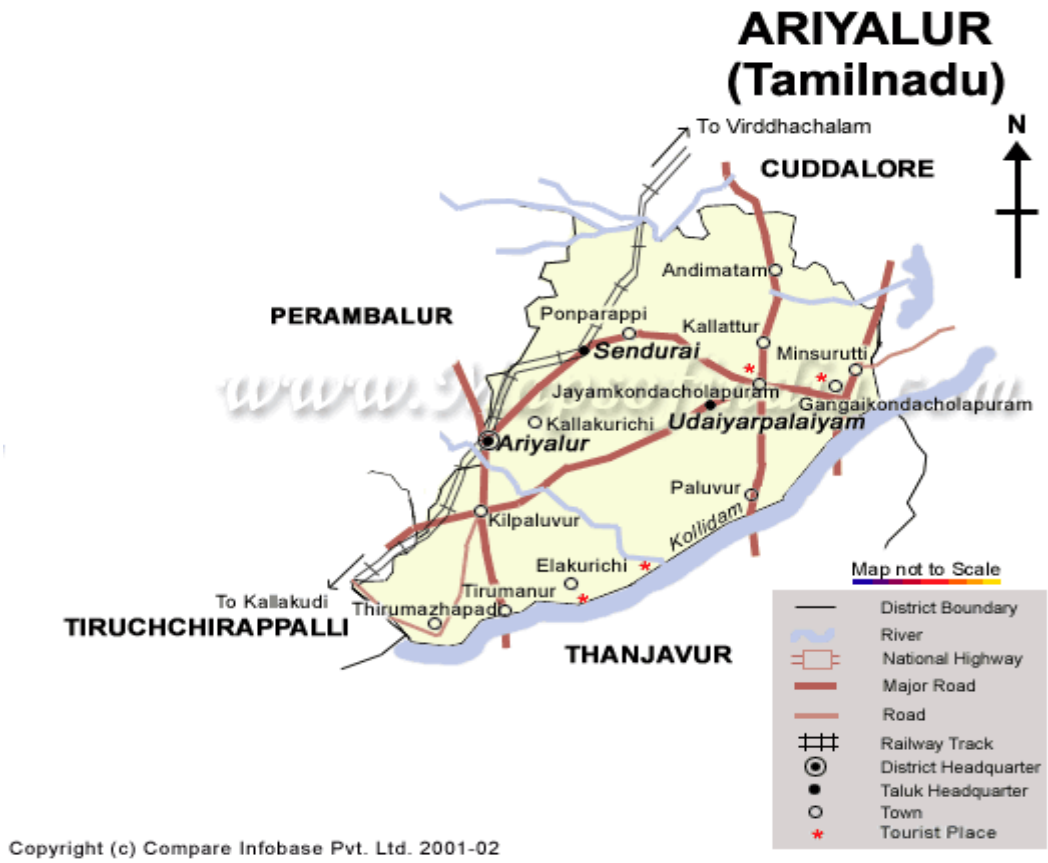
The feedback received in the District Collectors Meeting was incorporated before finalization of the District Agriculture Plan. The Strategic Research Extension Plan and Agriculture Technology Management Agency reports were also reviewed and relevant details have been incorporated in the draft report.

CHAPTER - II

GENERAL DESCRIPTION OF THE DISTRICT

2.1 Introduction

i. Map of the Ariyalur District



ii. Crops

The major crops and varieties grown in Ariyalur district is given in annexure.

iii. Animal Husbandry and Fisheries Activities in the District

a. Veterinary Institutions

Veterinary Hospital	: 2
Veterinary dispensary	: 19
Veterinary Subcentre	: 17
Mobile veterinary Unit	: 1

b. Poultry Development

a. Chicks produced in hatcheries : NIL

b. Birds sold for breeding : NIL

c. Birds sold for table : NIL

c. Livestock and Poultry Population (17th Livestock Census, 2004)

White Cattle	: 202033
Buffalo	: 16002
Sheep	: 73775
Goat	: 258953
Horses	: 5
Donkeys	: 49
Camels	: 49
Pigs	: 8784
Poultry	: 229340

d. Breedable Bovine Population

White Cattle	: 70850
Buffalo	: 5440

e. Dairy Development

i. Milk Chilling Plants : 1

ii. No. of Milk Co-Operative Societies : 213

Collection Centres &Co-OP Societies : 204

iii. Milk Production (Lakh litres)

Flush Season : 294.82

Lean Season : 260.95

f. Fisheries

i. Inland Fish Production (MT) : 6480

2.2 District at a Glance

2.2.1 Location and Geographic Units

The new district was bifurcated from Ariyalur district on 23rd November 2007. Ariyalur district will comprise three taluks - Ariyalur, Udayarpalayam and Senthurai and three Assembly segments - Ariyalur, Andimadam and Jayankondam. The district occupies an area of 2,033.66 km². The geographical extent of Ariyalur taluk is 681.19 sq. km; Sendurai 314.82 sq. km; and Udayarpalayam 943.30 sq. km. This district has 51% of males and 49% of females. It is rich in limestone resources. The district is bounded on the North and North West by Cuddalore district, West and South West by Ariyalur district, on the East and North East by Tanjore district and on the South East by Coleroon river. It lies between $10^0$54' and 11^o30' of North latitude and 78^0 40' and 10^o 30' of East longitude. It is almost a coastal district. 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 average height of the Pachamalai hill is 600 meters though a part of the peaks raise to 1020 meters. The western portion of the district is 180 metres above mean sea level and tapers towards the East and reaches the sea level. There are two rivers flowing through the district namely Maruthaiyaru and Anaivari Odai.

The Average annual rainfall is 949.6 mm. Agro climatic zone is Southern zone. Semi arid during South West monsoon and moist sub-humid during North East monsoon. The district population density per square kilometer is 358.

Big industrial houses like Birlas (Grasim Industries), India cements, Dalmia cements, Madras cements have their cement units here. Tamil Nadu government's TANCEM factory is in Ariyalur. The district is rich in fossil resources. Evidences prove that Ariyalur had a river long years ago and then it became a forest with natural animals like dinosours. Elakurichi is one of the important tourist place. There is a pond named "chettiyeri" which is used mainly for drinking purpose. The district is bordered by the districts of Cuddalore in the north, Ariyalur and Tiruchirapalli in the west, Thanjavur and

Tiruvarur in the south and Nagapattinam in the east. The new district will have a total of 16 police stations. It is famous for its cement industries in and around it. This is possible due to its vast limestone reserve which is the potential raw material for cement industries.

Ariyalur town has several features which make it famous like Kallankurichi Kaliya perumal temple, one of the historical place and famous for a number of cement factories (arasu cements) in and around Ariyalur. It is also a good place for pursuing education Arasunagar Matriculation Higher Secondary School is one among them.Ariyalur Govt.Hr.Sec.School is one of the ancient School in Tamilnadu. Puthukottai Girama panchayat is a village with 100 percent literacy in Ariyalur district. There are more than 100 teachers from this village.

2.2.2 Demographic Profile

As per the 2001 census, the population of Ariyalur was 694,058. About 51% of the population constitutes males and 49% of the population constitutes females Ariyalur has an average literacy rate of 73%, higher than the national average of 59.5% with 55% of the males and 45% of female literacy.

2.2.3 Topography and Agro Climatic Characteristics

Rainfall 951.1 mm (Annual) Climate Max: 38°C, Min: 24°C, Land of Limestone Ferruginous red loam occurs in Ariyalur district. The texture is usually loamy, the colour varying from red at the surface to yellow at the lower horizon. The soils are of medium depth with good drainage, free from accumulation of salt and calcium carbonate, pH ranging from 6.5 to 8.0 and contain low amounts of organic matter, nitrogen and phosphorus but with generally adequate amounts of potash and lime. The major cashew grown districts are Ariyalur and Cuddalore which occupies 77.56 and 22.44 per cent of the total cashew cultivable area.

Red loam soil is found to be prevalent in Sendurai, T. Palur, Andimadam, Jeyankondam blocks of Ariyalur District. Block soil is found in Thirumanur and Ariyalur blocks of the district. The blockwise details of soil classification are given in Annexure. Description of soil types in Ariyalur district is given in Table 2.1.

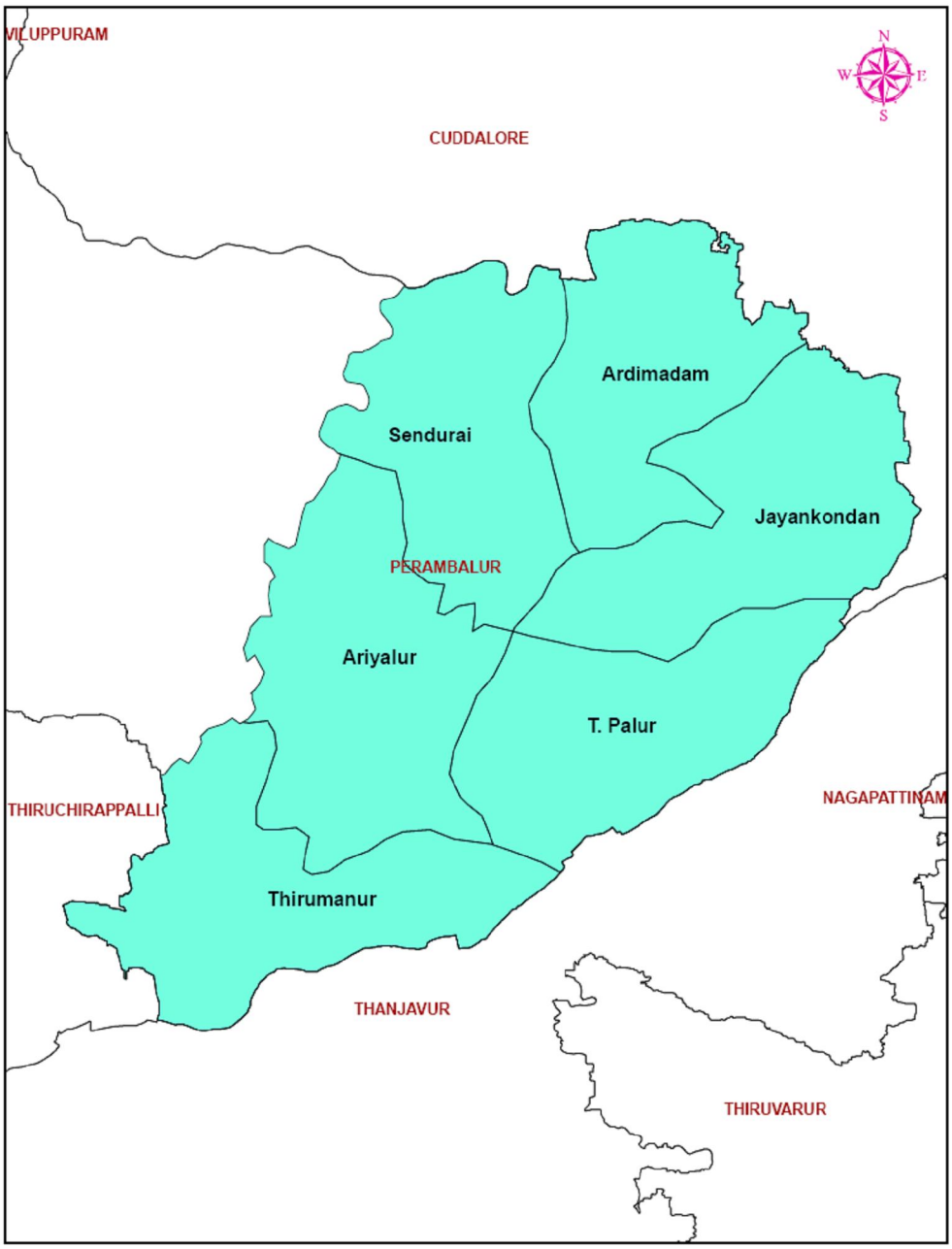
Table 2.1 Ariyalur Soils and Area in Hectare

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
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

Table 2.1 Contd….

Soil Description	Area (ha.)
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 ZONE OF ARIYALUR DISTRICT



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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.

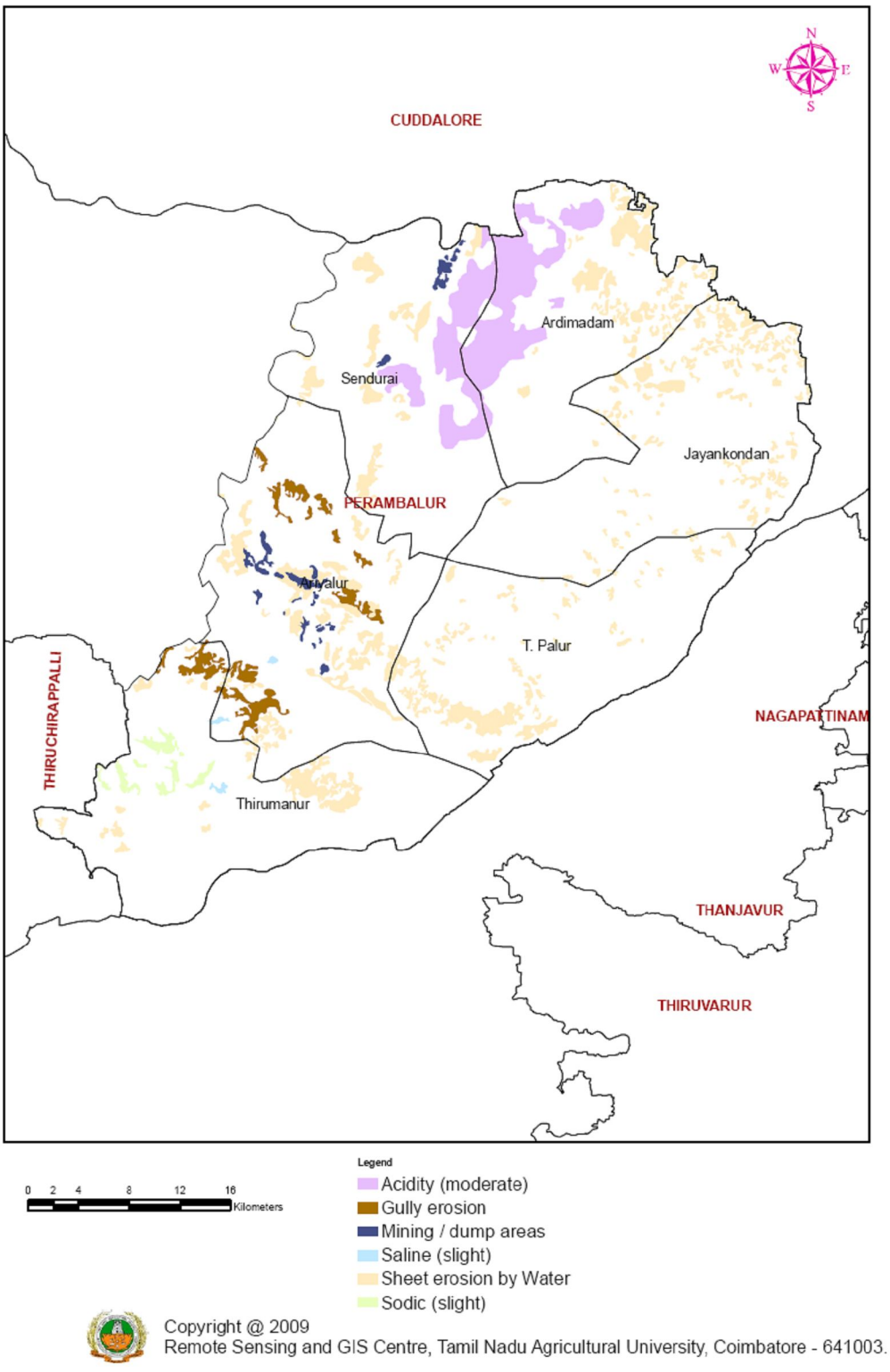
HIGH RAINFALL ZONE

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 ARIYALUR 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

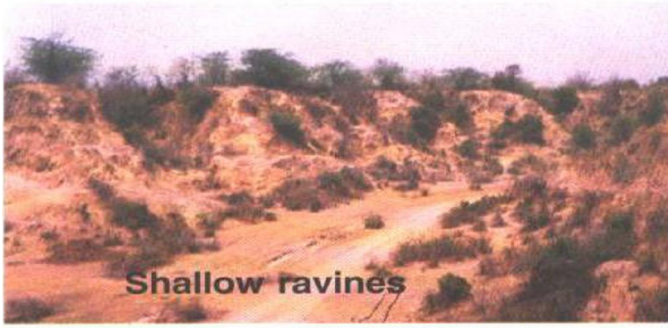
When the surface runoff goes in the form a concentric flow, a tiny water channels are formed in the field. These are small rivulets of such a size that they can be worked over with farm machinery. Rills are generally associated with the cultivated lands and are visible in the ploughed soil after first 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.

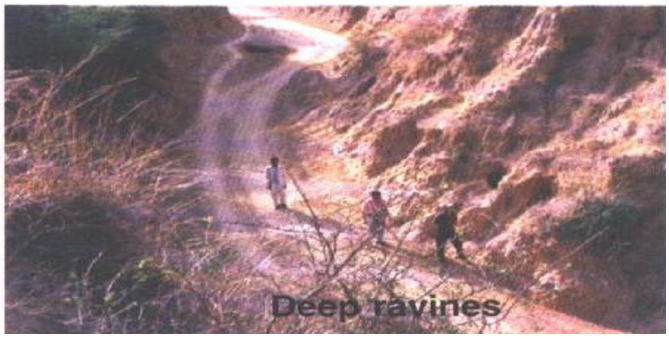
3. Gullies

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.

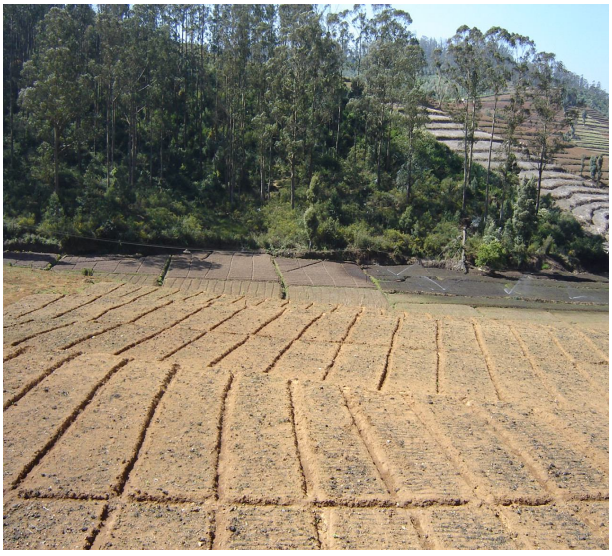
Salinity

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

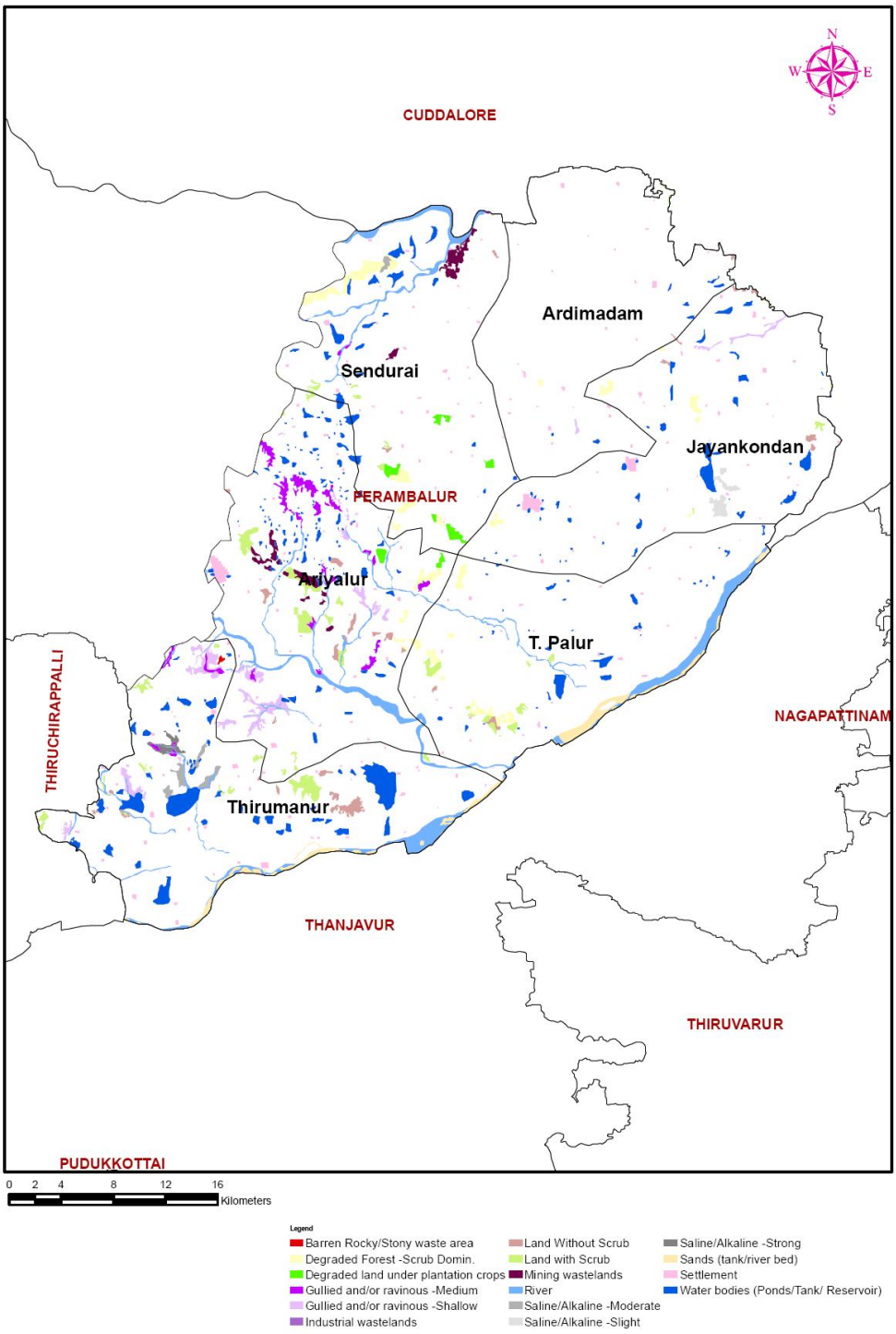
Barren / rocky / stony areas are the rock exposures of varying lithology often barren and devoid of soil and vegetal cover. They occur in hill forests as openings or as isolated exposures on plateau and plains. These can be easily delineated from other type of degraded land because of their severe nature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

Climatic Conditions and Rainfall Seasons

Climate	:	Tropical
Category	:	Medium and high region
Rainfall	:	Around 908 mm.
Precipitation	:	45-50 per cent
Monsoon	:	North-East Monsoon

Major Crops	:	Paddy, Maize, Millets, Sugarcane, Tapioca, Cotton, Onion, Chillies and Ground nut
Major Plantation Crop	:	Cashew

2.2.4 Irrigation (Canal, Tubewells, Wells, Tanks etc.)

Major Rivers : Kollidam

Canals : Irrigation is provided in Thriumanur and T.Palur blocks through Pullambadi and Nandhiyar canals from Kollidam.

Canals No & Length : 4 & 47 KM

Wells used for Irrigation purpose only	: 45645
Tube Wells	: 10386
Reservoirs /DAM	: 2
Tanks	: 816

The net and gross area irrigated sourcewise of Ariyalur district is given in annexure.

CHAPTER - III

SWOT ANALYSIS OF THE DISTRICT

3.1. Introduction

The strength, weekness, opportunities and threat analysis about agriculture and allied enterprise of ariyalur district was done involving all the stakeholders of agriculture and allied sectors highlight of such analysis is persented below.

3.2. SWOT Analysis of the District

Strengths

- The major river namely Kollidam flows in the district, which serves as a source for irrigation.
- Canal Irrigation is provided in Thriumanur and T.Palur blocks through Pullambadi and Nandhiyar canals from Kollidam.
- Favourable agro climatic conditions for the cultivation of Paddy, Cashew, Cholam, Ragi, etc.
- Large number of people practising farming in the district.
- Predominance of both red and block soil in a district.
- Rural women interested in goat farming.

Weakness

- Crop rotation not followed by farmers, monocropping is being adopted
- Groundwater cannot be used adequately due to salinity problem
- High pH and soluble salt concentration in Thirumanur and T. Palur blocks
- Water logging and ill drained soil conditions
- 70Percent of the cultivable area is under rainfed
- Dominance of poor and socio economically weaker section people in the district
- Inadequate facilitation for marketing of agricultural commodities.
- Non availability of artificial insemination services in time and also door to door.

Opportunities

- Availability of development departments namely agriculture, horticulture, agriculture marketing, forestry, animal husbandary, water resource organization, fisheries etc… in the district to take care of the development of agriculture and allied activities.
- North east monsoon is benefiting the farmers of the district.
- Emergence of special economic zone in neighbouring district may provide employment opportunities and favour trade of agricultural commodities.
- Cashew fruit processing industries could be established in the district thus enhancing the value chain, employment opportunities and income of farmers.
- Rainwater could be harvested and conserved for groundwater recharging and irrigation purposes.
- Knowledge and technology empowerment of farmers/ rural women (SHGs) on scientific dairy farming to increase milk production, to augument fertility, to produce clean milk and preparation/ marketing of value added milk products.

Threat

- High scarcity of labour for performing various agricultural operations
- Seasonal variations in rainfall
- Less care for soil health management by farmers
- Low productivity of crops limiting the food grain production of the district
- Depletion of soil macro and micro nutrients due to the practice of monocropping by the farmers.

3.3. Accommodating SWOT – Addressing issues emerging out of the Analysis

Strength, Weakness, Opportunities and Threat with focus on agriculture and allied sectors of Ariyalur district was done. Based on this analysis specific attention was given to draw interventions in such a way that these would tackle the problems faced by the farmers in the district. Accordingly the development plans would focus on overcoming the weakness, considering the strength, exploiting the opportunities and over coming the threats faced by the farmers in the district.

Hence the development interventions such as integrated rice productivity improvement programme. Sustaining the soil health, reclamatin of saline soil in Thirumanur and T. Palur blocks, creation of water harvesting structure in rainfed areas, strengthening group based market led extension approach, soil conservation and water management works, processing, promoting the concept mechanised village, precision farming for horticulture development, feed and fodder development, genetic upgradation, distribution of elite rams or bucks etc.. have been contemplated in the proposal.

3.4 Composite Index of Agricultural Development of Perambalur and Ariyalur 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 100Percent 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 four yeqr1990-91, 1995-96, 2000-01 and 2005-06. In all, 25 indicators of agricultural development as given in Table 3.1 were used for estimating the composite index of development for the district. The 25 indicators were grouped into 6 different 'components': i) Crop-Area-Variables (10) ii) Irrigation (7) iii) Livestock (3) iv) Fisheries (1) v) Fertilizer (3) and vi) Cultivators-Labourers (2).

The analysis showed that Perambalur district which was classified as 'very backward' in agricultural development during 90-91 and 2000-01 and it 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 3.2. 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 4 periods.

Table 3.1 Selected Indicators of Agricultural Development for Perambalur/Ariyalur District

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

Table 3.2. Rank of Perambalur/Ariyalur District in Terms of Agricultural Development among other Districts of Tamil Nadu during 1990-91 to 2005-06

Component of Composite Index	Crop-Area-Variables	Irrigation	Livestock-	Fisheries	Fertilizer	Cultivators-Labourers	Overall
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 AGRICULTURE SECTOR

4.1 Introduction

This chapter deals with major resources available in the Ariyalur district with special reference to land use pattern, soil health, water resources, major crops, farm mechanization, ongoing projects, constraints analysis and researchable issues.

4.2 Land Use

Total net area sown in the district is 124795 ha, Total forest area is 9051 ha, the total uncultivable waste is 8619 ha. The Land put to non Agricultural uses is 27472 ha. The total Cultivable Wastes in district is 3504 ha. The total permanent pasture land available in district is 1298 ha. The total Land under trees not included under net area sown is 6469 ha. The total land under current fallows is 9148 ha and other fallow is 2675 ha. The taluk wise land use pattern of the district is given in Annexure.

4.3 Soil Health

The soils are of medium depth with good drainage, free from accumulation of salt and calcium carbonate, pH ranging from 6.5 to 8.0 and contain low amounts of organic matter, nitrogen and phosphorus but with generally adequate amounts of potash and lime. The major cashew grown districts are undivided Perambalur and Ariyalur districts and Cuddalore which occupy 77.56 and 22.44 per cent of the total cashew cultivable area respectively.

Red loam soil is found to be prevalent in Sendurai, T. Palur, Andimadam, Jeyankondam blocks of Ariyalur District. Block soil is found in Thirumanur and Ariyalur blocks of the district. The blockwise details of soil classification are given in Annexure.

4.4 Water Resources and Management

- The net and gross area irrigated sourcewise of ariyalur district is given in Annexure.
- The major river namely Kollidam is flowing in the district, which serves as a source for irrigation.
- Canal Irrigation is provided in Thriumanur and T.Palur blocks through Pullambadi and Nandhiyar canals from Kollidam.

4.5 Major Crops and Varieties in the District

Major crops in the district are paddy, cholam, ragi etc…Major crops season and the varieties cultivated in the district are given in Annexure.

4.6 Input Management

Agricultural inputs such as chemical fertilizers, pesticides, biofertilizers, seeds, Bt cotton seeds, water etc.. are adopted by farmers at below optimum level by the small and marginal farmers. Overuse of fertilizers and pesticides were also observed among big farmers in the district.

4.7 Farm Mechanisation / Farm Equipments

Farmers are not aware of modern farm machineries and equipments to carryout various agricultural opearations. Hence popularisation of the modern farm machineries and equipments among farmers are needed. However small scale adoption of farm machineries is also observed.

4.8 Special Projects / Programmes on going in the District

The Special Projects/ Programmes on going (2007-2008) in the district is highlighted below and the details of such programmes and its achievement are given in Annexure.

4.8.1 Agriculture – ongoing Schemes

- Integrated Cereals Development Programme-2007-2008
- Integrated Scheme on Pulses under - Isopom Achievement (National Pulses Development Programme)
- Pulses development scheme
- Oil Seed Production Programme Achievement-2007-2008
- ISOPOM - Maize Scheme
- Coconut Development Scheme Achievement-2007-2008
- Cotton Mini Mission-II-2007-2008
- Seed Village Scheme 2007-2008
- Oil Palm Development Programme-2007-2008
- System of Rice Intensification for Paddy
- National Agricultural Development Project 2007-08

The details of the ongoing schemes with budget implemented by the Department of Agriculture, for Ariyalur District is given in Table 4.1 to 4.9

Table 4.1. Agriculture Department - Schemes implemented in 2007-2008

Integrated Cereals Development Programme-2007-2008 - Achievement

Undivided Ariyalur and Perambalur District

S. No	Name of the Component	Unit	Target						Achievement					
			Physical			Finance in Rs.			Physical			Finance in Rs.		
			General	Scp	Total	General	Scp	Total	General	Scp	Total	General	Scp	Total
A	**II Subsidies**													
1	Certified Paddy Seed Distribution (Rs.2/Kg)	M.T	239	102	341	477400	204600	682000	226	115	341	451700	229385	681085
2	SRI In Cluster-10 Ha Per Cluster (Rs.25000/10 ha)	Nos	8	2	10	160000	40000	200000	8	2	10	143224	56766	199990
3	I.P.M. Demonstration (Rs.17000/No.)	Nos	3	2	5	51000	34000	85000	5	0	5	77546	8200	85746
	Sub Total					**688400**	**278600**	**967000**	**0**	**0**	**47**	**672470**	**294351**	**966821**
B	**72 Trainning**					35000	15000	50000	0	0	3	35000	15000	50000
	Sub Total					**35000**	**15000**	**50000**	**0**	**0**	**3**	**35000**	**15000**	**50000**
C	**05 OE / OC**								0	0	0	0	0	0
4	**POL, Maintenance & Contingency**					30000		30000	0	0	2	29977	0	29977
	Sub Total					**30000**		**30000**	**0**	**0**	**2**	**29977**	**0**	**29977**
	Grand Total					**753400**	**293600**	**1047000**	**0**	**0**	**51**	**737447**	**309351**	**1046798**

Table 4.2. Ariyalur/Perambalur District

Integrated Scheme on Pulses under - ISOPOM Achievement

(National Pulses Development Programme)

S.No	Name of the Components	Unit	Target						Achievement					
			Physical			Finance			Physical			Finance		
			General	Scp	Total	General	Scp	Total	General	Scp	Total	General	Scp	Total
1	Procurement of Breeder seeds (100 % Sub)	Kgs	37.5	12.5	50	1875	625	2500	12	4	16	635	200	835
2	Procure of Foundation seeds Rs.10/KG	Qtls	5.5	1.35	6.85	2750	675	3425	7	1	8	5580	350	5930
3	Procurement of certified seeds Rs.10 /Kg.	Qtls	64.2	21.4	85.6	32100	10700	42800	90	29	119	58377	18482	76859
4	Distribution of C seeds Rs.12/Kg	Qtls	64.2	21.4	85.6	51360	17120	68480	79	52	131	91684	20712	112396
	Total Seed component					88085	29120	117205	0	0	0	156276	39744	196020
5	Compact Block Demonstration 50 % [or] Rs.2000	Ha	14	5	19	28000	10000	38000	19	5	19	31444	6556	38000
6	IPM Demonstration Rs.12315/ Ha	Nos	1		1	12315		12315	1	0	1	12315	0	12315
7	Distribution of Gypsum	Ha							0	0	0	0	0	0
8	Distribution of Bio-Fertilizer Rs.50/Ha or 50 per cent	Ha	177	59	236	8850	2950	11800	299	89	388	9759	2774	12533
9	Distribution of Bio-Pesticide 50 % 0r Rs. 250 / ha	Nos	7.5	2.5	10	1875	625	2500	8	3	11	1893	558	2451

Table 4.2. Contd….

S.No	Name of the Components	Unit	Target						Achievement					
			Physical			Finance			Physical			Finance		
			General	Scp	Total	General	Scp	Total	General	Scp	Total	General	Scp	Total
10	Distribution of NPV-50 %	Ha	3	2	5	750	500	1250	3	1	4	949	276	1225
11	Micro Nutrient Spray-50 % or Rs.70/Ha	Ha	248	82	330	17360	5740	23100	197	133	330	13790	11514	25304
12	DAP Spray-50 % or Rs.100/-Ha	Ha	106	36	142	10600	3600	14200	65	58	123	8371	5786	14157
13	PP Equipement Distribution - 50% or Rs.710 / No	Nos	18	7	25	14400	5600	20000	23	5	28	16330	3550	19880
14	Distribution of Sprinklers sets	Nos							0	0	0	0	0	0
15	Pipes Carrying Water from Source to Field (No) 50% or Rs.15000/-	Nos	2	1	3	30000	15000	45000	3	0	3	45000	0	45000
16	Farmers Trainning Rs.15000/-	Nos	3	1	4	45000	15000	60000	4	0	4	45000	15000	60000
17	Village Campaign	Nos							0	0	0	0	0	0
18	Farmers Interest Groups	Nos							0	0	0	0	0	0
19	Staff and Contingency					7500	2500	10000	0	0	0	0	9900	9900
20	POL					40000	3000	43000	0	0	0	40000	3000	43000
	Non - Seed Total					216650	64515	281165	0	0	0	224851	58914	283765
	T o t a l					**304735**	**93635**	**398370**	**0**	**0**	**0**	**381127**	**98658**	**479785**

Table 4.3. Oil Seed Production Programme Achievement-2007-2008
Ariyalur/Perambalur District

S.No	Name of the Components	Target						Achievement					
		Physical			Finance			Physical			Finance		
		General	Scp	Total	General	Scp	Total	General	Scp	Total	General	Scp	Total
1	Purchase of breeder seed -100% Sub	7	3	10	31500	13500	45000	10.34	2.61	12.95	33790	11800	45590
2	Production of Foundation seed-Rs. 10/Kg	175	75	250	87500	37500	125000	338.68	298.79	637.47	217180	160425	377605
3	Distribution of certified seeds Rs.12/Kg	875	375	1250	700000	300000	1000000	893.78	141.73	1035.51	944085	147206	1091291
4	Production of certified seed - Rs.10/Kg	875	375	1250	437500	187500	625000	252.91	185.43	438.34	220140	139050	359190
	Total Seed Component				1256500	538500	1795000	0	0	0	1415195	458481	1873676
5	Block demonstration - G.Nut-50%	21	9	30	84000	36000	120000	24.1	6.9	31	94935	29075	124010
6	Block demonstration - Gingelly-50%	6	2	8	9000	3000	12000	6	2	8	8359	3641	12000
7	Block demonstration - S.Flower-50%	1		1	2500		2500	0	1	1	1649	851	2500
8	Distribution of Power Operated Sprayer-50 %	14	6	20	28000	12000	40000	0	0	0	0	0	0
9	IPM Demonstrtion-Rs.22680/ No	4	2	6	90720	45360	136080	5	1	6	103288	32730	136018

Table 4.3. Contd….

S.No	Name of the Components	Target						Achievement					
		Physical			Finance			Physical			Finance		
		General	Scp	Total	General	Scp	Total	General	Scp	Total	General	Scp	Total
10	Bio Fertilizer Distribution-Rs.50/Ha	3500	1500	5000	175000	75000	250000	6093	2490	8583	182782	74706	257488
11	Distribution of Weedicide-Rs.500/Ha	4	0	4	2000	0	2000	4	0	4	2000	0	2000
12	Farmers Training Programme-15000/	6	2	8	90000	30000	120000	6	0	6	90000	30000	120000
13	Distribution of HOS-710/-	35	15	50	28000	12000	40000	55	20	75	39050	14200	53250
14	Combined Nutrient spray=100 %	36	16	52	7200	3200	10400	56.7	8	64.7	11467	3644	15111
15	Distribution of gypsum -50 %	840	360	1200	476640	288000	764640	678	213	891	561271	203323	764594
16	Distribution Of Bio Pesticide -Rs.250/	224	96	320	56000	24000	80000	407	10	417	69681	10247	79928
17	Block demonstration of Polythene Mulch-Rs.8000/-	7	3	10	73500	31500	105000	0	0	0	0	0	0
18	Pipe line-50 % or Rs.15000/-	17	8	25	255000	120000	375000	24	6	30	430500	81000	511500
	Non Seed Total				1377560	680060	2057620	0	0	0	1594982	483417	2078399
	Grand Total				**2634060**	**1218560**	**3852620**	**0**	**0**	**0**	**3010177**	**941898**	**3952075**

Table 4.4. Ariyalur/Peramablur District

ISOPOM - Maize Scheme

Sl No	Name of the Component	Unit	Target						Achievement					
			Physical			Finance			Physical			Finance		
			General	Scp	Total	General	Scp	Total	General	Scp	Total	General	Scp	Total
1	Production Of Certified Seed thro' Dept Rs.10/-	Qtl	3.75	1.25	5	1875	625	2500	5.47	1.83	7.3	5475	1825	7300
2	Distribution Of Certified Seed thro' Dept Rs.12/-	Qtl	22.5	7.5	30	18000	6000	24000	93.9	38.33	132.23	77990	16768	94758
3	Block Demonstration by Dept.50% or Rs.4000/-	Nos	7.5	2.5	10	30000	10000	40000	6	4	10	25122	14878	40000
4	IPM Demonstration by Dept Rs.22680/-.	Nos	1	1	2	22680	22680	45360	2	0	2	31808	13552	45360
5	Pipes Carrying Water From Source to 50% or Rs.15000/- the Field	Nos	6	1	7	70000	15000	85000	6	1	7	70000	15000	85000
6	Farmer's Training-Rs.15000/ - 50 No.	Nos	50	50	100	15000	15000	30000	2	0	2	22500	7500	30000
7	Seminar on Maize-1000 Nos.-15000/-	Nos	1		1	15000		15000	0	0	0	15000	0	15000
8	State Level Workshop On Maize Rs.20000/-	Nos	1		1	20000		20000	0	0	0	20000	0	20000
9	Provision Of Audio-Visual Aids Rs.400000/-Dt	Nos	1	1	2	200000	200000	400000	0	0	0	312427	99980	412407
10	POL					31500		31500	0	0	0	31475	0	31475
11	PUBLICITY					2500	0	2500	0	0	0	2500	0	2500
	Total					**426555**	**269305**	**695860**	**0**	**0**	**0**	**614297**	**169503**	**783800**

Table 4.5. Ariyalur/Perambalur District

Coconut Development Scheme Achievement-2007-2008

Sl.No	Name of the Scheme	Target		Achievement		No of Farmers Benifited	10 % SC/ST Allocation			
							Target		Achievement	
		Physical	Finance	Physical	Finance		Physical	Finance	Physical	Finance
I	**Distribution of Coconut Seedlings (No)**									
	Tall	5000		5000						
	Tall X Dwarf	5000		5000						
	Total	**10000**		**10000**						
II	**Control of Black Headed Caterpillar**	100		100						
III	**Coconut Board Scheme**									
1	Area Expansion Under Coconut (Ha)	2								
2	Organic Manure Units (Nos.)	0								
3	Management of Disease affected Plants (Viz., Cut and Removal of Disease Affected Plants)	50	12500	50	12500	22	3.0		3	
4	**Laying New Demo (No)**	**1**	**17500**	**1**	**17500**	**1**	**0**	**0**	**0**	0
5	**Maintenance of Demo (No)**	**3**	**52500**	**3**	**52500**	**3**	**0**	**0**	**0**	0
	Total		**82500**		**82500**					

Table 4.6. Ariyalur/Perambulur District

Cotton mini mission-II-2007-2008

Sl.No	Name of the components	Unit	Target						Achievement					
			Physical			Finance			Physical			Finance		
			General	Scp	Total	Target	Achiev	Total	General	Scp	Total	General	Scp	Total
1	Breeder seed Subsidy-100 %	kg	4	2	6	533	267	800	9	0	9	293	0	293
2	Certified Seed Production-Rs.27.71 - 50 %	Qtl	19	6	25	28500	9000	37500	34.04	0	34.04	94351	0	94351
3	Certified Distribution	Qtl	19	6	25	38000	12000	50000	22.762	10.84	33.602	32304	15190	47494
4	Seed treatment with Chemicals	Qtl	16	4	20	960	240	1200	66	69.8	135.8	660	698	1358
5	Distribution of Pheromone traps	Ha	140	60	200	19600	8400	28000	0	0	0	0	0	0
6	Distribution of Bio Agents	Ha	140	60	200	63000	27000	90000	0	0	0	0	0	0
7	Distribution of Power Operated Sprayers	No	175	75	250	350000	150000	500000	0	0	0	0	0	0
8	Distribution of Hand Operated Sprayers	No	140	60	200	112000	48000	160000	531	205	736	378900	146360	525260
9	Pest Surveillance	No	70	30	100	70000	30000	100000	68	32	100	68000	32000	100000

Table 4.6. Contd…

Sl.No	Name of the components	Unit	Target						Achievement					
			Physical			Finance			Physical			Finance		
			General	Scp	Total	Target	Achiev	Total	General	Scp	Total	General	Scp	Total
10	FLD Production Technology Demonstration	No	28	12	40	140000	60000	200000	67	11	78	353689	38370	392059
11	Distribution of Bio-fertilizers	No	8750	3750	12500	13125	5625	18750	11600	5764	17364	17400	8646	26046
12	Pulses Intercropping	Qtl.	18	7	25	11736	4564	16300	16.65	8.42	25.07	10172	6123	16295
13	Micro Nutrient Mixture Distribution	M.T.	1.5	0.5	2	9000	3000	12000	0.938	1.04	1.978	3750	8120	11870
14	Farmers Training	No	28	12	40	140000	60000	200000	38	2	40	190000	10000	200000
15	Contingency					100000	0	100000	0	0	0	93460	5934	99394
16	F.F.S.	No	11	4	15	187000	68000	255000	14	1	15	222182	32728	255000
	Total					**1283454**	**486096**	**1769550**	**0**	**0**	**0**	**1465161**	**304169**	**1769330**

Table 4.7. Seed Village Scheme 2007-2008

S.No	Crop	Area Covered (Acre)		Distribution of Seeds (M.T.)				Training (in Nos.)	
		Target	Achmt. Upto the month	Target	Achmt	General	SCP	Target	Achmt
1	PADDY	NA	NA	NA	66.86	NA	NA	NA	NA
2	OIL SEEDS	NA	NA	NA	15.35	NA	NA	NA	NA
3	PULSES	NA	NA	NA	0.00	NA	NA	NA	NA
	TOTAL	NA	NA	NA	82.20	NA	NA	NA	NA

Table 4.8. Seed Village Scheme 2007-2008

Financial Expenditure

Sub Head S.No.	Component	Target BE/RE/FMA (Rs.in Lakhs)	Expenditure during the month (in lakhs Rs.)			Expenditure Up to the month (in lakhs Rs.)		
			Total	General	SCP	Total	General	SCP
1	**Distribution of seeds**	NA	NA	NA	NA		NA	NA
	Paddy-50 % Subsidy	NA	NA	NA	NA	484755	NA	NA
	Oilseeds-50 % subsidy	NA	NA	NA	NA	207531	NA	NA
	Pulses	NA	NA	NA	NA	0	NA	NA
	Sub-Total	NA	NA	NA	NA	692286	NA	NA
2	**Training-Rs.15000/-**	NA	NA	NA	NA		NA	NA
	Paddy	NA	NA	NA	NA	225000	NA	NA
	Oilseeds	NA	NA	NA	NA	30000	NA	NA
	Pulses	NA	NA	NA	NA	0	NA	NA
	Sub-Total	NA	NA	NA	NA	255000	NA	NA
3	**Supply Of Storage Bin**	NA	NA	NA	NA	0	NA	NA
	Diverted to Paddy Seed Distribution	NA	NA	NA	NA	0	NA	NA
	Diverted to Oil Seed Distribution	NA	NA	NA	NA	0	NA	NA
	Sub-Total	NA	NA	NA	NA	0	NA	NA
	Grand Total	NA	NA	NA	NA	947286	NA	NA

Table 4.9. Oil Palm Development Programme-2007-2008

Ariyalur/Perambalur Dist

Sl. No	Details	Unit	Target						Achievement					
			Physical			Finance in Rs.			Physical			Finance in Rs.		
			General	SCP	Total	General	SCP	Total	General	SCP	Total	General	SCP	Total
1	Pre-Project Activities- (Rs.4290/ Ha)	Ha	68	22	90	289575	96525	386100	22.79	18.24	41.03	102909	72227	175136
2	I Year Subsidy- (Rs. 7000/ Ha)	Ha	68	22	90	472500	157500	630000	30.13	10.9	41.03	219796	66774	286570
3	II Year Subsidy- (Rs. 2450/ Ha)	Ha	42	14	56	102900	34300	137200	16.88	4.27	27	56050	10468	66518
4	III Year Subsidy- (Rs. 2800/ Ha)	Ha	175	58	233	489300	163100	652400	107.36	76	183.36	308670	192407	501077
5	IV Year Subsidy- (Rs. 3250/ Ha)	Ha	150	50	200	487500	162500	650000	108.22	24.88	133.1	376298	54373	430671
6	Drip Irrigation (SF/MF/SC/ST/ Women) @ Rs. 9300 Ha)	No	4	1	5	27750	9250	37000	5	0	5	46500	0	46500
7	Drip Irrigation (General Category- @ Rs.6200 /Ha)	No	2	1	3	11700	3900	15600	2	1	3	12400	6200	18600
8	Organic manure- Vermi compost	No	1	0	1	11250	3750	15000	1	0	1	15000	0	15000
9	Precision Farming	Ha	0	0	0	0	0	0	0	0	0	0	0	0
10	Farmers Training	No	75	25	100	37500	12500	50000	100	0	100	40000	0	40000
11	Publicity and Seminar (08 Publicity)					3750	1250	5000	0	0	0	5000	0	5000
12	Wire Fencing	Ha	15	5	20	42900	14300	57200	5.31	3.4	10.71	20900	9760	30660
	Grand Total					**1976625**	**658875**	**2635500**				**1203523**	**412209**	**1615732**

Source : Department of Agriculture, Ariyalur

4.9 Constraints Analysis

(i) Yield Gap Analysis of Major Crops

The yield gap of various crops grown in the district namely paddy, maize, cotton, sugarcane, groundnut, gingelly, sunflower, banana, onion, redgram, blackgram, chillies, cashewnut, cholam, cumbu, ragi was done blockwise and the details are presented in annexure (under the title productivity of crops). It was known that the yield gap varied from 0.1 to 15 tonnes for various crops listed above. The yield gap was found to maximum in sugarcane (15 tonnes). And it was found to be minimum in pulses.

(ii) Research / Extension / Adoption Gaps

The top three technologies mostly adopted by the farmers in the district was collected blockwise and analysed. It was found that the technologies such as seed treatment, micronutrient applications, biofertilizers, line sowing in groundnut, IPM, row planting in paddy, weedicide application in paddy etc. were adopted by the farmers.

Research is needed for development of drought tolerant crop varieties suitable for Ariyalur district. Research is needed for better use and management of saline soils which are prevalent in the district. Extension efforts are needed to decrease the yield gap by way of popularising the superior crop varieties which are resistant to pest and diseases and farm machineries suitable for various crop operations through awareness campaigns, demonstrations and success stories.

(iii) Processing / Storage / Marketing Gaps

Cashewnut is one of the major crops grown in the district. The farmers are using only the cashew nut. However the fruit is not used commercially. The fruit has got commercial value if it is processed. Hence establishment of cashew fruit processing industries in the district is needed to add value for the fruit and the give more income to farmers. Farmers also lack knowledge regarding better marketing practices. Market led agricultural extension services is also needed to be strengthened.

(iv) Existing Institutional Mechanism in the Government Sector

Farmers of Ariyalur district want to have decision support with regard to crop planting decisions, selection of suitable varieties for capturing the demand of markets, obtaining better price for their produce by selling them at appropriate market place. These issues could be overcome by strengthening department of agricultural marketing. Market intelligence cell need to be established in the department to carryout price forecasting of agricultural commodities and provide decision support to farmers to market their produce.

Considering the constraints mentioned above the proposals for the development of agriculture in the district is presented in chapter VI.

4.10. Recommended Interventions for the District-Agriculture

The interventions proposed for development of agriculture sector in Ariyalur district are as follows:

1. Integrated rice productivity improvement programme
2. Integrated soil health management
3. Problem soil management
4. Dry farming
5. Market led extension

The detailed project proposals on these interventions are given in chapter VI.

CHAPTER - V

ALLIIED AGRICULTURAL SECTOR

5.1 Introduction

Allied activities *viz.* horticulture, animal husbandry, sericulture, fisheries and forestry have the potential 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 surplus labour from the agricultural sector. The allied sector has the potential for putting the State's rural economy on a higher growth trajectory

5.2 Horticulture Development

Ariyalur 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, cotton, small onion, cashew nut, groundnut, gingelly and other vegetables. The farmers are 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 improved technologies, for which they need some support from Government in the form of subsidies and training. The ongoing schemes/programmes in the department of horticulture are as follows:

Ongoing Schemes – NADP - Horticulture

The following are the Horticulture Development Schemes implemented in the composite Perambalur district for the year 2007-08.

Table 5.1 Ongoing Schemes- Horticulture

Sl. No.	Name of the Scheme	2007 - 08	
		Target (ha)	Achievement (ha)
1	Integrated Horticulture Development Scheme (IHDS)	305	482
2	National Horticulture Mission (NHM)	2200	2200
3	Centrally Sponsored M.I. Scheme	625	--

The ongoing schemes proposed both for Ariyalur district to be implemented during the year 2008-09 are furnished in Tables 5.2 to 5.5.

ACTION PLAN 2008-2009

Table 5.2. Integrated Horticulture Development Scheme

District : Ariyalur

Sl.No.	Details	Target Proposed for 2008 - 09	
		Physical Area in (Ha)	Financial Rs. In Lakhs
	VEGETABLES		
	High Yielding Vegetables		
1	Chillies	100	0.500
2	Annual Moringa	50	0.375
3	Tomato	50	0.120
4	Gourd Varieties	50	0.125
5	Radish	10	0.250
6	Brinjal	25	0.075
7	Lab - Lab	10	0.250
8	Greens	50	0.050
9	Cluster Bean	5	0.125
	Total	**350**	**1.870**
	Hybrids		
1	Bhendi	50	2.200
2	Bitter Gourd	10	0.500
3	Brinjal	5	0.188
4	Tomato	5	0.188
5	Water melon	10	0.500
	Total	80	3.576
	Grand Total	**430**	**5.446**

Table 5.3. National Horticulture Mission

Proposed Action Plan for 2008 - 2009

District : Ariyalur

Sl.No.	Components		2008-09 Physical Area in Ha.	Finanacial Rs.in Lakhs
I	**PRIVATE SECTOR**			
	Small Nursery		1	1.500
II	**Establishment of New Garden**			
1)	Fruits - Perennial			
	1	Mango - I Yr.	25	2.813
		Mango - II Yr. Maintenance @ Rs.4,500/-	40	1.800
	2	Aonla - I Yr.	50	5.625
		Aonla - II Yr. Maintenance @ Rs.4,500/-	20	0.900
2)	Fruits - Non Perennial			
	1	Banana - I Yr.	100	7.500
		Banana - II Yr. Maintenance @ Rs.3,000/-	83	2.490
3)	Flowers			
	Loose Flowers		10	1.200
4)	Spices			
	1	Turmeric	0	0
	2	Chillies	500	56.250
5)	Plantation Crops			
	1	Cashew- I yr	500	28.125
	2	Cashew- II yr Maintenance	1100	24.750
6)	Creation of Water Sources		6	60.000
7)	Promotion of INM/IPM		500	5.000
8)	Organic Farming			
	1	Organic Farming	100	10.000
9)	Pollination support through beekeeping		50	0.400
10)	HRD IN HORTICULTURE			
	Tour & Training to farmers @ 2500/no/7 days		50	1.250
	Total		**3135**	**209.603**

Annual Action Plan 2008-09

Table 5.4. Centrally Sponsored Micro Irrigation Scheme

District : Ariyalur

1.AREA COVERAGE : PHYSICAL AND FINANCIAL PROGRAMME 2008-09

A. DRIP IRRIGATION

S.No.	Crop / Spacing	Area in ha	Total cost involved
I	**Horticulture Crops**		
1	Banana (1.5m x 1.5m)	10	275000
2	Cashew (8m x 8m)	10	100000
	Sub Total Drip	20	375000
II	Non Horticulture Crops Sugar cane (1.5m x 1.5m)	–	–
B. SPRINKLER IRRIGATION			
Vegetables (1m x 1m)		100	750000
C.DRIP DEMONSTRATION			
1	Mango (10m x 10m)	10	113250
2	Aonla (6m x 6m)	10	135000
3	Cashew (8m x 8m)	10	100000
4	Flowers (1.5m x 1.5m)	_	_
6	Chillies (1m x 1m)	10	216000
7	Vegetables (1m x 1m)	10	216000
8	Sugar cane (1.5 m x 1.5 m)		
	Sub Total Drip	**50**	**780250**
	Grand Total	**170**	**1905250**

Dove-tailing

In respect of Micro Irrigation scheme the target fixed for Horticulture Crops will be continued for the subsequent years also. As such the scheme will be dove-tailed with Precision farming component sanctioned for the year 2007-08.

Precision Farming (2007-08)

Table 5.5. Precision Farming

Sl.No.	Component	2007 - 08	
		Target (ha)	Dove tail to MIS
1	Drip & Fertigation system	500 ha	500 ha

The proposed development activities for X1 plan under DAP of NADP is given in Chapter VI.

5.3 Animal Husbandry

Animal Husbandry is one of the important enterprises of the district economy. The Animal Husbandry department has contributed immensely to livestock development in Aiyalur 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 Ariyalur 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 has been making progress in the field of Animal Husbandry particularly the Tamil Nadu Milk Producers' Federation has a milk collection center and processing plant at Ariyalur 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 be the major animal husbandry activity in the district in the coming years.

Livestock and Poultry Population (17th Livestock Census 2004)

White Cattle	: 202033
Buffalo	: 16002
Sheep	: 73775
Goat	: 258953
Horses	: 5
Donkeys	: 49
Camels	: 49
Pigs	: 8784
Poultry	: 229340

Ongoing Government Schemes for Livestock and Poultry Development

1. Assistance to states for control of animal disease (ASCAD)
2. National project for cattle and buffalo breeding
3. Economic assistance to Adi Dravider beneficiaries for purchase of milch cows by THADCO
4. Swarnajayanthi Gram Swarozgar Yojana (SGSY) – Capacity building and provision of income generating assets to women beneficiaries
5. District industries centre (DIC) – training in production/management aspects of small units of enterpreuner.

Interventions required Areas

1. Provide timely veterinary health care services for remote villages which are far away from government veterinary institutions. Well trained and qualified person for doing artificial insemination at door steps and para-veterinary staff for periodical vaccination should be appointed on contractual basis.
2. Fodder availability for livestock should be improved by identifying the wastelands in the district by having tie-up with other schemes implemented like IAMWARM, NAVAPRA and DPAP.
3. It is necessary to create awareness among rural people regarding scientific activities of animal husbandry for which IEC activities should be given priority.

The detailed action plan along with budget details is presented in chapter V1.

5.4 Fisheries Sector

Baseline Information

- 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 lakh against requirement of 39.05 lakh

Gaps Identified

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

Intervention Required 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
- Farmers training

The detailed action for development of fisheries sector is given in CHAPTER VI.

5.5. Agricultural Engineering

Ariyalur farmers are very poor in economic status. Majority of them are marginal farmers and small farmers. The agricultural operations and practices are still carried out following conventional procedures. They could not afford to adopt new agricultural machineries to increase their income. The ongoing schemes implemented by the Department of Agricultural Engineering are as follows:

Details of Ongoing Schemes Executed by Agricultural Engineering Department in Ariyalur District

A. Agricultural Mechanization Scheme

Agricultural machineries like power tiller, tractor, paddy transplanter, paddy thrasher are given to farmers at 25% subsidy. Agricultural implements like rotavator, disc plough, cultivator, subsoiler etc gender friendly equipments are given to farmers at 25% subsidy.

During 2007-08 one tractor, 82 power tillers and 6 rotavators were given to farmers incurring subsidy amount of Rs 25.937 lakhs.

B. Rainwater Harvesting and Runoff Management Scheme

Rainwater harvesting structures like check dams, farm ponds ,sunken ponds, rejuvenation failed wells ,formation of ooranies were carried out to harvest rainwater and manage runoff.18 check dams,19 farm ponds/sunken ponds, 2 ooranies were executed at a cost of Rs 19.16 lakhs.

C. Rainwater Harvesting Structures under NABARD Assisted RIDF-XI Fund

Rainwater harvesting structures like check dams, farm ponds, rejuvenation of failed wells, formation of percolation ponds were taken up in Veppur, Perambalur and Veppanthattai blocks of Perambalur district.

During 2007-08, 69 medium check dams,34 major check dams, 1 percolation pond were executed with a financial outlay of Rs 61.681 lakhs.

D. Replacement of Old Pump sets

To conserve electrical energy in farm sector, old agricultural pump sets were replaced with new energy efficient pump sets. New pump sets were given to farmers at 25% subsidy and electrical accessories were given at 50% subsidy. For scheduled caste farmers the subsidy for pump sets was 50% and subsidy for accessories was 50%.

During 2007-08, nine agricultural pump sets were given to farmers and 5 agricultural pump sets were given to scheduled caste farmers.

E. 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 three tractors with all implements are available in the district.

F. Minor Irrigation Scheme

Hand boring sets, rotary units are lent to farmers for hiring for sinking of shallow bore wells and tube wells, 7 hand boring sets and one rotary drill unit are available in the district.

G. Micro Irrigation Scheme

Drip Irrigation System for horticultural crops is laid at 50% subsidy to farmers.

H. Development of 2 Ac Wasteland Scheme

The cultivable waste lands are developed into cultivable land by this department and are given to farmers under Distribution of 2 acre waste lands to landless poor agricultural labour families scheme. The works carried out are jungle clearance, land shaping, bunding, discand tiller ploughing. The development cost for one acre is Rs 2600.The patta waste lands are also developed with the same cost norms.

I. Training to Farmers

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

5.6. Agricultural Marketing and Agribusiness

Agricultural marketing is one of the very important activities to be considered for the holistic development of farmers in the district. One of the important issues identified in this district is strengthening the agricultural marketing and agribusiness development. Some of the interventions like Commodity group formation, Market Intelligence dissemination, strengthening of market extension centre, Trainings and market infrastructure development activities are felt to be essential to achieve the proposed ends in marketing.

The detailed project proposal is given in chapter VI

5.7. Agricultural Credit

5.7.1. 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 Ariyalur district is furnished in Table 5.6.

Table 5.6. Activity Wise Credit Disbursement and Projections under Agricultural and Allied Sectors in Ariyalur District

(Rs. lakh)

Sectors	2008-09	2009-10	2010-11	2011-12
Crop loan	24961.44	26209.51	27519.99	28895.99
Term loan				
Minor irrigation	993.81	1043.50	1095.68	1150.46
Land Development	252.82	265.46	278.73	292.67
Farm Mechanization	1405.00	1475.25	1549.01	1626.46
Plantation & Horticulture	1071.92	1125.52	1181.79	1240.88
Forestry & Waste land Development	15.36	16.13	16.93	17.78
Dairy Development	1442.35	1514.47	1590.19	1669.70
Poultry	83.35	87.52	91.89	96.49
Sheep/Goat/Piggery	243.31	255.48	268.25	281.66
Fisheries	0.00	0.00	0.00	0.00
Storage Godown & Market yards	13.81	14.50	15.23	15.99
Bio-gas	0.00	0.00	0.00	0.00
Others	312.33	327.95	344.34	361.56
Sub total - Term loan	5834.06	6125.78	6432.04	6753.65
Total Agriculture Credit (1+2)	30795.50	32335.29	33952.03	35649.64
Non Farm sector	2038.16	2140.07	2247.07	2359.42
Other Priority Sector	5264.28	5527.49	5803.87	6094.06
Grand Total	**38097.94**	**40002.85**	**42002.97**	**44103.12**

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. 40002.85 Rs. 42002.97 and Rs. 44103.12 lakhs respectively. The total flow of agriculture credit in terms of crop loan and term loan in 2011-12 would be Rs.35649.64 lakhs. The flow of credit for non-farm sector and other priorty sectors in 2011-12 would be Rs.2359.42 and Rs.6094.06 lakhs respectively.

5.8. Constraint Analysis

i) Yield gap Analysis of Major Crops

The yield gap of various crops grown in the district namely banana, onion, chilies, cashew nut, mango, jackfruit, pineapple, guava, lemon, flowers was done block wise. It was known that the yield gap varied from 0.1 to 15 tonnes for various crops listed above. The yield gap was found to be maximum in fruits and it was found to be minimum in flower crops.

ii) Research/ Extension/ Adoption gaps

The top three technologies mostly adopted by the farmers in the district was collected block wise. It was found that technologies such as seed treatment, micronutrient applications, biofertilizers, line planting, IPM, row planting, weedicide application etc. were adopted by the farmers.

Research is needed for development of drought tolerant crop varieties suitable for Ariyalur district. Research is needed for better use and management of saline soils which are prevalent in the district. Extension efforts are needed to decrease the yield gap by way of popularizing the superior crop varieties which are resistant to pest and diseases and farm machineries suitable for various crop operations through awareness campaigns, demonstrations, success stories.

iii) Processing Storage / Marketing Gaps

Cashewnut is one of the major crops grown in the district. The farmers are using only the cashewnut. However the fruit is not used commercially. The fruit has got commercial value if it is processed. Hence establishment of cashew fruit processing industries in the district is needed to add value for the fruit and the give more income to farmers. Farmers also lack knowledge regarding better marketing practices. Market led agricultural extension services is also needed to be strengthened.

iv) Existing Institutional Mechanism in the Government Sector

Farmers of Ariyalur district want to have decision support with regard to crop planting decisions, selection of suitable varieties for capturing the demand of markets, obtaining better price for their produce by selling them at appropriate market place. These issues could be overcome by strengthening department of agricultural marketing. Market intelligence cell is to be establish in the department to carryout price forecasting of agricultural commodities and provide decision support to farmers to market their produce.

CHAPTER - VI
DISTRICT PLAN

6.1 Vision of XI Plan

The 11th 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 gap that divides rich and poor 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 per cent observed between 1980 and 1996-97 to a trend average of only 1.5per cent 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 4per cent.

Table 6.1 Agriculture – Budget Abstract

(Rs. in lakhs)

S.No	Component	2008-09	2009-10	2010-11	2011-12	Total Cost
		Total Cost	Total Cost	Total Cost	Total Cost	
1	IRPIP	185.250	185.250	181.500	178.150	730.150
2	ISHM	90.250	90.250	89.250	89.250	359.000
3	Problem Soil Management	263.580	263.580	263.580	263.580	1054.320
4	Dry Farming	26.730	26.730	26.730	26.730	106.920
5	Market Led Extension	231.000	231.000	231.000	231.000	924.000
6	Seed Testing Lab	6.000	0.000	0.000	0.000	6.000
	Total	**802.81**	**796.81**	**792.06**	**788.71**	**3180.39**

IRPIP – Integrated Rice Productivity Improvement Programme

ISHM – Integrated Soil Health Management

AGRICULTURE SECTOR

6.1.1 Integrated Rice Productivity Improvement Programme (IRPIP)

i) Background/ Problem Focus

Perambalur district carved out of Trichirapalli district in 1995, is a centrally located inland district spread over an area of 3, 69,137 Ha. The district was bifurcated as Perambalur and Ariyalur districts in November 2007. The District lies between 10^0 45' and 11^0 32 ' Northern latitude and 78 40' and 79^0 30' of eastern longitude. The soil is predominantly red loamy and black. The climate is tropical and the district falls Under the category of medium and heavy rainfall region with average rainfall of around 908 mm. Most of the Rain is received through North East Monsoon (October to early December).

The productivity of rice is found to be low (2 ton/ha) which need to be increased. Farmers use high seed rate and uncertified seeds/ inferior quality seeds in rice. Adoption of Zinc Sulphate and Borax is not practiced by majority of farmers. Farmers used aged seedlings.

ii) Project Goals

To Promote Integrated Rice Productivity Improvement Programme (IRPIP)

iii) Project Strategy

The following strategies would be adopted to achieve the above goals

1. Adoption of scientific Agriculture
2. Increasing Area under hybrid Paddy
3. Increasing Area under Semmai Nel Sagupadi
4. Use of 100 % Certified Seed/ Improved Varieties

iv) Project Rationale

Augmenting the yield of Rice through (IRPIP) Programme.

v) Implementation of the Project

At District level, the programme will be implemented constituting a committee under, the Chairmanship of District collector. The Joint Director of Agriculture will be the member secretary for implementing agricultural activities

vi) Elements under Stream-I

With a view to augment the yield of Rice by adopting Scientific Agriculture thereby increasing the standard of living of the farming community NADP is proposed seeking the financial assistance from central government A sum of Rs.730.15 Lakh for Ariyalur District is proposed for this purpose. The Agricultural components are presented in Table 6.2

Table 6.2 Agriculture – Components

S.No	Component	Cost
1	Grant to TANWABE/FIG to undertake seed production and Distribution	Rs.50000/group
2	Distribution of Certified seed	Rs.5/ Kg
3	Hybrid Seed Subsidy	75 % or Rs.122/Kg
4	Distribution of green Manure seed	75 % or18/ kg
5	Distribution of Soil Health Card	100 % or Rs.100/card
6	Semmai Nel Sagupadi demonstration	100 % or 10000/Ha
7	Transplanter to TANWABE/ SHG	75%
8	Power Tiller	50 % or Rs.50000/
9	Distribution of Znso4 and Mn mixture	Rs.500/Ha
10	Gypsum Distribution	100%
11	FFS	100 % or Rs.17000/-
12	Massive Rat Campaign in Village	100 % or Rs.5000/village
13	Village campaign	Rs.500/ Village
14	Power Thrasher	50%
15	Tarpaulin	100 % or Rs.10000/-
16	Thrashing Floor	Rs.50000/-
17	Publicity	Rs.100000/- District
18	Contigency/ Pol	Rs.100000/- District

vii) Reporting

The Scheme will be implemented during the year 2008 – 2012. The progress will be reported periodically.

viii) Budget

The project cost and budget for four years is presented in Table 6.3.

Table 6.3. NADP – Component - wise Budget – Agriculture Sector

Ariyalur District **(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
1	One time grant to TANWABE / FIG to undertake certified seed production and distribution @ Rs.50000/- per group (30 MT / Annum)	No.	30	15.00	30	15.00	30	15.00	30	15.00	120	60.000
2	Hybrid Seed Distribution @ 75 % (or) Rs.122 / Kg	Tonnes	10	12.20	10	12.20	10	12.20	10	12.20	40	48.8
3	Supply of Quality Certified seeds at nominal cost to enhance the SRR @ Rs. 7.5/- per kg. (Public and Private seeds) 50 % Subsidy	Tonnes	200	15.00	200	15.00	200	15.00	200	15.00	800	60.000
4	Distribution of Green Manure seeds at 75% subsidy of Rs.18/kg.	Tonnes	37.5	6.750	37.5	6.750	37.5	6.750	37.5	6.750	150	27.000

Table 6.3. 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)	100 Nos.	3.75	0.375	3.75	0.375	3.75	0.375	3.75	0.375	15	1.5
6	Distribution of Zinc Sulphate / Micro Nutrient @ Rs.500 / Ha. (or) 50% subsidy	L.Ha.	0.03	15	0.03	15	0.03	15	0.03	15	0.12	60
7	Gypsum 500 kg/ ha @ Rs.1875/Ha. or 100% subsidy	L.Ha.	0.015	28.125	0.015	28.125	0.015	28.125	0.015	28.125	0.06	112.500
8	Bio fertiliser @ 100% subsidy @ Rs.5 per No.	L.Nos	0.3	1.50	0.3	1.50	0.3	1.50	0.3	1.50	1.2	6.00
Integrated Pest Management												
9	Farmers Field School @17000/ No.	No	15	2.55	15	2.55	15	2.55	15	2.55	60	10.2
10	Massive Rat control campaign in village @ Rs.5000/village	Nos	38	1.9	38	1.9	38	1.9	36	1.8	150	7.5

Table 6.3. 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 Mechanization												
11	Demonstration of SRI @ Rs.10000 / Ha.100% Subsidy (to be organized in cluster of 10 Ha.)	Nos	300	30.00	300	30.00	300	30.00	300	30.00	1200	120.00
12	Transplanter to TANWABE / FIG / farmers @ Rs.75000 each or 50% subsidy	Nos	10	7.5	10	7.5	5	3.75	5	3.75	30	22.50
13	Power Tiller @ Rs.65000/- each or 50% subsidy	Nos	20	13.00	20	13.00	20	13.00	15	9.75	75	48.75
14	Power Thrasher @ Rs.50000/- per No.or 50% subsidy	Nos	6	3.0	6	3.0	6	3.0	6	3.0	24	12.00
Publicity & Training												
15	Publicity & Training @ Rs.50000/- per district	Nos	1	0.5	1	0.5	1	0.5	1	0.5	4	2

Table 6.3. 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
16	Village campaigns - Kharif / Rabi @ Rs.1000/- per campaign	Nos.	85	0.85	85	0.85	85	0.85	85	0.85	340	3.4
17	Publicity / POL & Hiring of Vehicle @ Rs.100000/- per district	Nos.	1	1	1	1.00	1	1	1	1	4	4
Other activities												
18	Tarpaulin @ Rs.10000/- Nos. or 100% subsidy	Nos.	70	7.00	70	7.00	70	7.00	70	7.00	280	28.00
19	Community Thrashing floor @ Rs.3 lakhs/- per No. (20'x20')	Nos.	8	24.00	8	24.00	8	24.00	8	24.00	32	96.00
	Total			**185.25**		**185.25**		**181.50**		**178.15**		**730.15**

6.1.2 Integrated Soil Health Management (ISHM) in Maize

i) Background / Problem Focus

Perambalur district carved out of Trichirapalli district in 1995, is a centrally located inland district spread over an area of 3,69,137 Ha. The district was bifurcated as Perambalur and Ariyalur districts in November 2007. The District lies between 10 45' and 11 32 ' Northern latitude and 78 40' and 79 30' of Eastern Longitude. The soil is predominantly red loamy and black. The climate is tropical and the district falls Under the category of medium and heavy rainfall region with average rainfall of around 908 mm. Most of the rainfall is received through North East Monsoon (October to early December).

With the majority of the cultivated area under Rainfed conditions maize is grown in 56000 Ha as best Viable crop to face limited availability of surface and ground water to ensure stabilization of income for small and Marginal farmers.

Crop rotation practice is not adopted by farmers. As maize is a C_4 plant. The depletion of soil macro and micro nutrients are high. Very good industrial uses for maize fetch good revenue.

Sustaining the soil health of maize grown area is the problem focus.

ii) Project Goals

To promote Integrated Soil Health Management (ISHM) in maize grown lands.

iii) Project Strategy

The following strategies would be adopted to achieve the above goal

1. Maize fallow leguminous/green manure crops
2. Educating farmers about soil and water testing
3. Distribution of soil health card.
4. Application of Bio-Fertilizers
5. Application of enriched press mud obtained from Sugar factories.

iv) Project Rationale

To sustain the soil health which is highly depleted and exhausted?

v) Implementation of the Project

At District level, the programme will be implemented constituting a committee under the chairmanship of the District collector. The Joint Director of Agriculture will be the member- secretary for implementing agricultural activities.

vi) Elements under Stream I

Table.6.4 Components for increasing Maize Production

S. No	Component	Cost/Unit
1	Micro-Nutrient Mixture Distribution	75 % subsidy
2	Soil and Water Heath Card Distribution	100 % subsidy
3	Distribution Of Green Manure Seeds	62.5 % Subsidy
4	Hybrid Seed Distribution	50 % Subsidy
5	Demonstration	100 % Subsidy
6	Pipeline distribution	50 % Subsidy
7	Publicity/POL / Contingency	Rs.6 Lakh/District
8	Bio-Fertilizer distribution	100 % subsidy
9	Training/ seminar/workshop	Rs.2 lakh / District
10	Organizing Marketing Groups	Rs10000/Group

vii) Reporting

The Scheme will be implemented on receipt of the government Order. The progress will be reported periodically.

viii) Budget

A sum of Rs. 359 lakhs for Ariyalur District has been proposed for executing this proposal. The detailed budget for four years is given in Table6.5.

Table 6.5. NADP - ISHM

(Rs. in lakhs)

S.No	Name of the Components	Unit	2008-2009		2009-2010		2010-2011		2011-2012		Total	
			Tonnes/ No	Total Cost	Tonnes/ No	Total Cost	Tonnes/ No	Total Cost	Tonnes/ No	Total Cost	Tonnes/ No	Total Cost
1	Hybrid seed distribution @50% subsidy limited to Rs.75/Kg	Tons	50	37.50	50	37.50	50	37.50	50	37.50	200	150.00
2	Micronutrient Mixture Distribution @75 %Subsidy Limited to Rs.35/Kg	Tons	12.5	4.375	12.5	4.375	12.5	4.375	12.5	4.375	50	17.50
3	Soil and Water Health Card Distribution@Rs.100 /Card	No	12500	12.50	12500	12.50	12500	12.50	12500	12.50	50000	50.00
4	Distribution of Green Manure seeds@62.5 % Subsidy limited to Rs.15/ kg	Tons	12.5	1.875	12.5	1.875	12.5	1.875	12.5	1.875	50	7.50
5	Compact Block Demonstration@100 % Subsidy	No	100	8.00	100	8.00	100	8.00	100	8.00	400	32.00
6	Pipeline Distribution @50 % subsidy Rs.15000/ Ha	No	100	15.00	100	15.00	100	15.00	100	15.00	400	60.00

Table 6.5. Contd….. **(Rs. in lakhs)**

S.No	Name of the Components	Unit	2008-2009		2009-2010		2010-2011		2011-2012		Total	
			No	Total Cost	Tonnes	Total Cost	Tonnes	Total Cost	Tonnes	Total Cost	Tonnes	Total Cost
7	Bio-Fertilizer Distribution@100% Subsidy	No	20000	1.00	20000	1.00	20000	1.00	20000	1.00	80000	4.00
8	Publicity/Hire Car/Pol/ Contigency	No	1	6.00	1	6.00	1	6.00	1	6.00	4	24.00
9	Traning /Seminar/Workshop	No	1	2.00	1	2.00	1	2.00	1	2.00	4	8.00
10	Organising Maize Marketing Groups	No	20	2.00	20	2.00	10	1.00	10	1.00	60.00	6.00
	Total			**90.25**		**90.25**		**89.25**		**89.25**		**359.00**

6.1.3 Reclamation of Problem Soils

i) Background / Problem Focus

Perambalur district carved out of Trichirapalli district in 1995, is a centrally located inland district spread over an area of 3, 69, 137 Ha. The disrict was bifurcated as PERAMBALUR and ARIYALUR districts in November 2007. The District lies between 10^0 45' and 11^0 32 ' northern latitude and $78^0$40' and $79^0$30' of eastern longitude. The soil is predominantly red loamy and black. The climate is tropical and the district falls under the category of medium and heavy rainfall region with average rainfall of around 908 mm. Most of the rainfall is received through North East Monsoon (October to early December).

Tube wells and wells irrigate nearly 66 % of the irrigated area. With the majority of the cultivated area under Rainfed conditions maize is grown in 56000 Ha as best viable crop to face limited availability of surface and ground water to ensure stabilization of income for small and marginal farmers.

The saline soils are found to be predominant in Thirumanur and T. Palur Blocks. The soils have high soluble salt concentrations and pH value. These soils are water logging and ill drained. Hence groundwater cannot be used due to salinity problem.

ii) Project Goals

1. To reclaim Problem Soils of Thirumanur and T. Palur Blocks by applying Gypsum and raising Green Manure Crops insitu.
2. To Boost yield and Productivity.
3. To Control Water logging and improve ill drained Soils.

iii) Project Strategy

The following Strategies would be adopted to achieve above goals.

a. Application of ZnSo4 as per pH values @500 Kg/ Ha at 100% Subsidy

b. Raising Green Manure Crops such as Glyricidia maculata, Sunhemp before flowering and ploughing in-situ and incorporated into the Soil.

iv) Project Rationale

To Promote, develop and disseminate technologies, blending traditional system and modern scientific knowledge.

v) Implementation of the Project

At district level the programme will be implemented constituting a committee under the Chairmanship of District Collector. The Joint Director of Agriculture will be the member secretary for implementing agriculture activities.

v) Elements of NADP under stream I

Table 6.6 Reclamation of Saline Soils

S.No.	Component	Cost/Unit
1	Soil Testing.Soil Health cards	100 % Subsidy
2	Application of ZnSo4@15 Kg/Ha	100 % Subsidy
3	Application of Gypsum as per PH	100%Subsidy
4	Raising Green Manure Crop	50 % Subsidy
5	Crop Rotation	
	Rice-Ragi-Pulses	100 % Subsidy
6	Disc Ploughing & Gypsum Appln	100%Subsidy

vii) Reporting

The Scheme will be implemented by department of agriculture. The progress will be reported periodically.

viii) Budget

A sum of Rs. 106.90 Lakhs/- for Ariyalur District is proposed for this purpose. The details are as follows:

Table.6.7 NADP Proposal-III
Problem Soil Management
Ariyalur District

(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	Soil Testing. Issuance of Soil Health Card@Rs.100/-	No	2500	2.50	2500	2.50	2500	2.50	25000	2.50	100000	10.00
2	Application of Gypsum as per PH Value @500 kg / Ha at 100 % Subsidy	Tons	250	6.125	250	6.125	250	6.125	250	6.125	1000	24.50
3	Application of ZnSo4 @ 15 Kg / Ha. At 100 % Subsidy	Tons	10	2.60	10	2.60	10	2.60	10	2.60	40	10.40
4	Distribution of Ragi seeds @15 Kg/ Ha at Rs.10/Kg 100 % Subsidy	Tons	100	12.00	100	12.00	100	12.00	100	12.00	400	48.00
5	Ploughing with disc Plough and application of Gypsum@Rs.700 / Ha @100 % subsidy,Rs.350/ hour-2Hours/ ha	Ha	500	3.50	500	3.50	500	3.50	500	3.50	2000	14.00
	Total			**26.73**		**26.73**		**26.73**		**26.73**		**106.90**

6.1.4. Increasing Income in Rainfed Areas

i). Background / Problem Focus

Perambalur district carved out of Trichirapalli district in 1995, is a centrally located inland district spread over an area of 3, 69,137 Ha. The district was bifurcated as Perambalur and Ariyalur districts in November 2007. The District lies between 10^0 45' and 11^0 32 ' northern latitude and 78^0 40' and 79^0 30' of eastern longitude. The soil is predominantly red loamy and black. The climate is tropical and the district falls under the category of medium and heavy rainfall region with average rainfall of around 908 mm. Most of the rainfall is received through North East Monsoon (October to early December).

The district is benefitted by north east monsoon only. There are no major surface irrigation potentials. There is a seasonal variation in rainfall. 70 % of cultivated area in the district is under rainfed. There is predominance of both red and black soil. The subsurface hardpan prevents groundwater recharge and hence poor water holding capacity.

ii) Project Goals

1. To increase income generation of Pre-Dominantly Rainfed Areas.
2. To increase Cropping Intensity.

iii) Project Strategy

a. Creation of Farm pond in every 20 acre of land to raise & Supplement crop Husbandry
b. Digging of Farm ponds 25M* 25 M*25M
c. Creation of Production Groups (Lift Irrigation Society)
d. Sinking Bore Well

iv) Project Rationale

To Promote, develop and disseminate Technologies, blending traditional system and modern scientific knowledge.

v) Implementation Chart of the Project

At district level the programme will be implemented constituting a committee under the chairmanship of District Collector. The Joint Director of Agriculture will be the member secretary for implementing agriculture activities.

vi) Elements of NADP under Stream – I

Table 6.8 Componnets of Dry Farming

S.No.	Component	Cost/Unit
1	Creation of Plastic lined Farm Pond With Portable Sprinkler Unit	90 % Subsidy
2	Unlined Farm Pond With Gravitational flow	90 % Subsidy
3	compartmental Bunding	100 % Subsidy
4	Chisel Plough & Dry Farming Implements	75 % Subsidy
5	Maize Sheller	75 % Subsidy
6	Crop Diversification Demonstration	100 % Subsidy
7	Sinking of Bore Well in production Cluster	75 % Subsidy
8	Dry Farming-Pre-Season Training	Rs.2 Lakh/District
9	Cultivation Expenses	50 % Subsidy

vii) Reporting

The Scheme will be implemented by agriculture and agriculture engineering department jointly. The progress will be reported periodically.

viii) Budget

With a view to augment the yield of crops by adopting Scientific Agriculture thereby increasing the standard of living of the farming community NADP is proposed seeking financial assistance from central government a sum of Rs. 1054.3 lakhs for Ariyalur District proposed for this purpose. The details of the budget for four years are given below.

Table 6.9 Dry Farming -Ariyalur District-NADP

(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	36	108	36	108	36	108	36	108	144	432
2	Unlined Farm Pond With Gravitational flow@ 5 Ponds / Block @ Rs.75000 / Pond	No	30	22.5	30	22.5	30	22.5	30	22.5	120	90
3	Compartmental Bunding@ Rs.3000 / Ha; 200 Ha/Block	Ha	1200	36	1200	36	1200	36	1200	36	4800	144
4	Chisel Plough @ 2/Block@ Rs.7500/ Unit	No	12	0.9	12	0.9	12	0.9	12	0.9	48	3.6
5	Dry Farming Implements Broad Bed furrow (BBF) At One/ Block @ Rs.35000/Block	No	6	2.10	6	2.10	6	2.10	6	2.10	24	8.4
6	Maize Sheller at One/ Maize grown Block @Rs. 1.125 Lakhs	No	3	3.375	3	3.375	3	3.375	3	3.375	12	13.5

Table 6.9 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
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	30	9	30	9	30	9	30	9	120	36
8	Sinking of Bore Well in production Cluster of 25 acres - lift Irrigation Society 75% Subsidy 4 No/Block limited to Rs.1.8 Lakh/No	No	24	43.2	24	43.2	24	43.2	24	43.2	96	172.8
9	Farmers Training through FTC @ 40 training (2 Days) / year @ 50 farmers / training. Rs.20000/ training	L.Rs	40	8.000	40	8.000	40	8.000	40	8.000	160	32.000
10	Dry Farming - Pre-Season Training Rs.500 / village	No	100	0.5	100	0.5	100	0.5	100	0.5	400	2.000
11	Cultivation Expenses@ Rs.5000/Ha-200 Ha/ block	Ha	600	30	600	30	600	30	600	30	2400	120
	Total			**263.575**		**263.575**		**263.575**		**263.575**		**1054.30**

6.1.5 Decisions Support to Farmers on Crop Production

i). Background / Problem Focus

Perambalur district carved out of Trichirapalli district in 1995, is a centrally located inland district spread over an area of 3,69,137 Ha. The district was bifurcated as Perambalur and Ariyalur districts in November 2007. The District Lies Between 10°45' and 11°32 ' northern latitude and 78°40' and 79°30' of eastern longitude. The soil is predominantly red loamy and black. The climate is tropical and the district falls under the category of medium and heavy rainfall region with average rainfall of around 908 mm. Most of the rainfall is received through North East Monsoon (October to early December).

There are various groups such as farmers' interest groups, commodity groups, TANWABE and self help groups. However these groups are loosely held which needs integration. Low market price is obtained by the farmers for their produce. Farmers lack access to market information services. Decision support on crop planning strategies including selection of crop, variety, time of sowing, technology, management technologies are needed through market intelligence cell.

ii) Project Goals

1. To Provide decision Support to farmers on crop Production and market information

2. To integrate various farmers group on a common platform to share the technical and market information services.

iii) Project Strategy

a. Establishing village agricultural information centre and market information to farmers

b. Providing incentives to clusters for handling and processing agricultural Produce/ Commodity marketing to agencies.

c. Establishing marketing Intelligence cell in the Regulated market. Increasing the number of market yards within a Radius of 15 Kms.

iv) Project Rationale

To Promote, decision Support to farmers and disseminate market information Technologies.

v) Implementation Chart of the Project

At district level the programme will be implemented constituting a committee under the chairmanship of District Collector. The Joint Director of Agriculture will be the member secretary for implementing agriculture activities.

vi) Elements of NADP under Stream – I

Table 6.10 Components of Market Information

S.No.	Component	Cost/Unit
1	Establishment of Village Agricultural Information Centre (VAIC)	100 % Subsidy
2	Provision of incentive to Commodity Group for Market interventions	Rs.100/Qtl/commodity
3	Establishment of Market intelligence Cell in Regulated Market with forward linkages	100 % Subsidy
4	Establishment of Market yard within the radius of 15 Kms.	100 % subsidy
5	Combined Harvester-Paddy, Sugar cane, Maize Sheller. Power thrasher at 75 % Subsidy to Village Commodity group, TANWABE,FIG	75 % subsidy
6	Weights and Measurements, Packing Materials	50 % subsidy
7	Value addition Training	Rs.2 lakh/ District

vii) Reporting

The Scheme will be implemented by department of agriculture and agricultural marketing. The progress will be reported periodically.

viii) Budget

A sum of Rs.924 Lakhs is proposed for Ariyalur District this purpose. The detailed budget for four year is presented as follows.

Table 6.11 NADP Market Led Extension Approach

(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 % subsidy -one AIC/Block	No	6	60	6	60	6	60	6	60	24	240
2	Provision of incentive to Commodity Group for Market interventions-Handling and Processing agricultural Produce/ Commodity marketing to agencies.Rs.100/quintal/Commodity	No	70	14	70	14	70	14	70	14	280	56
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 within the radius of 15 Kms@ 4/Block-Rs.2.5 Lakh/ Yard	No	24	60	24	60	24	60	24	60	96	240
5	Distribution of Combined Harvester-Paddy, Sugar Cane, Maize Sheller. Power thrasher at 75 % Subsidy to Village commodity Group, TANWABE, FIG@5 Lakhs/Group/Block	No	12	60	12	60	12	60	12	60	48	240
6	Weights and Measurements, Packing Material @Rs.2 Lakh/block	No	12	24	12	24	12	24	12	24	48	96
7	Value addition Training Rs.3 Lakh/District	No	1	3	1	3	1	3	1	3	4	12
	Total			**231.00**		**231.00**		**231.00**		**231.00**		**924.00**

ix) Projected Outcome and Growth Rate during the Plan Period

The expected outcome by implementing the proposed projects is to achieve an enhanced growth rate in agricultural sector from the existing level in Ariyalur district by taking up the recommended interventions for the district.

x) Researchable Issues

- Reclamation of soil and water resources affected by water logging and soil salinity
- 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.

6.1.6 Establishment of Seed Testing Laboratory at Ariyalur

Abstract

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, vigor, genetic purity 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 Tamilnadu 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 Ariyalur district.

i) Need

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.

ii) Budget

New Seed Testing Laboratory is proposed to be established during 2008-2009 at Ariyalur district. It is proposed to purchase the laboratory equipments at a total cost of Rs.6 lakhs.

iii) Project Implementation

The Department of Seed Certification shall implement the programme. The Laboratory equipments are expected to be purchased during 2008-09.

iv) 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 analysis results is of paramount importance to the seed producer, processor, certification and seed law enforcement officials. At present the certified seed samples from Seed Certification wing, Official seed samples from Seed Quality Control wing and Service samples from Seed Producers, Seed dealers and farmers are being sent to Trichy district for analysis. Establishment of seed testing laboratory at Ariyalur 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.

Establishment of Seed Testing Laboratory at Ariyalur District

1. Introduction

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

National Agricultural Development Programme (NADP) aims in bringing about quantifiable changes in production and productivity of various components of Agriculture and allied structure in a holistic manner. The purchase of equipments for New Seed Testing Laboratories is not covered under the components under NADP (a to p) and hence the purchase of Equipments for the Ariyalur 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 for easy accessibility to the poor farming community for the purpose of enhancing Agricultural production in the district, it is necessary to have a new Seed Testing Laboratory at Ariyalur district.

2. Objectives of Seed Testing

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

3. Role of Seed Testing Laboratories in Seed Quality Control

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

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

Seed Quality Control Activities

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

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

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

4. Need for Establishing Seed Testing Laboratory

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

Seed Distribution

A considerable quantum of quality seeds are being distributed through licensed seed selling points. The labelled seeds distribution is dominating. Under these circumstances, ensuring the quality of the seed lots before its usage by the farming community is very much essential. The quality of such seed lots can be ensured only by testing these seed lots in the Seed Testing Laboratories for its seed standards. The seed testing of these seed lots which are not covered under the preview of Seed Certification and that are covered to some extent under seed quality control program can be ensured only by inculcating the practice of sending service samples by seed producers, seed dealers and farmers. For testing to seed testing labs 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 Ariyalur 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 Ariyalur district under National Agricultural Development Programme at a financial outlay of Rs.6.00 lakhs towards provision of laboratory equipments.

5. Activities Prosposed

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

Requirement of Equipments for Establishing Seed Testing Laboratory

1. Mixing and Dividing Equipments

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

2. Moisture Testing Equipment

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

3. Weighing Equipments

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

4. Purity Analysis Equipment

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

5. Germination Equipment

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

6. Storage Equipment

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

7. General

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

8. Computers with Accessories

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

6. Cost Aspects

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

Table 6.12 Instruments / Equipments for Seed Testing Laboratory

Sl. No.	Name of the Instrument/Equipment	Approximate Qty required for One lab	Approximate cost Per unit rupees	Aproximate 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**

(Rupees Six lakhs only)

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

7. 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.

8. 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 Ariyalur 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.

9. Expected Date of Completion

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

10. Monitoring and Evaluation

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

6.2. HORTICULTURE

The Interventions now recommended for the district in horticulture sector, with detailed costing is presented below

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 Ariyalur District. Assistance will be given at the rate of 75% of project cost or Rs. 80000/ha whichever is less.

ii) 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 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 the 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.

iii) Plastic Crates for Vegetable Handling & Transport

It is estimated that post harvest loss is to the tune of 30 per cent of the produce which is a great loss to the farmer due to improper handling. Cost of packing materials is unbearable to the farmers. It is proposed to supply plastic crates of standard size at 50 per cent cost to the farmers to ensure safe packing & transport.

iv) Support System for Crops

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

v) 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.

vi) Interstate Exposure Visit

Exposure visit for 4 batch/year will be organized @ 50/batch to get exposed with adoption of new technologies from other states.

vii) Ten Hectare Mega Demonstration

Like minded farmers are organized to adopt all new technologies of Horticulture from seed to market at selected place in an area of 10 hac, which will serve as a visual aid and model farm. For the district mega demonstration like this will be organized @1/year/district in NADP.

Table 6.13 Component-wise Budget Details for Horticulture

S. No	Component	Cost/Unit	2008-2009		2009-2010		2010-2011		2011-2012		Total	
			Physical (No/ha)	Financial (Rs.in lakhs)	Physical (No/ha)	Financial (Rs.in lakhs)	Physical (No/ha)	Financial (Rs.in lakhs)	Physical (No/ha)	Financial (Rs.in lakhs)	Physical (No/ha)	Financial (Rs.in lakhs)
1	Precision Farming											
2	Net House structure											
	a. Nursery & Vegetable cultivation	Rs.1.00 lakh/300 sq.m	3	3.000	4	4.000	5	5.000	6	6.000	18	18.000
3	Pandal for vegetable production	Rs.1.00 lakh/ha	10	10.000	20	20.000	30	30.000	40	40.000	100	100.000
4	Package for plant protection measures	Rs.0.03 lakhs	100	3.000	100	3.000	100	3.000	100	3.000	400	12.000
5	Plastic Crates for vegetable handling and transport	Rs.0.0025 /crate	100	0.250	100	0.250	100	0.250	100	0.250	400	1.000
6	Farm waste shredder/vegetable waste shredder	Rs.0.400 lakh/No	6	2.400	6	2.400	6	2.400	6	2.400	24	9.600
7	Cashew -High Density Planting	Rs.0.090/ ha	100	9.000	200	18.000	300	27.000	400	36.000	1000	90.000
8	Bore well with casing pipes	Rs.1.50 lakh/No	50	75.000	50	75.000	50	75.000	50	75.000	200	300.000
9	Humic acid/Effective E Microbes	Rs.0.004 lakh/litre	30	0.120	40	0.160	50	0.200	60	0.240	180	0.720
10	Erection of net for production of disease free planting material inTapioca	Rs.1.00 lakh/300 sq.m	1	1.000	1	1.000	1	1.000	1	1.000	4	4.000
11	Tractor mounted steam boiler	Rs.0.500 lakh/No	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000

Table 6.13 Contd…

S.No	Component	Cost/Unit	2008-2009		2009-2010		2010-2011		2011-2012		Total	
			Physical (No/ha)	Financial (Rs.in lakhs)	Physical (No/ha)	Financial (Rs.in lakhs)	Physical (No/ha)	Financial (Rs.in lakhs)	Physical (No/ha)	Financial (Rs.in lakhs)	Physical (No/ha)	Financial (Rs.in lakhs)
12	Support System for Crops											
	a. Banana	Rs.1.500 lakhs/No	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
	b. Gloriosa	Rs.0.400 lakh/ha	100	40.000	100	40.000	100	40.000	100	40.000	400	160.000
13	Sales outlet points in districts (Rent and infrastructure)	Rs.2.600 lakh/No	3	7.800	3	7.800	3	7.800	3	7.800	12	31.200
14	District Level Farmers Workshop	Rs.0.004 lakh/No/ day	100	0.400	100	0.400	100	0.400	100	0.400	400	1.600
15	Inter State Exposure visit (5 days)	Rs.0.050 lakh/No	50	2.500	50	2.500	50	2.500	50	2.500	200	10.000
16	10 hectare mega demonstration plot for the districts	Rs.25.00 lakhs/No	6	150.000	6	150.000	6	150.000	6	150.000	24	600.000
17	Enterprising crop growers associations	Rs.25.00 lakhs/No	3	75.000	3	75.000	3	75.000	3	75.000	12	300.000
18	Support price for Acidlime	Rs.0.100 lakhs/ha	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
19	Support price for chillies & coriander	Rs.0.050 lakh/ha	1000	50.000	1000	50.000	1000	50.000	1000	50.000	4,000	200.000
20	Prize for Crop yield competition to the best cashew growers / vegetable growers	Rs.1.00 lakh/ha/ No	10	10.000	10	10.000	10	10.000	10	10.000	40	40.000
	Total			**439.47**		**459.51**		**479.55**		**499.59**		**1,878.12**

6.3 Animal Husbandry

i) Livestock Population (2007)

- Cattle : 322222
- Buffalo : 20011
- Sheep : 131034
- Goat : 412355
- Poultry : 262330

ii) Productivity (ACGR %) (1997-2007)

- Indi. Cow :1.35 Crossbred Cow : 1.47
- Buffalo : - 3.40
- Sheep : > 5 Goat : > 25
- Desi eggs : 22.95 %
- Improved egg : 5.49 %
- Green fodder deficit : 88.3 %
- Dry fodder, Excess : 29.9 %

iii) Ref. Year 2007

- Breedable population : 114000 cattle
- Number of A.I. : 134400 / year
- Milk production : 0.17 Million Tonnes
- Egg production : 176.07 Lakhs

iv) Livestock Sector

a. Strength

- Growing demand for milk meat and eggs
- Loan facilities
- Availability of high yielding animals
- Easy marketing
- Sufficient Dry fodder availability

b. Gap

- Severe green fodder shortage (88%)
- Diminishing pasture/grazing land
- High cost of inputs
- Lack of awareness of Technologies
- Underutilization of fodder resources
- Lack of awareness of producing clean and quality milk.
- Lack of availability of genetically superior male breeder stocks
- Insufficient processing & marketing facilities in Trichy Aavin
- Mineral deficiency related problems

v) Project Rationale /Strategy/Goals

- To augment fertility in cattle
- To increase productivity / production of milk, meat, eggs
- To create self employment among rural mass
- To ensure timely health cover door to door
- To produce clean & quality milk
- To achieve 4% GR per year
- Capacity building/extension programs for farmers and officers

vi) Intervention Areas / Road Map

- Fodder production – to augment fertility, production & productivity
- Supply of micro nutrients – to improve nutrient utilization
- Cold storage facilities for vaccines for fool proof/timely health cover.
- Door to door A.I. service – to enhance fertility & calf
- Clean and Quality milk production& reducing milking time and cost on milk processing
- Providing information resource, capacity building – to motivate for technology adoption
- Strengthening the infra structure of Veterinary institutions

Considering the strengths and weaknesses relating to animal husbandry sector in the district year wise action plan has been proposed along with the scope of the interventions and project cost. The budget details for interventions under Animal Husbandry and Fisheries have been included under Perambalur District.

6.5. Agricultural Engineering

i) Problem Focus

Agriculture is the predominant economic activity being pursued in the district. Conventional irrigation practices are followed. They can not afford to procure and apply the modern agricultural machineries and modern irrigation technologies in the farm since they are financially not sound and small and marginal farmers are found large in numbers among the total cultivators in the district.

In the upland Rainfed areas soil and moisture conservation measures and practices has to be followed to reduce soil erosion, moisture depletion, loss of fertilizer and the micro nutrient in the soil.

Further in the two river water shed area plenty of gullies exists and accelerating the soil erosion and thereby affecting the soil productivity. Without gullies which inturn gets wider and carries away the field productive soil by means of field land slide and erosion.

ii) Project Rationale

The stake holders are very poor in economic status. Majority of the holdings are with marginal farmers and small farmers and big farmers respectively. The agricultural operations and practices are still carried out in the conventional procedure even there are several state and central assistance schemes.

The Ariyalur farmers are aware of modern agricultural techniques to some extent through various Government departments every now and then when a new scheme is launched. Inspite of their poverty they could not afford to adopt by investing in the new agriculture machineries to increase in production and reduction in agriculture labour employment.

The rain water run-off through gullies should be checked or controlled and stored by way of percolation ponds, irrigation tanks, irrigation check dams, ooranies, farm

ponds, collection pit, contour bund, compartment bund, contour trench, staggered trench or any useful means which directly or indirectly help the farmers to save their lands from run-off erosion and leaching away the fertilizers applied and soil fertility built.

In total the interest band hard work of the farmers should be protected and supported by government functionaries in doing sustained agricultural operations. This NADP will be redressal for the farming community to some extent.

iii) Project Strategy

The NADP project will be executed through the available agricultural engineering department staff. From 2008-09 to 2011-12 the entire programme will be spread out and completed. On completion of the pragramme evaluation will be conducted on the out come of the project.

iv) Project Goals

1. Rainwater in the name of run-off or flood should be arrested then and there and stored for direct irrigation and also to recharge the underground.

2. Through borewells / tubewells the under ground water for irrigation could be tapped and utilized judiciously through efficient conveyance system like PVC pipelines and micro irrigation .

3. Employing modern agriculture machineries to take up field operations like ploughing, puddling, weeding, harvesting, drying, processing and marketing in right time without loosing the agriculture crop seasons.

4. Increase in yield and production will fetch good income to the farmer

5. Crop diversification and intensification will promote growth of 4% GDP

v) Project Components

The project is divided into two sectors. One sector is called as stream I category and another as stream II category.

A. Stream I Category

1. New innovative machinery and implements, gender friendly equipments and tools are proposed under 50% subsidy assistance to the individual farmers directly.

2. Irrigation facilities through borewells and energizing for horticulture development 4 to 5 Ha cluster or individual beneficiaries. (50% subsidy assistance)

3. Soil and conservation works – direct and indirect benefits to beneficiaries (individuals and 90%, Poram boak land 100% subsidy)

4. Improvement in water conveyance efficiency thro PVC /HDPE pipe lines, surface collection pits or tanks and micro irrigation systems(90% subsidy assistance)

5. Infrastructure facilities to the farmers by linking the farm roads for easy access to the farm inputs and outputs. Direct benefit to a cluster of farmers who are in remote villages and further settlement of quarrels among the neighboring field owners in transport issues.(90% subsidy)

B. Stream II Category

Under stream II Ongoing Projects on Various Subsidy Pattern

1. Agriculural mechanisation

2. Replacement of old pumpset

3. Rainwater harvesting and runoff

4. Rainwater harvesting through NABARD RIDF-XI –fund

vi) Reporting

Monitoring will be done during execution of work by the chief engineer/super intending engineer/executive engineer and works execution and field through the assistant executive engineer/assistant engineer.

Table 6.14 Agricultural Engineering - Budget Details of Stream I and Stream II Projects
District: Ariyalur

Sl. No	Project Component	Unit Cost Rs. in lakhs	Subsidy %	2008-09		2009-10		2010-11		2011-12		Total	
				Nos.	Cost Rs. in lakhs	Nos.	Cost Rs. in lakhs	Nos.	Cost Rs. in lakhs	Nos.	Cost Rs. in lakhs	Nos.	Cost Rs. in lakhs
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%	10	2.00	10	2.00	10	2.00	10	2.00	40	8.00
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	0.70
Total				**47**	**9.83**	**47**	**9.83**	**47**	**9.83**	**47**	**9.83**	**188**	**39.30**
2	**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
Total				**82**	**50.00**	**82**	**50.00**	**82**	**50.00**	**82**	**50.00**	**328**	**200.00**

Table 6.14 Contd….

Sl. No	Project Component	Unit Cost Rs. in lakhs	Subsidy %	2008-09		2009-10		2010-11		2011-12		Total	
				Nos.	Cost Rs. in lakhs	Nos.	Cost Rs. in lakhs	Nos.	Cost Rs. in lakhs	Nos.	Cost Rs. in lakhs	Nos.	Cost Rs. in lakhs
3	**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
c	Staggered Trenches in Cashew Plantation	0.03	90%	25	0.19	25	0.19	25	0.19	25	0.19	100	0.75
Total				**150**	**5.14**	**150**	**5.14**	**150**	**5.14**	**150**	**5.14**	**600**	**20.55**
4	**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
Total				**20**	**10.80**	**20**	**10.80**	**20**	**10.80**	**20**	**10.80**	**80**	**43.20**
5	**Processing**												
a	Drying yard/Thrasing floor	3.00	100%	2	6.00	2	6.00	2	6.00	2	6.00	8	24.00
Total				**2**	**6.00**	**2**	**6.00**	**2**	**6.00**	**2**	**6.00**	**8**	**24.00**
Grand Total				**301**	**81.7625**	**301**	**81.765**	**301**	**81.7625**	**301**	**81.7625**	**1204**	**327.0525**

Table 6.14 Contd….

Sl. No	Project Component	Unit Cost Rs. in lakhs	Subsidy %	2008-09		2009-10		2010-11		2011-12		Total	
				Nos.	Cost Rs. in lakhs	Nos.	Cost Rs. in lakhs	Nos.	Cost Rs. in lakhs	Nos.	Cost Rs. in lakhs	Nos.	Cost Rs. in lakhs
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	Tipper Trailer	0.40	50%	20	4.00	20	4.00	20	4.00	20	4.00	80	16.00
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
Total				**106**	**55.83**	**106**	**55.83**	**106**	**55.83**	**106**	**55.83**	**424**	**223.32**
II	**Innovative Water Harvesting Structures**												
1	Lined farm pond with mobile sprinkler	3.00	90%	2	5.40	2	5.40	2	5.40	2	5.40	8	21.60
2	Rejuvenation of percolation ponds with recharge shafts	3.00	100%	4	12.00	4	12.00	4	12.00	4	12.00	16	48.00
Total				**6**	**17.40**	**6**	**17.40**	**6**	**17.40**	**6**	**17.40**	**24**	**69.60**
III	**Promoting the Concept of Mechanised Villages**												
1	Distribution of crop based package of Agrl. Machinery on cluster basis in the adopted villages	varied	75%										
	a. Paddy	31.60	75%	0	0.00	1	23.70	1	23.70	0	0.00	2	47.40
Total				**0**	**0.00**	**1**	**23.70**	**1**	**23.70**	**0**	**0.00**	**2**	**47.40**
Grand Total				**112**	**73.23**	**113**	**96.93**	**113**	**96.93**	**112**	**73.23**	**450**	**340.32**

6.6. Agricultural Marketing and Agri Business

Strengthening of Agricultural Marketing and Agribusiness development in Tamil Nadu through NADP funding

1. Current Status of Agribusiness

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

The Government is taking efforts to attain sustainable agricultural development by bringing agriculture as a commercial venture by switching over from the present method of cultivation through adoption of new scientific method of cultivation to increase the productivity to manifold, value addition, processing and utilization of marketing opportunities. To improve the marketing opportunities for agricultural produce, the Uzhavar Santhai, post harvest management, cold storage facilities for perishables, food processing, establishment of export zones, terminal markets have been taken up. To reduce the loss of the food products which are upto 30%, necessary provisions are made in the Agricultural Industrial Policy to ensure remunerative price to the produce, encourage food processing sector and export to earn foreign exchange by increasing the food processing from the present level of1% to 10%, out of the total production, increasing value addition from 7% to 30%. Under this policy, all assistance which is provided to other industries will be extended to agro based industries, agricultural machineries and industries manufacturing micro irrigation equipments.

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

2. Agribusiness and the National Development Goals

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

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

The two most important programs related to agribusiness development are the Technology Mission for Integrated Development of Horticulture (TM) and the National

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

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

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

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

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

Small farms produce more than 35 percent of State total grain, and over half of total fruits and vegetables despite being resource constrained. The marginal holdings have higher cropping intensity compared with that of the small, medium and large farmers, mainly owing to higher irrigated area as percentage of net sown area. The small and marginal farmers are certainly going to stay for long time in State though they are going to face a number of challenges. Therefore, what happens to small and marginal farmers has implications for the entire State and people's livelihoods. But, they can adequately respond to these challenges only if there is efficient marketing system for handling their small surpluses. Otherwise, they will only be losers in the process of globalization and liberalization. The viability of the small holdings is an important issue and promoting agricultural diversification towards high value crops through an efficient marketing system is argued to be one of the means through which this can be achieved. Hence there is an urgent need for specific intervention in agricultural marketing in Tamil Nadu.

4. Sector Problem Analysis

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

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

Entrepreneurs have weak linkages with farmers through contacts and vertical integration arrangements and are distant from consumers because of the absence of organized retail chains. Linkages with service providers are characterized by a lack of confidence particularly in the case of research and extension organizations. The absence of proper certification, quality assurance systems and inadequate infrastructure continues to limit the integration of production with international markets.

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

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

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

5. Project Rationale

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

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

6. Project Strategy

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

7. Project Approach

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

8. Project Goals

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

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

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

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

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

9. Project Components

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

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

i) Project Rationale

According to Government sources, the inefficient marketing system leads to an avoidable waste of around Rs 50,127 crore. A major part of this can be saved by introducing scale and technology in agricultural marketing. Milk and eggs marketing are two success areas of role of scale and technology in marketing. The extent to which the

farmer-producers will benefit (out of saving of avoidable waste) depends on the group-marketing practices adopted by the farmers. In this sense, Farmers' Groups/ Commodity Groups need to be promoted for undertaking marketing activities on behalf of the individual members of the group.

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

ii) Project Strategy

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

iii) Project Goals

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

iv) Project Components

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

v) 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 of marketing. To organize these amount of Rs.20, 000/- is provided per group.

In this project it is proposed to organize 18 commodity groups in five commodities for marketing of agricultural commodities in Ariyalur district over the period of four years. This will require resources of Rs. 17.96 lakhs for the period of four years.

vi) Reporting

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

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

i) Project Rationale

Apart from linking the farmer to consumer through farmers' organizations, another initiative for reducing transaction cost is establishment of direct channel between farmer-processor/bulk consumers, through contract farming (CF). For different reasons, both farmers and farm product processors/distributors may prefer contracts to complete vertical integration. A farmer may prefer a contract which gives access to additional

sources of capital, and a more certain price by shifting part of the risk of adverse price movement to the buyer. Farmers also get an access to new technology and inputs, including credit, through contracts which otherwise may be beyond their reach. For a processor or distributor, contracts are more flexible in the face of market uncertainty, make smaller demands on scarce capital resources, and impose less of an additional burden of labour relations, ownership of land, and production activities, on management.

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

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

Nadu. The lessons learnt in case of sugarcane, cotton and other commodities have to be taken into account during formulation of the project. For this in this NADP programme facilitation of contract farming between the traders and producer is proposed.

ii) Project Strategy

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

iii) Project Components

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

iv) Project Cost and Financing

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

In this project it is proposed to organize the meeting on various crops regarding contract farming between farmers and bulk buyers in Ariyalur 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.

v) Implementation Chart of the Project

Implementation chart of the project is given table.

vi) Reporting

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

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

6.6.3. Dissemination of Market intelligence

i) Project Rationale

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

The most important marketing information is price data. Agricultural price data are based on thousands or millions of transactions, many of them on a small scale, that are taking place every day all over the country. Collecting an adequate sample and making sure that these are representative enough to be useful is not an easy task. As farmers become more market oriented, extension workers need to be in a position to advise them not only on how to grow crops but also on how to market them. Knowledge of produce handling, storage and packaging is also essential. An understanding of costs and margins is essential for all those involved with agricultural marketing. Before any agro-processing venture is started, or before an existing venture decides to expand its product line, an understanding of the market for the planned products is essential. Market

research can never guarantee success but it can certainly increase the likelihood that the new business will turn out to be profitable. Hence in this project is included the dissemination of market intelligence provided by the Domestic and Export Market Intelligence Cell, Centre for Agricultural and Rural Development Studies, Tamil Nadu Agricultural University, Coimbatore and other agencies.

ii) Project Strategy

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

iii) Project Components

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

iv) Project Cost and Financing

In this project it is proposed to disseminate Market intelligence of agricultural commodities to all the Stake holders through different mass media in Ariyalur district over the period of four years. This will require resources of Rs. 27.86 lakhs for the period of four years.

v) Implementation Chart of the Project

Implementation chart of the project is given in table.

vi) Reporting

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

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

6.6.4 Arrangement of Buyers - Sellers Meet

i) Project Rationale

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

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

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

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

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

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

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

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

ii) Project Cost and Financing

In this project it is proposed to arrange for 40 buyers sellers meet in Ariyalur district over the period of four years. This will require resources of Rs. 6.90 lakhs for the period of four years. Organizing the exposure visits to important markets within the state and outside the state by commodity groups / farmers and extension functionaries.

iii) Project Rationale

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

iv) Project Strategy

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

v) Project Goals

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

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 with in the state and out side the state by extension functionaries

vi) Project Cost and Financing

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

vii) Reporting

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

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

6.6.5 Strengthening of Market Extension Centre at each dIstrict/ bLock Level for Capacity Building and Dissemination of Marketing Information

i) Project Rationale

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

ii) Project Strategy

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

iii) Project Goals

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

iv) Project Components

Strengthening of market extension centre at each district/ block level

v) Project Cost and Financing

Over the last few years mass media has seen a phenomenal growth in the country both in terms of reach and advance in technology. This medium has not been exploited to its full potential for the purpose of agricultural extension specifically market led extension. A concerted and well-coordinated effort now needs to be made to use the electronic media in the Extension strategy by strengthening infrastructure facility. In this project it is proposed to strengthening market extension centre in Ariyalur district over the period of four years. This will require resources of Rs. 2.5 lakhs for the period of four years.

vi) Reporting

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

6.6.6. Capacity Building of Farmers' Skill

i) Project Rationale

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

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

ii) Project Strategy

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

iii) Project Goals

Strengthening the knowledge of farmers on formation of commodity groups, storage and post harvest management in Tamil Nadu over the period of four years from NADP funding.

iv) Project Cost

8.08 lakhs

v) 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.

vi) Reporting

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

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

6.6.7. Strengthening of Selected Market Infrastructure (equipments) through NADP Funding

Rationale

Considering the importance of different Markets, there is an urgent need to develop these markets in a phased manner with necessary infrastructural amenities to have a strong base of the marketing channel. Suitability and adequacy of marketing infrastructure depends on the type and quantity of marketed surpluses of agricultural produce in the State. The estimated marketed surpluses of various commodities 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 (%)
Rice	51.9
Wheat	53.8
Jowar	39.7
Bajra	45.4
Maize	46.2
Other Coarse Cereals	57.1
Pulses	53.9
Food grains	
Oilseeds	79.6
Sugarcane	92.9
Fruits and Vegetables**	88.2
Cotton	100.0
Fish	100.0
Milk	60.0
Mutton and Goat Meat	100.0
Beef and Buffalo Meat	100.0
Meat(Total)	100.0
Eggs	88.2

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

Project Strategy

Through purchase of price display board, chilli driyer and establishment of collection centre cold storage.

Project Goal

To Strengthening of selected Market Infrastructure (equipments)

Project Components

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

Project Cost and Financing

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

Reporting

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

Overall Project Cost

The total cost for development of agricultural marketing so as to increase the profitability of farmers would be Rs. 94.63 lakhs for this district for the next four years.

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.

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.

Sustainability

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

Table. 6.15 Marketing Activities - Ariyalur District

(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	2	0.4	0.22	5	1.1	0.24	7	1.68	0.26	10	2.6	5.78
	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	1	0.2	0.22	3	0.66	0.24	4	0.96	0.26	6	1.56	3.38
	Cashew	0.2	2	0.4	0.22	5	1.1	0.24	5	1.2	0.26	5	1.3	4
	Pulses	0.2	1	0.2	0.22	2	0.44	0.24	3	0.72	0.26	4	1.04	2.4
2	**Market Intelligence Dissemination**													
	Village level meeting - before sowing	0.1	10	1	0.22	15	3.3	0.24	17	4.08	0.26	20	5.2	13.58
	Village level meeting - before harvest	0.1	10	1	0.22	15	3.3	0.24	17	4.08	0.26	20	5.2	13.58
	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
3	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
4	Exposure visit to markets	0		0	0		0	0		0	0		0	0
	Within state	0.2	2	0.4	0.22	2	0.44	0.24	1	0.24	0.26	1	0.26	1.34
	Outside	0.75	1	0.75	0.825	1	0.825	0.9	0	0	0.975	0	0	1.575
5	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	6.9

Table. 6.15 contd…

(Rs. in lakhs)

S. No	Components	Unit Cost	Physical	Financial	Unit cost	Physical	Financial	Unit cost	Physical	Financial	Unit cost	Physical	Financial	Total
6	Streng. Of market extension centre	2.5	1	2.5	0	0	0	0	0	0	0		0	2.5
7	Streng. Of village shandies	0	0	0	0	0	0	0	0	0	0		0	0
8	Market price surveillance	0.1	1	0.1	0.11	1	0.11	0.12	1	0.12	0.13	1	0.13	0.46
9	Publicity - regulated market	5	1	5	5.5	1	5.5	6	1	6	6.5	1	6.5	23
10	Trainings on	0		0	0		0	0		0	0		0	0
	Trainings on various crops	0.1	3	0.3	0.11	5	0.55	0.12	5	0.6	0.13	5	0.65	2.1
	Minimizing PH losses	0.1	12	1.2	0.11	12	1.32	0.12	12	1.44	0.13	12	1.56	5.52
	Value addition	0.1	1	0.1	0.11	1	0.11	0.12	1	0.12	0.13	1	0.13	0.46
11	Market infrastructure activities	0		0	0		0	0		0	0		0	0
	Providing moisture meter	0.75	2	1.5	0	0	0	0	0	0	0		0	1.5
	Total			**17.6**			**21.82**			**24.86**			**30.345**	**94.63**

6.8. Strategy for Achieving XI Five Year Plan

Paddy productivity in the district is one of the lowest in the state. However, there is scope for increasing the productivity of paddy further in this district by using appropriate crop varieties with suitable crop production techniques. 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.

PROCEEDINGS OF THE NADP-DISTRICT AGRICULTURE PLAN MEETING WITH PHOTOGRAPHS

The NADP-District Agricultural Plan meeting of Ariyalur district was held on 8th May 2008 in the Tahsildar meeting hall at Ariyalur. The meeting was attended by three Panchayat Union Presidents, 199 village Panchayat Presidents, 41 development officials from the department of Agriculture, Horticulture, Agricultural Marketing, Fisheries, Animal husbandry, Agricultural Engineering including few scientists from TNAU and village people.

The meeting was presided over by Mr.Sudalai Kannan, IAS, the Ariyalur district collector. He stressed the significance of the bottom up planning and the need to involve the local leaders and actual beneficiaries in the programme planning process. He highlighted the problems faced by farmers in agriculture such as the increasing demand for food, decreasing availability of cultivable lands, low returns for agriculture in the market, compared to the investments, labour scarcity, problem soils management in Ariyalur, water harvesting, existence of more proportion of marginal and small farmers in the district, lack of opportunity to the use of farm implements and equipments for carrying out various agricultural operations etc., He called the participants to give suggestions on the problems faced by the farmers in the district.

Mr.Asokan, Joint Director of Perambalur and Ariyalur district narrated the purpose of the meeting and briefed about NADP and its objectives to the participants. Mr.Perumal, Assistant Director of Agriculture, Ariyalur briefed about the ongoing NADP programmes in the district. Following this the draft District Agricultural Plan of Ariyalur district for four years (2008-2012) prepared by the TNAU Scientist through discussions with all the development officials and the stakeholders was presented to the participants of the meeting to have a thorough discussion on the components with the local leaders. Feed back on the draft plan was obtained from the participants and these points were considered for incorporation in the district agricultural plan. The meeting ended after

obtaining consensus of the participants over various components of the plan. The discussion and feed back meeting was facilitated by the District Collector.

The meeting was given very good press coverage in the leading Tamil dailies published on 9th May 2008. The clippings of the media coverage along with few photographs depicting the event are attached.

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ANNEXURE - I

Major Crops and Varieties grown in Ariyalur District

Crop	District	Season	Variety
Paddy	Perambalur and Ariyalur	Kuruvai (June-July)	TKM 9, IR 50, CO 37, ASD 18, ADT 42
		Samba (August)	White Ponni, CO 43, CR 1009, TRY 1, ASD 19, IR 20
		Late samba	IR 20, White Ponni, ADT 39, CO 43, CO 45, ASD 19.
		Navarai (Dec-Jan)	ASD 18, ADT 42.
Cholam	Perambalur and Ariyalur	Thaipattam (Jan-Feb)	CO 25, CSH 5, COH 3, COH 4, BSr 1
		Chithiraipattam (April-May)	CO 25, CO 21, CSH 5, COH 3, COH 4, BSR 1
		Adipattam (Jun-Jul)	K 5, K.Tall, COH 3, CO 25, CO 26, BSR 1
		Purattasipattam (Sep-Oct)	K. Tall, CO 25, CO 26, BSR 1
Ragi	Thiruvannamali Perambalur Ariyalur	Chithiraipattam (April-May)	CO 11, K 7
		Adipattam (Jun-Jul)	INDAF 5, CO 11, CO 7
		Purattasipattam (Sep-Oct)	CO 11

Source: Department of Agriculture, Ariyalur

Land Use Pattern

Particulars	Taluks with Extent (ha.)			
	Ariyalur	**Udaiyarpalayam**	**Sendurai**	**Total**
Net Area Sown	41317 (61.07)	60872 (64.57)	22606 (71.87)	124795 (64.54)
Forests	248 (0.37)	7,023 (7.45)	1780 (5.66)	9051 (4.68)
Uncultivable waste	5,275 (7.80)	2,903 (3.08)	441 (1.40)	8619 (4.46)
Land put to nonAgricultural uses.	12,727 (18.81)	9,871 (10.47)	4874 (15.50)	27472 (14.21)
Cultivable Wastes.	2,078 (3.07)	1,358 (1.44)	408 (1.30)	3844 (1.81)
Permanent pasture.	986 (1.46)	257 (0.27)	55 (0.17)	1298 (0.67)
Land under trees not included under net area sown.	509 (0.75)	5,849 (6.20)	111 (0.35)	6469 (3.35)
Current Fallows.	2,981 (4.41)	5,145 (5.46)	1022 (3.25)	9148 (4.73)
Other Fallows.	1,529 (2.26)	991 (1.05)	155 (0.49)	2675 (1.38)
Total Geographical Area	**67,650 (100.00)**	**94,269 (100.00)**	**31452 (100.00)**	**193371 (100.00)**

(Figures in parentheses denote percentage to total)

Blockwise details of Soil Classification

S.No.	Type of soil	Places in district
1	Red loam	Sendurai, Jeyankondam, Andimadam, T.Palur
2	Lateritic soil	-
3	Black soil	Veppur, Alathur, Vepanthattai, Thirumanur, Perambalur, Ariyalur
4	Sandy coastal alluvium	-
5	Red sandy soil	-

Source: www.tngov.nic.in

The Net and Gross Area Irrigated Sourcewise of Ariyalur District

Source	Number	Area irrigated	
		Net	Gross
1. Surface Water			
1. Canal i. Government canals ii. Private canals	4	9854	10126
2. Tank i. Large ii. Small	84 732	3859	3953 3759
3. Flow Irrigation i. Major and medium ii. Minor	-		-
4. Ponds i. Lift irrigation ii. Minor	-	-	-
5. Other Source i. Lift irrigation ii. Flow irrigation	-	55	55
2. Ground Water i. Public ii. Private wells iii. Dug wells	- 10634 41396	- 18855 31731	- 21419 34806

(Source: G Return Fasli 1416)

ANNEXURE – II

The budget provision for all the interventions under Animal Husbandry and Fisheries Sector is to be met from the consolidated budget for Animal Husbandry and Fisheries given under Perambalur District. (Including Ariyalur District)

Animal Husbandry Sector

I. Baseline information of Livestock / Poultry sector

Dairy farming in Ariyalur 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.

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 Percent (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 %)

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 %**
Green fodder	2.5098	0.294	2.216	88.3
Dry fodder	0.963	1.250	0.287	29.9

Number of Breedable Bovine Population (2004) : 114000

Number of AI done (2007) : 105000

SWOC Analysis (Strength, Weakness, Opportunities, Challenges)

Dairy farming

Strength

- 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

Weakness

- 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

Challenges

- Diminishing pasture land , deficit of green fodder is 88.3 %
- 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

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% Goat - > 25 % during the past decade
- Feed availability : Only grazing, migratory towards harvesting areas
- Fodder availability : **Deficit %**
  - Green fodder : 88.3
  - Dry fodder : +29.9

SWOC Analysis – Small Ruminants (Sheep and Goat Farming)
Strength

- 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

Weakness

- 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

Challenges

- Diminishing pasture land , deficit of green fodder is 89.9 %, 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 %)
- 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

Strength

- 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

Weakness

- 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.

Challenges

- 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)

Strength

- 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

Weakness

- 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

Challenges

- Seasonal marketing /Unhygienic slaughter/spread of rumours

II. On going Government Development Schemes for Livestock & Poultry (State and 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.

III. Interventions Required Areas: Livestock and Poultry sector

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
- Limmunization 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 and Practice (EVP)

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

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.

V. Annexure (Project Summary for Each Broad Area)

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.

I. Feed and Fodder Development

For Dairy, Sheep, Goat and Poultry Farming

Abstract (Summary of the Project)

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% 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.

Budget : Rs.136.60 Lakhs

Background / Problem Focus

Deficit of green fodder is 90% 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.

Project Rationale

To augment fertility, productivity and production of livestock and to achieve 4 % annual growth rate during XI plan period. The action plan is prepared to achieve this target

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.

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.

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 four Years by the Department of Animal Husbandry and the Aavin, Ariyalur -- 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**	
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**

S.No.	Details	Amount (in Rs.)
	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, Ariyalur 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

Project Cost and Financing : 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% 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% grant / DDD	0.20	4	0.80	3	0.60	3	0.60	-	-	10	2.00
										Total	**136.60**

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% 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% grant / DDD	1-1-1-0	1-1-1-0	1-1-1-0	1-0-0-0

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.

II. Genetic Upgradation

For Dairy, Sheep and Goat Farming

Abstract (Summary of the Project)

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.

Budget : Rs. 80.80 Lakhs

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%. 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

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

Project Strategy

To improve conception rate from 40 to 45 % to 65 to 70%. 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.

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% 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.

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).

Project Cost and Financing : 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**

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

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.

III. Improvement of livestock health

For dairy, sheep, goat and poultry farming

Abstract (Summary of the Project)

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.

Budget : Rs. 324.17 Lakhs

Background / Problem focus

The TDCMPU, Ariyalur 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.

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.

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.

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.

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.

Role of Animal Disease Intelligence Units

- 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 susceptiblity 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.

Anticipated Benefits

- 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%) @ 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% 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

Project Cost and Financing

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

Project Cost and Financing contd…

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%) @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% 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**										

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 & establishment	Started functioning
Identification & traceability of bovines / DAH	30000	30000	30000	24000
Supply of Min.mix. to milch animals at subsidized cost (50%) @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% 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

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.

IV. Processing Facilities

For TDCMPU (Aavin) Tiruchirapalli at Ariyalur

Abstract (Summary of the Project)

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.

Budget : Rs. 94.55 Lakhs

Background / Problem Focus

The TDCMPU, Ariyalur 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. Based on this background, the existing problems are addressed through above mentioned facilities

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.

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.

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.

Project Components

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

Project Cost and Financing: 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**

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

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.

VI. 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

Abstract (Summary of the Project)

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.

Budget : Rs. 224.55 Lakhs

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.

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.

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

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**

Project Cost and Financing: 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
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**

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

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.

Fisheries Sector

I. Baseline Information

- 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

II. On going Government Development Schemes for Livestock & Poultry (Both State and Central)

Schemes Pertaining to Inland Fisheries Development

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.

III. Intervention Required 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
- Farmers training

Strength

- 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

Weakness

- 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

Challenges

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

1. Baseline Information

- Length of Cauvery river - 47 km
- Reservoir – 1 No.; WSA - 200 ha
- Tanks - 215 Nos.; WSA – 2100 ha
- Ponds - 1930 Nos.: W.S.A - 5645 ha

- Inland Water spread Area -7969 ha
- Area utilised - 2473.6 ha
- Total fishermen population - 306
- Present production - 1500 tonnes/year against potential 2900 tonnes
- Total fish seed requirement - 115.50 lakhs seeds; only 5.00 lakhs seeds/year produced by private

On-going Government Development 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.

Intervention Required Areas

- Subsidy assistance to private fish seed rearing & seed production
- Expansion of fish culture activities in hitherto unutilised water bodies
- Providing quick transporting facilities for fish marketing
- Subsidy assistance for fishing implements
- Capacity building for fish farmers on fish farming technologies

Strength

- Cauvery river of 47 km length
- Reservoir – 1 No.; WSA - 200 ha
- Ponds - 1930 Nos.: W.S.A - 5645 ha

Weakness

- Present production - 1500 tonnes/year against potential 2900 tonnes
- Total fish seed requirement - 115.50 lakhs seeds; only 5.00 lakhs seeds/year produced by private

Opportunities

- Composite fish culture in village ponds is possible to enhance fish production

Challenges

- Creating awareness on fish farming among people

Annexure (Proposed Plan for the year 2008-2012)
Ariyalur District
Proposed Plan
Project

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

Abstract

In Ariyalur tanks receive water mostly from October every year. Depending upon the water availability, these tanks waters dwindle from February to June. Therefore, these waters are available for fish culture for a minimum period of 4 months from October to January and a maximum period of 9 months ie. October to June. Therefore, the inland fish production in this District is directly proportional to the period of water retention in irrigation tanks. Ariyalur District receives water mostly from North-East monsoon rains and through Periyar – Vaigai river system. Hence fish culture is common during October to June every year.

Sathiar fish seed farm has the following infrastructures:
Fish Seed Rearing ponds (Defunct) :30m X 15mX2=900m2
Cement nurseries (14 functional + 6 Defunct) 6M X3mX20 = 360 m2

Budget : Rs. 10.00 lakhs

Background / Problem focus

- ❖ Vaigai river flows across the district and has major beneficiary of Periyar – Vaigai river system

- Inadequate infrastructure development causing problems to attain self Sufficiency in seed production
- Fish seed production / Rearing is not adequate. The fish seed demand is mostly met Import from other Districts / States near by.
- Fish seed production / rearing in private sector has been not encouraged to minimize intake from neighboring States.
- Fish culture activity shall be encouraged by extending 50% subsidy on inputs.
- Ariyalur District's water potential gives more opportunity for fish seed production

Project Rationale

Infrastructure development to attain self sufficiency in seed production

Fish seed production / rearing in private sector should be encouraged to minimize import from other States.

Fish culture activity shall be encouraged by extending 50% subsidy on inputs.

Project Strategy

Mismatch of major carp breeding season and water availability period in tanks. Inadequate infrastructure facilities for seed rearing and fish marketing. So seed of carps in enhance.

Project Goals

- To increase good quality fish Seed and fish production capacity
- To expand fish culture in hitherto unutilized water bodies.
- To produced 10 lakhs crab seeds every year.

Project Cmponents

Repair / Renovation of Carp nurseries, Provision of bore well, Water supply arrangement, Crap seeds and 50% subsidy.

Implementation chart of the project

Sl. No.	Particulars	2008-12			
		I Qtr	II Qtr	III Qtr	IV Qtr
1.	Rearing of seeds	√		√	
2.	Completion of civil works	√		√	

Reporting

The project will be implemented by Department of Fisheries.

2) Expansion of Fish Culture in Open Water System by Extending Subsidy

It is proposed to cover 250 ha of water bodies additionally to every year to bring all the water bodies under fish culture by extending 50% subsidy assistance for stocking fingerlings. The total cost would be Rs.3.12 lakhs per year for the supply of 12.5 lakhs fingerlings @ 50% subsidy. The total cost involved for 4 years would be Rs.12.48 lakhs

Unit cost per ha.	:	Rs.2500 / ha.
Subsidy 50%	:	Rs.1250
Area to be covered per year	:	250 ha
Fingerlings required	:	12.5 lakhs per year (50 lakhs for 4 years)
Total cost	:	Rs.3.12 lakhs (Rs.12.48 lakhs)
Duration	:	4 years
Area of Implementation	:	Ariyalur District
Implementing Agency	:	Department of Fisheries
Mode of Implementation	:	Subsidy will be extended to registered fish farmers
Bench mark	:	I year – 250 ha; II year – 250 ha; III year – 250 ha; IV year – 250 ha

Plan of Action	:	Identification of ponds / tanks and beneficiaries July 2008 Stocking fingerlings October 2008 Estimation of fish production Feb.2009
Expected output	:	125 tonnes of fish per year (at the end of 4th year 500 tonnes)

3) To Provide Subsidy for the Provision of Moped with Ice Box.

Abstract

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

Budget : Rs. 4.50 lakhs

Background / Problem Focus

For transporting and progressing fish hygienically.

Project Rationale

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

Project Strategy

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

Project Goals

To promote and sale of fish of high quality with hygiene

Project Components

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

Project Cost and Financing

Rs. 4.50 lakhs for 30 units

Implementation Chart of the Project

TAFCOFED will be implemented this project.

Reporting

Progress of the project will be reported periodically.

4) Capacity Building

Abstract

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

Budget : Rs. 4.00 lakhs

Background / Problem Focus

The inland fisheries sector of Tamilnadu is endowed with a total water spread area of 3,18,790 ha with as major irrigation and long seasonal tanks (97,690 ha), short seasonal tanks/ponds (1,58,100 ha), estuaries and backwaters (56,000 ha) derelict waters, swamps etc. (7,000 ha). While these resources have a potential to yield 2.46 lakhs tonnes of fish,

the present yield is only 1.14 lakhs tonnes. About 60% culturable area has been brought under culture practices.

Project Rationale

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

Project Strategy

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

Project goals

- To conduct 60 training programmes on freshwater fish culture
- To conduct follow up studies.

Project components

Composite fish culture, Ornamental fish culture, Integrated fish farming, Cat fish culture, Economies and Marketing

Project cost and financing

S.No.	Particulars	App. Budget
1.	Stipend@ Rs. 50/ participant for 25 participants/ 3days	Rs. 3750
2.	Extension materials	Rs. 1750
3.	Miscellaneous	Rs. 500
Total		**Rs. 6000**

Implementation of client of the project

S. No.	Particulars	20085-2012			
		I Qtr	II Qtr	III Qtr	IV Qtr
1.	Identification of villages	√	√	√	√
2.	Selection of participants	√	√	√	√
3.	Conducting training programmes	√	√	√	√
4.	Evaluation of training programmes	√	√	√	√

Reporting

The progress of the project will be reported to the concerned authorities quarterly

5) Supply of Fishing Implements

Abstract

Fishermen will be provided with gill nets for effective fishing.

Budget : Rs 7.50 lakhs

Background / Problem focus

To provide gillnets to the fishermen at 50% subsidy

Project Rationale

To enhance fish production through capture fisheries.

Project Strategy

To provide 200 nos. of gillnets to the inland fishermen.

Project Goals

To intervene fishing in natural water bodies.

Project components

Supply of gillnets at 50% subsidy

Project Cost and Financing : Rs. 10.00 lakhs

Implementation Chart of the Project

The project will be implemented by the Department of Fisheries.

Reporting

The progress of the project will be reported periodically.

Ariyalur District

Proposed Plan

Project

a) Subsidy Assistance to Private Fish Seed Rearing / Fish Seed Production (50% Subsidy)

Abstract

In Ariyalur tanks receive water mostly from October every year. Depending upon the water availability, these tanks waters dwindle from February to June. Therefore, these waters are available for fish culture for a minimum period of 4 months from October to January and a maximum period of 9 months ie. October to June. Therefore, the inland fish production in this District is directly proportional to the period of water retention in irrigation tanks. Ariyalur District receives water mostly from North-East monsoon rains and through Periyar – Vaigai river system. Hence fish culture is common during October to June every year.

Budget : Rs. 20.00 lakhs

Background / Problem Focus

- Vaigai river flows across the district and has major beneficiary of Periyar – Vaigai river system
- Inadequate infrastructure development causing problems to attain self Sufficiency in seed production

- ❖ Fish seed production / Rearing is not adequate. The fish seed demand is mostly met Import from other Districts / States near by.
- ❖ Fish seed production / rearing in private sector has been not encouraged to minimize intake from neighboring States.
- ❖ Fish culture activity shall be encouraged by extending 50% subsidy on inputs.
- ❖ Ariyalur district's water potential gives more opportunity for fish seed production

Project Rationale

Infrastructure development to attain self sufficiency in seed production

Fish seed production / rearing in private sector should be encouraged to minimize import from other States.

Fish culture activity shall be encouraged by extending 50% subsidy on inputs.

Project Strategy

Mismatch of major carp breeding season and water availability period in tanks. Inadequate infrastructure facilities for seed rearing and fish marketing. So seed of carps has to be enhanced.

Project Goals

To increase good quality fish Seed and fish production capacity

To expand fish culture in hitherto unutilized water bodies.

To produced 10 lakhs crab seeds every year.

Project Components

Repair / Renovation of Carp nurseries, Provision of bore well, Water supply arrangement, Crab seeds and 50% subsidy.

Project Cost and Financing

Unit cost	* 5.0 lakhs	* renovation of existing fish ponds & fish seed
No. of units	4.0	
Total cost	20 lakhs	

Implementation Chart of the Project

Sl.No.	Particulars	2008-12			
		I Qtr	II Qtr	III Qtr	IV Qtr
1.	Completion of civil works and Rearing of seeds	√	√	√	√

b) Expansion of Fish Culture in Open Water System by Extending Subsidy

It is proposed to cover 1000 ha of water bodies additionally every year to bring all the water bodies under fish culture by extending 50% subsidy assistance for stocking fingerlings.

Budget : Rs. 2.5 lakhs

Project Cost and Financing

Unit cost	0.0025 lakhs	* supply of fish seed
No. of units	1000	
Total cost	2.5 lakhs	

c) To Provide Subsidy for the Provision of Moped with Ice Box

Abstract

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

Budget : Rs. 4.50 lakhs

Background / Problem Focus

For transporting and progressing fish hygienically.

Project Rationale

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

Project Strategy

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

Project Goals

To promote and sale of fish of high quality with hygiene

Project Components

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

Project cost and financing

Unit Cost	0.015 lakhs	* supply of fishing net & ice box
No. of units	30	
Total cost	4.5 lakhs	

Implementation chart of the project

Sl.No.	Particulars	2008-09	2009-10	2010-11
1.	Purchase & supply of ice box & moped	√	√	√

d) Capacity Building (Training):

Abstract

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

Budget : Rs. 4.00 lakhs

Background / Problem focus

The inland fisheries sector of Tamilnadu is endowed with a total water spread area of 3,18,790 ha with as major irrigation and long seasonal tanks (97,690 ha), short seasonal tanks/ponds (1,58,100 ha), estuaries and backwaters (56,000 ha) derelict waters, swamps etc. (7,000 ha). While these resources have a potential to yield 2.46 lakhs tonnes of fish, the present yield is only 1.14 lakhs tonnes. About 60% culturable area has been brought under culture practices.

Project Rationale

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

Project Strategy

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

Project goals

- To conduct 60 training programmes on freshwater fish culture
- To conduct follow up studies.

Project Components

- Composite fish culture
- Ornamental fish culture
- Integrated fish farming
- Cat fish culture
- Economies and Marketing

Project Cost and Financing

S.No.	Particulars	App. Budget (in Rupees)
4.	Stipend@ Rs. 100/ participant for 25 participants/ 3days	7500.00
5.	Extension materials	2000.00
6.	Miscellaneous	500.00
Total		**10000.00**
Grand total (10,000 x 40)		**400000.00**

Implementation Chart of the Project

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

e) Supply of Fishing Implements

Abstract

Fishermen will be provided with gill nets for effective fishing.

Budget : Rs 2.25 lakhs

Background / Problem Focus

To provide gillnets to the fishermen at 50% subsidy

Project Rationale

To enhance fish production through capture fisheries.

Project Strategy

To provide 200 nos. of gillnets to the inland fishermen.

Project Goals

To intervene fishing in natural water bodies.

Project Components

Supply of gillnets at 50% subsidy

Project Cost and Financing : Rs. 2.25 lakhs

Unit cost	0.05 lakhs	* purchase & supply of gill nets
No. of units	45	
Total cost	2.25 lakhs	

Implementation Chart of the Project

Sl. No.	Particulars	2008-09	2009-10	2010-11
1.	Purchase & supply of gill nets	√	√	√