NATIONAL AGRICULTURAL DEVELOPMENT PROGRAMME (NADP)

DISTRICT AGRICULTURE PLAN

KRISHNAGIRI DISTRICT

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

2008

NATIONAL AGRICULTURE DEVELOPMENT PROJECT – DISTRICT AGRICULTURE PLAN

PROJECT TEAM

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FOREWORD

Date.....

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

The task of preparing the District Agriculture Plan has been given to Tamil Nadu Agricultural University by Government of Tamil Nadu. Thus 29 Districts level Plans, excluding Chennai and Nilgiris, 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 ASAMY)

Coimbatore
June 30, 2008

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)

NATIONAL AGRICULTURE DEVELOPMENT PROGRAMME
DISTRICT AGRICULTURE PLAN

Krishnagiri District - An Abstract

Krishnagiri District was bifurcated from the erstwhile Dharmapuri District and Krishnagiri District came into existence from 9th February 2004, consisting of Hosur and Krishnagiri Divisions.

After the bifurcation of Krishnagiri District from Dharmapuri, the present Krishnagiri is located approximately between 11°12'N and 12°49'N of the north latitude and between 77°27'E and 78°38'E of east longitude. The total geographical area of the district is 5143 Sq. Km. This District is elevated from 300 m to 1400 m above the mean sea level. The total Geographical extent of Krishnagiri District is 5,14,326 hectares. It had 2, 02,409 hectares of forest land which constituted nearly 40 percent of the total geographical area of the district. Krishnagiri District has two Municipalities, 10 Panchayat Unions, seven Town Panchayats, 352 Village Panchayats and 636 Revenue Villages. Shoolagiri, Thally and Veppanapalli blocks have vast stretches of forest area with large tribal population.

Krishnagiri district is more suitable for cultivation of horticulture crops. Other Plantation crops, medicinal plants, Fruits, Vegetables, Spices, and flowers are grown well by way of its moderate climate, high altitude and fertility of the soil. Important crops grown in the district are paddy, ragi, cholam, redgram, blackgram, mango, coconut, cabbage, banana, tomato etc., and the major cash crops are groundnut, flowers and cotton. The land use pattern of the district indicates that forest area occupied a maximum percentage, nearly 40 percent, while the net cropped area followed with 37 percent. The other types of land uses occupied a minimum percentage of less than 10 percent for each category. The land under non agricultural uses (8.2 percent) is causing a concern as the growth of these activities will reduce the agricultural growth in the district. The current fallow and barren lands occupying eight percent of area can be reduced considerably by

encouraging mango garden plantations. Meanwhile, the productivity of the crops has to be increased so as to compensate the reduction in land under agriculture by adopting modern practices and high yielding hybrid varieties. Different types of the soils such as black or mixed loamy red and gravel are found in the district. The black of rigor loam is very fertile due to its moisture absorbing character. Red soils are seen in Hosur, Shoolagiri, Thally and Kelamangalam. In general, the soil in the district is quite loose and fresh with its colour from red to dark brown. The irrigation sources of the district indicate that wells are the major source of irrigation supplemented by tanks and canals. The tube - wells form an important source of irrigation for the Hosur and Denkanikottai taluks.

The major irrigated crops in the district are paddy, ragi, turmeric, sugarcane, banana, tomato, groundnut, cotton, coconut and flowers. The irrigated area under vegetables, fruit and flowers if increased by judicious use of water with modern water management techniques, yield of those crops can be boosted and thereby export potential can be explored. The productivity of food crops like paddy, ragi and pulses can also be increased to the target levels by proper water management practices. This district has a great potential for agribusiness and export of agricultural products. The establishment of industrial complexes and special economic zones will further contribute to the development of the district.

SWOT Analysis of the District

Strengths

- Excellent scope for agribusiness
- Export potential for mango and cut flowers – fresh and processed products
- Implementation of precision farming for most of the fruit, flower and vegetable crops.
- SIPCOT, the industrial complex at Hosur is the source of livelihood to people in the district contributing to raising their standard of living.
- Set up of special IT Zones and SEZs.

Weakness

- Agricultural labour migration to industries
- Fragmented land holdings
- Non availability of good quality seeds of staple crops
- Groundnut, a major oilseed crop grown in this district is mainly cultivated as rainfed crop and drought tolerant varieties are not available
- Very low irrigation potential and over exploitation of ground water potential

Threats

- Migration of people towards urban areas hinders the agricultural growth
- Mechanization has limited scope as the land holdings are very much fragmented
- Establishment of industrial complexes and multinational companies attracts people from agriculture towards industries.
- Farming is unattractive mainly because of increased input cost, poor credit availability, labour problems and non remunerative returns while disposing the harvested produce.

Opportunities

- By establishing the SEZs, the export of mango and flowers from this district can be enhanced to a large extent.
- The rehabilitation and development of tanks will help to increase the area under assured irrigation facility
- The precision farming and contract farming will go a long way to improve the returns considerably to the farmers
- The small, tiny and medium sized industries in this district can be utilised to their full potential to reap the maximum benefits.

The composite index analysis with 25 indicators grouped into 6 components indicated that krishnagiri district has 'backward' in agricultural development during 1991-2001and further it was classified as very backward in agriculture during 1995-96 and 2005-06.In terms of overall agricultural development its rank among the 29 districts of Tamil Nadu varying from 15-25 during 1990-90 to 2005-06.Further except cultivators and labourers in all other components its performance in the period of study is not satisfactory.

Major Interventions of Agriculture Development

The department of agriculture has proposed the following interventions in the district agriculture programme.

1. **Integrated Development of Paddy**
    - Production of Certified seeds
    - Distribution of Certified seeds
    - Assistance to SRI
    - INM, IPM, FFS to 50 farmers
    - Mechanization-Power tiller, paddy planter, paddy harvester and tools set.

2. **Integrated Development of Ragi**
    - Production of Certified seeds
    - Distribution of Certified seeds
    - INM, IPM, FFS to 20 farmers
    - Mechanisation – Ragi harvester and tools set.

3. **Integrated Development of Groundnut**
    - Production of Certified seeds
    - Distribution of Certified seeds
    - Gypsum application
    - INM, IPM, FFS to 20 farmers
    - Storage Godown
    - Modern mini processing unit
    - Tools set.

4. **Extension Activities**
    - Study tour – interstate, within state and outside countries
    - Audiovisual van

5. **Community Godowns**
    - Community godown
    - Agricultural Extension Godown
    - Tarpaulin

6. **Establishing Seed Testing Laboratory**

Major Interventions of Horticulture Development

- Net House Structure
- Plastic Crates for Vegetable handling and transport
- Banana bunch cover
- Humic Acid Effective Micro Organism
- Mango Harvester
- Sales outlet point in district - Rent and infrastructure
- District level farmers workshop
- Exposure visit for five days
- 10 ha Mega Demonstration Plot
- Package for plant protection
- Bore well with casting pipe
- Refrigerated Van

Major Interventions of Animal Husbandry Development

- Increasing efficiency of nutrient utilization
- Effective utilization of other fodder resources
- Increasing productivity by mineral supplements
- Reducing milking time and cost on milk processing
- Providing information resource and capacity building
- Providing fool proof and timely health cover

Major Interventions of Fisheries Development

- Strengthening of Government Fish Seed Farm at Krishnagiri.
- Private participation for inland fish culture in farm pond activities, expansion of fish culture in open water system by extending subsidy.
- Cage culture (seed rearing) with 90% subsidy in which open waters will be effectively utilized.
- River ranching of native fish varieties for augmenting fish production
- Establishment of ornamental fish culture and breeding units.

- Establishment of retail outlet at Hosur.
- Supply of fishing implements (modified or advanced craft & gear for operation in deep inland water bodies).
- Training of fish farmers.
- Development of Landing Centres, supply of mopeds fitted with ice box for post harvest handling.

Major Interventions of Agricultural Engineering Department

- Introduction of Newly Developed Agricultural Machine & Implements
- Innovative water harvesting structures
- Popularization of Agrl. Mechanisation through Conventional Machinery / Equipments
- Water Harvesting Structures
- Soil Conservation work
- Water Management works

Major Interventions of Agricultural Marketing and Agri business Committee

- Establishment/ organization of commodity groups for marketing in the State
- Facilitation of Contract Farming between farmers and bulk buyers in the State
- Dissemination of Market intelligence
- Arrangement of Buyers - Sellers Meet
- Organizing the exposure visits to important markets with in the state and out side the state by commodity groups / farmers and extension functionaries.
- Strengthening of market extension centre at each district/ block level for capacity building and dissemination of marketing information.
- Strengthening of selected village shandies
- Capacity building of farmer's skill
- Price surveillance

- Regulated Market and uzhavar Shandies Publicity
- Market Infrastructure

Major Interventions of Public Works Department

- Repairs to the damaged Anicuts
- Providing Head Sluice to some of the supply channels to avoid breaches during floods and for better water management.
- Providing Scour vent in some Anicuts.
- Trimming the supply channels by earthwork excavation
- Providing revetments and retaining walls in selective area of the supply channels.
- Repairing and restoring the traditional water bodies (i.e. tanks)
- Desilting the supply channels to tank.
- Strengthening the bunds of the tanks and channels wherever necessary for effectively storing the water and conveying it to the entire command area and also for conveying agriculture inputs to the field.
- Repairs to the damaged weirs.
- Repairs to the damaged Sluices
- Providing revetments and retaining walls in selective area of the tanks
- Providing S.G. Shutter/ Plug arrangements to Sluices, Head sluices, Scour vents etc.,
- Removing, repairing and re fixing in position of the existing S.G. shuttering arrangements and providing locking arrangements etc.,

To carry out the recommended interventions in all the sectors of Krishnagiri district, a sum of Rs. 8800.87 lakhs is required as detailed below.

Budget Requirement for the Interventions Proposed in the District Agriculture Plan

(Rs. in lakhs)

Sl. No	Departments	2008-09	2009-10	2010-11	2011-12	Total
1	Agriculture	537.100	529.100	529.100	529.100	2124.400
2	Horticulture	397.400	401.400	401.400	401.400	1601.600
3	Animal Husbandry	1489.266	492.100	170.830	167.600	2319.796
4	Fisheries	75.650	115.000	9.900	8.400	208.950
5	Agricultural Engineering	145.190	162.890	145.420	161.770	615.270
6	Agricultural Marketing	240.85	220.40	299.39	270.21	1030.85
7	Public Works Department	408.000	180.000	147.000	165.000	900.000
	Total	**3293.46**	**2100.89**	**1703.04**	**1703.48**	**8800.87**

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 11th plan. To implement this, formulation of action plans by means of developing District Agriculture Plans (DAP) is recommended. It is of the view that such plans would also reflect the felt needs of the farmers and stakeholders. Such District Agriculture Plans aim at moving towards projecting the requirements for development of Agriculture and allied sectors of the district including animal husbandry and fishery, minor irrigation projects, rural development works, agricultural marketing schemes and schemes for water harvesting and conservation, etc. keeping in view the natural resources and technological possibilities in each district.. These plans thus, present the vision for Agriculture and allied sectors within the overall development perspective of the district apart from the financial requirement and the sources of financing the agriculture development plans in a comprehensive way.

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

Methodology Adopted for Preparation of District Agriculture Plan

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

Major Areas of Focus

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

(b) Agriculture mechanization;

(c) Activities related to enhancement of soil health;

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

(e) Integrated Pest Management schemes;

(f) Strengthening of Market Infrastructure and marketing development;

(g) Strengthening of Infrastructure to promote Extension Services;

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

(i) Animal husbandry and fisheries development activities;

(j) Study tours of farmers;

(k) Organic and bio-fertilizers;

(l) Innovative schemes.

Collection of Data

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

Formulation of District Planning Unit

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

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

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

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

Sensitization Workshop

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

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

Preparation of Draft Action Plan and Presentation in District Collectors Meeting

Based on the baseline information and proposals, draft action plan was prepared and this was presented in the District Collectors Meeting held on 16.5.08 under the chairmanship of District Collector. This meeting was attended by the scientists from TNAU, officials from line departments and the representatives of local bodies. Wide coverage was given in the media also.

Finalisation

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

CHAPTER - II

GENERAL DESCRIPTION OF THE DISTRICT

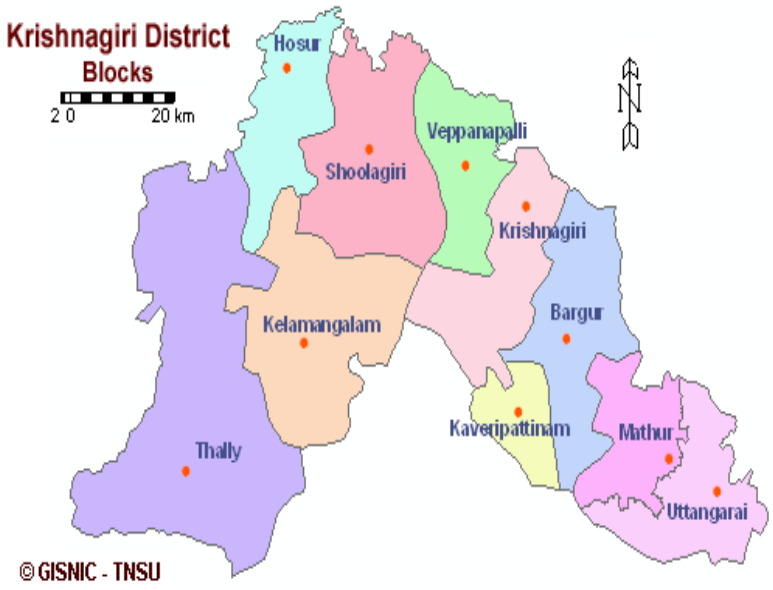
Krishnagiri District was bifurcated from the erstwhile Dharmapuri District and Krishnagiri District came into existence from 9th February 2004, consisting of Hosur & Krishnagiri Divisions.

2.1 Location and Area

After the bifurcation of Krishnagiri District from Dharmapuri, the present Krishnagiri is located approximately between 11°12' and 12°49' of the north latitude and between 77°27' and 78°38' of east longitude. The total geographical area of the district is 5,143 Sq. Km. This District is elevated from 300m to 1400m above the mean sea level.

REVENUE DIVISIONS	PANCHAYAT UNIONS
• Krishnagiri • Hosur	• Kelamangalam • Thali • Krishnagiri • Shoolagiri • Vepanapalli • Hosur • Kaveripattinam • Bargur • Mathur • Uthangarai
REVENUE TALUKS	
• Krishnagiri • Hosur • Pochampalli • Uthangarai • Denkanikottai	
Krishnagiri District has two Municipalities, 10 Panchayat Unions, seven Town Panchayats, 352 Village Panchayats and 636 Revenue Villages.	

Fig.1 Map of Krishnagiri District



2.2 Climate

The Climate condition of the district is hot and dry in summer i.e. from March to May. In winter, it is very cold and misty i.e. from November to February. The temperature details are furnished in Table 2.1.

Table 2.1. Temperature Details at Agriculture Research Station, Paiyur

Year	Months	Maximum Temperature °C		Minimum Temperature °C		Relative Humidity %		Rainfall MM	
		Normal	Actual	Normal	Actual	07.17	14.17	Normal	Actual
2006	April	37.10	35.30	23.60	24.90	75.60	48.10	45.00	34.00
	May	36.80	33.30	24.50	24.20	84.00	48.10	85.80	59.20
	June	35.50	34.80	24.40	25.60	84.90	47.40	63.30	37.80
	July	34.40	34.30	24.30	25.00	76.50	48.40	64.50	1.00
	August	33.50	34.20	23.90	24.30	77.50	49.40	149.10	60.20
	September	33.30	33.40	23.30	24.00	87.20	50.60	205.50	78.80
	October	32.20	31.70	22.70	23.10	93.20	54.00	215.40	216.20
	November	30.50	28.70	20.80	22.30	95.50	61.70	92.30	98.20
	December	29.50	26.50	17.90	19.20	98.10	50.50	44.80	14.10
2007	January	27.80	28.40	17.90	18.30	98.90	36.00	1.70	0.00
	February	33.10	32.40	18.70	19.60	95.90	28.80	2.50	0.00
	March	36.30	34.10	20.90	21.60	91.30	25.80	18.00	0.00

Source: Data from the Agriculture Research Station, Paiyur.

2.3 Rainfall

The normal rainfall of the District was 863.50 mm during the year 2006-07 and the actual rainfall of the District was 637.10 mm. The seasonwise distribution of rainfall for the year 2006-07 is furnished in Table 2.2.

Table 2.2. Season and Month wise Rainfall in Krishnagiri District

(in mm)

Period	Normal Rainfall	Actual Rainfall
1. South West Monsoon Period		
June, 2006	48.4	108.8
July, 2006	81.3	7.0
August, 2006	108.9	77.3
September, 2006	165.0	38.4
Total	**403.6**	**231.5**
2. North East Monsoon Period		
October, 2006	169.4	126.1
November, 2006	83.8	79.9
December, 2006	37.7	6.6
Total	**290.9**	**212.6**
3. Winter Period		
January, 2007	7.6	0.0
February, 2007	6.7	1.9
Total	**14.3**	**1.9**
4. Hot Weather Period		
March, 2007	13.1	0.6
April, 2007	35.5	93.6
May, 2007	106.1	96.9
Total	**154.7**	**191.1**

Source: Records of Office of Assistant Director of Statistics, Krishnagiri

2.4 Climatic Conditions and Rainfall Seasons

Krishnagiri District is basically an agrarian district. However the quantity and quality of agricultural operations and crop production depend upon monsoons. Krishnagiri is a border district of Tamil Nadu having a large number of small hills and is generally a dry district. North East monsoon provides more rain and the normal average rainfall is 860 mm per annum (Table 2.4). Good showers are rarely received. More than

75 percent of the area cultivated is under rainfed conditions. Also the rain received is not evenly distributed throughout the crop period. As a result of erratic distribution of rainfall, crop production often fails causing economic loss besides unemployment problem. Drought is a regular phenomenon in this district.

2.5 Soil

Different types of the soils such as black or mixed loamy, red and gravel are found in the district. The Black of rigor loam is very fertile due to its moisture absorbing character. Red soils are seen in Hosur, Shoolagiri, Thally and Kelamangalam. In general, the soil in the district is quite loose and fresh with its colour from red to dark brown. The soil has low nitrogen and phosphate content with marked variation between different taluks.

- Coarse textured red sandy loam (Typic Ustorthent) 80 per cent
- Laterite 10 per cent
- Black and other soil types 10 per cent

2.6 Rivers

The main rivers that flow across the district are Cauvery and South Pennar. Cauvery enters the district from South West in Denkanikottai taluk and exits in South West direction. It forms a waterfall at Hokenakkal and joins Mettur Dam. South Pennar originates in Nandidurg of Karnataka State and flows through Hosur, Krishnagiri and Uthangarai taluks. Vanniyar and Markanda rivers joins the South Pennar.

2.7 Reservoirs

Krishnagiri Reservoir Project, Shoolagiri-Chinnar Reservoir, Thangarai Reservoir, Pambar Reservoir, Kelevarapalli Reservoir Project and Baarur Tank are the sources of irrigation for Krishnagiri district. By all these water reservoirs 18,965 ha of land are irrigated.

2.8 Infrastructure Available

- No. of Agri Depots/Sub depots / State Seed Farms : a) Main Depots 10, Sub depots-6.
- No. of Cooperative outlets and banks: 97 Primary Agrl. Cooperative Banks
- No. of Commercial banks: 120
- No. of Agri input sellers: Total - 442 Private - 345 Co-operatives -97
- No. of Bio-fertilizer and Bio pesticide units -1
- Vermicompost units - 10

2.9 Marketing Facilities for Agrl. Produce (including Uzhavar Sandhai)

Markets

Regulated markets	:	9 (Krishnagiri, Hosur, D.Kottai, Kalamengalam, Rayakottai, Kaveripattinam, Bargur, Pochampalli, Uthangarai)
Co-op marketing societies		: 97
Uzhavar Sandhai		: 2 (Krishnagiri & Hosur)
Contract farming (crops/ area covered)	:	NIL
Wholesale markets	:	157 (Traders)
Local shandies	:	23

2.10 Value – Addition of Farm Produce - Status and Prospects

Mango pulp industries	: 33
Processing Unit	: 2 Nos. (Krishnagiri capacity 5000 MT, 2500MT, Grading facility)

Storage Go-downs available (including cold storage)

Krishnagiri	4
Hosur	7 (for floriculture -4)
Rayakottai	1

2.11 Basic Infrastructure

(i) Roads: Roads - National Highways : 191.276 km.

The following major roads (km) pass through Krishnagiri

1.	Kanniyakumari – Kashmir (NH 7)	70.185
2.	Krishnagiri – Ranipet (NH 46)	21400
3.	Pondichery – Krishnagiri (NH 66)	58.969
4.	Krishnagiri – Kuppam (NH 219)	19.000
5.	Sarjapur – Bagalur – Hosur (NH 207)	19.000
6.	Eastern by pass Road	2.722
7.	State Highways	1658.000
8.	Panchayat union Roads	577.250
9.	Panchayat Roads	2474.715

(ii) Railways

Salem-Bangalore Broad gauge line runs through Hosur. A railway line between Jolarpet and Hosur (Via) Krishnagiri will pave way for further improvement of industrial growth in Hosur. This will link Chennai city and its port facilities with the growing town of Hosur, which is also a hub for horticultural crops. However, this will take time for realization.

2.12 Irrigation (Canals, Tube Wells, Wells and Tanks)

The Public Works Department and Panchayat union tanks, ponds and supply channels plays an important role in the irrigation of Krishnagiri district. But they have to be desilted and strengthened. New Check Dams and flood protection walls have to be constructed for water conservation.

2.13 Irrigation and Ground Water

The irrigation sources in the district are shown in Table 2.3. Tube wells formed the major source of irrigation (66 percent) followed by tanks (16 per cent), wells (16 per cent), canal (2 per cent) and other sources in that order.

Table 2.3 Sources of Irrigation - Area Irrigated (ha)

Sl.No.	Source	2006-07	2006-07
1	Canal	1115	2.14
2	Tank	8275	15.92
3	Wells	8268	15.90
4	Tube wells	34330	66.03
5.	Others, if any	4	0.01
	Total (Net)	**51992**	**100.00**
	Gross Irrigated area	54689	

Source: Records of Office of Assistant Director of Statistics, Krishnagiri

The wells dug under private sector with pump sets were seen in most places and private tube wells were the next source in utilizing the ground water potential. The details are given in Table 2.4.

Table 2.4 Ground Water Potential

Ground Water	Numbers	Area in Ha
1. Public	-	-
2. Private Tube Wells	6654	6747
3. Dug Wells	56804	27866
4. I) With Pump sets	52868	-
ii) Without Pump sets	396	-

Source: Records of Office of Assistant Director of Statistics, Krishnagiri

The Talukwise sources of water supply are furnished in Table 2.5.

Table 2.5 Irrigation Sources of Water Supply Taluk-Wise

Year : 2006 - 07

Sl. No.	Name of the Taluk	Canals (Nos.)	Length (Km.)	Wells used for irrigation purpose	Tube wells	Wells used for Domestic purpose only	Reser voirs	Tanks (Nos.)
1.	Krishnagiri	15	38	30130	--	1027	1	314
2.	Pochampalli	8	19	10870	--	1274	--	114
3.	Uthangarai	39	43	11739	--	1578	1	239
4.	Hosur	6	11	7507	4150	1229	2	312
5.	Denkanikottai	41	26	5245	2876	1743	0	348
	Total	**109**	**137**	**65579**	**7026**	**6851**	**4**	**1327**

Source: Records of Office of Assistant Director of Statistics, Krishnagiri

The irrigation sources of the district indicate (Table 2.9) that wells were the major source of irrigation supplemented by tanks and canals. The tube wells formed an important source of irrigation for the Hosur and Denkanikottai taluks.The details of the dams and their capacity are furnished in Table 2.6.

Table 2.6 Dams and their Capacity in Krishnagiri District

Year: 2006-2007

S. No.	Name of the Dam / Block	Dams			
		Catchment area (ha.)	Height (ft.)	Capacity (M.C.Ft.)	Length of Canals (in kms)
1.	K.R.P.Dam	542861	52.00	1666.29	35.00
2.	Pambaru Dam	173600	19.60	280.00	41.00
3.	Shoolagiri Sinnar Dam	143620	32.80	81.20	13.00
4.	Kelavarapalli Dam	244200	44.00	481.00	48.00

Source: Records of Office of Assistant Director of Statistics, Krishnagiri

As seen in the Table 2.10, K.R.P. and Kelavarapalli dams covered the largest catchment area and caters to the needs of the farmers in this district.

2.14 Rural Electrification

Street lighting in rural areas is vested with the Panchayat Administration. The panchayats looks after the erection of new streetlights in the hamlets and payment of current consumption charges from the panchayat funds. Also the Procurement of tube lights, sodium vapor lights and other electrical appliances are done by the concerned Panchayats itself. Now solar lights are also being utilized to cut down on consumption cost. Overall, 95 per cent of the hamlets are covered under rural electrification.

2.15 Power Supply Position

Generally power supply position in Krishnagiri District is normal. But in some areas, low voltage problem is felt, especially in the hamlets in ghat section. To minimize the current consumption charges in the Panchayat, efforts were taken to utilize solar power lights as an alternate and renewable source in Krishnagiri District.

2.16 Educational and Vocational Training Institutes etc.

There is a Community Polytechnic run by the Government in Krishnagiri District. The TAHDCO (Tamil Nadu Adi Dravidar Housing Development Corporation) offers nursing and catering training under Vocational Training courses through private training institutions to people belonging to SC / ST communities. Also skill training is given to scavengers by TAHDCO.

The Krishnagiri District is surrounded by Vellore and Thiruvannamalai Districts in the East, Karnataka State in the West, State of Andhra Pradesh in the North and Dharmapuri District in the South.

2.17 Area and Population

(i) Population (2001 Census)	: 1561118
a. Male	: 803077 (51%)
b. Female	: 758041 (49%)
c. Rural	: 1299726 (83%)
d. Urban	: 261392 (17%)

The male and female populations were distributed equally in total population. The density of population is 304 persons /Sq.Km.

(ii) Literates	: 838547 (53.71%)
a. Male	: 498832 (59.49%)
b. Female	: 339715 (40.51%)

In the case of literacy, only 54 percent of the population was literates and in that 59 percent of males and 41 percent of females were literates.

(iii) Main Workers

a. Total Workers	: 766666
b. Male Workers	: 469779 (61%)
c. Female Workers	: 284887 (37%)
d. Rural Workers	: 661616 (86%)
e. Urban Workers	: 93050 (12%)
f. Cultivators	: 326019 (43%)
g. Agricultural Labourers	: 272033 (35%)
h. Household Industry	: 22190 (3%)
i. Other workers	: 242637 (32%)

In the classification of main workers, male workers constituted 61 percent and females 37 percent. Similarly the rural workers constituted about 86 percent as compared to urban counterparts of only 12 percent. The cultivators and agricultural labourers formed 43 and 35 percent respectively. The household category of workers were only three percent and the other workers constituted 32 percent.

(iv) Vital Statistics (2001 census)

I. Birth	: 31753
II. Death	: 9317
III. Infant Death	: 810
IV. Birth Rate (Per 1000 Population)	
a. Rural	: 18.8
b. Urban	: 18.2
c. Combined	: 18.7
V. Death Rate (Per 1000 Population)	
a. Rural	: 5.5
b. Urban	: 5.7
c. Combined	: 5.5

VI. Infant Mortality Rate (Per 1000 Live Births)

a. Rural : 26.1

b. Urban : 19.6

c. Combined : 25.5

The expectancy of life was 61 years for male and 65 years for female in this district. The infant mortality rate was higher in rural areas as compared to urban places and proper health facilities have to be established to reduce the mortality rate.

(v) Demographic Profile

Population Statistics [CENSUS - 2001]	
Total Population	15,46,700
Population Male	7,95,718
Population Female	7,50,982
Urban Population	2,53,989
Rural Population	12,92,711
Density of Population per Sq. Km.	301
Sex Ratio	944/1,000
Birth Rate	21.5%
Death Rate	4.1%
Infant Mortality Rate	38.2%
Literacy rate	58.11%
Literacy rate men	67.11%
Literacy rate women	48.62%

Source: Krishnagiri District Stastistical Hand Book – 2006-07.

Tribal like 'Irular' live in the forest of Denkanikottai. As they are away from towns they do not lose their identity and individuality. These people are skilled in tree climbing, honey collection and protecting themselves from wild animals.

The features of population are furnished in Table 2.7.

Table 2.7 Features of Population in Krishnagiri district

S.No	Particulars	Population	Percentage Share
1	Male	810136	51
2	Female	750892	49
3	Sex ratio	944 /1000	
4	Child(0-6 age)		
5	Males	105893	52
	Females	97194	48
	Total	**203807**	
6	Rural child Population	171247	84
7	Urban Population	31840	16

Urban Rural Population

S.No	Area	Population	Percentage
1	Rural	1315688	84.00
2	Urban	245430	16.00
	Total	1561118	100.00

Taluk wise Population

S.No	Districts	Population	Percentage
1	Krishnagiri	521815	33
2	Pochampalli	157766	10
3	Uthangarai	182325	12
4	Hosur	386933	25
5	Denkanikottai	309579	20
Total		**1561118**	

Total Workers Classification

S.No	Classification of workers	Population	Percentage
1	Cultivators Cultivators	287680	38
2	Agricultural laboures	225299	30
3	Workers in house hold industry	19926	3
4	Other workers	221761	29

Source: Krishnagiri District Statistical Hand Book, 2006-2007.

In the classification of population as seen in Table 2.7, the sex ratio indicates that female population was marginally less than male category and the child population in

rural areas was 84 percent as compared to 16 percent in urban centres which indicated the unawareness of family planning and benefits of small size family in that areas. The worker's population shows that cultivators and agricultural labourers constituted 70 percent and this trend shows that labour migration is not to that extent as the other workers category constituted only 30 percent.

2.18. Land Use Pattern of the District

The land use pattern of the district (Table 2.8) shows that forest area occupied a maximum percentage, nearly 40 percent, while the net cropped area followed with 37 percent. The other types of land uses occupy a minimum percentage as less than 10 percent for each category. The land under non agricultural uses (8.2 percent) is causing a concern as the growth of these activities will reduce the agricultural growth in the district. The current fallow and barren lands occupying 8 percent of area can be reduced considerably by encouraging mango garden plantations. Meanwhile, the productivity of the crops has to be increased so as to compensate the reduction in land under agriculture by adopting modern practices and high yielding hybrid varieties.

Table 2.8 Land Use Pattern of Krishnagiri District

Sl. No.	Classification	2006-07	
		Area(ha)	Percent
1.	Forest	202409	39.35
2.	Barren and Uncultivable uses	25016	4.86
3.	Land put to Non-Agricultural uses	42161	8.20
4.	Cultivable Waste	4951	0.96
5.	Permanent Pastures and Other Grazing Land	8156	1.59
6.	Land Under Miscellaneous Tree Crops and Grooves not included in Net Area Sown	9682	1.88
7.	Current Fallows	23328	4.54
8.	Other Fallows Land	8606	1.67
	Net Area Sown	190017	36.94
	Geographical Area According to Village Papers	514326	100.00
	Total Cropped Area	198593	38.61
	Area sown more than once	8576	1.66

Source: Records of Office of Assistant Director of Statistics, Krishnagiri

2.19 Land Holding Pattern of the farmers – Size Group Wise Number and Area of Holdings

The distribution of land size holdings as shown in Table 2.9, indicates the fact that 1,34,362 farmers were holding less than 0.5 hectare and this scenario continues as the number of farmers gradually decrease with the operational holdings from 0.5 to 2.0 hectares and thereafter drastically reduced to very small number of farmers holding large area like 10 & 20 hectares. This fact shows the difficulty of the farm mechanisation in very small fragmented holdings but can be made possible if the farmers follow contract or cooperative farming to reap the gains of farm mechanisation.

Table 2.9 Land Holding Pattern – Size Group wise

Size Class of holdings (Hectares)	Number	Area (Ha.)	Average size of holdings (Ha.)
upto 0.5	134362	33154.20.0	0.25
0.5-1.0	64358	46406.93.0	0.72
1.0-2.0	48789	68431.76.0	1.40
2.0-3.0	15648	37591.83.0	2.40
3.0-4.0	6197	21303.73.0	3.44
4.0-5.0	2923	12933.91.0	4.42
5.0-7.5	2477	146.32.63.0	5.91
7.5-10.0	895	7615.647.0	8.51
10.0-20.0	476	6212.49.0	13.05
20.0 & Above	73	2258.55.0	30.94

Source: Records of Office of Assistant Director of Statistics, Krishnagiri

2.20 Agriculture

A. Total Cultivated Area(in Hectares) : 198593

B. Net Area Sown(in Hectares) : 190017 (96%)

C. Area Sown more than once(in Hectares) : 8576 (4%)

D. Area and Production of Principal Crops : 2006-2007

			Area in (ha.)	Prodn. in 000' (Tonnes)
i.	Rice	:	17891	47.05
ii.	Millets and other cereals	:	56584	48.95
iii.	Pulses	:	26203	7.05
iv.	Sugarcane (in terms of gur)	:	2956	111.60
v.	Groundnut	:	19628	24.20
vi.	Gingelly	:	312	.042
vii.	Cotton (bales of 170 kg	:	1604	2823 (Bales) lint each)

E. Agricultural Land Holdings

i. Number of Holdings (2001 census) : 276198

ii. Area in Hectares : 236055

iii. Average size of Holdings (in Hect) : 0.91

F. (a) Important Food Crops grown : Paddy, Ragi, Cholam, Redgram, Blackgram, Mango, Coconut, Cabbage, Banana, Tomato.

(b) Important Non- Food Crops: Flowers, Groundnut and cotton

The net area sown in this district constituted 96 percent in the total cultivated area as the area sown more than once was very less due to low irrigation potential. The average size of holdings was less than one hectare and the major food crops grown were paddy, ragi, pulses and mango. The non food crops like flowers, groundnut and cotton are also grown in large extent which indicates the export potential of these crops from this district.

2.21 Cropping Pattern

Cropping pattern of the district is given below in Table 2.10.

Table 2.10 Cropping Pattern of Krishnagiri District

Sl. No	Name of the Crop	2006-2007	
		Area in Ha.	Production (in '000 tonnes)
Cereals			
1	Paddy	**17891**	**47.1**
2	Cholam	6107	6.5
3	Bajra	546	0.4
4	Ragi	**47203**	**53.4**
5	Thinai	2	0.00
6	Varagu	25	0.03
7	Samai	**2604**	**1.06**
8	Maize	97	0.12
	Total cereals	**74475**	**108.61**
Pulses			
9	Redgram	**2717**	**1.11**
10	Bengalgram	12	0.002
11	Greengram	681	0.2
12	Blackgram	769	0.2
13	Horsegram	**17975**	**3.8**
14	Other pulses	4049	0.8
	Total pulses	**26203**	**6.112**
Oil Seeds			
15	Ground Nut	**19628**	**24.2**
16	Gingelly	312	0.04
17	Sunflower	66	0.01
18	Other Oil seeds	15948	0.00
	Total oilseeds	**35954**	**24.25**
19	Cotton	**1604**	**0.3**
22	Sugar cane	**3030**	**190.9**
23	Tapioca	**1949**	**74.4**
24	Banana	**2177**	**106.9**
25	Coriander	94	0.3
26	Chillies	441	0.6
27	Onion	102	0.8
	Total	**9474**	**374.2**

Source: Records of Office of Assistant Director of Statistics, Krishnagiri.

The cropping pattern provides an insight into the major crops grown in this district. Paddy, ragi and samai are the predominant cereal crops grown and among the pulses, horse gram and redgram are predominantly grown. Groundnut is the major oilseed crop grown and among the cash crops, banana, cotton and mango are grown predominantly. This diversified cropping system in this district provides great scope for agro based industries.

2.21 Animal Husbandry

a. Veterinary Institutions

i. Veterinary Hospitals	: 2
ii. Veterinary Dispensaries	: 35
iii. Clinical Centers	: 2
iv. Sub Centers	: 31

b. Poultry Development

i. Chicks produced in Hatcheries (Lakh Nos)	: 1.30
ii. Birds sold for breeding (Lakh Nos)	: 0.40
iii. Birds sold for table (Lakh Nos)	: 1.16

c. Dairy Development

a. Dairies	: 1
b. Milk Chilling Plants	: 2
c. No.of Milk Co-op.Societies	: 210
d. Milk Production per day (Lakh Litres)	
Flush Season	:116.230
Lean Season	:142.195

d. Live Stock and Poultry Population

i. Cattle	: 299515
ii. Buffaloes	: 18935
iii. Sheep	: 294230
iv. Goat	: 149744
v. Poultry	: 1317857

The livestock and poultry sector provides ample opportunity and have to be developed in this district as the agricultural laborers population can earn income from this sector during the off season or non cropping periods.

2.22 Industries

Name of the Important Industries in the District: Premier Spinning Mill, TVS Motor Company Ltd., Exide Ltd., AV. Tech. Ltd., Titan Watches, Ashok Leyland, Carborandum Universal Ltd.

CHAPTER - III

SWOT ANALYSIS OF THE DISTRICT

3.1. Introduction

The Tamil Nadu has been divided into seven Agro climatic zones based on different Climatic Conditions. Krishnagiri occupies the Fourth Zone called as "North Western Zone". Krishnagiri district is more suitable for cultivation of Horticulture crops. Other Plantation crops, medicinal plants, Fruits, Vegetables, Spices, and flowers are grown well by way of its moderate climate, high altitude and fertility of the soil. Important crops grown in the district are paddy, ragi, cholam, red gram, black gram, mango, coconut, cabbage, banana, tomato etc., and the major cash crops are groundnut, flowers and cotton.

3.2. SWOT Analysis of the District

(a) Strength

- Excellent scope for agribusiness
- Export potential for mango – fresh and processed products
- Scope for rose and other flower production for export purposes has been initialized
- Implementation of precision farming for most of the fruit, flower and vegetable crops.
- The vast forest resource of the district contribute towards the national income
- The district has rich granite resources
- SIPCOT, the industrial complex at Hosur is the source of livelihood to people in the district contributing to raise their standard of living
- Set up of special IT zones and SEZs.

(b) Weakness

- Agricultural labour migration to industries
- Fragmented land holdings
- Non availability of good quality seeds of staple crops
- Groundnut, a major oilseed crop grown in this district is mainly cultivated as rainfed crop and drought tolerant varieties are not available
- Very low irrigation potential and over exploitation of ground water potential

(c) Threats

- Migration of people towards urban areas hinders the agricultural growth
- Mechanization has limited scope as the land holdings are very much fragmented
- Establishment of industrial complexes and multinational companies attracts people from agriculture towards industries.
- Farming is unattractive mainly because of increased input cost, poor credit availability, labour problems and non remunerative returns while disposing the harvested produce.

(d) Opportunities

- By establishing the SEZs the export of mango and flowers from this district can be enhanced to a large extent
- The rehabilitation and development of tanks will help to increase the area under assured irrigation facility
- The precision farming and contract farming will go a long way to improve the returns considerably to the farmers
- The small, tiny and medium sized industries engaged in this district can be utilised to their full potential to reap the maximum benefits

3.2 Composite Index of Agricultural Development of Krishnagiri District

Agricultural Development of a district is a comprehensive multidimensional process involving large number of related indicators. Hence, it can be well represented by composite indices which are used as yardsticks not only to gauge the development of each district but also to compare its performance in relation to other districts. These indices help to classify the sub-regions based on a set of large multivariate data. The information contained in the large set is transformed into a small set of indices which would provide a convenient method for classification. There are many methods of classification based on multivariate data. Among them, one method which is statistically sound is that developed by Iyengar and Sudarshan (1982). This method is simple and easy to apply and it helps to classify the districts into various stages of development, *viz.,* 'highly developed', 'developed', 'developing', 'backward' and 'very

backward'. In this method for each district a 'composite index' is constructed. The index lies between 0 and 1 with 1 representing 100 per cent development and 0 representing no development at all.

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

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

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

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

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

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

The analysis showed that Krishnagiri district which was classified as 'backward' in agricultural development during 90-91 and 2000-01 and it was classified as 'very backward' in agriculture during 1995-96 and 2005-06. In terms of overall agricultural development its rank among the 29 districts of Tamil Nadu varied from 15 to 25 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 Table 3.2. The table shows that except cultivators and labourers, in all other components its performance in the period of study is not satisfactory. For example, in irrigation its rank is between 21 and 24 in all the four periods. Similarly in livestock also it occupied between 9th and 27th ranks.

Table 3.1. Selected Indicators of Agricultural Development for Krishnagiri District

Component	Indicators	No. of Indicators
Crop-Area-Variables	Cropping Intensity	10
	% of Gross Cropped Area to Total geographical area	
	% Share of foodgrains to Gross Cropped Area	
	% Share of foodcrops to Gross Cropped Area	
	% Share of non foodcrops to Gross Cropped Area	
	% Share of cultivable waste to total geographical area	
	% Area under High Yielding Variety-PADDY	
	% Area under High Yielding Variety-CHOLAM	
	% Area under High Yielding Variety-CUMBU	
	% Area under High Yielding Variety-RAGI	
Irrigation	Irrigation Intensity	7
	% of Gross Irrigated Area to Gross Cropped Area	
	% of Net Irrigated Area to net area sown	
	% Area under Canal Irrigation to Gross Irrigated Area	
	% Area under Tank Irrigation to Gross Irrigated Area	
	% Area under Well Irrigation to Gross Irrigated Area	
	% Area under other sources Irrigation to Gross Irrigated Area	

Table 3.1 Contd…

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	% of Cultivators to total population	2
	% of Agri.labourers to total workers	
	Total	25

Table 3.2. Rank of Krishnagiri District in terms of agricultural development among other Districts of Tamil Nadu during 1990-91 to 2005-06

Component of Composite Index		Crop-Area-Variables	Irrigation	Livestock	Fisheries	Fertilizer	Cultivators-Labourers	Overall
Period	1990-91	19	24	9	-	-	2	18
	1995-96	21	25	25	19	29	4	24
	2000-01	17	24	25	22	26	10	22
	2005-06	14	25	14	28	29	16	25

CHAPTER - IV

DEVELOPMENT OF AGRICULTURE

4.1 Agriculture

The important crops of Krishnagiri District are Paddy, Maize, Ragi, Banana, Sugarcane, Cotton, Tamarind, Coconut, Mango, Groundnut, Vegetables and Flowers. The district has an excellent scope for agri business. Regional Agricultural Research Center of Tamil Nadu Agricultural University is functioning efficiently at Paiyur in Kaveripattinam since 1973. This center is functioning in 18.5 ha of land. It helps the peasants to develop and adopt the modern techniques of cultivation.

4.2. Land Use Pattern of the District

The land use pattern of the district (Table 4.1) shows that forest area occupied a maximum percentage, nearly 40 percent, while the net cropped area followed with 37 percent. The other types of land uses occupied a minimum percentage of less than 10 percent for each category.

Table 4.1 Land Use Pattern of the District - 2006-07

(Area in hectares)

Sl. No.	Classification	Area	Percent
1.	Forest	202409	39.35
2.	Barren and Uncultivable uses	25016	4.86
3.	Land put to Non-Agricultural uses	42161	8.20
4.	Cultivable Waste	4951	0.96
5.	Permanent Pastures and Other Grazing Land	8156	1.59
6.	Land Under Miscellaneous Tree Crops and Groves not included in Net Area Sown	9682	1.88
7.	Current Fallows	23328	4.54
8.	Other Fallows Land	8606	1.67
	Net Area Sown	190017	36.94
	Geographical Area According to Village Papers	514326	100.00
	Gross Cropped Area	198593	38.61
	Area sown more than once	8576	1.66

Source: Records of Office of Assistant Director of Statistics, Krishnagiri.

4.3. Soil Health

Table 4.2 Details of Soil Classification - 2006-2007

Sl.No.	Type of Soil	Places in District (Taluks)	Area in ha.	Percentage in total geographical area
1.	Red soil	Hosur, Kelamangalam, Thally	273221	53
2.	Clay soil	Krishnagiri	43505	8
3.	Kavi soil	--	--	--
4.	Vandal soil	--	--	--
5.	Barren	--	--	--
6.	Other soil	--	--	--
7.	Forest & Barren	All blocks	197600	39
8.	Catchment Area	--	--	--
	Total Geographical Area	--	514326	100

Source: Records of Office of Assistant Director of Statistics, Krishnagiri.

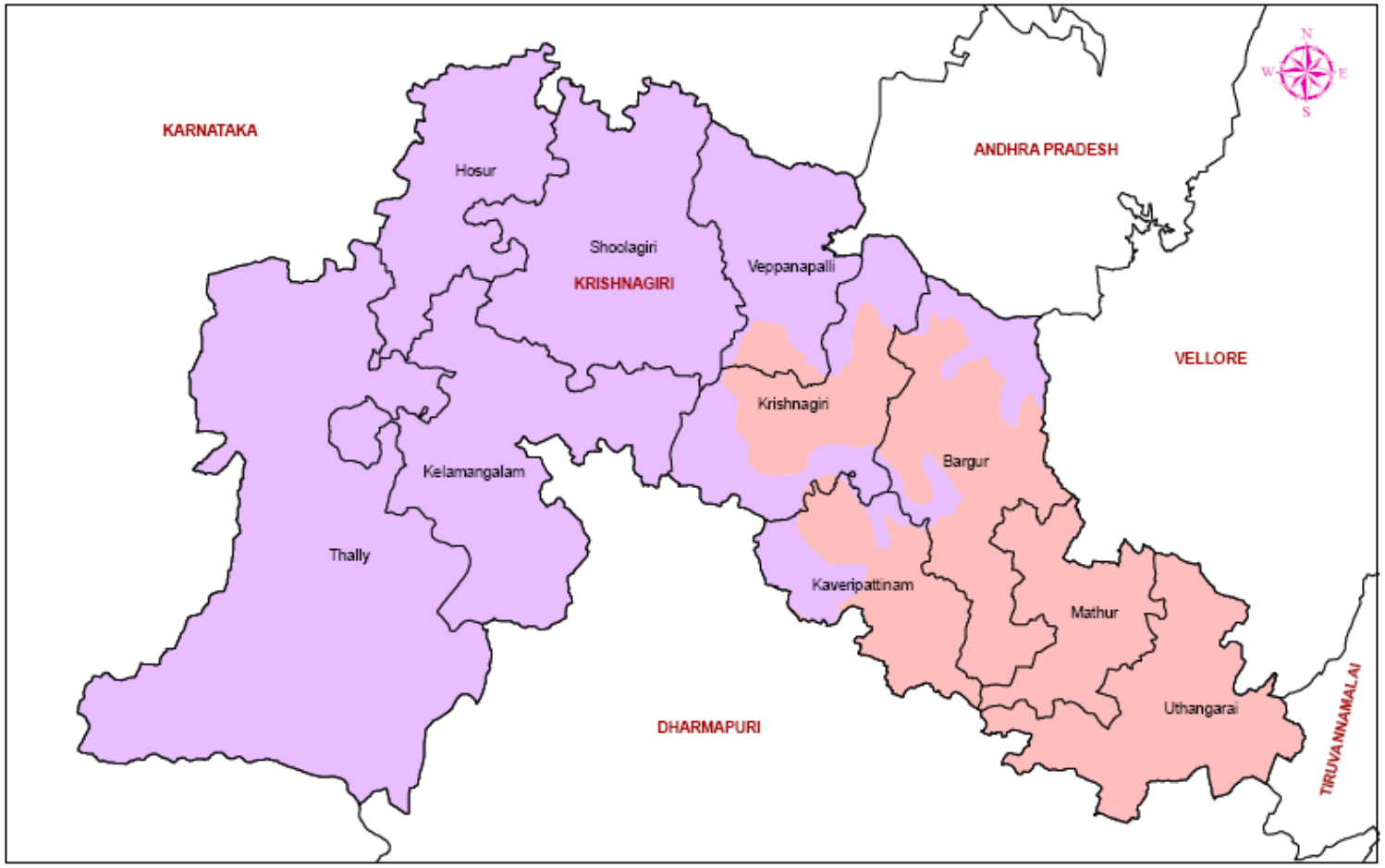
The soil types prevalent in this district are red soil, clay soil and forest & barren soil types. Red soil is predominantly found in Hosur, Shoolagiri, Kelamangalam & Thally taluks and accounted for 53 percent area of the total geographical area. Krishnagiri taluk comprised of clay soil which occupied eight percent of area and nearly 40 percent of area in all the taluks were under forest and barren soil. The soil map and related information are furnished in Figure 2 and Table 4.3.

Table 4.3 Details of Soils of Krishnagiri District

(in Ha.)

Soil Description	Area
Deep, fine, mixed, Alfisols	78206.81
Very shallow, loamy skeletal, mixed, Entisols	64448.70
Deep, loamy skeletal, mixed, Alfisols	57030.54
Deep, fine, mixed, Inceptisols	55261.87
Moderately shallow, fine loamy, mixed, Entisols	32168.53
Very deep, contrasting particle size, mixed, Entisols	31559.21
Moderately deep, clayey skeletal, mixed, Inceptisols	29291.41
Deep, fine loamy, mixed, Alfisols	26026.66
Moderately shallow, loamy skeletal, mixed, Entisols	19444.86
Moderately deep, fine, mixed, Alfisols	19385.98
Moderately shallow, fine, mixed, Inceptisols	14320.77
Very deep, fine loamy, mixed, Inceptisols	11207.55
Very deep, fine silty, mixed, Entisols	6794.49
Moderately shallow, fine, montmorillonitic, Inceptisols	6186.36
Shallow, loamy skeletal, mixed, Alfisols	6014.10
Shallow, clayey, mixed, Inceptisols	5811.45
Moderately deep, fine loamy, mixed, Inceptisols	4417.35
Deep, fine, montmorillonitic, Vertisols	3483.92
Moderately deep, clayey skeletal, mixed, Alfisols	2604.03
Very deep, fine, mixed, Alfisols	2235.24
Deep, fine, montmorillonitic, Inceptisols	1819.78
Deep, coarse loamy, mixed, Ultisols	1513.74
Shallow, clayey skeletal, mixed, Inceptisols	1281.39
Shallow, loamy, mixed, Inceptisols	1204.31
Moderately deep, fine loamy, mixed, Alfisols	1004.02
Moderately deep, fine, montmorillonitic, Vertisols	908.18
Shallow, loamy skeletal, mixed, Entisols	889.51
Shallow, clayey, mixed, Alfisols	677.76
Moderately deep, coarse loamy, mixed, Inceptisols	540.18
Deep, coarse loamy, mixed, Inceptisols	372.27
Moderately shallow, fine, mixed, Alfisols	257.31
Shallow, clayey, mixed, Ultisols	245.93
Shallow, loamy skeletal, mixed, Inceptisols	206.58
Deep, fine loamy, mixed, Entisols	191.71
Very shallow, loamy, mixed, Entisols	121.81
Moderately shallow, coarse loamy, mixed, Entisols	79.79

AGROCLIMATIC ZONES OF KRISHNAGIRI DISTRICT



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NORTH EASTERN ZONE

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

NORTH WESTERN ZONE

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

WESTERN ZONE

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

CAUVERY DELTA ZONE

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

SOUTHERN ZONE

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

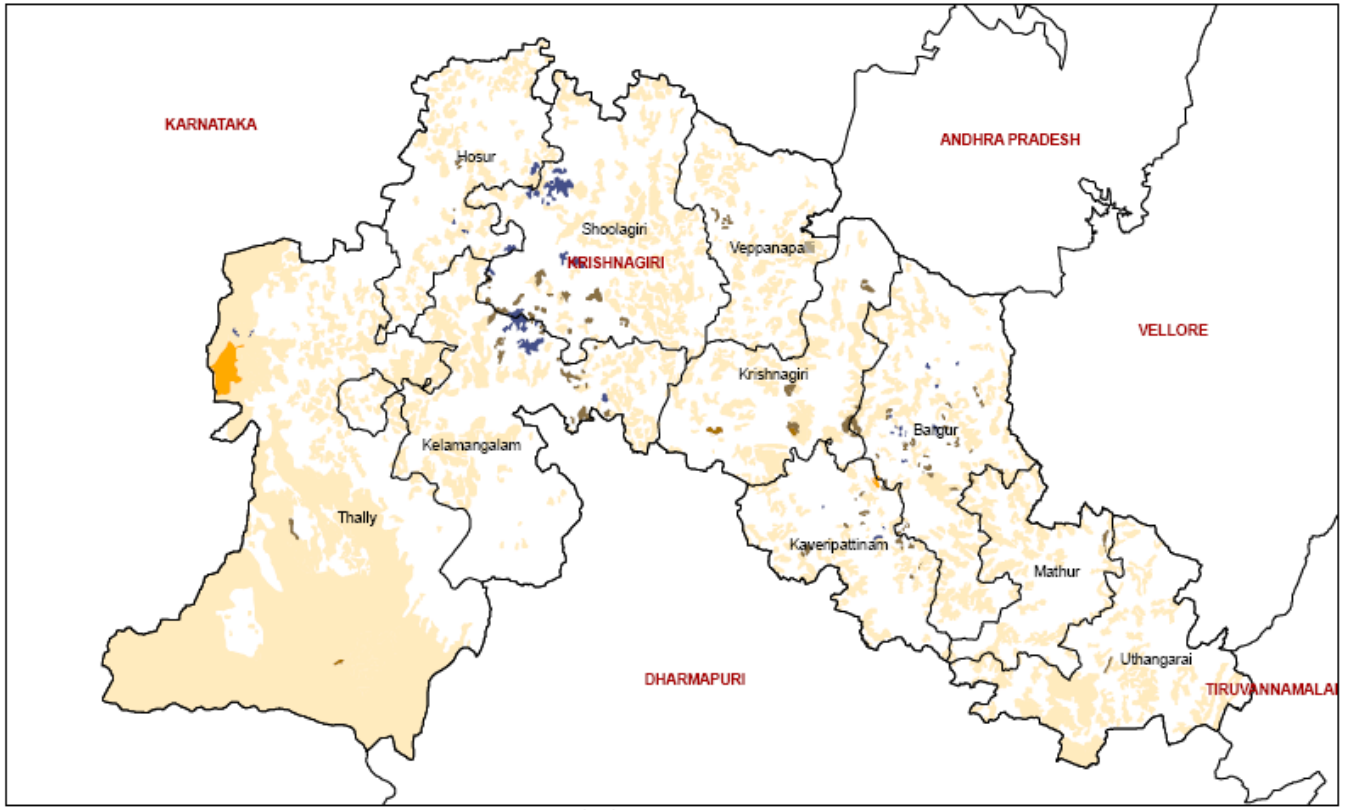
HIGH RAINFALL ZONE

Kanayakumari district.

HIGH ALTITUDE AND HILLY ZONE

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

LAND DEGRADATION MAP OF KRISHNAGIRI 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

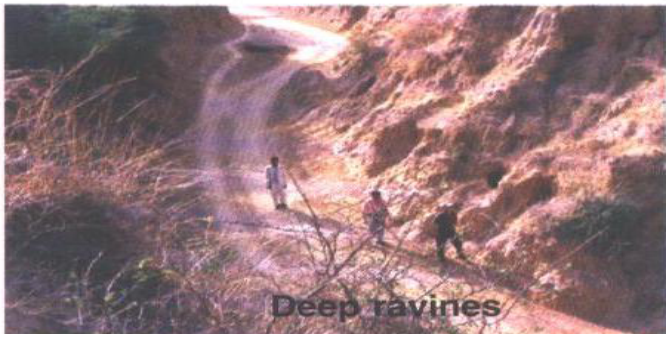
When the surface runoff goes in the form a concentric flow, a tiny water channels are formed in the field. These are small rivulets of such a size that they can be worked over with farm machinery. Rills are generally associated with the cultivated lands and are visible in the ploughed soil after first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

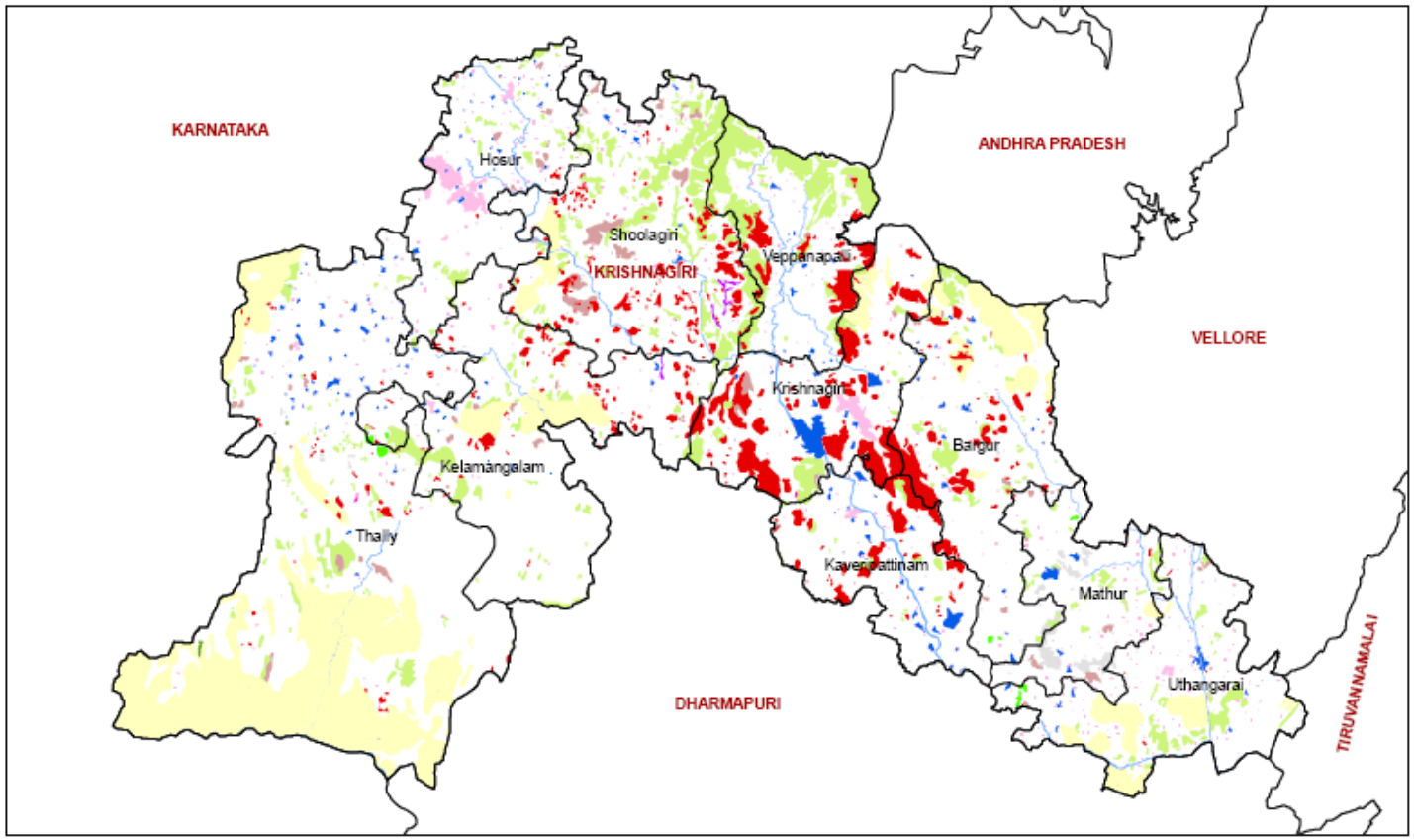
Barren / rocky / stony areas are the rock exposures of varying lithology often barren and devoid of soil and vegetal cover. They occur in hill forests as openings or as isolated exposures on plateau and plains. These can be easily delineated from other type of degraded land because of their severe nature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



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WASTELAND CLASSIFICATION

Culturable Wastelands

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

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

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

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

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

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

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

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

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

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

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

Unculturable Wastelands

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

i. Barren rocky / stony wastes / sheet rock area.

ii. Steep sloping area - Land with very steep slopes (greater than 35 degrees); Prone to erosion and mass wasting (Landslides).

4.4 Water Resources and Management

Table 4.4. Area Irrigated by Crops – 2006

(in ha.)

Sl. No.	Crop	Area
1	**Paddy**	**17809**
2	Jowar	50
3	Bajra	156
4	Maize	97
5	**Ragi**	**2302**
6	Greengram	1
7	Redgram	4
8	Blackgram	15
9	Other Pulses	20
10	**Turmeric**	**1315**
11	Arecanut	38
12	Coriander	91
13	**Sugarcane**	**2952**
14	Onion	98
15	**Banana**	**2176**
16	Mango	231
17	Grapes	70
18	**Tomato**	**3604**
19	Brinjal	572
20	Tapiaco	488
21	Gingelly	32
22	**Groundnut**	**966**
23	**Coconut**	**14367**
24	Sunflower	65
25	**Cotton**	**887**
26	Fodder	146
27	**Flowers**	**2103**
28	Chillies	415

Source: Records of Office of Assistant Director of Statistics, Krishnagiri.

The major irrigated crops in the district are paddy, ragi, turmeric, sugarcane, banana, tomato, groundnut, cotton, coconut and flowers. The irrigated area under

vegetables, fruits and flowers if increased by judicious use of water with modern water management techniques the yield of those crops can be boosted thereby export potential can be explored. The productivity of food crops like paddy, ragi and pulses can also be increased to the target levels by proper water management practices.

The productivity of the crops, as shown in Table 4.5 can be increased to the maximum achieved level by means of good agricultural and management practices and this has to be done by extension machinery.

Table 4.5. Productivity of Crops in the District – 2006-07

Sl. No.	Name of the crop	Yield kg/ha (Rainfed / Dry)	Yield (kg / ha) (Irrigated)	Season	Maximum achieved yield kg/ha
1	Paddy	-	6050	Samba	**7950**
2	Cholam	950	-	kharif	**1130**
3	Bajra	720	1540	kharif	**1730**
4	Ragi	1730	2730	kharif	**2950**
5	Maize	-	9940	Rabi	**13250**
6	Samai	625	-	kharif	**830**
7	Pulses	350	530	kharif	**1050**
8	Groundnut	980	1940	kharif	**2350**

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

4.6. Major Crops and Varieties in the District

The details of major crops and varieties grown in the district are given in Table 4.6.The major crops of this district are paddy, ragi, groundnut, flowers, mango, banana, coconut, cotton, sugarcane and turmeric. This district has a great potential agribusiness and export of agricultural products. The establishment of industrial complexes and special economic zones will further contribute to the development of the district.

Table 4.6. Major Crop and Varieties (Block wise) – 2006-07

Sl. No.	Year	Crop	Variety	Duration (days)	Specific block
1	2004-05	Paddy	ADT 39	120 to 125	Krishnagiri,Kaveripatinam
2	2005-06		Paiyur 1	135	Krishnagiri,Kaveripatinam
3	2006-07		W.Ponni	140	Krishnagiri,Kaveripatinam
			BPT 5204	140	Krishnagiri,Kaveripatinam
4	2006-07	Millets			
		Ragi	GPU 28	120	Hosur, Denkanikotta, Thally, Kelamangalam
		Cumbu	ICMV 221	80	Veppanapalli, Mathur, Kaveripatinam
		Maize	COHM 5	90	Hosur, Uthangarai
			GANGA 5	100	Hosur, Uthangarai
5	2006-07	Pulses			
		Red gram	SA1	180	Krishnagiri,Kaveripatinam Bargur, Veppanapalli Uthangarai,Mathur
			TTP 7	150	Hosur,Shoolagiri Kelamangalam,Thally
			HY3 C	180	Hosur,Shoolagiri Kelamangalam,Thally
		Blackgram	T9	70	Throughout District
			VBN 3	70	Throughout District
			TMV 1	70	Throughout District
			VBN 1	65	Throughout District
		Greengram	KM 2	70	Kaveripatinam, Bargur
			VBN (GG2)	70	Kaveripatinam, Bargur
		Cowpea	Pusa 152	75	Throughout District
			VBN 1	65	Throughout District
		Horsegram	Paiyur 2	0	Throughout District
		LabLab	CO 1	140	Throughout District
6		Cotton	Surabi	160	Uthangarai Mathur
7		Sugarcane	COC 92061	330	Throughout District
			COC 90063	330	Throughout District
8		Oilseeds			
		Groundnut	TMV 7	105	Krishnagiri, Kaveripatinam Bargur, Veppanapalli Uthangarai, Mathur
			JL 24	105	Hosur,Shoolagiri,Kelamangalam Thally
		Gingelly	TMV 3	85	Veppanapalli Kaveripatinam
		Castor	TMV 3	240	Throughout District

Source: Records of Office of Assistant Director of Statistics, Krishnagiri

The major paddy varieties grown in this district are ADT 39, Paiyur 1, White Ponni, BPT 5204 and they were grown mostly in Krishnagiri and Kaveripattinam blocks. COHM 5 and Ganga 5 were the maize varities grown in Hosur and Uthangarai blocks. In ragi, GPU 28 was the predominant variety grown in the district and as regards pulses, the local, Tindivanam and Vamban varieties were used by farmers. In case of oilseeds also, Tindivanam and Vamban varieties were grown in most blocks and in sugarcane, COC varieties were preferred by farmers.

4.7 Input Management

The Consumption of chemical fertilizer and pesticides is given in Table 4.7.

Table 4.7. Consumption of Chemical Fertilisers and Pesticides- 2006-2007

Fertilizers (in '000' Tonnes)				Pesticides		Urea ('000' Tonnes)
Nitrogenous (N)	Phosphatic (P2 05)	Pottassic (K2 0)	Total (NPK)	Dust (MT.)	Liquid (Lit.)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
12908	5464	7459	25832	222	136000	10000

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

4.8 Current Input use Level for Major Crops in the District

The current input use level of major crops like paddy, ragi and maize are given in Table 4.8 and it indicates that optimum quantity of fertilizers, farm yard manure and micro nutrients were used by the farmers to get the current yield.

Table 4.8. Input use Level for Major Crops – 2006-07

(i) Local Varieties : Rice ADT 39 / Paiyur 1 / ADT 43

Sl.No.	Name of the input	Rainfed/Dry	Irrigated	Season	Remarks
1	Seed (kg)		40	Samba / Navarai	Grown in two seasons
2	Fertilizer (Kg)				
	N		150		
	P		60		
	K		60		
3	Pesticides (Litres)		2 lit / ha		
4	Weedicides (Kg/Lit)		2.5 lit / ha		
5.	FYM		25 tonnes/ ha		
6.	Micro nutrient deficiencies identified if any		25 kg / ha		

(ii) High Yielding Varieties (Ragi GPU 28 / Co14 / Paiyur 1)

Sl. No.	Name of the input	Rainfed/Dry	Irrigated	Season	Remarks
1	Seed (kg)	5 kg / ha		June - July	Raised in the western part of the district
2	Fertilizer (Kg)				
	N	40 kg / ha			
	P	20 kg / ha			
	K	0 kg / ha			
3	Pesticides (Litres)	1 kg / ha			
4	Weedicides (Kg/Lit)	-			
5.	FYM	25 tonnes / ha			
6.	Micro nutrient deficiencies identified if any	5 kg / ha			

(iii) Popular Hybrids : Maize CoH (M5) / M 900

S.No	Name of the input	Rainfed / Dry	Irrigated	Season	Remarks
1	Seed (kg)		15 kg/ha	Aadi Puratasi & Thai pattam	Grown in all three seasons
2	Fertilizer(kg)				
	N		135 kg/ha		
	P		62.5 kg/ha		
	K		50 kg/ha		
3	Pesticides(Litres)		1 Lit./ha		
4	Weedicides		-		
5	FYM		25 tonnes / ha		
6	Micro nutrient deficiencies identified if any		12.5 kg/ha		

Source: Records of Office of Assistant Director of Statistics, Krishnagiri.

The major paddy varieties grown in this district are ADT 39, Paiyur 1, white ponni, BPT 5204 and they were grown in Krishnagiri and Kaveripattinam blocks. COHM5 and Ganga 5 were the maize varieties grown in Hosur and Uthagarai blocks. in ragi GPU 28 was the predominant variety grown in the district and as regards pulses the local, Tindivanam and Vamban varieties were used by farmers in case of oilseeds also, Tindivanam and Vamban varieties were grown in most of blocks. In sugarcane, COC varieties were preferred by farmers.

4.9. Farm Mechanization / Farm Equipments

There is ample scope for selective mechanization in the district by large scale use of power tiller, thrasher, cultivators and harvesters. The total number of pump sets were 46962 and the number of tractors / agricultural machineries owned by farmers were 627. The area covered by each machinery / agricultural implements by State Dept of Agricultural Engineering was Rs.150/hour for tractor and Rs.625/hour for hiring dozer.

Table 4.9. Agricultural Implements and Machinery
(in Numbers)

Sl. No.	Item	2006
1.	**Ploughs**	
	a) Wooden	79628
	b) Iron	47720
	c) Total	*127348*
2.	**Water Pumps for Irrigation Purpose**	
	a) Worked by Oil Engine	24278
	b) Worked by Electric Power	22684
	c) Total	*46962*
3.	**Tractors**	
	a) Government	61
	b) Private	566
	c) Total	*627*
4.	**Sugarcane Crushers**	
	a) Worked by Power	111
	b) Worked by Bullocks	86
	c) Total	*237*

Source: District Statistical Hand Book 2006-07

The use of agricultural implements and machineries has been practised by farmers for efficiency and also due to labour shortage during peak seasons. The tractors, water pumps for irrigation purpose and sugarcane crushers available were 627, 46962 and 237 respectively as shown in Table 4.9.

4.10. Special Projects / Programmes On-going in the District

Agriculture Department - Ongoing Scheme Details

The department of agriculture in the year 2007-08 has implemented the following schemes as given in Table 4.10. In the State government funded schemes, the procurement and distribution of paddy, millets, oilseeds, cotton and green manure seeds were undertaken including the distribution of coconut seedlings, crop yield competition and vermicompost and in all 499 farmers were benefited.

The Centre and State governments funded projects viz., integrated scheme for oilseeds, pulses, maize, intensive cotton development programme, cereal development programme, farmers' interest group, TANWABE, coconut development board assistance schemes and seed village programme are in operation in this district and in all 16542 farmers were benefited.

Table 4.10. Ongoing Schemes - Achievement Details - 2007-08

Sl. No.	Schemes	Unit	Target	Achievement	% of Achievement	Beneficiaries
I	**State Schemes**					
1	Procurement & Distribution of Paddy and Millet Seeds	L.Rs.	33.4	33.4	100%	74
2	Procurement & Distribution of Pulses Seeds	L.Rs.	19.424	19.424	100%	210
3	Procurement & Distribution of Oil Seeds	L.Rs.	29.234	29.234	100%	106
4	Procurement & Distribution of Cotton Seeds	L.Rs.	0.82	0.82	100%	5
5	Procurement & Distribution of Green Manure Seeds	L.Rs.	0.80	0.80	100%	10
6	Procurement & Distribution of Coconut	L.Rs.	7.597	7.597	100%	30

Table 4.10 Contd….

Sl. No.	Schemes	Unit	Target	Achievement	% of Achievement	Beneficiaries
7	Crop Yield Competition	L.Rs.	0.40	0.40	100%	4
8	Vermi Compost	L.Rs.	0.077	0.077	100%	60
	Total	L.Rs.	**91.752**	**91.752**	**100%**	499
II	**Schemes Shared between Centre and State**					
1	Integrated Scheme for Oilseeds, (ISOPOM)	L.Rs.	38.230	38.230	100%	3916
2	Integrated Scheme for Pulses, (ISOPOM)	L.Rs.	40.443	40.443	100%	5673
3	Integrated Scheme for Maize (ISOPOM)	L.Rs.	6.584	6.584	100%	345
4	Intensive Cotton Dev. Programme	L.Rs.	0.7	0.7	100%	101
5	Cereal Development Programme	L.Rs.	12.65	12.65	100%	4450
6	Farmers Interest Group	L.Rs.	3.67	3.67	100%	570
7	TANWA BE	L.Rs.	3.5	3.5	100%	525
8	Coconut Development Board Assistance Schemes	L.Rs.	10.075	10.075	100%	237
9	Seed Village Programme	L.Rs.	4.45	4.45	100%	725
	TOTAL	**L.Rs.**	**120.302**	**120.302**	**100%**	**16542**
	Grand Total (A + B)	**L.Rs.**	**212.054**	**212.054**	**100%**	**17041**

Source: Records of Office of Joint Director of Agriculture, Krishnagiri.

4.11 Constraint Analysis

Reasons for gaps: Technological gap

- Top three technologies mostly adopted: Latest high yieding varieties, Biofertilizers and biocontrol agents

- Top three technologies least adopted: IPM, Application of nutrients and adoption of crop rotation

4.12. Recommended Interventions for the District

The Department of Agriculture has proposed the following interventions in the District Agriculture Programme.

1. Integrated Development of Paddy

i. Production of Certified seeds
ii. Distribution of Certified seeds
iii. Assistance to SRI
iv. INM, IPM, FFS to 50 farmers
v. Mechanisation – Power tiller, paddy planter, paddy harvester and tools set.

2. Integrated Development of Ragi

i. Production of Certified seeds
ii. Distribution of Certified seeds
iii. INM, IPM, FFS to 20 farmers and
iv. Mechanisation – Ragi harvester and tools set.

3. Integrated Development of Groundnut

i. Production of Certified seeds
ii. Distribution of Certified seeds
iii. Gypsum application
iv. INM, IPM, FFS to 20 farmers
v. Storage Godown
vi. Modern mini processing unit and
vii. Tools set.

4. Extension Activities

i. Study tour – inter - state, within state and outside countries and
ii. Audiovisual van

5. Community Godowns

i. Community godown
ii. Agricultural Extension Godown
iii. Tarpaulin

6. Establishing Seed Testing Laboratory.

CHAPTER - V

ALLIED AGRICULTURAL SECTORS

Introduction

Allied agricultural sectors like Horticulture, Agricultural Engineering, Public Works Department and Animal Husbandry also are equally important for the development of the district and details about the sectors are presented in this chapter.

5.1 Horticulture Development

Krishnagiri district is more suitable for cultivation of horticulture crops. Other Plantation crops, medicinal plants, fruits, vegetables, spices, and flowers are also grown well due to the moderate climate, high altitude and fertility of the soils prevailing in the district.

Table 5.1 Area, Production & Productivity of Horticulture Crops – 2004

Crop	Area (Ha)	Production (MT)	Productivity (MT)
Mango	34626	252436	7.29
Banana	1024	36224	35.38
Others	477	9528	346.55
Total fruits	**36127**	**298188**	**8.25**
Chillies	497	503	1.01
Turmeric	448	1111	2.48
Tamarind	1123	3873	3.45
Others	263	2367	209.13
Total Spices	**2331**	**7854**	**3.37**
Plantation Crops	**207**	**2859**	**13.81**
Tapioca	434	8826	20.34
Lablab	809	10517	13.00
Tomato	2081	27465	13.20
French Beans	325	4875	15.00
Other vegetables	1408	38053	427.23
Total Vegetables	**5057**	**89736**	**15.77**
Rose	304	2204	7.25
Jasmine	519	4022	7.76
Other Flowers	249	2074	50.25
Total Flowers	**1072**	**8300**	**8.17**

Source: Records of Office of Assistant Director of Statistics, Krishnagiri

The Table 5.1 indicates that the fruits and flower crops including vegetables like tomato grown in the district have great export potential. Proper guidance to the farmers cultivating these crops including awareness creation about the government subsidies for export promotion would pave way for improving their economic status.

Special Projects / On going programmes in the District

At present in Krishnagiri district, horticulture development programmes are implemented through no. of schemes viz. Integrated Horticulture Development Scheme, National Horticulture Mission and Micro Irrigation.

5.1.1. Integrated Horticulture Development Scheme

In Integrated Horticulture Development Scheme 50 percent subsidy is given to the farmers, by distribution of fruit plants, hybrid vegetable seeds, spices, flowers etc, as seen in Table 5.2.

5.1.2. Micro Irrigation

All categories of farmers are covered under this scheme. Assistance to farmers will be given for covering a maximum area of five ha per beneficiary. The scheme (Table 5.3) will facilitate to increase the coverage of area under drip irrigation and sprinkler irrigation for enhancing crop productivity.

5.1.3. National Horticulture Mission

National Horticulture Mission scheme is being implemented from 2005-06 with the following sub components (Table 5.4).

i) Production of Planting Material

1. Model Nursery (4 Ha) - Public sector.
2. Model Nursery (4 Ha) - Private.
3. Small Nursery (1 Ha) Public sector.
4. Small Nursery (1 Ha) - Private.

ii) Establishment of New Garden

Fruits (Perennial) In perennial fruits cultivation, mango is being cultivated as major crop since the maximum number of processing units are functioning in the district.

Fruits - Non perennial (Banana) - Banana is another major crop in the district.

iii) Flowers

It has been classified as,

- **Cut Flowers:** In this district, the major cultivated flower crops Rose, Gerbera, Carnation, Golden rod, Bop, etc.
- **Loose Flowers:** Jasmine, chrysanthemum, hybrid marigold, aster, etc.. are being grown in this district.
- **Bulbous Flowers :** Tube rose and Gladiolous are being cultivated.

iv) Rejuvenation / Replacement of Sterile Plantation

Low productivity of Mango fruits was seen in large traits in different parts of district. Under the National Horticulture Mission, its proposed to take up productivity improvement though replantation with fresh stock supported with appropriate and integrated combination of inputs, pruning and grafting techniques.

v. Protected Cultivation

1. **Green House (Hi-Tech) SF/MF -** This programme is implemented in Hosur, Thally, Kelamangalam & Denkanikottai since suitable conditions are available for protected cultivation. Moreover, in this area, the farmers are most interested in construction of Green house.

vi) Promotion of INM/IPM

Emphasis will be on nutrition management and bio-fertilizer distribution to the farmers to balance the mal nutrition status in the soil.

vii) Organic Farming

Natural manures are recommended and supplied through this scheme.

viii) Beekeeping

For improvement of pollination in flora the beekeeping is motivated.

Table 5.2. Integrated Horticulture Development Scheme - 2007-08

S. No	Details	General				SC				ST				Total			
		Physical (Ha)		Finance (Rs. in Lakhs)		Physical (Ha)		Finance (Rs. in Lakhs)		Physical (Ha)		Finance (Rs. in Lakhs)		Physical (Ha)		Finance (Rs. in Lakhs)	
		T	A	T	A	T	A	T	A	T	A	T	A	T	A	T	A
1.	Fruits	0	0	0	0.000	1	1	0.057	0.057	1	1	0.003	0.003	2	2	0.060	0.060
2.	Vegetables	850	850	3.891	3.891	150	150	0.378	0.378	0	0	0	0	1000	1000	4.269	4.269
3.	Spices	24	24	0.606	0.606	6	6	0.158	0.158	0	0	0	0	30	30	0.764	0.764
4.	Plantation crops	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.	Others	0	0	0.141	0.141	0	0	0	0	0	0	0	0	0	0	0.141	0.141
	Total	874	874	4.638	4.638	157	157	0.593	0.593	1	1	0.003	0.003	1032	1032	5.234	5.234

Source: Records of the Office of the Assistant Director of Horticulture, Krishnagiri

T : Target

A : Achievement

Table 5.3 Micro Irrigation - 2007-08

Sl. No.	Description	Target		Achievement		Remarks
		Phy (Ha)	Fin (Rs. in Lakhs)	Phy (Ha)	Fin (Rs. in Lakhs)	
1.	Vegetables	900	259.20	50.10	13.45	Beneficiary selection under and work under way progress for rest of the target
2.	Flowers	100	27.50	40.50	11.05	Beneficiary selection under and work under way progress for rest of the target
3.	Spices	25	7.20	5.80	1.58	Beneficiary selection under and work under way progress for rest of the target
4.	Fruits	877.23	108.90	190.00	37.88	Bills on hand Rs.3.14 lakhs
5.	Coconut	400	40.00	88.24	-	Work order issued
6.	Sugarcane	400	110.00	101.22	15.04	Bills on hand Rs.16.10 lakhs
	Total	**2702.23**	**552.80**	**475.86**	**79.00**	

Source: Records of the Office of the Assistant Director of Horticulture, Krishnagiri

Table 5.4 National Horticulture Mission - 2007-08

Sl. No	Components	Unit	Subsidy / Unit	Target		Achievement	
				Physical	Financial	Physical	Financial
I.	**Plantation Infrastructure and Development**						
1.	Establishment of new gardens			6100.	695.938	5174	569.948
(i)	Fruits perennial	Ha.		4100.	408.938	3543	350.235
	1. Mango I year		0.11250	3025.	340.313	2556	287.550
	2. Anola I year		0.11250	-	-	-	-
	3. Mango II year maintenance		0.04500	175.	7.875	175	7.875
	4. Anola II year maintenance		0.04500	-	-	-	-
	5. Mango III year maintenance		0.06750	900.	60.750	812	54.810
	6. Anola III year maintenance		0.06750	-	-	-	-
(ii)	Fruits non-perennial	Ha.		300.	22.500	220	16.50
	1. Banana I year		0.07500	300.	22.500	220	16.50
	2. Banana II year maintenance		0.03000	-	-	-	-
	3. Banana III year maintenance		0.04500	-	-	-	-
(iii)	Flowers	Ha.		1000.	185.750	879	143.363
A.	Cut flowers			100.	35.00	45	15.750
	1. Small and marginal farmers		0.35000	100.	35.00	45	15.750
	2. Other farmers		0.23100	-	-	-	-
B.	Bulbous flowers	Ha.		150.	67.50	100	45.00
	1. Small and marginal farmers		0.45000	150.	67.50	100	45.00
	2. Other farmers		0.29700	-	-	-	-

Table 5.4 Contd…

Sl. No	Components	Unit	Subsidy / Unit	Target		Achievement	
C.	Loose flowers	ha		750	83.250	734	82.613
	1. Small and marginal farmers		0.12000	600	72.000	600	72.000
	2. Other farmers		0.07920	150	11.250	134	10.613
(iv)	Spices, Aromatic and Medicinal Plants	ha		700	78.750	532	59.850
A.	Spices			700	78.750	532	59.850
	1. Turmeric		0.11250	500	56.250	347	39.038
	2. Chillies		0.11250	200	22.500	185	20.813
B.	Aromatic plants	ha	0.11250	-	-	-	-
C.	Medicinal plants	ha	0.11250	-	-	-	-
(v)	Plantation crops including Coastal Horticulture	ha					
	i) Cashew I year		0.05625	0	0.000	0	0.000
	ii) Cocoa I year		0.05625	0	0.000	0	0.000
	iii) Cashew II year maintenance		0.02250	0	0.000	0	0.000
	iv) Cashew III year maintenance		0.03375	0	0.000	0	0.000
2.	**Rejuvenation/Replacement of Senile Plantation**	ha		800	120.000	785	117.750
	1. Mango		0.15000	800	120.000	785	117.750
	2. Cashew		0.15000	-	-	-	-
3.	**Creation of water resources** Community tanks, ponds, on farm water reservoirs with use of plastic lining	No.	10.00000	3	30.000	3	30.000

Table 5.4 Contd…

Sl. No	Components	Unit	Subsidy / Unit	Target		Achievement	
4.	**Protected cultivation**			290000	908.260	181000	554.010
1.	Green House			290000	908.260	181000	554.010
A.	Green House (Hitech)	Sq.m.		282000	900.000	173000	545.750
	1. Small and marginal farmers		0.00325	267000	867.750	158000	513.500
	2. Other farmers		0.00215	15000	32.250	15000	32.250
B.	Green House (Normal)			8000	8.260	8000	8.260
	i) Small and marginal farmers	Sq.m.	0.00125	5000	6.250	5000	6.250
	ii) Other farmers		0.00067	3000	2.010	3000	2.010
2.	Shade Net		0.00007	0	0.000	0	0.000
3.	Plastic-Tunnel		0.00005	0	0.000	0	0.000
4.	Mulching	Ha	0.07000	0	0.000	0	0.000
5.	**Promotion of INM/IPM**	Ha	0.01000	1200	12.000	1200	12.000
6.	**Organic Farming**			210	23.000	205	21.500
	1. Adoption of organic farming	Ha	0.1000	200	20.000	200	20.000
	2. Vermicompost units	No.	0.3000	10	3.000	5	1.500
7.	**Pollination support through bee-keeping** Distribution of colonies with hives	No.	0.00800	50	0.400	0	0.000
	GRAND TOTAL				**1789.598**		**1305.208**

Source: Records of Office of the Assistant Director of Horticulture,Krishnagiri

5.1.4 Horticulture Interventions recommended for the District

Net House Structure

- Plastic Crates for Vegetable handling and transport
- Banana bunch cover
- Humic Acid Effective Micro Organism
- Mango Harvester
- Sales outlet point in district - Rent and infrastructure
- District level farmers workshop
- Exposure visit for five days
- 10 ha Mega Demonstration Plot
- Package for plant protection
- Bore well with casting pipe
- Refrigerated Van

5.2 Sericulture Development

The details of area under mulberry and production of cocoons in Krishnagiri district are furnished in Table 5.5. It could be seen that area under mulberry was the highest in Thali block and the lowest in Kelamangalam. The production of cocoon was found to be high in Soolagiri block followed by Hozur, Veppanapalli and Krishnagiri in that order.

Table 5.5. Cocoon Production in Krishnagiri District - 2006-07

Block	Area under Mulberry (Ha)	Production of Cocoons (Qtl)	Value (in lakhs)
Krishnagiri	79.88	615.212	73.825
Veppanapalli	239.52	2304.441	299.58
Bargur	102.69	578.640	75.224
Kaveripattinam	109.23	572.230	69.888
Uthangarai	61.57	369.902	46.24
Mathur	36.75	229.944	28.743
Hosur	364.65	3836.110	460.333
Shoolagiri	669.95	5890.890	706.903
Kelamangalam	12.50	22.358	0.027
Thally	1034.60	144.197	712.920

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

Tamil Nadu occupies fourth position in the country in silk production. The annual silk production in Tamil Nadu was 1368 Metric Tons. At present 28,996 farmers are practicing Sericulture in Tamil Nadu, cultivating 14217.41 hectares of mulberry. This gives employment opportunities to 1, 75,590 persons. Central Silk Board has established a Sericulture Germplasm Resource Centre at Hosur and four Sericulture Service Centres at Bagalur (Krishnagiri District), Palacode (Dharmapuri District), Coimbatore (Coimbatore District) and Natrampalli (Vellore District) and two P2 Basic Seed Farms at Kumbarapalli (Krishnagiri District) and Yealgiri Hills (Vellore District). For some of the schemes under implementation in Tamil Nadu, Central Silk Board is assisting the State by providing 50 percent of the funds required for the schemes.

5.3. Animal Husbandry Development

Breedable population

Cattle : 145738; Buffalo : 10598

Fodder Deficiency (%)

Green : 88.4

Dry : 27.2

- Total milk yield :1.67 tonnes
- Productivity for milk : 6.74 litres
- Compound growth rate for milk :13.03 percent

Table 5.6 Base Line Information – Animal Husbandry

Animal	Percentage	Lactation (Kg)
Milch Animals	1.44 Lakhs	-
Crossbred	50.20	2027
Indigenous	43.02	802
Buffalo	6.70	1416

Source: Records of Office of Joint Director of Animal Husbandry, Krishnagiri.

5.3.1 Animal Husbandry and Fisheries Interventions

i) Animal Husbandry

- Increasing efficiency of nutrient utilization
- Effective utilization of other fodder resources
- Increasing productivity by mineral supplements
- Reducing milking time and cost on milk processing
- Providing information resource and capacity building
- Providing fool proof and timely health cover

ii) Fisheries

- Strengthening of Government Fish Seed Farm at Krishnagiri.
- Private participation for inland fish culture in farm pond activities, expansion of fish culture in open water system by extending subsidy.
- Cage culture (seed rearing) with 90 percent subsidy in which open waters will be effectively utilized.
- River ranching of native fish varieties for augmenting fish production
- Establishment of ornamental fish culture and breeding units.
- Establishment of retail outlet at Hosur.
- Supply of fishing implements (modified or advanced craft & gear for operation in deep inland water bodies).
- Training of fish farmers.
- Development of Landing Centres, supply of mopeds fitted with ice box for post harvest handling.

5.4. Agricultural Engineering Department

The Agricultural Engineering department implemented the rain water harvesting & runoff management programme, Creation of water harvesting structure in the national horticulture mission scheme and agricultural mechanisation in the year 2007-08 and the details are provided in Table 5.7.

Table 5.7. Ongoing Schemes of Agricultural Engineering - 2007-08

Sl No.	Item of works	Unit Cost in Rs	Subsidy Portion		Physical in Nos	Financial in lakhs
			in%	Amount Rs		
I	**Rain water Harvesting and Runoff management Programme**					
1	Minor Check dam	25000		-	4	1.00
2	Medium Check dam	50000		-	13	6.50
3	Major Check dam	100000		-	8	8.00
4	Percolation pond	300000		-	11	33.00
5	Rejuvenation of wells	26000		-	10	2.60
6	Farmpond/Sunken pond	40000		-	30	12.00
7	New village tanks/ Ooranies	150000		-	9	13.50
		Total			**85**	**76.60**
II	**National Horticultural mission: Creation of water Harvesting Structure**					
1	Community Tanks			-	17	40.00
III	**Agricultural mechanization**					
1	Tractor		25	30,000	7	2.10
	Power tiller		25	30,000	25	7.27
	Rotavator		25	20,000	5	1.00
	Cultivator		25	10,000	21	0.92
	Disc Plough		25	10,000	2	0.20
	Self Propelled Paddy Transplanter		25	25,000	1	0.25
		Total				**11.74**

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

5.5.1 Agricultural Engineering Interventions recommended for the District

1. Introduction of Newly Developed Agricultural Machine & Implements

- Mini combined Harvester
- TNAU model Power weeder with attachment(all model)
- Power Thrasher
- Paddy Transplanter
- Post hole digger
- Coconut De-husker
- Chisel plough Knapsac power operated
- Hydraulic Sprayer
- Gender friendly equipments

2. Innovative Water Harvesting Structures

- Rejuvenation of percolation pond with two recharge shafts

3. Popularization of Agrl. Mechanisation through Conventional Machinery / Equipments

- Power tiller
- Rotavator
- Cultivator
- Off set disc harrow
- Disc plough

4. Water Harvesting Structures

- Farm pond-Unlined
- Check dam-Minor
- Check dam-Medium
- Check dam-Major
- Percolation pond
- New village tank

5. Soil Conservation work

- Compartmental bunding
- Land shaping
- Terrace support wall

6. Water Management works

- PVC Pipe laying
- Ground level Reservoir

5.6. Marketing Committee Interventions recommended for the District

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

5.7. Public Works Department Interventions recommended for the District

1. Repairs to the damaged Anicuts
2. Providing Head Sluice to some of the supply channels to avoid breaches during floods and for better water management.
3. Providing Scour vent in some Anicuts.
4. Trimming the supply channels by earthwork excavation
5. Providing revetments and retaining walls in selective area of the supply channels.
6. Repairing and restoring the traditional water bodies (i.e. tanks)
    a. Desilting the supply channels to tank.
    b. Strengthening the bunds of the tanks and channels wherever necessary for effectively storing the water and conveying it to the entire command area and also for conveying agriculture inputs to the field.
    c. Repairs to the damaged weirs.
    d. Repairs to the damaged Sluices
    e. Providing revetments and retaining walls in selective area of the tanks
    f. Providing S.G. Shutter/ Plug arrangements to Sluices, Head sluices, Scour vents etc.,
    g. Removing, repairing and refixing in position of the existing S.G.shuttering arrangements and providing locking arrangements etc.,

5.8. Agricultural Credit

5.8.1. Credit Disbursement

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

I. Policy Innovations of Government of India:

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

II. Policy initiatives of Reserve Bank of India:

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

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

III. Policy and Development Initiatives of NABARD:

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

IV. Policy Initiatives of Government of Tamil Nadu:

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

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

Activity wise credit disbursement and projection under agricultural and allied sectors in Krishnagiri district is furnished in Table 5.8.

Table 5.8 Activity Wise Credit Disbursement and Projections under Agricultural and Allied Sectors in Krishnagiri District

(Rs in Lakhs)

Sectors	2008-09	2009-10	2010-11	2011-12
Crop loan	30808.58	32349.01	33966.46	35664.78
Term loan				
Micro Irrigation	1009.82	1060.31	1113.33	1168.99
Land Development	899.60	944.58	991.81	1041.40
Farm Mechanization	3540.10	3717.11	3902.96	4098.11
Plantation & Horticulture	7544.65	7921.88	8317.98	8733.88
Forestry & Waste land Development	30.53	32.06	33.66	35.34
Dairy Development	1807.99	1898.39	1993.31	2092.97
Poultry	1620.17	1701.18	1786.24	1875.55
Sheep/Goat/Piggery	405.20	425.46	446.73	469.07
Fisheries	12.65	13.28	13.95	14.64
Storage Godown & Market yards	345.00	362.25	380.36	399.38
Bio-gas	0.00	0.00	0.00	0.00
Sericulture	0.00	0.00	0.00	0.00
Others	8021.07	8422.12	8843.23	9285.39
Sub total - Term loan	25236.78	26498.62	27823.55	29214.73
Total Agriculture Credit (1+2)	56045.36	58847.63	61790.01	64879.51
Non Farm sector	15314.12	16079.83	16883.82	17728.01
Other Priority Sector	22004.11	23104.32	24259.53	25472.51
Grand Total	93363.59	98031.77	102933.36	108080.03

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. 98031.77, Rs. 102933.36 and Rs. 108080.03 lakhs respectively. The total flow of agriculture credit in terms of crop loan and term loan in 2011-12 would be Rs.64879.51 lakhs. The flow of credit for non farm sector and other priorty sectors in 2011-12 would be Rs. 17728.01 and Rs.25472.51 lakhs respectively.

CHAPTER - VI

DISTRICT PLAN

6.1 Agriculture

As the industrial growth at Hosur, Denkanikottai and Krishnagiri Taluk is rapidly increasing, the cultivable area is being reduced considerably. Farmers are also migrating towards towns for their livelihood in the industrial sectors. Hence it is a right time to stop the farmers to leave the agricultural sector and boost the production level.

For over all production of agricultural growth, the following crops need special attention under NADP at Krishnagiri District.

1) Paddy
2) Ragi
3) Groundnut

Further, to educate the farmers regarding high-tech agriculture study tours are also highly required. The financial abstract of agricultural sector for funding under NADP is furnished in Table 6.1.

Table 6.1 NADP – Agriculture Action Plan – Financial Abstract – 2008-2012
(Rs. in lakhs)

S.No	Components	2008-2009	2009-2010	2010-2011	2011-2012	Total
1	Paddy	79.00	79.00	79.00	79.00	**316.00**
2	Ragi	18.60	18.60	18.60	18.60	**74.40**
3	Groundnut	158.50	158.50	158.50	158.50	**634.00**
4	Pulses DAP 2 % spray for 1000 ha. @ Rs.200/ ha.	2.00	-	-	-	**2.00**
5	Extension activities	63.00	63.00	63.00	63.00	**252.00**
6	Community godown	210.00	210.00	210.00	210.00	**840.00**
7	Establishment of Seed Testing laboratory	6.00	-	-	-	**6.00**
	Total	**537.10**	**529.10**	**529.10**	**529.10**	**2124.40**

*** DAP 2% Spray for 1000 hectares @ Rs.200/ ha.**

6.1.1. Paddy

Krishnagiri District is a semi dry tract. The area under paddy is reducing considerably due to more input cost, non availability of labour, poor mechanisation and less productivity. Krishnagiri Reservoir Project and Kalavarapalli Reservoir Project area are the major paddy cultivable area where the above problems are existing. To over come these problems and to increase the production the following components under NADP have to be included.

a. **Production of 'C' Seeds :** By considering the production cost the assistance for the production of 'C' seeds may be raised to Rs. 5 / kg so that the production of quality seeds 'C' seeds through farmers can be ensured.

b. **Distribution of 'C' seeds :** To increase the production, quality certified seeds are must. By increasing the distribution subsidy @ Rate of Rs.7 / Kg. more area can be brought under paddy cultivation besides increasing the productivity level.

c. **Assistance to SRI :** Day by Day the area under Paddy is declining due to so many reasons and correspondingly the production level also reduced. Hence the thrust is to provide assistance for SRI @ 50% (or) Rs.3000/ha so that the production level can be raised.

d. **INM, IPM, FFS to 50 Farmers:** Due to lack of technical knowledge about the paddy cultivation, the farmers are facing lot of inconveniences in increasing the production. To over come these problems, INM, IPM and FFS may be conducted for 50 farmers, so that the cost of production will be decreased and the production will be increased.

6.1.1.1 Mechanisation

In paddy cultivation labour is a major problem to the farmers. As the paddy cultivation is a season bound, adequate labourers are not available at a time to all the farmers. Hence mechanisation is a most important to do the operations in time. So assistance may be provided in the following pattern.

1) Power tiller with accessories @ 50% (or) Rs.50000 / No.
2) Paddy Planter @ 50% (or) Rs. 75000/ No.
3) Paddy harvester @ 50% (or) Rs. 7500/ No.
4) Tools set (Mammatty, hand hoe, crowbar etc.,) @ Rs. 250 / set

By introducing the above assistance to the farmers there is a possibility to raise the productivity level upto 10 MT/ha. The cost involved for the aforesaid interventions in paddy are furnished in Table 6.2.

Table 6.2. Project Proposal for Paddy

(Rs. in lakhs)

S.No	Component - Paddy	Pattern of Assistance	Unit	Phy	Fin
I	**Paddy**				
1	Production of C seeds	@ Rs. 5/kg	MT	300	15
2	Distribution of C seeds	@ Rs. 7/kg	MT	300	21
3	Assistance to SRI	@ 3000/ha or 50% subsidy	Ha	500	15
4	INM/IPM/FFS to 50 farmers	@ 15000/ No	Nos	20	3
II	**Mechanization**				
1	Power tiller	50000/50% subsidy	Nos	15	7.5
2	Paddy planter	75000/50% subsidy	Nos	10	7.5
3	Paddy harvester	75000/50% subsidy	Nos	10	7.5
4	Tools set (mammaty, hand hoe, crowbar)	@ Rs. 250/set	Nos	1000	2.5
	Total				**79.00**

6.1.2. Ragi

Ragi is a major rainfed crop at Hosur and Denkanikottai taluks and also a stable food to the farmers. Due to poor management practices and poor quality seeds, the yield

is reduced considerably. To over come these problems, the following assistance is essential to the farmers.

a. **Production of 'C' Seeds:** To replace the traditional varieties, the new high yielding varieties like GPU 28, L5 etc., have to be introduced. For the production of such new and high yielding varieties an assistance of Rs. 5/kg may be provided as production subsidy to the farmers, so that more quantity of quality seeds can be made available to the farmers which would in turn increase the over all production.

b. **Distribution of 'C' Seeds:** To bring more area under newly introduced High yielding varieties and to increase the production, an assistance of Rs 7 /kg may be provided to the farmers.

c. **IPM, INM, FFS:** To educate the farmers regarding effective handling of fertilizers, pesticides etc., farmer's field school may be conduced to 50 farmers. Thus the farmers can be exposed towards IPM and INM.

d. **District level Seminars:** A district level seminar is essential to the farmers to share their experiences in the cultivation aspects.

e. **Mechanization:** Due to inadequacy of labour, timely cultivation and harvest is difficult resulting in inconveniences and losses. To overcome these problems mechanization is essential. It leads to easy cultivation and minimizing the losses to the farmers. Following machineries may be supplied at subsidy cost.
    1. Ragi Harvester at 50% (or) Rs.75000/ per No.
    2. Tools set (Crowbar, Mammatty, Hand hoe etc.,) 250/set

By providing the aforesaid assistance, the productivity level will be increased from 1400 Kgs /ha. to 2500 Kgs /ha. The costs involved for the aforesaid interventions in Ragi are furnished in Table 6.3.

Table 6.3 Project Proposal for Ragi

(Rs. in lakhs)

Sl No	Component – Ragi	Pattern of Assistance	Unit	Phy	Fin
I	Making available certified seeds(production)	@ Rs. 500/Qtl	MT	35	1.75
1	Distribution of certified seeds	700/qtl	MT	35	2.45
2	IPM/INM/FFS	20000/unit	Nos	20	4
3	District level seminar	40000/unit	Nos	1	0.4
II	**Mechanisation**				
1	Ragi Harvester	@ Rs. 75000 / 50% subsidy	Nos	10	7.5
2	Tools set(mammatty, hand hoe, crowbar)	@ Rs. 250/set	Nos	1000	2.5
	Total				**18.6**

6.1.3. Groundnut

Groundnut is a major oil seed crop in this district, mainly cultivated as rain fed crop. Due to non availability of drought tolerance varieties and non adoption of good package of practices the farmers are facing lot of hurdles in groundnut production. To over come these problems, the following assistance may be provided to the farmers.

a. **Production of 'C' Seeds:** Most of the farmers are raising traditional varieties resulting in low production. To replace such seeds, high yielding varieties such as VRI, 1,2,3 & 5, TMV 7, JL 24 etc., have to be introduced in major areas. To produce more good quality seeds, production subsidy of Rs. 10/kg may be provided to the farmers.

b. **Distribution of 'C' Seeds:** To bring more area under high yielding varieties and to increase the yield, distribution of 'C' seeds with subsidy may be given @ Rs.10/Kg.

c. **Distribution of Gypsum:** Due to poor quality of groundnut seeds, the farmers are getting lesser price. It is because of ill filled seeds in the groundnut pods. To

increase the yield by way of weight, gypsum may be distributed to the farmers @ Rs.1500 / MT.

d. **IPM, INM / FPS:** Because of poor technical knowledge on the cultivation of groundnut, the farmers are producing poor quality seed yield. To over come this, a FFS may be conducted in a village level to 50 farmers, so that the farmer knows the way of effective utilization of fertilizer and pesticides, which would in turn increase the income by reducing the production cost.

e. **Storage Godown:** In Groundnut, post harvest technology is not adopted by the farmers. Because of non availability of godown facilities, the farmers are selling their produce at lesser prices. To overcome these problems, godowns may be constructed at block level and financial assistance may be provided @Rs.10 lakhs / godown.

f. **Modern Mini Processing Unit:** Farmers are selling poor quality of unprocessed seeds, associated with lower price. To increase the profit, the seed quality has to be increased by way of processing for which a mini processing unit may be constructed at block level and an assistance of Rs.2.00 lakhs/unit may be given as subsidy.

g. **Tools:** Tool sets to the small, marginal and Scheduled Caste farmers may be provided @ Rs.250/set so as to help them for clean cultivation.

The major problem in groundnut cultivation is non availability of quality seeds, poor knowledge on cultivation practices and post harvest technologies. By providing the above assistance, the production level will be increased from 1MT / ha to 1.5 MT / ha. The costs involved for the aforesaid interventions are furnished in Table 6.4.

Table 6.4. Project Proposal for Groundnut

(Rs. in lakhs)

Sl No	Component - Groundnut	Pattern of Assistance	Unit	Phy	Fin
I-1	Production of C seeds	@ Rs.10/kg	Tons	80	8
2	Distribution of C seeds	@ Rs.10/kg	Tons	80	8
3	Gypsum application	@ Rs.1500/MT	Tons	1000	15
4	IPM/INM/FFS	@ Rs.25000/unit	unit	20	5
II	Storage godown	@ Rs.10 lakh/godown	Nos		100
1	Modern mini Processing unit	@ Rs.20 lakh/unit	Nos		20
2	Tools set (mammaty, hand hoe, crowbar)	@ Rs. 250/set	Nos	1000	2.5
	Total				**158.5**

6.1.4. Extension Activities

i) Study Tour

A farmer should see the other farmers adoptions. Then only he will believe and adopt. Farmers should be exposed to the high-tech agriculture. Farmers gain knowledge through farmers interaction. So farmers' study tour is quite essential. The following pattern of tours may be organized

a) Inter state - @ Rs. 1.80 Lakhs / Tour for 30 farmers for 10 days @ Rs.600/day/farmer.

b) Within the state - @ 1.5 lakhs / tour for 50 farmers for 5 days. @ Rs. 600/ farmer /day

c) Out side countries - @ Rs.1 lakh / farmer for 20 farmers.

Due to exposure tour, farmers would gain knowledge on different segments of agriculture and improve their economic standards by adopting technologies and practices learned in study tours.

ii) Audio Visual van: (Mobile van with LCD and all accessories)

Audio Visual van can help the remote village farmers to expose themselves towards the technical cultivation. Further it helps more farmers at a time to clarify their doubts in agriculture and allied activities. Audio visual van can be used at any village and at convenient times of farmers including festival days, shandies etc. Hence financial assistance may be provided @ Rs.10 lakhs/unit. The costs involved for the aforesaid interventions are furnished in Table 6.5.

Table 6.5. Project Proposal for Extension Activities

(Rs. in lakhs)

S.No	Component	Pattern of Assistance	Unit	Physical	Finance
I	**Study Tour**				
1.	Interstate	@ Rs. 1.8 lakh/tour for 30 farmers for 10 days at Rs. 600/day/farmer	Nos	10	18
2.	Within the State	@ Rs. 1.5 lakh/tour for 50 farmers for 5 days @ Rs. 600/day/farmer	Nos	10	15
3.	Outside countries	@ Rs. 1 lakh/farmer for 20 farmers	Nos	20	20
II	Audiovisual van (Mobile van with LCD and all accessories)	@ Rs. 10 lakhs/unit	Nos	1	10
	Total				**63.00**

6.1.5. Strengthening of Community Godowns

i) **Community Godown :** Farmers are lacking godwon facilities. Due to poor storage facilities they were disposing their produce immediately after harvest. It fetches heavy low price to them. To avoid the losses and maximize the profit, community godown at block level is required with the financial assistance of Rs.10 lakhs / unit.

ii) **Agriculture Extension Godown:** Majority of the godowns in the Agriculture Department were having poor capacity to stock the seeds. It causes reduction in quality of seeds in the long run. Hence each block needed a godown with the financial assistance @ Rs.10 lakhs/godown.

iii) **Tarpaulin:** Farmers are unable to process and dry the harvested produce due to rains and hot sunlight. To over come, tarpaulins can be distributed to them which required financial assistance @ Rs.2000/unit. The costs involved for the aforesaid interventions are furnished in Table 6.6.

Table 6.6. Project Proposal for Community Godowns

(Rs. in lakhs)

Sl. No	Component	Pattern of Assistance	Unit	Phy	Fin
	Community Godowns				
1	Community godown	10 lakh / unit	unit	10	100
2	Agrl. Extn. Godown	10 lakh / unit	unit	10	100
3	Tarpaulin	2000 / unit	Nos	500	10
	Total				**210.00**

6.1.6. Establishment of Seed Testing Laboratory at Krishnagiri

i) Introduction

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

National Agricultural Development Programme (NADP) aims in bringing about quantifiable changes in production and productivity of various components of Agriculture and allied sectors 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 Krishnagiri Seed Testing Laboratory is proposed under component (q) innovative schemes.

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

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

Seed tests can provide information on pure seed, other crop seed and weed seed (by percentage and number per unit weight of different species), inert matter, normal and abnormal seedlings, fresh or hard seed, dead seed and moisture content. The main aim of seed testing is to obtain accurate and reproducible results. The seed testing laboratory is an institution in carrying out the seed production and certification program.

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

ii) Objectives of Seed Testing

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

iii) Role of Seed Testing Laboratories in Seed Quality Control

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

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

iv) Seed Quality control activities

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

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

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

v) Need for Establishing Seed Testing Laboratory

At present the certified seed samples from Seed Certification wing, Official seed samples from Seed Quality Control wing and Service samples from Seed Producers, Seed

dealers and farmers are being sent to Dharmapuri 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 Krishnagiri district.

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

vi) Seed Distribution

A considerable quantum of quality seeds are being distributed through licensed seed selling points. The labeled seeds distribution is dominating. Under these circumstances, ensuring the quality of the seed lots before its usage by the farming community is very much essential. The quality of such seed lots can be ensured only by testing these seed lots in the Seed Testing Laboratories for its seed standards. The seed testing of these seed lots which are not covered under the preview of Seed Certification and that are covered to some extent under seed quality control program can be ensured only by inculcating the practice of sending service samples by seed producers, seed dealers and farmers. In the present scenario, where Seed Testing Laboratory is not available in the district the seed producers, seed dealers and farmers find it very difficult to send the seed samples for analysis. Hence, facilitating the seed producers, seed dealers and farmers by establishing Seed Testing Laboratory in the district will be of much use. Accordingly, a Seed Testing Laboratory is proposed to be established in Krishnagiri 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 Krishnagiri district under National Agricultural Development Programme at a financial outlay of Rs.6.00 lakhs towards provision of laboratory equipments.

vii) Activities Proposed

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

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

3. Weighing Equipments

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

4. Purity Analysis Equipment

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

5. Germination Equipment

Seed Germination in the laboratory should be made under ideal conditions. This necessitates controlled temperature and humidity. For conducting germination test under prescribed temperature and humidity for various agricultural and horticultural crop seed samples , Cabinet germinator is very much required. Germination Trays and Petri dishes are necessary for conducting Germination Test. Germination paper and 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 and Hygrometer to measure temperature and humidity respectively are needed. Trolley (Movable) for transporting sand and Air Conditioner to maintain prescribed temperatures are 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.

viii) 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 and the details are furnished in Table 6.7.

Table 6.7. Cost Aspects of Establishing Seed Testing Laboratory

(in Rs.)

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

(Rupees Six lakhs only)

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

ix) 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.

x) 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 analysed results is of paramount importance to the seed producer, processor, certification and seed law enforcement officials. Establishment of seed testing laboratory at Krishnagiri 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.

xi) Expected Date of Completion

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

xii) 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. Department of Horticulture – Action Plan Proposals - 2008-12

The financial requirements of the projects are furnished in Table 6.8.

Table 6.8 Horticulture Action Plan – Financial Abstract

Sl.No	Year	Project cost (Rs. in lakhs)
1.	2008-09	397.14
2.	2009-10	400.90
3.	2010 -11	400.90
4.	2011 - 12	400.90
	Total	**1509.85**

The productivity of horticulture crops especially mango in this district is quite low though there is high potential for attaining maximum yield. The main reason for the low productivity in the horticulture crops is the non adoption of advanced scientific technologies in cultivation. Increased productivity of horticulture crops is to be aimed at

by following the advanced technologies. Most of the farmers are not taking up such cultivation practices because of high investments on seeds, fertilizers, plant protection chemicals and micro irrigation systems though the return in the advanced cultivation is very high.

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

i) Project Rationale

In this District area under Vegetable crops is around 5200 ha and most of the farmers are cultivating Hybrid varieties of all kinds. Farmer needs the proper package and storage facilities in order to avoid post harvest loss of 30% to 35% in villages. The pest and disease problem in the fruits of banana reduces its market value to a large extent and hence proper mechanism like bunch covering should be followed. Precision farming and micro irrigation practices would increase the yield of vegetables and applying humic acid has to be promoted to enrich the quality of the produce. The losses due to post harvest handling of mango has to be reduced and sales outlet points have to be established at district head quarters. Packages for plant protection have to be provided to farmers to improve their yield.

ii) Strategy

a. Promote R & D technologies for production, post- harvest management and processing.

b. Enhance acreage, coverage and productivity through diversification, from traditional crops to plantations, flower and vegetable gardens.

c. Extension of appropriate technology to the farmers for high-tech horticulture cultivation and precision farming and

d. Adopting a coordinated approach and promotion of partnership, convergence and synergy among R&D, processing and marketing agencies in public as well as private sectors, at the national, regional, state and sub-state levels.

iii) Project Goals

i. To enhance horticulture production, improve nutritional security and income support to farm households.

ii. To establish convergence and synergy among multiple on-going and planned programmes for horticulture department.

iii. To promote, develop and disseminate technologies, through a seamless blend of traditional wisdom and modern scientific knowledge and

iv. To create opportunities for employment generation for skilled and unskilled persons, especially for unemployed youth.

6.2.1 Net House Structure

In this district, area under vegetable crops accounted for 5200 ha. Most of the farmers are cultivating hybrid varieties of all kinds vegetables. Since the cost of hybrid vegetable is high, at most care has to be taken while producing the seedling for the above purpose. Hence, net house construction is very useful in order protect the seedling from the infection of pest and diseases from the atmosphere and from cultivated farmers at the neighbourhood. An increased area under net house is very much essential. So, nearly 12000 Sq. Meter area under net house is proposed at the cost Rs.40.00 Lakhs.

6.2.2 Crates

Farmer needs proper package and storage facilities in order to avoid post harvest loss of 30 to 35 percent in villages, To reduce the post harvest loss, introduction of plastic crates are essential. 8000 numbers of crates have been proposed at the rate of 75 percent subsidy to farmers. Hence, Rs.20.00 lakhs is required as subsidy.

6.2.3 Banana Bunch Cover

To avoid the infection of banana bunch from pest and diseases, nearly 50,000 no's of banana bunch covers are required at the cost of Rs.5.25 Lakhs including the 75 percent subsidy component.

6.2.4 Humic Acid / Effective Micro Organism

Precision farming requires fertilization by applying the humic acid to soil which increases the humus content and thereby the quality of the products is increased.

6.2.5 Mango Harvester

The area under mango is nearly 40,000 ha in this district. In order to avoid the damage to mango fruits while harvesting, the mango harvester is necessary. So, 800 numbers of harvesters have been proposed.

6.2.6 Sales Outlets Point in District Rent and Infrastructure

In order to store the inputs like neem cake, vermicompost, organic manure and plant protection chemicals, centrally based godown at district head quarters is needed with storage capacity of 10,000 MT at the cost of Rs.18.20 lakhs.

6.2.7 District Level Farmers Workshop

The farmers need regular training and to transfer the technology, the farmer has to be trained and Rs. 2.80 lakhs has been proposed.

6.2.8 Exposure Visit - Outside / Inter State

The farmers are to be exposed to high tech horticulture to gain knowledge on new technologies in horti-business. A five days visit for 200 farmers / year is proposed with a budget requirement of Rs.10.0 lakhs.

6.2.9 10 Ha Model Demonstration

To show the new technologies to the farmers, there should be a mega ten hectare demonstration plot which includes all facilities to demonstrate the technologies and for that Rs. 25 lakhs has been proposed per year.

6.2.10 Package for Plant Protection

In order to get higher yield, the produce should be protected against pest and diseases in all stages. So, 400 units at the rate of Rs.3000/ unit has been proposed as a package for plant protection in order to the educate the farmers and to know the use of plant protection chemicals.

6.2.11 Bore well with Casting Pipe

Water Users' Community should be formed and for each community a bore well has to be installed with the subsidy of 75 per cent. This costs Rs. 225 lakhs for 200 units per year. The details of project cost are furnished in Table 6.9.

Table 6.9. Horticulture Action Plan - Project Cost Details

(Rs. in Lakhs)

Sl. No	Activities	Unit Cost	2008-09		2009-10		2010-11		2011-12	
			Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
1.	Net House Structure	300 sq m 1.0 Lakh	3000 Sq m.	10.00	3000 Sq m.	10.00	3000 Sq m.	10.00	3000 Sq m.	10.00
2.	Plastic Crates for Vegetable Handling and Transport	Rs.250/no	2000	1.50	2000	1.50	2000	1.50	2000	1.50
3.	Banana Bunch cover	Rs.10/- no	10000	1.00	20000	2.00	20000	2.00	20000	2.00
4.	Humic Acid Effective Micro Organism	Rs. 400/ lit	100	0.40	100	0.40	100	0.40	100	0.40
5.	Mango Harvester	Rs.500/ no	200	1.00	200	1.00	200	1.00	200	1.00
6.	Sales outlet point in district - Rent and infrastructure	Rs. 2.60/ Unit	1	2.60	2	5.20	2	5.20	2	5.20
7.	District level farmers workshop	Rs. 400/ farmer	100 farmers	0.40	200 farmers	0.80	200 farmers	0.80	200 farmers	0.80
8.	Exposure visit 5 days	Rs.5000/- farmer	200 farmers	10.00	200 farmers	10.00	200 farmers	10.00	200 farmers	10.00
9.	10 ha Mega Demonstration Plot	25.0 Lakhs	1	25.0	1	25.0	1	25.0	1	25.0
10.	Package for plant protection	Rs. 3000/ Unit	400	12.0	400	12.0	400	12.0	400	12.0
11.	Bore well with casting pipe	1.5 Lakhs / Unit	200	300.0	200	300.0	200	300.0	200	300.0
12.	Refrigerated Van	10 Lakhs/ Van	3	30.00	3	30.00	3	30.00	3	30.00
	Total			**397.15**		**400.90**		**400.90**		**400.90**
	Grand Total			**-**		**-**		**-**		**1599.85**

6.3 Animal Husbandry

Table 6.10: Project Proposal – Animal Husbandry Sector – 2008 - 2012

S. No	Scheme Components	Unit Cost	2008-2009		2009-2010		2010-2011		2011-2012		Grand Total	
			Unit	Cost	Unit	Cost	Unit	Cost	Unit	Cost	Unit	Cost
	Cattle and Buffalo											
	Feed And Fodder Development											
1	Popularizing chaff cutter @ 50% of the total cost of Rs.20,000 1/B1/yr for SHG's elite farmers (DAH)	0.1	10	1	10	1	10	1	10	1	40	4.00
2	Fodder production by SHG's @ 10 acre B1/yr (DAH)	0.235	100	23.5	100	23.5	100	23.5	100	23.5	400	94.00
3	Establishment of 6x6x4 feet silo to ensile sugarcane tops @ 75% of the total cost of Rs.15,000 (DAH)	0.112	50	5.6	50	5.6	50	5.6	50	5.6	200	22.40
4	Popularizing mineral mixture to improve livestock production @ 1 kg/month for one year for animals in one block (DAH)	0.006	7500	45	7500	45	7500	45	7500	45	30000	180.00

Table 6.10 Contd…

5	Mobile Veterinary Clinics	5.832	3	17.496	0	0	0	0	0	0	3	17.496
6	Control of parasitic disease through to enhance vaccine response(DAH)	0	0	7.96	0	7.96	0	7.96	0	7.96	0	31.84
7	Mobile Veterinary Clinics @1/taluk(DAH)	12	1	12	0	0	0	0	0	0	1	12.00
8	Identification and traceability of breedable bovine population (DAH)	0.0002	740 00	14.8	0	0	0	0	0	0	74000	14.80
9	Fodder production at DLF, Hosur (DAH)	0	0	164.07	0	0	0	0	0	0	0	164.07
10	Improving livestock component at DLF, Hosur (DAH)	0	0	370.55	0	0	0	0	0	0	0	370.55
	Sheep & Goat											
1	Quality Ram / Buck production centre for distribution of quality germ plasm by SHG 2/B1 (DAH)	0.5	5	2.5	5	2.5	5	2.5	5	2.5	20	10.00

Table 6.10 Contd…

S. No	Scheme Components	Unit Cost	2008-2009		2009-2010		2010-2011		2011-2012		Grand Total	
			Unit	Cost	Unit	Cost	Unit	Cost	Unit	Cost	Unit	Cost
2	Semi intensive sheep / goat forming to improve meat production by SHG / tribes 25/B1(DAH)	0.25	70	17.5	60	15	60	15	60	15	250	62.50
3	Supply of Rams / Bucks to SHG/ Elite farmers @ 2/B1/(DAH)	0.04	20	0.8	0	0	0	0	0	0	20	0.80
4	Primb lamb/kid production under intensive system	0.42	10	4.2	0	0	0	0	0	0	10	4.20
	Poultry											
1	Popularizing technology backed backyard poultry (9+1) units 200/B1 (DAH)	0.005	1000	5	1000	5	1000	5	1000	5	4000	20.00
2	Health care for existing desi birds in backyard (DAH)	0.00001	50000	0.5	0	0	0	0	0	0	50000	0.50
	Pig											
1	Establishment of (3+1)piggery unit by SHG	0.385	20	7.7	0	0	0	0	0	0	20	7.70
	Others											
1	Renovation of existing	5	20	100	0	0	0	0	0	0	20	100

	VDs(DAH)											
	DAH - Total			**800.176**		**105.56**		**105.56**		**105.56**		**1116.856**
1	Programmed Breeding Indigenous Cattle & Buffalo to increase conception rate(DDD)	0.007	1500	10.5	1500	10.5	1500	10.5	1500	10.5	6000	42.00
2	Buffalo calf development programme (2000 calves / year) DDD	0.148	50	7.4	50	7.4	50	7.4	50	7.4	200	29.60
3	Mobile input units (one per 50 DCS) (DDD)	4.5	6	27	0	0	0	0	0	0	0	27.00
4	Supply of mineral mixture to the milch animals at subsidised cost (50%) 18kg / year (DDD)	0.005	875	4.375	875	4.375	875	4.375	875	4.375	3500	17.50
5	Supply of By-Pass protein feed to the milch animals (360kgs/year/ animal 50% subsidized cost of Rs.9/- per kg) (DDD)	0.033	250	8.25	250	8.25	250	8.25	250	8.25	1000	33.00

S. No	Scheme Components	Unit Cost	2008-2009		2009-2010		2010-2011		2011-2012		Grand Total	
			Unit	Cost	Unit	Cost	Unit	Cost	Unit	Cost	Unit	Cost
6	Portable milking machine for farmers (DDD)	0.18	13	2.34	13	2.34	13	2.34	11	1.98	50	9.00
7	Chaff cutters for Elite farmers (Small type) Rs.20,000 as 100% Grant (DDD)	0.2	2	0.4	2	0.4	1	0.2	1	0.2	6	1.20
8	Bulk Milk cooler (DDD)	30	1	30	0	0	0	0	0	0	1	30.00
9	Walk - in coolers (DDD)	30	1	30	1	30	0	0	0	0	2	60.00
10	Revival of Dormant MPCS (DDD)	1	5	5	5	5	5	5	5	5	20	20.00
11	Fodder development activities for production of fodder seed / slips in dairy or chilling centres & land of DDD)	2.1	1	2.1	0	0	0	0	0	0	1	2.10
12	Fodder development activities (500 acres in 100 IDF villages in each for 2 years & 1850 acres in farmers field (DDD)	0.235	13	3.055	13	3.055	13	3.055	11	2.585	50	11.75
13	Manufacturing facilities for milk khoa (DDD)	0.77	1	0.77	1	0.77	0	0	0	0	2	1.54
14	Milk weighing machine for milk producers Co-op societies (DDD)	0.17	30	5.1	30	5.1	30	5.1	20	3.4	110	18.70

15	P.C. Based automatic milk collection stations to IDF villages milk producers Co-operative Societies (DDD)	1.75	3	5.25	2	3.5	2	3.5	2	3.5	9	15.75
16	Quality Assurance lab strengthening (DDD)	10	1	10	0	0	0	0	0	0	1	10.00
17	Farmers study tour Rs.5000/- per farmer (DDD)	0.05	40	2	40	2	40	2	30	1.5	150	7.50
18	Energy management system (DDD)	10	1	10	0	0	0	0	0	0	1	10.00
19	Orientation training / workshop for milk producers at society level DDD	0.2	4	0.8	4	0.8	4	0.8	4	0.8	16	3.20
	DDD - Total			164.34		83.49		52.52		49.49		349.84
1	Establishment of quarantine facility and Strengthening of DLF, Hosur (TNLDA)	0	0	446.2	0	290.5	0	0	0	0	0	736.70
	TNLDA - Total			**446.2**		**290.5**						**736.70**

S. No	Scheme Components	Unit Cost	2008-2009		2009-2010		2010-2011		2011-2012		Grand Total	
			Unit	Cost	Unit	Cost	Unit	Cost	Unit	Cost	Unit	Cost
1	Establishment of model livestock village for educating farmers (TANUVAS)	9	1	9	1	9	1	9	1	9	4	36.00
2	Establishment of training centre for capacity building programmes for farmers (TANUVAS)	50	1	50	0	0	0	0	0	0	1	50.00
3	Training programmes and village level campaign on livestock farming (TANUVAS)	0.3	11	3.3	11	3.3	11	3.3	11	3.3	44	13.20
4	Strengthening of training equipments for technology dissemination at VUTRC (TANUVAS)	16	1	16	0	0	0	0	0	0	1	16.00
5	Study tour of farmers to livestock and Poultry research station (TANUVAS) 50 persons / batch	0.25	1	0.25	1	0.25	1	0.25	1	0.25	4	1.00
	TANUVAS - Total			**78.55**		**12.55**		**12.55**		**12.55**		**116.20**
	Grand Total			**1489.266**		**492.10**		**170.63**		**167.60**		**2319.596**

A. Large Ruminants

a. Feed and Fodder Development

Abstract

Fodder deficiency is wide spread and in this drought prone Krishnagiri district it is about 88.4 per cent. In spite of deficient fodder, the farmers do not utilize the alternative fodder resources effectively and do not attempt to increase the efficiency of nutrient utilization from available fodder. This project aims to reduce the pressure on green fodder requirement by utilizing the sugarcane tops, develop micro-level fodder units and increase the efficiency of nutrient utilization in the consumed feed and fodder. The project proposes to commercialize fodder production by involving the SHG, adoption of the technology of SCT ensiling and feeding and increase the efficiency of nutrient utilization by popularizing chaff cutters, supplementing mineral mixture and supplementing By-pas protein feed to milch animals. The project also proposes to establish fodder seed, fodder slips producing unit in TCMPF land and also the land available chilling centres. A total of 1 acre land will be developed in this project. The project will be implemented by the Department of Animal Husbandry and the Department of Dairy Development at a total cost of Rs.365.95 lakhs in four years.

Budget

(Rs. in lakhs)

Project	Total amount
1. Popularizing chaff cutter @ 1/Bl/yr for SHGs/elite farmers at 50 % of total cost of Rs 20,000 (DAH)	4.00
2. Fodder production by SHGs @ 10 acre/Bl/yr (DAH)	94.00
3. Establishment of 6 x 6 x 4 feet silo to ensile sugarcane tops at 75 % subsidy total cost of Rs 15,000 (DAH)	22.40

4. Popularizing mineral mixture to improve livestock production @ 1kg/month at 100 % subsidy (DAH)	180.00
5. Supply of mineral mixture to the milch animals at subsidised cost (50%) @ 18 kg/ year (DDD)	17.50
6. Supply of by-pass protein feed to the milch animals (360kgs/ year/animal @ 50% subsidised cost of rs.9/- per kg.) – (DDD)	33.00
7. Chaff cutters for elite farmers (small type) @Rs.20,000 as 100% grant (DDD)	1.20
8. Fodder development activities in farmers field at 100% grant (DDD)	11.75
9. Fodder production activities for production of fodder seed/ slips in dairy or chilling centre (DDD)	2.10
Total	**365.95**

Background / Problem Focus

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

Project Rationale

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

Project Strategy

- Involving SHG in fodder production
- Ensiling and feeding of sugarcane tops
- Introduction of fodder chaffers
- Supplementation with mineral mixture and By- pass protein to enhance nutrient efficiency
- Production of fodder slips and seeds in chilling centres and dairies.

Project Goal

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

Project Components

- Popularizing chaff cutters by providing to SHG/Elite farmers at 50% of the total cost of Rs.0.20 lakh each. A total of 40 chaffers will be distributed at the rate of one per block per year to the total cost of Rs.4.00 lakhs.
- Encouraging fodder production in irrigated condition by SHG at the rate of 10 acre per block per year with 100% subsidy on the total cost of Rs.0.20 lakh per acre. The SHG resorting to fodder production will be given training at the cost of Rs.3.500. This component will be implemented in 400 acres at the total cost of Rs.94.00 lakhs.
- The sugarcane farmers will be encouraged to ensile the Post-harvested green sugarcane tops to supplement their animals during summer. For digging the 6x6x4 cubic feed silo, 75% subsidy on the total cost of Rs.0.15 lakh will be provided. A total of 200 sugarcane farmers will be involved this project in 4 years at the total cost of Rs.22.40 lakhs.
- To popularize mineral mixture supplementation 12kg mineral mixture per year at the rate of 1kgper month will be supplied to a total of 30,000 cows in four years with 100% subsidy. The total cost for this proposal is Rs.180.0 lakhs. This programme will be implemented by the Department of Animal Husbandry.
- The Department of Dairy Department will distribute the mineral mixture to 3500 continuous milk pourers at the rate of 18kg for Rs. 500 for 4 years. The total cost will be Rs.17.50 lakhs.
- The Department of Dairy Development will distribute by – pass protein feed to high yielding milch animals(360kg/animal/yea) at 50% subsidized cost of Rs 9/kg. A total of 1000 animals will be covered in 4 years at the total cost of Rs.33.00 lakhs.

- About 1.0 acre land available at Dairy or chilling centre will be established with fodder seed and fodder slips production unit @ Rs.2.10 lakhs per acre.
- The Department of Dairy Development will establish fodder production in the land of milk pourers covering the total of 50 acres in 4 years @ total cost of Rs.11.75 lakhs
- The Department of Dairy Development will distribute small sized six chaff cutters to elite farmers at 100% subsidy in the unit cost of Rs.0.20 lakh each. The total cost will be Rs.1.20 lakhs.

Project Cost and Financing

Unit Cost of Fodder Production

S.No.	Details	Amount (in Rs.)
I.	**Training Cost**	
1.	Incentive @ Rs.100/person/day, for 2 days, for 15 members	3,000.00
2.	Refreshment expenses @ Rs.10/day/person, for 2 days, 15 persons	300.00
3.	Study materials including scribbling pad, pen etc.@ Rs.15/person, for 15 members	225.00
	Total training cost per SHG	3,525.00
II.	**Fodder Cultivation of Fodder**	
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 farm yard manure 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
	Total cost of cultivation of fodder per acre	**23,525.00**

(Rs. in lakhs)

Project	2008-2009	2009-2010	2010-2011	2011-2012	Total Amount
1. Popularizing chaff cutter @ 1/Bl/yr for SHGs/elite farmers at 50 % of total cost of Rs 20,000 @ 10 farmers/year for 4 years (DAH)	1.00	1.00	1.00	1.00	4.00
2. Fodder production by SHGs @ Rs.0.235 lakh/acre for 100 acres/yr for 4 years (DAH)	23.50	23.50	23.50	23.50	94.00
3. Establishment of 6 x 6 x 4 feet silo to ensile sugarcane tops at 75 % of total cost of Rs 15,000 @ 50 units/ year for 4 years (DAH)	5.60	5.60	5.60	5.60	22.40

4. Popularizing mineral mixture to improve livestock production @ 1kg/month/ animal @ Rs.600/ animal/year for @ 30000 animals in 4 years (DAH)	45.00	45.00	45.00	45.00	180.00
5. Supply of mineral mixture to the milch animals at subsidised cost (50%) @ 18 kg/ year @ Rs.500/animal/year for 3500 animals in 4 years (DDD)	4.375	4.375	4.375	4.375	17.50
6. Supply of by-pass protein feed to the milch animals (360kgs/ year/animal @ 50% subsidised cost of Rs.9/- per kg.) – Rs.0.033 lakh/animal for 1000 animals in 4 years (DDD)	8.25	8.25	8.25	8.25	33.00
7. Chaff cutters for elite farmers (small type) @ Rs.20,000 as 100% grant for 6 farmers in 4 years (DDD)	0.40	0.40	0.20	0.20	1.20
8. Fodder development activities in farmers field @ Rs0.235 lakh/acre in 50 acres in 4 years (DDD)	3.055	3.055	3.055	2.585	11.75
9. Fodder production activities for production of fodder seed/ slips in dairy or chilling centre @ Rs.2.10 lakhs/ acre (Land Development Rs. 0.70 lakh, implements / equipments – Rs. 0.10 lakh, store room – Rs. 0.20 lakh, facilities for irrigation – Rs. 0.50 lakh and recurring expenditure – Rs. 0.60 lakh) - (DDD)	2.10	0	0	0	2.10
Total	**93.28**	**91.18**	**90.98**	**90.51**	**365.95**

Implementation Chart of the Project

Project	2008-2009	2009-2010	2010-2011	2011-2012
1. Popularizing chaff cutter @ 1/Bl/yr for SHGs/elite farmers at 50 % of total cost of Rs 20,000 (DAH)	✓	✓	✓	✓
2. Fodder production by SHGs @ 10 acre/Bl/yr (DAH)	✓	✓	✓	✓
3. Establishment of 6 x 6 x 4 feet silo to ensile sugarcane tops at 75 % of total cost of Rs 15,000 (DAH)	✓	✓	✓	✓
4. Popularizing mineral mixture to improve livestock production @ 1kg/month (DAH)	✓	✓	✓	✓
5. Supply of mineral mixture to the milch animals at subsidised cost (50%) @ 18 kg/ year (DDD)	✓	✓	✓	✓
6. Supply of by-pass protein feed to the milch animals (360kgs/ year/animal @ 50% subsidised cost of rs.9/- per kg.) – (DDD)	✓	✓	✓	✓
7. Chaff cutters for elite farmers (small type) @rs.20,000 as 100% grant (DDD)	✓	✓	✓	✓
8. Fodder development activities in farmers field (DDD)	✓	✓	✓	✓
9. Fodder production activities for production of fodder seed/ slips in dairy or chilling centre (DDD)	✓			

Reporting

Concerned project implementing agency will report the progress to respective financial authorities.

b. Augmenting Fodder Production and Improving Livestock Components in District Livestock Farm, Hosur

Abstract

The economic viability of Livestock farming depends upon the feed and fodder cost which accounts for 65-70 of the production cost. However the districts of Dharmapuri and Krishnagiri which are having high population of cross bred cows have 91.0 and 88.4 percent of green fodder deficiency respectively. Hence the farmers depend on the supplemental concentrates to feed their animals which further increase the cost of production. Hesitation on the part of farmers to spare the cultivable land is also another reason for low fodder production in this districts. This project aims to augment the fodder production by utilizing the land resources at the District Livestock Farm, Hosur to cultivate fodder, Fodder slips and produce fodder seeds which will be sold to the needy farmers on nominal prices. This project proposes to cultivate fodder in irrigated system in a total of 517 acres to produce about 20,000 to 23,000 tonnes green fodder annually. The cost of cultivating green fodder alone is included in this project. The total cost is Rs.164.07 lakhs. The Department of Animal Husbandry will implement this project. The total cost for improving livestock components in the farm is Rs. 370.55 lakhs.

Budget

(Rs. in lakhs)

Project	Cost
1. Augmenting Fodder Production Through District Livestock Farm, Hosur (DAH)	164.07
2. Improving livestock component in District Livestock Farm, Hosur	370.55
Total	**534.62**

Background / Project Focus

Feed and fodder deficiency are the major limiting factors in enhancing farm animal productivity. The economic viability of Livestock husbandry depends on the feeding cost which constitutes 65-70% of total cost of livestock farming. While the state of Tamil Nadu has about 68 % green fodder deficiency the districts of Dharmapuri and Krishnagiri have 91.0 and 88.4% green fodder deficiency respectively. Fodder production is restricted to selected areas and season. Farmers are hesitant to utilize the fertile land and water for fodder production. Hence to meet the ever growing demand for fodder, the land available at District Livestock Farm, Hosur could be utilized for cultivating fodder, fodder seeds and fodder slips for supply to needy farmers at nominal rate.

Project Rationale

Hesitation of the farmers to spare cultivable land and irrigation facilities to cultivate fodder has resulted in severe fodder deficiency in this district. Hence only the high yielding cross bred cows are fed with cultivated fodder installs and majority of other cows are maintained on grazing land and post harvested fields. This practice has exerted great grazing pressure on grazing land and resulted in low productivity of livestock due to poor nutrition and high production cost.

Project Strategy

The land and irrigation facilities available at the District Livestock Farm, Hosur would be utilized to produce fodder, fodder seed, fodder slips besides providing inputs on package of practices in fodder cultivation. The Green fodder production, in 517 acre in irrigated condition will be taken up.

Project Goal

To cultivate fodder, produce fodder seed and fodder slips a total of 517 acres at the District Livestock Farm, Hosur and supply to the needy farmers. The livestock component in District Livestock Farm, Hosur will be improved for further supply of animals to the needy farmers.

Project Components

The Green fodder containing both cereals and legume will be developed in 517 acres under irrigated condition at the total cost of Rs.164.07 lakhs, of which non-recurring cost will be Rs.138.57 lakhs and recurring cost will be Rs.25.50 lakhs. Through this project it is expected to produce 18.98 and 23.30 thousand tonnes of fodder during 2008-09 and 09-10 respectively.

Augmenting Fodder Production Through District Livestock Farm, Hosur

(Rs. in lakhs)

S.No.	Particulars	Cost
A	**Non-recurring**	
1.	Erection of bore well (15 numbers)	37.50
2.	Desilting of 4 lakes	35.00
3.	Purchase of 3 nos. oil engines @ Rs.0.10 lakh/unit	0.30
4.	Purchase of rain guns @ Rs.1/ lakh for 10 numbers	10.00
5.	Preparation of fodder land, land clearance cost of seeds, sowing cost	38.35
6.	Land development and cost of seeds for pasture and grazing lands	2.30
7.	Maintenance for seed production @ Rs.8000/ acre	15.12
	Total Non recurring cost	**138.57**
B	**Recurring Cost**	
1.	Cost of maintenance of fodder plots @Rs.6400/acre	12.28
2.	Cost of maintenance of fodder seed plots @ Rs.7000/acre	13.22
	Total Recurring cost	**25.50**
C	**Total cost**	**164.07**

Improving Livestock Component in DLF, Hosur

(Rs. in lakhs)

S.No.	Particulars	Cost
A	**Non-recurring**	
1.	Purchase of 163 cows,600 Sheep,600 Goats,80 pigs and 20 thorough bred horses	86.70
2.	Repairs to existing building	5.00
3.	Conversion of bull sheds to stables	15.00
4.	Repairs to vacant sheds (grid)	20.00
5.	New construction of 2 piggery sheds	10.00
6.	Construction of in-patient sheds (10 sheds)	46.70
7.	Construction of sheep sheds	19.50
8.	Construction of Goat sheds	21.60
9.	Renovation of guest house and quarters	50.00
10.	Erection of 5 borewells	12.50
11.	Chaff cutter @ Rs.1.25 lakh per unit for 2 units	2.50
12.	Weighing balance @ Rs. 0.75 lakh per unit for 4 units	3.00
13.	Fencing for 6 km (solar)	6.00
14.	Generator @ Rs.2.00 lakh per unit for 3 units	6.00
15.	Solar lighting (50 lights)	7.50
	Total Non-Recurring	**312.00**
B.	Recurring	
1.	Electricity	11.00
2.	Feed, medicine and animal maintenance	42.55
3.	Others	5.00
	Total Recurring	**58.55**
Total		**370.55**

Project Cost and Financing

(Rs. in lakhs)

Project	2008-2009	2009-2010	2010-2011	2011-2012	Grand total
1. Augmenting Fodder Production Through District Livestock Farm, Hosur – Non-recurring cost of Rs. 138.57 lakhs and recurring cost of Rs. 25.50 lakhs (DAH)	164.07	0	0	0	164.07
2. Improving livestock component in DLF, Hosur	370.55	0	0	0	370.55
Total	**534.62**	**0**	**0**	**0**	**534.62**

Implementation Chart of the Project

Project	2008-2009	2009-2010	2010-2011	2011-2012
1. Augmenting Fodder Production through District Livestock Farm, Hosur (DAH)	✓			
2. Improving livestock component in DLF, Hosur	✓			

Reporting

Concerned project implementing agency will report the progress to respective financial authorities.

c. Genetic Upgradation of Large Ruminants

Abstract

The population of buffalo is dwindling in this district due to reproductive problems and long inter-calving period as farmers often fail to identify the animals in heat. This causes heavy economic loss. The buffalo calves are also neglected resulting in

malnutrition, stunted growth and attainment of late maturity. This project aims to demonstrate 100% conception rate through programmed breeding in buffaloes and indigenous cows, popularize supplemental feed strategy to buffalo calves to attain early sexual maturity apart from maintaining data base on breedable bovines in this district. The Project proposes to demonstrate heat synchronization in buffaloes, followed by AI, popularize concentrate feed supplementing strategy to buffalo calves of both sexes and maintain data base on breedable bovines for future planning. The project will be implemented by both the Department of Dairy Development and Department of Animal Husbandry at a total cost of Rs.86.40 lakhs in four years.

Budget

(Rs. in lakhs)

Project	**Total amount**
1. Identification and traceability of breedable bovine population (DAH & DDD)	14.80
2. Programmed breeding indigenous cattle & buffalo to increase conception rate (DDD)	42.00
3. Buffalo calf development programme (2000 calves / year) – (DDD)	29.60
Total	**86.40**

Background / Problem Focus

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

Project Rationale

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

Project Strategy

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

Project Goal

- To improve the conception rate and reduce inter-calving period in buffaloes
- To demonstrate improvement in economic traits on account of proper nutrition to buffalo calves.

Project Components

- All the breedable bovines that are brought for insemination will be tagged and the cow Index card (data base) for each tagged bovine will be maintained. A total of 0.74 lakh breedable bovines will be thus identified and included in data base in 4 years. The project will be continued even after the completion of NADP. The cost per animal will be Rs.12 to cover the cost of Tag and Rs.8 for the issue of Blue Index card. The total cost will be Rs.14.80 lakhs for 1 year. This component will be implemented both by the Department of Animal Husbandry and Department of Dairy Development.
- The Indigenous cattle and buffaloes totaling 6000 to cover about 10% of population at the rate of 1500 per year will be subjected to heat synchronization

and subsequent A.I to achieve 100% conception rate. At the unit cost of Rs.700/- per animal a total of Rs.42.00 lakhs will be utilized in 4 years.

- In the Buffalo calves development programme at the rate of 50 calves per year a total of 200 calves of either sex will be supplied with supplemental concentrate feed upto 32 months age at 100% subsidy. The total cost will be Rs.29.60 lakhs. These components will be implemented by the Department of Dairy Development.

Project Cost and Financing

(Rs. in lakhs)

Project	2008-2009	2009-2010	2010-2011	2011-2012	Total amount
1. Identification and traceability of breedable bovine population @ Rs.20/ animals for 74000 animals (DAH and DDD)	14.80	0	0	0	14.80
2. Programmed breeding indigenous cattle & buffalo to increase conception rate @ Rs.700/ animal for 1500 animals/ year in 4 years (DAH)	10.50	10.50	10.50	10.50	42.00
3. Buffalo calf development programme @ Rs.14800/calf for 50 calves / year in 4 years – (DAH)	7.40	7.40	7.40	7.40	29.60
Total	**32.70**	**17.90**	**17.90**	**17.90**	**86.40**

Implementation Chart of the Project

Project	2008-2009	2009-2010	2010-2011	2011-2012
1. Identification and traceability of breedable bovine population (DAH and DDD)	✓			
2. Programmed breeding indigenous cattle & buffalo to increase conception rate (DAH)	✓	✓	✓	✓
3. Buffalo calf development programme (2000 calves / year) – (DAH)	✓	✓	✓	✓

Reporting

Concerned project implementing agency will report the progress to the respective financial authorities.

d. Improvement in livestock health services

Abstract

Disease outbreak and parasitic infestation are the major causes for economic loss in livestock sector. Providing health cover to animals in remote areas, insufficient facilities for providing off-campus health cover and quick disease diagnosis are the major impediments in providing foolproof health cover to livestock. This project aims to achieve fool proof and timely disease diagnosis and treatment even in inaccessible remote areas, better surveillance of disease outbreak etc., The project purposes to give major emphasis in controlling parasite diseases, establishment of Mobile Veterinary Clinic for off – campus treatment in remote areas, upgrading the existing Animal Disease Investigation Unit as Mobile Veterinary Diagnostic Laboratory and renovation of existing Veterinary dispensaries to provide better on-campus treatment. The cost of this proposal is Rs.174.77 lakhs in 4 years and will be implemented by the Department of Animal Husbandry. Mobile inputs unit will be established (6 units) by the Department of Dairy Development at the total cost of Rs.27.00lakh @ Rs.4.5 lakhs per unit to provide

additional health cover and timely insemination services to the milk pourers of the society. This project will be implemented by the Department of Dairy Development. The total cost of project is Rs. 188.336 lakhs.

Project	Total amount
1. Control of parasitic diseases through treatment to enhance vaccine response (DAH)	31.84
2. Mobile veterinary clinics (DAH)	17.496
3. Mobile veterinary diagnostic laboratory (DAH)	12.00
4. Renovation of Existing Veterinary Dispensaries	100.00
5. Mobile inputs units (1/ 50 DCS) – (DDD)	27.00
Total	**188.336**

Background / Problem Focus

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

Project Rationale

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

Project Strategy

- Providing full proof off–campus Veterinary facilities through mobile veterinary clinics

- Strengthening of existing Animal Disease Investigating unit as Mobile Veterinary Diagnostic Laboratory
- Renovation of existing Veterinary dispensaries to provide on–campus quality Veterinary service to Livestock
- A total of 6 mobile routes will be established to provide additional health cover and timely insemination services to milk pourers of societies.

Project Goal

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

Project components

- Control of parasitic diseases through treatment to increase vaccine response.
- Establishment of mobile veterinary clinics having equipments like surgical kit, Obstetrical kit, Binocular microscopes, Liquid Nitrogen container, Thermos flask and a Bolero jeep. For each unit diesel worth of Rs 45000 will be provided. The total cost will be Rs 5.832 to each unit and the total cost will be Rs.17.496 lakhs. The staff for this will be sourced from the available manpower in the department.
- Establishment of Mobile Veterinary Diagnostic Laboratory containing diagnostic equipments, refrigerator, centrifuge, microscope and other equipments to conduct postmortem examinations fitted in a vehicle the total cost will be Rs.12.00 lakhs.
- Renovation of existing 20 Veterinary dispensaries with basic facilities like fencing, bore wells water troughs and minor repair works at the cost of Rs 5.00 lakhs for each dispensary at a total cost of Rs 100.00 lakhs.
- A total of 6 mobile units will be established by the Department of Dairy Development @ cost of Rs.4.50 lakhs for each unit to provide additional health cover and timely insemination services to the milk pourers of societies.

Project Cost and Financing

(Rs. in lakhs)

Project	2008-2009	2009-2010	2010-2011	2011-2012	Total amount
1. Control of parasitic diseases through treatment to enhance vaccine response @ Rs.1/- per sheep or goat and Rs.3/- per calf below one year – (52781 calves, 294230 sheep and 149744 goats) - @ Rs. 7.96 lakhs per year for 4 years (DAH)	7.96	7.96	7.96	7.96	31.84
2. Mobile veterinary clinics @ Rs.5.832 Lakhs/unit (Jeep – Rs. 4.75 Lakhs, Equipments – Rs. 0.30 lakh, LN2 container large and small – Rs. 0.35 lakh, Recurring Expenditure - Rs. 0.43 Lakh) - 3 units totally (DAH)	17.496	0	0	0	17.496
3. Mobile veterinary diagnostic laboratory @ Rs.12.00 Lakhs/unit (Vehicle - Rs.11.00 lakhs, microscope - Rs.0.50 lakh, refrigerator - Rs.0.25 lakh, centrifuge – Rs.0.15 lakh, post mortem kits and other chemicals and reagents - Rs.0.10 lakh) - (DAH)	12.00	0	0	0	12.00
4. Renovation of existing Veterinary	100.00	0	0	0	100.00

Dispensaries @ like fencing, water troughs, bore-wells, minor repair works etc. @ Rs.5.00 lakhs / institution for 20 dispensaries (DAH)					
5. Establishment of Mobile inputs Units @ Rs.4.50 lakhs/ unit (Salary for veterinarian and attendant and traveling expenses – Rs. 3.60 lakhs, Equipments – Rs. 0.66 lakh, Administrative charges – Rs. 0.24 lakhs) for 6 units - (DDD)	27.00	0	0	0	27.00
Total	**164.456**	**7.96**	**7.96**	**7.96**	**188.336**

Implementing Chart of the Project

Project	2008-2009	2009-2010	2010-2011	2011-2012
1. Control of parasitic diseases through treatment to enhance vaccine response (DAH)	✓	✓	✓	✓
2. Mobile veterinary clinics (DAH)	✓			
3. Mobile veterinary diagnostic laboratory (DAH)	✓			
4. Renovation of existing Veterinary Dispensaries (DAH)	✓			
5. Establishment of Mobile Inputs Units (DDD)	✓			

Reporting

Concerned project implementing agency will report the progress to the respective financial authorities.

e. Establishment of Quarantine Facility and Strengthening District Livestock Farm, Hosur

Abstract

The Tamil Nadu Livestock Development Agency (TNLDA) is functioning with the goal of

- Improving the milk production and productivity in the livestock of Tamil Nadu.
- Bringing all the breedable female cattle and buffaloes in the state under defined breeding programme through artificial insemination.

Its frozen semen production facility at District Livestock Farm, Hosur needs basic but very essential infrastructure to meet the Minimum Standard Protocol (MSP) set by the Central Monitoring Unit of Government of India. The TNLDA has met part of the fund required for creating the above facilities by mobilization from other agencies and only the fund required for rest of the alone facilities is proposed in this project. The project proposes to create new quarantine facilities to house 30 animals, store rooms, and watering facility as per the MSP at the cost of Rs.90.0 lakhs. The project also propose to establish a frozen semen laboratory, Calf shed, Isolation shed etc., as per the MSP at a cost of Rs.404.0 lakhs. The project further propose to create facility to establish Bull Mother Farm containing cow shed, calf shed, calving pen, isolation shed, laboratory, store house, bore wells etc as per the MSP at the cost of Rs.103.50 lakhs. The project will be implemented by the TNLDA at the District Livestock Farm, Hosur for two years at the total cost Rs.736.70 lakhs.

Budget

(Rs. in lakhs)

Project	Cost
Establishment of Quarantine Facility and Strengthening of District Livestock Farm, Hosur	736.70

Background / Problem Focus

The frozen semen production facility at District Livestock Farm, Hosur needs basic but very essential infrastructure to meet the Minimum Standard Protocol (MSP) set by the Central Monitoring Unit of Government of India.

Project Rationale

To meet the minimum standard protocol (MSP) for frozen semen production the bulls purchased from other sources be subjected to quarantine for a mandatory period. At present the animal quarantine is being carried out in a make shift facility at the District Livestock Farm, (DLF) by the Tamil Nadu Livestock Development Agency (TNLDA). The existing semen production station and Bull mother farms are located near other livestock species at the DLF. Hence this semen production station has to be shifted to a new place to have the mandatory distance for bio security reasons as specified under MSP.

Project Strategy

- A new quarantine facility will be established at the DLF, Hosur in the area allotted for the TNLDA, to house 30 animals, along with facility to store feed, medicines, equipments etc.,
- Facility to house 150 bulls and 40 calves, an isolation shed and a frozen semen station cum laboratory will be established at the DLF Hosur in the area allotted for TNLDA.
- Bull mother facility for housing Red Sindhi bull mothers will also be established.

Project Goal

- To bring all the breedable female cattle and buffaloes in the state of Tamil Nadu under defined breeding programme through Artificial Insemination.
- To provide facilities to the line department to increase milk production, per animal productivity and per capita milk consumption

Project Components

- The quarantine facility will have one animal house to house 30 animals, and store houses for storing cattle feed, medicine, equipments apart from a Bore well, and land development work etc., at the total cost of 90.0 lakhs.
- The bull shed and frozen semen laboratory will have five calf sheds, one store house and one isolation shed at the cost of Rs.40.40 lakhs. The funds for quality control laboratory and collection yard laboratory will be mobilized from other agencies.
- The Bull mother farm will have one each of cow shed, calf shed, calving pen and isolation shed, laboratory, store house, over head tank and transformer, 40 borewells, fencing, land development etc at the cost of Rs.103.50 lakhs. Funds for other facilities will be mobilized from other agencies.

Project Cost and Financing

(Rs. in lakhs)

Particulars	2008-2012		2008-2009			2009-2010		2010-2011		2011-2012	
	Phy	Amt.	Phy	Amt.		Phy	Amt.	Physical	Amt From NADP	Phy	Amt. From NADP
				Available under NABARD	Available under NPCBB		From NADP				
Bull sheds											
New sheds	7	490.10	2	86.10	54.00	1	70.00	2	140.00	2	140.00
Calf sheds	1	15.00	1		15.00						
QC lab, collection yard lab	1	116.79	1	16.79	100.00						
Fencing	4 km	8.00	4 km		8.00						
Stores etc.,	1	36.00				1	36.00				
Isolation shed	1	18.00				1	18.00				
Sub total		**683.89**		**102.89**	**177.00**		**124.00**		**140.00**		**140.00**
Quarantine											
Sheds	1	60.00				1	60.00				
Store etc.,	1	30.00				1	30.00				
Bore well land development etc	1	2.50				1	2.50				
Sub total		**92.50**					**92.50**				

Bull mother farm											
Cow sheds	2	110.00	1		55.00	1	55.00				
Calf shed	2	30.00	1		15.00	1	15.00				
Calving pen and isolation shed	1	7.20				1	7.20				
Laboratory	1	30.00				1	30.00				
Store	1	30.00				1	30.00				
Fencing	2.5 km	5.00	1.5		3.00	1.0 km	2.00				
Sub total		**212.20**			**73.00**		**139.20**				
Bore well land development etc	10	25.00				7	17.50	3	7.50		
over head tank	2	6.00				1	3.00	1	3.00		
Roads	5km	30.00				5km	30.00				
Transformer	**1**	40.00				**1**	40.00				
Sub total		**101.00**		**0.00**	**0.00**		**90.50**		**10.50**		
Total		**1089.59**		**102.89**	**250.00**		**446.20**		**150.50**		**140.00**

(Rs. in lakhs)

Project	2008-2009	2009-2010	2010-2011	2011-2012	Total amount
Establishment of Quarantine Facility and Strengthening of District Livestock Farm, Hosur (TNLDA)	446.20	290.50	0	0	736.70

Implementation Chart of the Project

Project	2008-2009	2009-2010	2010-2011	2011-2012
Establishment of Quarantine Facility and Strengthening of District Livestock Farm, Hosur (TNLDA)	✓	✓		

Reporting

Concerned project implementing agency will report the progress to the respective financial authorities.

f. Improvement in infrastructure for milk procurement

Abstract

Current practice of laborious, time consuming and unhygienic hand milking of high yielders, measuring the procured milk instead of weighment, non-functional and dormant milk societies are the major contributing factors for low milk procurement in Co-operative milk societies. This project aims at increasing the milk procurement in Co-operatives, avoid unhygienic milk handling by milkmen, introduction of transparency in milk weighment and automation in milk Co-operative societies. The project proposes to provide portable milking machine to continuous milk pourers to the milk co-operatives at 100% subsidy. A total of 50 machines will be supplied to the milk pourers 4 years. For

milk weighment electronic balances will be provided to 110 milk Co-operatives with 100% subsidy. P.C. based Automatic Milk collection Station will be installed in 9 milk Co-operatives. Total 20 dormant milk Co-operatives will be revived by providing basic essential infrastructure. The Project will be implemented by the Department of Dairy Development at a total cost of Rs.63.45 lakhs.

Budget

(Rs. in lakhs)

Project	**Total amount**
1. Portable milking machines for farmers (DDD)	9.00
2. Milk weighing machine for milk producers co-op.societies (DDD)	18.70
3. P.C.based automatic milk collection stations to IDF villages milk producers cooperative societies (DDD)	15.75
4. Revival of dormant MPCS (DDD)	20.00
Total	**63.45**

Background / Problem Focus

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

- The milk pricing depends on total solid content and hence any problem in milk weighment badly affects the return to farmers.
- Less transparent activities at milk collection centres and problem in maintaining summary of milk supplied on daily, monthly and yearly basis affects the confidence of milk pourers.

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

Project Rationale

- Introduction and popularization of simple machine milking will not only minimize milkmen problem but also avoid in unhygienic milk handling.
- Introduction of electronic weighing machines at the milk procuring societies and vis-a vis transparency will not only reduce man power involvement and pilferage but also improve efficiency in milk procurement.
- Installation of Automatic Milk collection Stations (AMS) will automatically measure weight of milk, fat content and total solid and give print out of payment slip to farmers. The AMC with personal computer will maintain complete record of the Dairy Co-operative together with all transactions.
- By providing essential milk procuring equipments and other infrastructure for record maintenance etc. the hitherto dormant milk societies could be revived and milk procurement increased. It will also free the farmers from the clutches of exploiting private vendors.

Project Strategy

- Popularizing machine milking by providing portable milking machine to a total of 50 milk pourers in 4 years period with 100% subsidy.
- Providing electronic milk weighing machines to a total of 110 Co-operative milk societies procuring more than 500 litres of milk per day.
- Providing P.C. based Automatic Milk collection Station facility to a total of 9 milk producers Co-operative societies procuring more than 1000 litres per day.
- Revival of a total of 20 hitherto dormant but potential milk societies by providing basic and essential milk procuring infrastructure.

Project Goal

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

Project Components

- Supply of Portable simple milking machine costing Rs.0.18 lakh each to 50 milk pourers at 100% subsidy.
- Supply of electronic milk weighing machines costing Rs.0.17 lakh each to 110 Co-operative milk societies.
- Installation of PC based AMS having integrated milk weighing system, Electronic milk testing, Personal Computer with printer and battery with a capacity to analyze 120 – 150 milk samples per hour costing Rs.1.75 lakh to each of 9 Co-operative milk societies.
- Reviving 20 dormant but potential milk societies each at the cot of Rs.1.00 lakh.

Project Cost and Financing

(Rs. in lakhs)

Project	2008-2009	2009-2010	2010-2011	2011-2012	Total amount
1. Portable milking machines for farmers @ Rs. 0.18 lakh/ unit for 50 units in 4 years (DDD)	2.34	2.34	2.34	1.98	9.00
2. Milk weighing machine for milk producers co-operative societies @ Rs.0.17 lakh/unit 110 units in 4 years (DDD)	5.10	5.10	5.10	3.40	18.70

3. P.C.based automatic milk collection stations to IDF villages milk producers cooperative societies @ Rs. 1.75 lakhs/ unit for 9 units in 4 years (DDD)	5.25	3.50	3.50	3.50	15.75
4. Revival of dormant MPCS @ Rs. 1.00 lakh/ unit for 20 units in 4 years (DDD)	5.00	5.00	5.00	5.00	20.00
Total	**17.69**	**15.94**	**15.94**	**13.88**	**63.45**

Implementation Chart of the Project

Project	2008-2009	2009-2010	2010-2011	2011-2012
1. Portable milking machines for farmers (DDD)	✓	✓	✓	✓
2. Milk weighing machine for milk producers co-op.societies (DDD)	✓	✓	✓	✓
3. P.C.based automatic milk collection stations to IDF villages milk producers cooperative societies (DDD)	✓	✓	✓	✓
4. Revival of dormant MPCS (DDD)	✓	✓	✓	✓

Reporting

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

g. Strengthening the Infrastructure for Milk Processing

Abstract

The unhygienic handling of milk by the milk men and unclean milk production by few milk pourers due to lack of awareness introduces bacterial contamination in fluid milk. Further the odd hour milking and more time taken for transporting the contaminated milk to processing unit increases the bacterial load in milk and escalate the processing cost. This project aims to check the bacterial load in procured fluid milk at the milk collection centres and processed packed milk at retail ends. It further aims at converting the excess fluid milk to value added products. This project proposes to improve the infrastructure facilities both at Co-operative milk societies and District Co-operative Milk Producers Federation Dairy to achieve the above aims. The project also proposes to strengthen the quality assurance laboratory at Krishnagiri Dairy at a total Rs.10.00 lakhs to maintain quality control in the milk and milk products. The project also proposes to establish an energy management system to reduce fuel consumption in the milk processing equipments @ Rs. 10.00 lakhs. The proposal includes establishing 5000 litres capacity bulk milk cooler at villages, walk –in cooler at retail end, facility to manufacture milk khoa at a total cost of Rs.111.54 lakhs. The Department of Dairy Development will implement this project.

Budget

(Rs. in lakhs)

Project	Total amount
1. Bulk milk cooler (DDD)	30.00
2. Walk-in coolers (DDD)	60.00
3. Manufacturing facilities for milk khoa (DDD)	1.54
4. Strengthening of quality assurance laboratory (DDD)	10.00
5. Establishment of Energy management systems (DDD)	10.00
Total	**111.54**

Background / Problem Focus

- The District of Krishnagiri Produces 1.67 lakh litres of milk daily. The milk procured from Co-operative Societies has to be chilled within half an hour of milking to check further multiplication of bacterial load. More over customary odd hour milking in late evening by the farmers necessitate storing of procured milk at the milk co-operatives transportation next day.
- It is also necessary to convert the excess fluid milk into products which are in demand.
- The quality of the milk and milk products produce by Aavin has to be assessed.
- The cost of fuel for processing the milk has to be reduce using the unconventional energy sources.

Project Rationale

In the District of Krishnagiri about 1.67 lakh liters of milk are collected annually from rural areas. By establishing milk coolers the fluid milk could be chilled and stored at milk collection centres and walk-in-coolers will store the processed and packed milk. Introducing the solar energy system will considerably reduce the processing cost of milk. These measures will keep the bacterial load at minimum and reduce the processing cost. In addition it is imperative to assess the quality of milk and milk products produced and sold by the Union.

Project Strategy

- Establishing bulk milk coolers along the rural operating milk routes to maintain quality of fluid milk.
- Locating walk–in-coolers at retail ends in urban areas to maintain quality of packed milk.
- Establishing Milk khoa at the District Co-operative milk producers union Dairy and to establish solar energy system to reduce processing cost.
- A quality assurance laboratory will be established at the Dairy to assess the quality of milk and milk products.

Project Goal

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

Project Components

- Establishing one number of 5000 lt capacity bulk milk cooler in one of the milk collection centres of milk co-operative at the total cost of Rs.30.00 lakhs.
- Establishing two Walk-in-coolers in urban retail end at the total cost of Rs.60.00 lakhs. (Rs.30 lakhs each)
- Establishing two Milk Khoa manufacturing units at the total cost of 1.54 lakhs in 2 years period at the District Co-operative Milk Producers Union Dairy.
- Establishing one number of solar water heating unit of 5,000 litres capacity @ Rs.10,000.
- Strengthening quality assurance laboratory at total cost of Rs.10.00.

Quality Assurance Lab

Sl. No.	Name of the equipment	Amount in lakhs
1.	Incubator	0.35
2.	Hot air oven	0.35
3.	Water bath	0.35
4.	Auto clave	0.30
5.	Microscope	0.50
6.	Laminar air flow	0.50
7.	Refrigerator	0.35
8.	Air conditioner	0.35
9.	Analytical Balance	2.00
10.	Water Distillation Plant	0.35
11.	Glass ware	0.50
12.	Chemicals & Bacteriological media	0.50
13.	Furniture and work tables	0.50
14.	Colony counter	0.10
15.	PH, TDS meter	1.00
16.	Civil work	2.00
	Total	**10.00**

Project Cost and Financing

(Rs. in lakhs)

Project	2008-2009	2009-2010	2010-2011	2011-2012	Total amount
1. Bulk milk cooler @ Rs. 30.00 lakhs/ unit (DDD)	30.00	0	0	0	30.00
2. Walk-in coolers @ Rs. 30.00 lakhs/ unit for 2 units (DDD)	30.00	30.00	0	0	60.00
3. Manufacturing facilities for milk khoa (DDD)	0.77	0.77	0	0	1.54
4. Strengthening of quality assurance laboratory @ Rs.10 lakhs (DDD)	10.00	0	0	0	10.00
5. Establishment of Energy management systems @ Rs.10 lakhs (Solar water heating unit - 5000 litres – 1 unit (DDD)	10.00	0	0	0	10.00
Total	**80.77**	**30.77**	**0**	**0**	**111.54**

Implementing chart of the project

Project	2008-2009	2009-2010	2010-2011	2011-2012
1. Bulk milk cooler (DDD)	✓			
2. Walk-in coolers (DDD)	✓	✓		
3. Manufacturing facilities for milk khoa (DDD)	✓	✓		
4. Strengthening of quality assurance laboratory (DDD)	✓			
5. Establishment of Energy management systems (DDD)	✓			

Reporting

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

B. Small Ruminants

a. Establishment of quality germ plasm production centres

Abstract

Inbreeding and non-availability of quality germplasm are the major reasons for low productivity in small ruminants. The Government farms which are the major sources of germplasm input do not cope up with the demand. The Project aims at establishing germplasm production centres day SHG for distribution to needy farmers at nominal rates. The project proposes to encourage the SHG / Elite farmers to start a total of 20 ram / buck production centres by providing 50% subsidy in the total cost of Rs.1.00 lakh in 4 years. The Project also proposes to supply quality rams / bucks to organized farms at the rate of 2 animals per block at 100% subsidy which will be rotated for every 2 years at the cost of Rs.4000/- animal. The Department of Animal Husbandry will implement the project at the total cost of Rs. 10.80 lakhs.

Budget

(Rs. in lakhs)

Project	Total amount
1. Quality ram / buck production centre for distribution of quality germplasm by SHGs @ 2/Bl (DAH)	10.00
2. Supply of rams / bucks to SHGs / Elite farmers @ 2/Bl (DAH)	0.80
Total	**10.80**

Background / Problem Focus

The district of Krishnagiri possesses 2.94 lakh sheep and 1.49 lakh goats. However the economic traits in the small ruminants are poor due to heavy inbreeding and poor nutrition resulting in decreased meat production.

Project Rationale

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

Project Strategy

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

Project goal

- To supply quality germ plasm to needy farmers.
- To avoid inbreeding.
- To increase meat production.

Project Components

- Providing 50% subsidy in the total cost of Rs.1.00 lakh to start 20+1 ram / buck production centres by SHG /Elite farmers / tribes at the rate of 2 units per block.
- Supply of Rams / Bucks at 100% subsidy to SHG / Elite farmers / Tribes having sheep or goat farm at the rate of 2 per block. The cost of each animal is Rs.4,000/-. A total of 20 animals will be supplied in the first year itself at the total cost of 0.80 lakh.

Project Cost and Financing

Unit cost for quality ram/buck production centre		Rs.in lakhs
Cost of animals (20+1)	:	0.53
Land Development	:	0.06
Renovation of Civil structure	:	0.14
Minor irrigation	:	0.05
Equipments	:	0.04
Fodder Production	:	0.10
Working Capital	:	0.08
Total	**:**	**1.00**

(Rs. in lakhs)

Project	2008-2009	2009-2010	2010-2011	2011-2012	Total amount
1. Quality ram / buck production centre for distribution of quality germ plasm by SHGs @ 2/Bl - 50 % subsidy of the total unit cost of Rs. 1.00 lakh for 20 units (DAH)	2.50	2.50	2.50	2.50	10.00
2. Supply of rams / bucks to SHGs / Elite farmers @ Rs. 4000 for 20 animals @ 2/Bl (DAH)	0.80	0	0	0	0.80
Total	**3.30**	**2.50**	**2.50**	**2.50**	**10.80**

Implementing chart of the project

Project	2008-2009	2009-2010	2010-2011	2011-2012
1. Quality ram / buck production centre for distribution of quality germ plasm by SHGs @ 2/Bl (DAH)	✓	✓	✓	✓
2. Supply of rams / bucks to SHGs / Elite farmers @ 2/Bl (DAH)	✓			

Reporting

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

b. Popularization of Scientific Small Ruminant Farming Systems

Abstract

The District of Krishnagiri possesses 4.83 lakh heads of sheep and goat which are maintained only on extensive system. In this system of management, the animals get good nutrition only for 3-4 months in a year and later, particularly during summer, the farmers resort to distress sale for want of fodder. The growth rate, dressing percentage and meat quality in these animals will be poor and fetch poor return. The semi intensive and Intensive systems of management have been evolved as an alternate to extensive system in which the animals get year round nutrition, good growth rate, dressing percentage, meat quality etc., This project aims to educate the farmers and popularize the semi-intensive and intensive management systems. The SHG/Tribes/Elite farmers who opt for semi intensive system of management for 20+1 unit will be given subsidy of Rs.0.25 lakh in the total cost of Rs.0.50 lakh per unit by waiving the margine money and bank loan while availing the bankable schemes. A total of 250 units (20+1) will be established in 4 years at the total cost of Rs.62.50 lakhs.

The project also proposes to popularize the prime lamb/kid production under intensive system of management by providing 50% subsidy in the total cost of Rs.4.20 lakhs to SHG / Tribes / Elite farmers. A total of 10 units will be established in the first year itself. Initially one unit will be established in each block. Each unit will have 0+40 ram lambs / he kids unit in 2 batches 0+20 each. The Department of Animal Husbandry will implement these projects at the total cost of Rs.66.70 lakhs in one year.

Budget

(Rs. in lakhs)

Project	Total amount
1. Semi- intensive goat farming to supply germ plasm by SHGs @ 25 / block (DAH)	62.50
2. Prime lamb/Kid production (0+40)unit at 50% subsidy in the total cost of Rs 0.84 lakh (DAH)	4.20
Total	**66.70**

Background / Problem Focus

The small ruminants in this district are maintained on Extensive system in which the animals receive good nutrition only for 3-4 months of monsoon and later due to poor nutrition, their production goes down. Farmers resort to distress sale of their stock. This necessitates popularizing alternate systems of small ruminant production.

Project Rationale

By switching over to Semi intensive or Intensive systems of management with scientific interventions the animals receive year – round good nutrition and maintain good production potential with better cost benefit ratio. In these systems the available crop residues could also be effectively utilized.

Project Strategy

Semi Intensive System

The SHG / Tribes will be encouraged to start semi intensive small ruminant farming. The margin money and interest bearing loan to start the farm will be covered under subsidy from this project while availing bankable schemes.

For 20+1 unit the total cost will be Rs.0.50 lakh of which margin money and bank loan will be Rs.0.125 and 0.125 lakh respectively. The beneficiaries at the rate of 25 per block will be covered and thus a total of 250 farms will be started in 4 years.

Intensive System

Weaned ram lamb / kids will be intensively manage for 180 days and finished for meat purpose in prime ram lamb / prime he kid production system. The number of units (0+40 in 2 batches of 0+20 each) will be one per block with 50% subsidy in total cost of Rs.0.84 lakh.

Project Goal

To popularize scientific and proven alternate management systems like semi-intensive and intensive systems in small ruminants production with improved cost benefit ratio.

Project Components

Providing Rs.0.25 lakh as subsidy in the bank loan (0.125 lakh) and Margin money (0.125 lakh) while availing bankable schemes to start 20+1 unit under semi-intensive system to SHG/Tribes selected at the rate of 25 per block.

Providing 50% incentive in the total cost of Rs.0.84 lakh to start Prime ram lamb / he kid production centre in intensive management system for each unit 0+40 in 2 batches of 0+20 each) grown each batch for 6 months.

Project Cost and Financing

Unit cost for 0+40 lambs/kids		**Rs. in lakhs**
Cost of 20x2 batch lambs / kids	:	0.32
Housing 20 x 15sq.ft x Rs. 80	:	0.24
Equipments	:	0.04
Manual Chaffer (150-200kg /hr)	:	0.10
Feed cost (0.150 kg x180dx40xRs.8)	:	0.05
Fodder cultivation in 0.25 ac	:	0.05
Miscellaneous	:	0.04

Total	**:**	**0.84**

(Rs. in lakhs)

Project	2008-2009	2009-2010	2010-2011	2011-2012	Total amount
1. Semi- intensive goat farming to supply germ plasm by SHGs @ 25 / block block @ Rs.0.50 lakh/ unit – 50 % subsidy - Rs. 0.25 lakhs for 250 units in four years (DAH)	17.50	15.00	15.00	15.00	62.50
2. Prime ram lamb / he Kid production (0+20 units in 2 batches (0+40) at 50% of total cost of Rs 0.84 lakh for 10 units (DAH)	4.20	0	0	0	4.20
Total	**21.70**	**15.00**	**15.00**	**15.00**	**66.70**

Implementation chart of the project

Project	2008-2009	2009-2010	2010-2011	2011-2012
1. Semi- intensive goat farming to supply germ plasm by SHGs @ 25 / block (DAH)	✓	✓	✓	✓
2. Prime ram lamb / he Kid production (0+20 units in 2 batches (0+40) at 50% of total cost of Rs 0.84 lakh (DAH)	✓			

Reporting

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

C. Poultry

a. Popularizing Technology Backed Backyard Poultry

Abstract

The Desi eggs produced by the backyard poultry are in great demand. However the backyard poultry system is vanishing due to non-application of technological interventions and intensive farming system with improved birds. Even today the existing backyard poultry are the major source of cash flow to rural women. This project aims to popularize technology backed backyard poultry systems with improved strains of poultry and protect the existing backyard birds with health cover. This project proposes to establish (9+1) backyard poultry units at 50% subsidy to 2000 rural house holds in 4 years and provide complete health care to 50,000 existing backyard poultry in 4 years. The Project will be implemented by the Department of Animal Husbandry at the total cost of Rs.20.50 lakhs.

Budget

(Rs. in lakhs)

Project	Total amount
1. Rural livelihood security through Technology backed backyard poultry (DAH)	20.00
2. Health care for existing Desi birds in backyard (DAH)	0.50
Total	**20.50**

Background / Problem Focus

The district of Krishnagiri produces 78.39 lakh Desi eggs annually. In recent times there is great demand for Desi eggs which are sold at premium rate. The Desi eggs are produced only through backyard poultry. But lack of improved strains and non-application of Technology interventions seriously affect the backyard poultry and vis-à-vis egg production.

Project Rationale

Introduction of improved stains and adoption of scientific interventions like phosphorus supplementation and energy source like grain are proved to enhance the production of backyard poultry. At the field level inadequate health care due to lack awareness results in significant level of mortality. Thus by providing supplemental feed and regular health cover, the back yard Poultry will be a very successful venture suited for rural women to sustain her livelihood.

Project Strategy

- Providing 9+1 unit of improved poultry strain suited for backyard at the rate of 200 units per block and providing Technology back up to improve production.
- For the existing birds complete health cover like vaccination and deworming will be provided. A total of 0.50 lakh birds will be covered each year for a total period of 4 years.

Project Goal

- To Popularize Technology backed backyard Poultry units of improved strains among rural women.
- To improve the cash flow among rural women through regular sale of Desi eggs at premium rate.

Project Components

- A total of 2000 rural house holds will be selected at the rate of 500 per year and supplied with 9+1 backyard unit at 100% subsidy.
- The Technology interventions like legume fodder / wheat bran supplementation, white ant feeding, modified egg storage system etc., will be provided for adoption.
- The existing desi birds will be given complete health cover through regular deworming and Vaccinations.

Project Cost and Financing

Project	2008-2009	2009-2010	2010-2011	2011-2012	Total amount
1. Rural livelihood security through Technology backed backyard poultry (9+1) @ Rs.1000/ unit for 500 units/ year for 4 years (DAH)	5.00	5.00	5.00	5.00	20.00
2. Health care for existing Desi birds in backyard Re.1/ bird for 50000 birds/year (DAH)	0.50	0	0	0	0.50
Total	**5.50**	**5.00**	**5.00**	**5.00**	**20.50**

Implementation chart of the project

Project	2008-2009	2009-2010	2010-2011	2011-2012
1. Rural livelihood security through Technology backed backyard poultry	✓	✓	✓	✓
2. Health care for existing Desi birds in backyard	✓			

Reporting

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

D. Piggery

a. Establishment of piggery units by SHG

Abstract

There is great demand for wholesome pork at Bangalore city located in just 40 km distance from Krishnagiri district. Pig production at present has been taken up by the

farmers at subsistence level which has to be developed into commercial pig production with fast growing exotic breeds in clean environment. The project aims to popularize organized pig farms in a scientific way with exotic breeds and tap the market potential for wholesome pork at Bangalore. A total of 20 piggery units (3+1) will be established in 1 year. The margin money and interest bearing bank loan together of Rs.38,500 per unit will be borne in this project when the beneficiaries (SHG / elite farmers) avail bankable scheme. The project will be implemented at the total cost of Rs.7.70 lakh by the Department of Animal Husbandry. The required piglets to start the farm will be purchased from the District Livestock Farm, Hosur.

Budget

(Rs. in lakhs)

Project	Total amount
Establishment of (3+1) piggery unit by SHG @ 2 units / block (DAH)	7.70

Background / Problem Focus

Pig farming is the most economic Livestock farming system. Pigs have higher feed efficiency for meat production and high dressing percentage than other farm animals. In rural sector however pigs are raised at subsistence level. The existing subsistence pig farming has to be changed into commercial pig production with fast growing exotic breeds in clean environmental condition to enable the exotic animals to express their production potential. There is also an urgency to establish organized pig farms in private sector not only to supply the germ plasm but also to demonstrate to other pig farmers.

Project Rationale

The Krishnagiri district due to its strategic location near to Bangalore city has great demand for pork. To meet this demand and tap the market potential at Bangalore

the private entrepreneurs have to be encouraged to start organized pig farming on scientific lines with exotic swine breeds. These farms not only will supply the pigs for pork production but also supply the quality germ plasm to other needy farmers to start the farm.

Project Strategy

Small piggery units comprising 3 sows and one Boar (3+1) is proposed for SHG/ Elite farmers. The margin money and interest bearing loan will be subsidized (Rs.0.385 lakh) and covered in this project to enable the beneficiaries to avail bankable schemes.

Project Goal

- To popularize organized pig farms in a scientific way with exotic breeds.
- To tap the market potential for wholesome pork at Bangalore.

Project Components

The SHG/Elite farmers who want to take up organized pig farming with Large White Yorkshire will be selected to start 3+1 unit, for which the unit cost is Rs.0.77 lakh. When the entrepreneur goes for bankable scheme, the margin money of Rs.7600, and bank loan of Rs.30,900 totaling Rs.38,500 will be subsidized and met in this project. At the rate of 2 units per block, a total of 20 units will be started at the total cost of Rs.7.70 lakhs.

Project Cost and Financing

(Rs. in lakhs)

Project	2008-2009	2009-2010	2010-2011	2011-2012	Total amount
Establishment of (3+1) piggery unit by SHG @ 2 units / block (DAH)	7.70	0	0	0	7.70

Implementation Chart of the Project

Project	2008-2009	2009-2010	2010-2011	2011-2012
Establishment of (3+1) piggery unit by SHG @ 2 units / block	✓			

Reporting

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

E. Strengthening the Infrastructure to Promote Extension Services

Abstract

Extension services are the linkages between Researchers and Farmers for transfer of technologies. In order to document the transferable technologies and transferring the same in a farmer – friendly mode the existing out-dated technology transfer aids be replaced with updated modern gadgets. The Project proposes to adopt one village each year to establish it as Model Livestock Village which will act as an open –air laboratory for other farmers to visit and learn. The model village will be developed to have self – sufficiency in fodder production and adopt new scientific technologies in farming systems. The Livestock in this village will have optimum and commendable Productive and Reproductive traits with zero disease outbreaks. The entire household possessing Livestock will be trained on livestock farming. The project also proposes to strengthen the existing audio visual aids in the training centre with modern, updated gadgets to articulate the message effectively to farmers. he project further proposes to improve the learning atmosphere in the existing training centres by undertaking essential renovation works. While the model Livestock villages establishment will be for all the four years, other infrastructural developments will be completed in the first year itself. The Tamil Nadu Veterinary and Animal Sciences University will implement this project through its Training Centre located at Dharmapuri / Krishnagiri with total cost of Rs.52.00 lakhs for 4 years.

Budget

(Rs. in lakhs)

Project	Total amount
1. Establishment of model livestock village to educate farmers	36.00
2. Strengthening of Training equipments for Technology dissemination at VUTRC	16.00
Total	**52.00**

Background / Problem Focus

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

Project Rationale

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

Project Strategy

- Establishing Model Livestock Village for demonstration to farmers will act as an open laboratory for farmers to learn. The village will have self sufficiency in fodder, High yielding animals, integrated farming system, Livestock information centre etc.
- Strengthening the training equipments in the existing Training centres with modern updated electronic gadgets.

Project Goal

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

Project Components

- One village in each year will be adopted and developed in to a model livestock village which will have the followings:
  - Micro level fodder units
  - Existing cows will be managed to have optimum productive and reproductive trails
  - Intensive scientific rearing of sheep and goat units
  - Genetic upgradation of ND goats with Artificial insemination with Boer semen
  - Integrated Livestock farming systems
  - Clean milk production
  - Farming systems with other poultry species and
  - Technology backed backyard poultry

- Strengthening of Training equipments for conducting capacity building and Technology dissemination programmes at the Veterinary University Training Centre, Dharmapuri with Slide Projector, Projection screen, Digital camera, Lap Top, LCD Projector, DVD Player, Vehicle mounted with Television and other audio visual aids for conducting off-campus Training and village level campaigns, Shamina, Chairs and Tables for trainees, Copying machine, Fax and Furniture for Trainees Hostel

Project Cost and Financing

(Rs. in lakhs)

Project	2008-2009	2009-2010	2010-2011	2011-2012	Total amount
1. Establishment of model livestock village to educate farmers @ Rs. 9 lakhs / unit in 4 villages (TANUVAS)	9.00	9.00	9.00	9.00	36.00
2. Strengthening of Training equipments for Technology dissemination at VUTRC with Slide Projector, Projection screen, Digital camera, Lap Top, LCD Projector, DVD Player, Vehicle mounted with Television and other audio visual aids (TANUVAS)	16.00	0	0	0	16.00
Total	**25.00**	**9.00**	**9.00**	**9.00**	**52.00**

Implementation Chart of the Project

Project	2008-2009	2009-2010	2010-2011	2011-2012
1. Establishment of model livestock village to educate farmers (TANUVAS)	✓	✓	✓	✓
2. Strengthening of Training equipments for Technology dissemination at VUTRC (TANUVAS)	✓			

Reporting

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

F. Establishment of Farmers' Training Centre for Capacity Building

Abstract

The farmers in Krishnagiri district have taken up Livestock farming in a big way. The district produces 1.69 lakh tonnes of milk and 172.16 lakh eggs annually. In spite of having 2.99 and 0.19 lakh heads of cattle and buffaloes the district ranks 16th and 17th position respectively in milk and egg production in the state. Lack of awareness and training in modern livestock farming systems have seriously affected the skill of livestock growers in this district. The livestock growers in Krishnagiri district have to travel to Dharmapuri or Vellore which are about 150-200 kms for getting the skill development training programmes. The Tamil Nadu Veterinary and Animal Sciences University has 16 training centres to impart training and capacity building programmes district at district head quarters. However no such training centre exists in Krishnagiri district. This proposal aims to establish a training centre for providing capacity building programmes to farmers of Krishnagiri district at a total cost of Rs.50.00 lakhs. The Tamil Nadu Veterinary and Animal Sciences University will implement this project.

Budget

(Rs. in lakhs)

Project	Total Cost
Establishment of farmers' training centre for providing capacity building programmes (TANUVAS)	50.00

Background / Problem Focus

The district of Krishnagiri possesses high population of high yielding milch animals with average lactation yield of about 2027 kg. The district ranks 16th in state milk production. However the livestock growers in this district have to travel to either Dharmapuri or Vellore which is about 150-200km away to get skill development trainings. The Tamil Nadu Veterinary and Animal Sciences University has 16 Training centres to impart training on felt need of the end users, practicing farmers and officers of the line department. However no such training centre is available for the Livestock growers of Krishnagiri district.

Project Rationale

Extension services are the tools for technology transfer to improve the production potential of the livestock and also the socio economic condition of the farmers. The skill of farmers has to be updated periodically and hence the capacity building programmes are to be offered continuously.

Project Strategy

The Tamil Nadu Veterinary and Animal Sciences University will establish a Training and Research Centre at the district head quarters in Krishnagiri district. The centre will be operated with highly qualified professional technical staff and offer capacity building and training programmes to livestock growers in this district.

The centre will function to achieve the following objectives

- To impart training on the felt need of the end users, practicing farmers and officers of the line department.
- To act as a two way channel between University and the farmers to identify the field based livestock and poultry problems and also to pass on remedial measures.
- To conduct on farm trails on the latest research findings of the University and the field oriented problems specific to the area.
- To ensure an immediate and thorough diagnosis of disease in the event of an out break with special emphasis on disease reporting system.
- To motivate and encourage in establishing livestock and poultry farms for self employment by the local farmers.
- To collaborate with state and central sponsored rural development programme.
- To develop and maintain data base on livestock / poultry in the area.
- To carry out short term need based location specific projects.

Project Goal

To provide capacity building and hands on training programme to livestock growers in Krishnagiri district for improving their skill in scientific livestock farming.

Project Components

Establishment of Training and Research centre having training hall, exhibition hall, audio- visual laboratory, library, office, demonstration hall, farmers' hostel, etc., at a total cost of Rs.50.0 lakhs. The detailed project cost is as follows :

S.No.	Particulars	Cost (Rs. in lakhs)
1.	Civil works (Building)	25.00
2.	Fencing	10.00
3.	Equipments	
	a. Laminar air flow	0.50
	b. Centrifuge	0.50
	c. Air conditioner	2.00
	d. Deep freezer	1.00
	e. Spectrocytometer	1.00
	f. Analytical instrument	10.00
Total		**50.00**

Project Cost and Financing **(Rs. in lakhs)**

Project	2008-2009	2009-2010	2010-2011	2011-2012	Total amount
Establishment of farmers' training centre for providing capacity building programmes (TANUVAS)	50.00	-	-	-	50.00

Implementation Chart of the Project

Project	2008-2009	2009-2010	2010-2011	2011-2012
Establishment of farmers' training centre for providing capacity building programmes (TANUVAS)	✓			

Reporting

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

G. Capacity building and technology transfer programmes

Abstract

Extension services provide the much needed information resource and develop the skill of Livestock growers to adopt newer technologies. Capacity building is a continuous process having the components of Training, Village level meetings, Demonstrations, Learning by seeing, etc., The project aims to update the livestock growers with recent scientific interventions and develop their skill to adopt them. This project proposes to conduct year – round off-campus and on-campus training programmes, village level campaigns on scientific system of Livestock farming, conducting skill development programmes to technical staff, workshops and exposure visit. All the programmes

proposed will be implemented for 4 years at a total cost of Rs.24.90 lakhs. While all the trainings to farmers and study tour to Research Stations will be conducted by the Tamil Nadu Veterinary and Animal Sciences University through its proposed training centre at Krishnagiri the skill developmental programmes, study tour for milk pourers of Co-operative societies and workshop for milk producers at society level will be implemented by the Department of Dairy Development.

Budget

(Rs. in lakhs)

Project	Total amount
1. Training programmes and village level campaign on livestock (TANUVAS)	13.20
2. Study tour of farmers to livestock and poultry research station @ 50 persons/batch with the cost of Rs 25.00/batch (TANUVAS)	1.00
3. Farmers study tour @ Rs.5000/- per farmer (DDD)	7.50
4. Orientation training / workshop for milk producers at society level (DDD)	3.20
Total	**24.90**

Background / Project Focus

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

Project Rationale

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

Project Strategy

- Conducting off -campus and on -campus Training programmes and village level campaigns on scientific system of Livestock farming.
- Conducting farmers study tour to expose them to various organized farms and Research Stations.
- Providing orientation Training / Workshop for milk pourers at society level.

Project Goal

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

Project Components

- Conducting 32 Training programmes and 12 village level campaigns on Livestock Production to farmers at a total cost of 13.20 lakhs
- Conducting exposure visit to Research Stations in 4 batches of 50 farmers each / year at a total cost of Rs.4.00 lakhs
- Conducting study tour to 150 continuous milk pourers annually to organized dairy farms and Dairies at a total cost of Rs.7.50 lakhs
- Conducting 4 workshops annually for 4 years to milk pourers at society level at a total cost of Rs.3.20 lakhs

Project Cost and Financing

(Rs. in lakhs)

Project	2008-2009	2009-2010	2010-2011	2011-2012	Total amount
1. Training programmes and village level campaign on livestock @ Rs. 3.30 lakhs for conducting 8 training programmes and 3 village level campaigns per year for 4 years (TANUVAS)	3.30	3.30	3.30	3.30	13.20
2. Study tour of farmers to livestock and poultry research station @ 50 persons / batch with the cost of Rs.0.25 lakh/batch/year for 4 years (TANUVAS)	0.25	0.25	0.25	0.25	1.00
3. Farmers study tour @ Rs.5000/- per farmer for 150 farmers (DDD)	2.0	2.0	2.0	1.50	7.50
4. Orientation training / workshop for milk producers at society level @ Rs.0.2 lakhs/ training for 4 trainings / year for 4 years (DDD)	0.80	0.80	0.80	0.80	3.20
Total	**6.35**	**6.35**	**6.35**	**5.85**	**24.90**

Implementation Chart of the Project

Project	2008-2009	2009-2010	2010-2011	2011-2012
1. Training programmes and village level campaign on livestock (TANUVAS)	✓	✓	✓	✓
2. Study tour of farmers to livestock and poultry research station @ 50 persons/batch with the cost of Rs 25.00/batch (TANUVAS)	✓	✓	✓	✓
3. Farmers study tour @ Rs.5000/- per farmer (DDD)	✓	✓	✓	✓
4. Orientation training / workshop for milk producers at society level (DDD)	✓	✓	✓	✓

Reporting

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

6.4 FISHERIES SECTOR

Table 6.11: Project Proposal – Fisheries Sector – 2008 – 2012

(Rs. in Lakhs)

Sl. No.	Components	Implementing Agency	Unit cost Rs.in lakh)	Total units	2008-09		2009-10		2010-11		2011-12		Total cost (Rs.in lakh)
					Units	cost	Units	cost	Units	cost	Units	cost	
1	Strengthening of Government Fish Seed Rearing Centres. Krihsnagiri.	Fisheries Department	0.017	60960			6096.00	103.60					103.60
2	Development of post harvest infrastructure in selected landing centers	Fisheries Department	3.00	40	1.00	3.00	1.00	3.00	1.00	3.00	1.00	3.00	12.00
3	Supply of Fishing implements with 50%subsidy	Fisheries Department	0.10	50	10.00	1.00	20.00	2.00	10.00	1.00	10.00	1.00	5.00
4	Expansion of fish culture by providing subsidy 50% assistance	Fisheries Department	0.01	2000	500.00	2.50	500.00	2.50	500.00	2.50	500.00	2.50	10.00
5	Retail outlet	TNFDC	10.00	10	1.00	10.00							10.00
6	Subsidy for quick transportation (Moped with Ice Box) (50% subsidy)	TAFCOFED	0.15	30	10.00	1.50	10.00	1.50	10.00	1.50			4.50
7	Cage Culture for seed rearing (50% subsidy)	Fisheries Department	0.075	10	10.00	0.75							0.75
8	Creation of Farm ponds at 50%subsidy	Fisheries Department	0.28	20	5.00	1.40	5.00	1.40	5.00	1.40	5.00	1.40	5.60

Table 6.11 contd…

Sl. No.	Components	Implementing Agency	Unit cost Rs.in lakh)	Total units	2008-09		2009-10		2010-11		2011-12		Total cost (Rs.in lakh)
					Units	cost	Units	cost	Units	cost	Units	cost	
9	Desilting of Barur Tank	Fisheries Department	5.00	5	5	25.00							25.00
	Fisheries - Total					**45.15**		**114.00**		**9.40**		**7.90**	**176.45**
1	Establishment of endemic ornamental fish culture unit	TANUVAS	10.00	1	1	10.00							10.00
2	Farmers training	TANUVAS	0.10	250	50	0.50	100	1.00	50	0.50	50	0.50	2.50
3	River ranching of native fish varieties (100% grant)	TANUVAS	20.00	1.00	1.00	20.00							20.00
	TANUVAS - Total					**30.50**		**1.00**		**0.50**		**0.50**	**32.50**
	Grand Total					**75.65**		**115.00**		**9.90**		**8.40**	**208.95**

V. Project

1) Strengthening of Government Fish Seed Rearing Centres, Krishnagiri.

Abstract

The Department has fish seed rearing farms at Krishnagiri and Pambar. Out of the total area of 22917 sq.mt, only 16821 sq.mt are under useable conditions and remaining 6096 sq.mt are under repair. The details are given below.

Sl.No.	Name of the Farm	Rearing Space	
1.	Krishnagiri Old Farm	3,142.00 Sq. mt.	Repaired condition
2.	FFDA Farm	7,210.07 Sq. mt.	Repaired condition
3.	New Farm	10,370.00 Sq. mt	Used condition
4.	Pambar Fish Farm	2,195.00 Sq. mt.	Used condition

Budget : Rs. 103.60 lakhs

Background / Problem Focus

Strengthening the existing seed farm is eventual is view of the need for increased seed rearing. The repair work in the existing nursery ponds will be rebuilt in the enhanced seed production and thereby the culture production can be increased Krishnagiri district being the potential district for freshwater aquaculture, the repair work will be good use for increasing fish production.

Project Rationale

The proposed in more pertinent in the current seed demand situation in the district. Therefore the present project in proposed with the rationale of unmoving the fish seed supply situation in the district.

Project Strategy

- To strengthening the Government fish seed rearing centres at Krishnagiri for efficient fish seed production.
- To supply fish seeds for stocks in the district waterbodies.

Project Goals

The following are the goals of this project

- Renovation and repairing of the existing seed production facility
- Increasing seed rearing area by brining in unused nursery ponds into fish rearing.
- Supply of fish seeds to the needy farmers.

Project Components

The project is convicting of

a) Repair and renovation of existing nursery ponds.
b) Strengthening the seed farm with required support facilities.

Project cost and financing

1 year - Rs. 103.60 lakhs

Excavation of nursery ponds	: 40 lakhs
Repair and renovation	: 40 lakhs
Stone pitching and plastering	: 23.6 lakhs
Total	**: 103.6 lakhs**
Cost of repair works per unit	: Rs.0.017 lakhs (Rupees 1700/m2)
No. of units to be repaired	: 6096 M2
Total cost	**: 103.6 lakhs**

Implementation Chart of the Project

Sl. No.	Particulars	2008-09	2009- 10	2010 -11	2011-12
1.	Repair & Renovation of Krishnagiri old farms	√			
2.	Repair & renovation of FFDA	√			
3.	Repair & renovation new farm	√			
4.	Repair & renovation fish farm	√			

Reporting

Progress of the project will be reported periodically.

2) Development of post harvest infrastructure in selected landing centres.

Abstract

Fish is a perishable commodity. In most of the reservoir there is no proper hygienic fish landing facilities. Hence it is proposed to develop fish landing centres with fish marketing facilities. The proposed landing centre will have fish landing area, modern retail outlet. The total cost would be Rs. 3.00 lakhs per landing centres. It is proposed to establish 4 units in the 4 reservoirs.

Budget : Rs. 12.00 lakhs

Background / Problem Focus

Infrastructure development in post harvest is loading. Quick transportation of the harvested inland fisheries is not possible in the remote areas, where reservoirs are located.

Project Rationale

1. Good scope for retail outlet at Hosur.
2. For hygienic handling of landed inland fish along the reservoir or dam site landing centre is essential.
3. The produce has to be sold than a modernized retail market for fetching optimal price for the consumers.
4. Fish farmers have to the encouraged for marketing their fish produce at consumers preference.

Project Strategy

1. Establishing fish landing area
2. To establishing modern retail outlet
3. Encouraging the fish farms for availing the maximum profit with consumer preference

Project Goals

- ❖ To established four landing centre along the reservoir site.
- ❖ To establish modern retail outlet in the appreciable area of Krishnagiri district.
- ❖ To enable the fish produce to be sold at higher price.
- ❖ To help the fisheries sector with exposure to modern development.

Project components

- ➢ Fish landing centre
- ➢ Fish retail outlet / market

Project Cost and financing

Total units	:	4
Total Cost	:	Rs. 12.00 lakhs at Rs.3.00 per unit

1.	Refrigerated display unit 200 *l*. capacity for storage of 100 kg fish each	1.00	2	2.00
2.	Deep freezer 200 *l* capacity	0.40	2	0.80
3.	Electronic balance	0.10	1	0.10
4.	Electronic billing machine	0.10	1	0.10
	Total			**3.00**

Implementation chart of the project

Sl. No.	Particulars	2008-09	2009- 10	2010 -11	2011-12
1.	Construction of post harvest infrastructure at first landing centre	√			
2	Construction of post harvest infrastructure at second landing centre		√		
3	Construction of post harvest infrastructure at third landing centre			√	
4	Construction of post harvest infrastructure at fourth landing centre				√

Reporting

The progress report / Annaual report of the project will be reported to the concerned authorities.

3) Supply of fishing implements (Gear) 50% subsidy

Abstract

Fishermen will be provided with gill nets for effective fishing.

Budget **:** Rs 5.00 lakhs

Background / Problem focus

To provide gillnets to the fishermen at 50% subsidy

Project Rationale / Project Strategy / Project Goals

- To enhance fish production through capture fisheries.
- To provide 200 nos. of gillnets to the inland fishermen.
- To intervene fishing in natural water bodies.

Project Components

Supply of gillnets at 50% subsidy

Project Cost and Financing :

Unit cost (cost of fishing Gear)	:	Rs.0.1 lakhs
Nylon webbing	:	RS 0.05
Nylon rope	:	Rs. 0.025
Floats and sinkers	:	Rs 0.025
Number of units	:	50
Total cost (50 X 0.1)	:	5 lakhs

Implementation Chart of the Project

S.No	Particulars	2008-09	2009-10	2010-11	2011-12
1.	Selection of boats	√			
2.	Supply of gears /implements		√	√	√

Reporting

The progress of the project will be reported periodically.

4) Expansion of Fish Culture by Providing Subsidy 50% Assistance

Abstract

The project aims to cover 2000 ha of freshwater bodies additionally to bring under freshwater fish culture of the total 19366.6 ha as long seasonal irrigation tanks, short seasonal tanks and others, extending subsidy assistance for stocking fingerlings. The Annaual fish production from these water bodies at present is 4841 tonnes.

Budget : Rs.10.0 lakhs

Background / Problem Focus

In Krishnagiri district, about 2000 ha water areas are yet to be brought for freshwater fish culture or aqua farming. So far there is no encouragement to fish farmers to stock fish seeds with subsidy at 50%. This would ensure fish production to the tune of 9600 tonnes of fish addition to the existing fish production of

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Project Rationale / Project Strategy

- Hitherto unutilized water bodies will be stocked at 2000 fingerlings per ha.
- Stocking of 2000 fingerlings at 500 ha each in the four years of the plan period.
- A subsidy amount t of Rs. 2.5 lakhs will be provided every year to the fish farmers for undertaking fish culture

Project Goals

- To select suitable fishermen or fish farmers for extending subsidy for stocking of fish seeds in water bodies
- To stock 5000 fish fingerlings every year through subsidy at 50%
- To achieve additional fish production to the level of 9600 tonnes Annaually

Project Components

- Water bodies from selection
- Fish seeds / fingerlings
- Subsidy at 50%

Project cost and financing - Rs. 10.00 lakhs

Purchase	:	Rs. 800
Packing and transport	:	Rs. 200
Total	:	Rs.1000
Subsidy	:	Rs.500
Area to be covered	:	Rs.2000 ha
Total; cost 2000 x 500	:	10 lakhs

Implementation Chart

S.No	Particulars	2008-09	2009-10	2010-11	2011-12
1.	Selection of participants	√	√	√	√
2.	Stocking fish fingerlings	√	√	√	√
3	Assessment of fish production	√	√	√	√

Reporting

The progress report will be reported periodically.

5) Establishment of Endemic Ornamental Fish Culture & breeding

Abstract

Ninety five per cent of our ornamental fish export is based on wild collection. Majority of the indigenous ornamental fish trade in India is from the North Eastern states and the rest is from Southern states which are the hot spots of fish bio diversity in India. This capture based export is not sustainable and it is a matter of concern for the industry. In order to sustain the growth it is absolutely necessary to shift the focus from capture to culture based development. Moreover most of the fish species grown for their ornamental importance can be bred in India successfully. Organised trade in ornamental fish depends on assured and adequate supply of demand, which is possible only by mass breeding

Budget : Rs. 10.00 lakhs

Background/Problem Focus

Ornamental fish keeping is one of the most popular hobbies in the world today. The growing interest in aquarium fishes has resulted in steady increase in aquarium fish trade globally. The trade with a turnover of US $ 5 Billion and an Annaual growth rate of 8 percent offers a lot of scope for development. The top exporting country is Singapore followed by Honkong, Malaysia, Thailand, Philippines, Srilanka, Taiwan, Indonesia and India. The largest importer of Ornamental fish is the USA followed by Europe and Japan. The emerging markets are China and South Africa. Over US $ 500 million worth of ornamental fish are imported into the USA each year. India's share in ornamental fish trade is estimated to be Rs 158.23 lakhs which is only 0.008% of the global trade. The major part of the export trade is based on wild collection. There is very good domestic market too, which is mainly based on domestically bred exotic species. The overall domestic trade in this field cross 10 crores and is growing at the rate of 20 per cent Annually. The earning potential of this sector has hardly been understood and the same is not being exploited in a technology driven manner. Considering the relatively simple technique involved, this activity has the potential to create substantial job opportunities, besides helping export earnings.

Project Rationale

Among the various aquaculture practices, ornamental fish culture is gaining momentum at present. There is much scope for self employment opportunities in this trade. Tamilnadu has sufficient potential for the development of ornamental fish culture in terms of land , water and labour resources, If the ornamental fish breeding is taken up by farmers, rural youth, women self help groups considerable quantities of ornamental fishes could be produced. This in turn could contribute considerably to GDP growth of our nation besides alleviating poverty.

Project Strategy

i) Breeding of live bearing ornamental fishes such as molly, guppy, plat and swordtail fish and egg laying ornamental fishes like gold fish, koi carp, fighter, gourami and oscar fish.
ii) Production of healthy young ones
iii) Development of good quality broodstock
iv) Selling of ornamental fishes

Project Goals

i) To breed ornamental fishes and selling to the public
ii) To increase the family income and to improve the socio economic status of the farmers, women self help groups and to create employment through aquariculture by quality broodstock supply.

Project Components

Work Shed, Cement tanks, Glass tanks, Heater, Filter, Other aquarium accessories

Project Cost and Financing

Total cost : Rs. 10.00 lakhs

Sl.No.	Particulars	Cost (Rs. in Lakhs)
1.	Rearing Pond. Size 1 ha (Earthen and Cement tanks) (Excavation and construction cost)	3.00
2.	Cost of digging Bore well, pump	2.00
3.	Aerator	0.50
4.	Nets, velon screen, oxygen cylinder	0.20
5.	PVC pipe line to all the ponds	1.00
6.	Operating cost (seed cost, feed cost, medicines)	1.50
7.	Labour cost including watch man	1.00
8.	Power supply, post, light wiring, etc.	0.80
	Total	**10.00**

Implementation Chart

S. No	Particulars	2008-09	2009-10	2010-11	2011-12
1.	Construction of fish tanks	√			
2.	Conditioning of breeders		√		
3	Breeding of fishes			√	
4	Sale of fishes				√

Reporting

The progress of the work will be intimated once in 3 months to the reporting

6) Retail Outlet

Abstract

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

Budget : Rs. 10.00 lakhs

Background / Problem focus

The modern fish retail outlet will be used to keep the excess stock until selling.

Project Rationale / Project Strategy / Project Goals

- To avoid fish spoilage & loss of quality & revenue.
- The facility will be established at Krishnagiri.
- To avoid loss of revenue this outlet will be established.

Project components

I year - One retail market

Project Cost and Financing

It is proposed to set up Modern Retail outlet in Hosur. The unit cost will be Rs.10.00 lakhs. **(Rs. in Lakhs)**

Sl.No.	Particulars	Cost
1.	Land Development of 750 sq.mt including water facilities compound wall, drainage grill gates and floor etc.	2.00
2.	Fabrication and installation of Modern fish stall	6.00
3.	Fish storage cabin	1.00
4.	Glass Display Cabinet	1.00
	Total	**10.00**

Implementation Chart of the Project

S.No	Particulars	2008-09	2009-10	2010-11	2011-12
1.	Construction of retail outlet	√			

Reporting

The progress report will be reported periodically to TNFDC.

7) Subsidy for quick transportation (Moped with Ice Box) (50% subsidy)

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 / Project Strategy / Project Goals

Fishermen and vendors will be provided with ice box and mopeds could help make available of the fish produce in time with quality retention. Making available mopeds and ice box at affordable price to meet the fishermen needs. 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

Cost of unit	:	0.15 Lakhs
Cost of the moped	:	0.25
Ice box	:	0.05
Total cost	:	0.3
Subsidy	:	0.15 (@ 50 %)
No of units	:	30 units
Total cost 30 x 0.15	:	4.5 lakhs

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

Implementation Chart of the Project

TAFCOFED will be implementing this project.

Reporting

Progress of the project will be reported periodically.

8) Farmers training

Abstract

To conduct training programmes on fisheries 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. 2.50 lakhs

Background / Problem Focus

To impart knowledge on scientific fish farming in order to enhance fish production.

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 one 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.	DA/TA for participants	4000
2.	Extension materials	4000
3.	Refreshments	2000
Total		**10000**
Total number of participants 25 x Rs.10000		**2.5 lakhs**

Implementation of Chart of the Project

S.No	Particulars	2008-09	2009-10	2010-11	2011-12
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

9. Cage Culture for Seed Rearing (50% Subsidy)

Abstract

Krishnagiri district has 2001 ha reservoirs, 8106 ha of seasonal irrigation tanks and 9258 h short seasonal ponds. They can be utilized for open water fish seed rearing by extending 50% subsidy to the farmers for fabrication of suitable floating cages.

Budget **:** Rs.0.75 lakhs

Background/Problem Focus

The district show sudden spurt in fish seed demand soon after the onset of the North East monsoon. Fish seed rearing in cages will help maintaining the seed stock to meet the seed requirements at times of emerging situations. Cage culture also offers additional income to the farmers.

Project Rationale

The expected inland fish production in Krishnagiri district is 4471 tonnes per Annaum value of Rs.17.88 crores. The additional increase in fingerlings production is 179 lakhs. This would assure employment opportunities to the rural poor. The post harvest infrastructure created will make the consumers to get quality fish.

Project Strategy

- Making use of the open water system for fish seed rearing in cages
- Expecting more recovery of the fish seeds from the open water system
- Meeting the fish seeds requirements in time
- Enhancing to seed production in the larger water bodies
- Ensuring quality fish seeds for stocking
- Additional income to the fish farmers

Project Goals

- To make use of the open water system for fish seed rearing in cages
- To get more recovery of the fish seeds from the open water system
- To meet the fish seeds requirements in time
- To enhance to seed production in the larger water bodies
- To ensure quality fish seeds for stocking

Project components

- Identification of interested fish farmers for availing subsidy -50%
- Cage fabrication and fish seed stocking
- Rearing, fish feed, monitoring of the programme

Project Cost and Financing

Cost of Cage fabrication : Rs.5000/-

Cost of fish seed and stocking : 1000

Cost of fish feed : 1500

Total : 7500

Total units : 10

Total amount : Rs.0.75 lakhs

Implementation Chart

Sl.No.	Activity	2008-09	2009-10	2010-11	2011-12
1.	Selection farmers	√	√	√	√
2.	Selection of water body	√	√	√	√
3.	Fabrication of cages and supply	√	√	√	√
4.	Seed stocking and rearing in cages and restocking in the water bodies or selling	√	√	√	√

Reporting

The functioning and progress of the work will be periodically monitored by State Fisheries Department Officials and reviewed by the Commissioner or Joint Director of Fisheries

10) Creation of Farm Ponds at 50% Subsidy

Abstract

The fisheries Department is developing Farm ponds in the fields of farmers to facilitate aquaculture, rainwater harvesting and irrigation of the crops during critical periods. The concept of farm ponds excavation is prioritized on fish cultures so as to utilize these ponds at the source of additional income to the farmers.

It is anticipated that above 20 farm ponds each with 0.10 ha water spread area and with minimum of 1.50 mt depth to ensure water retention for the period of 5 to 6 months shall be developed in the District to encourage the farmers to take up fish culture.

Budget : Rs. 5.60 lakhs

Background/Problem Focus

A lot of unutilized area needs to be brought into use for fish culture

Project Rationale

This would facilitate increase fish production and meet the demand

Project Strategy

- Making use of the waste land for fish culture
- Additional income to the fish farmers

Project Goals

- To make use of the waste land for fish production
- To increase the fish production
- To meet the fish requirements in time
- To enhance to fish production of the district
- To ensure quality fish protein

Project Components

- Identification of interested fish farmers for availing subsidy -50%
- Creation of new pond facility
- Fish cultivation in new ponds

Project Cost and financing

Excavation	:	Rs.25000
Bund formation	:	Rs. 5000
Inlet and outlet provision	:	Rs. 5000
Fingerling cost	:	Rs. 1000
Feed cost	:	Rs.10000
Fertilizer and manure cost	:	Rs. 500
Equipments and implements	:	Rs. 9500
Total	:	Rs. 56000
Subsidy amount	:	Rs. 28000(0.28)
Number of units	:	20
Total cost	:	5.6 lakhs

The functioning and progress of the work will be periodically monitored by State Fisheries Department Officials and reviewed by the Commissioner or Joint Director of Fisheries

Implementation chart in the project

Sl. No.	Activity	2008-09	2009-10	2010-11	2011-12
1.	Establishment of 5 farm ponds	√			
2.	Establishment of 5 farm ponds		√		
3.	Establishment of 5 farm ponds			√	
4.	Establishment of 5 farm ponds				√

Reporting

The project will be implemented by Department of Fisheries.

11) River ranching of native fish varieties (100% grant)

Abstract

The development of native fish species in the Pennaiyar River system. It is proposed to River ranching of native fish varieties with a availability of existing farm area of Krishnagiri fish farm. River ranching project will protect the native species and also development of fishery wealth of indigenous varieties of Pennaiyar River. This project is very much essential to safe guard the native fishery wealth of this District.

Budget : Rs. 20.00 lakhs

Background / Problem focus/ Project Rationale / Project Strategy / Project Goals

- Ranching of common fish species of riverine origin is expected to enhance the stock and save the endemic fish species. Pennaiyar flow in this district. Since there is depletion of stock, fish species such as labeos, puntius, rasboras, native catfish, aaral, murrel , glossogobius and similar fish species have to be grown in captivity , bred and rached into the rivers to enhance the stock.
- Restocking of riverine fish species
- Replenishment of running water bodies
- Conservation of riverine fishes
- Assisting the fishermen for livelihood
- Identification of riverine systems
- Identification of depleted riverine fish species
- Breeding in captivity
- Ranching of the seeds in the riverine systems
- To restock the river water bodies with native fish species
- To ranch the fish species at different localities of the chosen river systems with fishermen participation

Project Components

Native, endemic and river fish species ranching and replenishment

Project cost and financing

Project cost - Rs. 20.00 lakhs

Sl.No	Particulars	Amount (Rs. in lakhs)
1	Construction of ponds and hatcheries	10.00
2	Creation of laboratory facilities for breeding the fishes	3.00
3	Production of native fish species and rearing	5.00
4	Ranching of seeds in rivers	2.00
	Total	**20.00**

Implementation Chart of the Project

Sl.No	Particulars	2008-09	2009-10	2010-11	2011-12
1.	Construction of ponds and hatcheries	√	√		
2.	Creation of laboratory facilities for breeding the fishes		√		
3.	Production of native fish species and rearing		√	√	√
4.	Ranching of seeds in rivers		√	√	√

Reporting

The progress of the project will be reported to the TANUVAS

12) Desilting of Barur Tank

Abstract

In order to meet out the demand of freshwater fishes of this district, its proposed to renovate the existing damaged nurseries at Barur tank.

Budget : Rs. 25.00 lakhs

Background / Problem Focus

At present there are two Government fish seed production centres in this district. These two tanks are able to produce only 17.50 lakhs fingerlings per year, in spite of its higher potential. Therefore it is proposed to desilt Barur tank in order to increase water holding capacity and fish production.

Project Rationale / Project Strategy

- Desilting of Barur tank to increase the water holding capacity and improve
- fish production
- To increase the fish production through desilting of Barur tank.

Project Goals

Desilting of Barur tank in order to increase the water holding capacity so that year around fish production can be done.

Project Components

Desilting of Barur tank.

Project cost and financing

Project cost	: Rs. 25.00 lakhs
Area of the tank to be desilted	: 250 ha
Desilting cost	: Rs. 10000 per hectare

Implementation Chart of the Project

Barur tank will be Desilted during 11th five year plan period to increase water holding capacity.

Reporting

Quarterly progress will be reported to the monitoring agency regarding in the desilting of Barur tank.

6. 5 Agricultural Engineering – Action Plan - 2008-12

Krishnagiri district is having very low irrigation potential and over-exploitation of groundwater to a great extent has aggravated the problem further. Therefore, suitable soil and water management interventions need to be advocated with immediate concern in order to reap the fruits in the long run. Agricultural operations, at present, mainly depend on manual labour. Agricultural labourers migrate to urban centres in search of various other jobs which pay more than agriculture. Moreover, agricultural operations by manual labour takes more time and are not efficiently done. These problems relating to agricultural laborers need to be focused on and suitable interventions are advocated.

i) Project Rationale

By resorting to suitable interventions like introduction of newly developed agricultural machinery / implements and popularizing the existing machinery / implements by way of supplying them to the farming community @ subsidized rates, the farmers would realise the advantages of machineries and associated benefits. This will largely help in overcoming the problem of labour shortage and also in timely agricultural operations and in the reduction of the recurrent cost of agricultural operations to a great extent. This will also indirectly result in the enhancement of the farmers' income and make the country self sufficient. Importing food grains from other countries will also come to a grinding halt thereby saving foreign exchange.

ii) Project Strategy

A. Agricultural Mechanization

This project of supplying agricultural machinery / implements to the farming community @ subsidized rates is programmed to be implemented in the following ways:

a) Collecting applications from the needy farmers (of course, after due motivation) for their requirement of machinery / implement, manufactured by the company of their choice.

b) Arrangements with the approved manufacturing companies / dealers for the supply of machinery / implement and release of subsidy.

c) MOU between the supplier and the Executive Engineer (AE), for warranty and after sales service and

d) Coordinating with the bankers to arrange for loans to meet the beneficiaries' contribution portion

This may, of course, require concerted effort by the Agricultural Engineering Department, the Bankers and the District Administration.

B**. Soil and Water Management**

This project of Soil and Water Management is programmed to be implemented in the following ways:

a) Identifying the needy and feasible areas taking into consideration of the felt needs of the farmers.

b) Coordinating with the direct and indirect beneficiaries of the proposed works and also with the local bodies;

c) Arranging for the collection of the beneficiaries' contribution portion;

d) Executing the works in cooperation with the local beneficiaries;

e) Handing over the works to the local beneficiaries / local bodies; and

f) Monitoring and Evaluation.

his may, of course, require concerted effort by the Agricultural Engineering Department, the Farmers' Forums and the Local bodies.

i) Project Goals

a) To create an awareness among the farmers towards the adoption of machinery.

b) To achieve the ambitious goal of complete mechanized farming.

c) On achieving this, the efficiency of agricultural operations will be substantially increased leading to the enhancement of the farm income.

d) To create an awareness among the farmers towards the need for conserving soil and water;

e) To motivate the farmers by way of constructing the soil and water management devices with subsidy;

f) To achieve the ambitious goal of harnessing the entire rainwater and use it for groundwater recharge and also arresting the soil erosion completely.

g) On achieving this, the productivity of the farm per unit of the rainfall is envisaged to be substantially increased leading to the enhancement in the farm income.

ii) Project Components

On a broad categorization, there are two components

1. Supplying agricultural machinery / implements to the individual farmer at subsidized rates. The machinery / implements include

- Mini combine harvester (TNAU model)
- Power weeder with attachments
- Power thrasher
- Paddy transplanter
- Post hole digger
- Coconut De-husker
- Knapsac power operated Hydraulic Sprayer
- Chisel plough

- Power tiller
- Rotavator
- Cultivator
- Offset disc harrow
- Disc plough.
- Gender Friendly Equipments etc.

2. Providing innovative water harvesting structures at 100 percent subsidy, in the individual landholdings.

3. Providing other water harvesting structures

- Unlined farm ponds in individual land holdings @ 90 percent subsidy;
- Check dams, percolation pond and new village tanks in Govt. owned streams @ 100 percent subsidy.

4. Providing Soil Conservation structures in individual holdings @ 90 percent subsidy

- Compartmental Bunding, Land shaping and Terrace support wall.

5. Providing Water Management infrastructure @ 90 percent subsidy in individual landholdings

- PVC Pipe Laying and Ground Level Reservoirs.

iii) Implementation Chart of the Project

The project is programmed to be implemented in a staggered manner over a span of four years commencing from 2008-2009. Year wise and component wise detailed programme is furnished.

iv) Reporting

The monitoring and evaluation of the project shall be handled by the competent agency to he prescribed by the Government. The details of financial component are furnished in Table 6.12 and Table 6.13.

Table 6.12. Financial Abstract of Agricultural Engineering Sector 2008-12

(Rs.in lakhs)

S.No	Components	2008-2009	2009-2010	2010-2011	2011-2012	Total Subsidy Cost
Stream I	**Agricultural Mechanization**					
a	Introduction of Newly developed Agricultural Machinery/Implements	4.35	5.70	4.48	4.68	**19.21**
b	Innovative water harvesting structures	2.00	2.00	2.00	2.00	**8.00**
	Total	6.35	7.70	6.48	6.68	**27.21**
Stream II	**Soil and Water management**					
a	Popularization of Agricultural Mechanization through conventional machinery/equipments	10.34	10.34	10.34	10.34	**41.34**
b	Water Harvesting structure	79.00	94.00	77.75	95.25	**346.00**
c	Soil conservation works	25.20	26.55	26.55	25.20	**103.50**
d	Water management works	24.30	24.30	24.30	24.30	**97.20**
	Total	138.84	155.19	138.94	155.09	**588.10**
	Grand Total	**145.19**	**162.89**	**145.42**	**161.77**	**615.27**

Table 6.13. Project Proposal of Agricultural Engineering Sector - 2008-2012

(Rs. in lakhs)

Sl. No.	Project Component Stream I	Unit Cost	Subsidy %	2008-09		2009-10		2010-11		2011-12		Total	
				Nos	Cost	Nos	Cost	Nos	Cost	Nos	Cost	Nos	Cost
I	**Introduction of Newly Developed Agricultural Machine & Implements**												
1	Mini combined Harvester TNAU model	2.50	50			1	1.25		0.00		0.00	1	1.25
2	Power weeder with attachment(all model)	1.00	50				0.00	1	0.50		0.00		0.50
3	Power Thrasher	1.00	50	1	0.50		0.00		0.00		0.00	1	0.50
4	Paddy Transplanter	1.40	50	1	0.70	1	0.70	1	0.70	2	1.40	5	3.50
5	Post hole digger	0.85	50	2	0.85	2	0.85	3	1.28	3	1.28	10	4.25
6	Coconut De-husker	0.6	50	3	0.90		0.90	2	0.60	2	0.60	10	3.00
7	Chisel plough	0.12	50	5	0.30		0.30	5	0.30	5	0.30	20	1.20
8	Knapsac power operated Hydraulic Sprayer	0.2	50	5	0.50		0.50	5	0.50	5	0.50	20	2.00
9	Gender friendly equipments	0.08	75	10	0.60	20	1.20	10	0.60	10	0.60	50	3.00
II	**Innovative Water Harvesting Structures**												
I	Rejuvenation of percolation pond with 2 recharge shafts	1	100	2.00	2.00	2.00	2.00	2	2.00	2	2.00	8	8.00
	Total			**29**	**6.35**	**39**	**7.70**	**29**	**6.48**	**29**	**6.68**	**126**	**27.21**

6.13 Table Contd..

Sl. No.	Project Component Stream II	Unit Cost	Subsidy %	2008-09		2009-10		2010-11		2011-12			Total
				Nos	Cost	Nos	Cost	Nos	Cost	Nos	Cost	Nos	Cost
I	**Popularization of Agrl. Mechanisation through Conventional Machinery / Equipments**												
	Power tiller	1.16	25	25	7.25	25	7.25	25	7.25	25	7.25	100	29.00
	Rotavator	0.90	25	10	2.25	10	2.25	10	2.25	10	2.25	40	9.00
	Cultivator	0.16	25	10	0.4	10	0.4	10	0.4	10	0.4	40	1.60
	Off set disc harrow	0.47	25	0	0	0	0	0	0	0	0	0	0.00
	Disc plough	0.35	25	5	0.4375	5	0.4375	5	0.4375	5	0.4375	20	1.75
II	**Water Harvesting**												
I	Farm pond-Unlined	0.50	90	10	4.50	10	4.50	10	4.50	10	4.50	40	18.00
2	Check dam-Minor	0.30	100	15	4.50	15	4.50	15	4.50	15	4.50	60	18.00
3	Check dam-Medium	0.75	100	10	7.50	15	11.25	15	11.25	10	7.50	50	37.50
4	Check dam-Major	1.00	100	15	15.00	10	10.00	10	10.00	15	15.00	50	50.00
5	Percolation pond	3.25	100	10	32.50	15	48.75	10	32.50	15	48.75	50	162.50
6	New village tank	1.50	100	10	15.00	10	15.00	10	15.00	10	15.00	40	60.00
III	**Soil Conservation work**												
	Compartmental bunding	0.03	90	500	13.50	500	13.50	500	13.50	500	13.50	2000	54.00
	Land shaping	. 0.1	90	100	9.00	100	9	100	9.00	100	9.00	400	36.00
	Terrace support wall	0.3	90	10	2.70	15	4.05	15	4.05	10	2.70	50	13.50
IV	**Water Management**												
	PVC Pipe laying	0.15	90	100	13.50	100	13.50	100	13.50	100	13.50	400	54.00
	Ground level Reservoir	0.8	90	15	10.80	15	10.80	15	10.80	15	10.80	60	43.20
	Total			**845**	**138.84**	**855**	**155.19**	**850**	**138.94**	**850**	**155.09**	**3400**	**588.10**
	Grand Total			**874**	**145.19**	**894**	**162.89**	**879**	**145.42**	**879**	**161.77**	**3526**	**615.27**

6.6. Strengthening of Agricultural Marketing and Agribusiness Development in Tamil Nadu

1. Current Status of Agribusiness

Agriculture, as a primary sector provides livelihood to 56 per cent of the population and contributes around 13 percent of the State GDP. In value terms between 65 and 75 percent 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 percent of industry output. The Government is taking efforts to achieve targeted growth rate of 4 percent in Agriculture during XI Plan period. Though fertile soil, good quality water and long period of sunlight which are the basic requirements for 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 transforming 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 manifold, by 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 and terminal markets have been taken up. To reduce the loss of the food products which are upto 30 percent, necessary provisions are made in the Agricultural Industrial Policy to ensure remunerative price to the produce, encourage food processing sector and export to earn foreign exchange by increasing the food processing from the present level of one percent to 10 percent of the total production, increasing value addition from seven percent to 30 percent. 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 each 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 percent could be achieved in horticulture. These growth rates have not eventuated largely because constraints identified in the Plan have not been overcome. These constraints include lack of modern and efficient infrastructure, poor technological support and post harvest management, underdeveloped and exploitative market structures, inadequate research and extension to address specific agricultural problems and linkages with farmers and industry. The strong relationship between agriculture and rural poverty means that current plans, policy and sector performance will be unable to address the needs of rural poor.

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

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

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

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

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

sections of farmers. The timely, quality and cost effective delivery of adequate inputs still remains a dream despite the marketing attempts of the corporate sector and the developmental programmes of the State. Also, the farmers are not able to sell their surplus produce remuneratively. There are plenty of distress sales among farmers both in agriculturally developed as well as backward regions in the State. There are temporal and spatial variations in the markets and the producers' share in consumers' rupee has not been satisfactory, except for a few commodities. In fact, in some commodities like tomato in some regions in the 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's 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 livelihood. 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 though effective producer organizations able to undertake joint decisions in production and marketing. Farmers have weak linkages with enterprises and often fail to link effectively to markets because of limited access to relevant market intelligence and inadequate market infrastructure. Farmers are also poorly linked to research and extension constitutions to address their specific technology and knowledge needs that would enable them to innovate into high value production systems.

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

Service providers 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 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 the current policy setting.

5. Project Rationale

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

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

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

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

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

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

6. The existing Government programmes 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 programmes.

6. Project Strategy

The project will promote the Agri-business practices and models required to support agribusiness development in Tamil Nadu, allowing the sector to contribute to economic growth, particularly in rural areas. New Agri-business practices will be introduced relating to: (i) farmers and entrepreneurs engaging service providers to solve

specific technology problems (ii) learning to work together in the value chain (iii) making effective use of market intelligence in decision making and (iv) making investments in supply chain infrastructure and market places.

7. Project Approach

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

8. Project Goals

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

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

The envisaged project's interventions will provide higher value for consumers, value that will be shared as distributed benefits to value chain stakeholders including farmers, entrepreneurs and workers. This will be achieved through activities that improve

business practices related to use of market information, investment in technology transfer and knowledge services, development of value chain linkages and investment in market infrastructure. The distributed benefits will provide incentive for ongoing involvement and further innovation from which the sector can extend its development.

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

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

9. Project Components

- Establishment/ organization of commodity groups for marketing in the State
- Facilitation of Contract Farming between farmers and bulk buyers in the State
- Dissemination of Market intelligence
- Arrangement of Buyers - Sellers Meet
- Organizing the exposure visits to important markets with in the state and out side the state by commodity groups / farmers and extension functionaries.
- Strengthening of market extension centre at each district/ block level for capacity building and dissemination of marketing information.
- Strengthening of selected village shandies
- Capacity building of farmer's skill
- Price surveillance
- Regulated Market and uzlhavar Shandies Publicity
- Market Infrastructure

10. Project Components Description

10.1 Establishment/Organization of Commodity Groups for Marketing in the State

i) Project Rationale

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

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

ii) Project Strategy

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

iii) Project Goals

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

iv) Project Components

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

v) Project Cost and Financing

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

In this project, it is proposed to organize eight commodity groups in paddy, ragi, maize, coconut, pulses, tomato, potato and cut flowers for marketing of agricultural commodities in Krishnagiri district over the period of four years. This will require resources of Rs 34.82 Lakhs for the period of four years. The details are presented in Table 6.15 A.

vi) Reporting

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

2. Periodical inspection to be undertaken by the Deputy Director (Agricultural Marketing and Agri Business)

10.2 Facilitation of Contract Farming between Farmers and Bulk Buyers in the State

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 income 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 not have staying power. Such arrangements are being encouraged to help in reducing price risks of farmers and to also expand the markets for farm products. It is to be noted that contract farming of sugarcane is going on for more than 50 years in Tamil Nadu. In case of cotton, maize and medicinal plants there are few cases of contract farming. Contract farming in milk, eggs and broiler production is successfully taking place in large scale in Tamil Nadu. The lessons taught in case of sugarcane, cotton and other commodities have to be taken into account during formulation of the project. For this, in this NADP programme, facilitation contract farming between the traders and producer is proposed.

ii) Project Strategy

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

iii) Project Components

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

iv) Project Cost and Financing

Arranging / organising Commodity groups involve several rounds of meeting with large number of farmers and traders, train the 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 Krishnagiri district for marketing of agricultural commodities in Tamil Nadu over the period of four years. This will require resources of Rs 2.34 lakhs for the period of four years. The details are presented in Table 6.15 A.

v) Reporting

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

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

10. 3. Dissemination of Market Intelligence

i) Project Rationale

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

The most important marketing information is price data. Agricultural price data are based on thousands or millions of transactions, many of them on a small scale, that are taking place every day all over the country. Collecting an adequate sample and

making sure that these are representative enough to be useful is not an easy task. As farmers become more market oriented, extension workers need to be in a position to advise them not only on how to grow crops but also on how to market them. Knowledge of produce handling, storage and packaging is also essential. An understanding of costs and margins is essential for all those involved in 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 Krishnagiri district over the period of four years. This will require resources of Rs.32.46 Lakhs for a period of four years. The details are presented in Table 6.15 A.

v) Implementation Chart of the Project

Implementation chart of the project is given in Table 6.15A.

vi) Reporting

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

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

10.4. Arrangement of Buyers - Sellers Meet

i) Project Rationale

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

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

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

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

There is increasing pressure on all segments of the agriculture produce economy to respond to the challenges that the global markets pose in the new post: World Trade Order.

Buyers and sellers meet would function 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 aspects of success i.e. technology and human resources. Besides display of agricultural commodities through exhibitions, the meet aspect covers all the latest market related interventions and provides need based solutions to farmers through direct contact with experts.

ii) Project Cost and Financing

In this project it is proposed to arrange for 31 buyers sellers meet in Krishnagiri district over the period of four years. This will require resources of Rs.6.66 Lakhs for a period of four years. The details are presented in Table 6.15 A.

10.5 Organizing the Exposure Visits to Important Markets with in the State and Outside the State by Commodity Groups / Farmers and Extension Functionaries

i) Project Rationale

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

process, for attaining the desired 4 percent growth during the XIth Plan period, reliance on known and proven technology is absolutely essential. Agriculture research system claims to have a large number of promising technologies to achieve high growth and promote farming systems that improve natural resource base. However, these are not seen at farmers' fields at large. Visit of other areas, where new technologies are implementing successfully i.e., exposure visits is an important thing to enlighten the farmers for implementing those technologies in their areas also. It is easy to know the new technology through demonstration. Farmers will be selected to visit different places within the State where the technologies are well adopted. Therefore it is proposed to organize the exposure visit to important markets with in the State and out side the State by commodity groups / farmers and extension functionaries in the State for marketing of agricultural commodities in Tamil Nadu over the period of four years.

ii) Project Strategy

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

iii) Project Goals

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

iv) Project Components

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

v) Project Cost and Financing

Visit of important markets, where new opportunity for marketing of the commodity and consumer preference i.e., exposure visits SAFAL market Bangalore is an important thing to enlighten the farmers for marketing their produce as well as consumer preference. It is easy to know the marketing of the commodity through observation and participation in the well developed markets. Farmers will be selected to visit different market places within the State where the new opportunities for marketing of commodities exist. This will require resources of Rs.64.58 Lakhs for the period of four years. The details are presented in Table 6.15 A.

vi) Reporting

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

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

10.6. Strengthening of Market Extension Centre at each District/ Block Level for Capacity Building and Dissemination of Marketing Information

i) Project Rationale

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

interactive multimedia and such other tools will help the extension workers to serve the farmers better. Similarly, extension systems have to utilize the existing print and electronic mass media for faster dissemination of information to farmers. The technological advancement in telecommunication and space technology has to be fully tapped for devising appropriate programs for farmers. Hence there is an 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 a 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 Krishnagiri district over the period of four years. This will require resources of Rs.20.75 Lakhs for a period of four years. The details are presented in Table 6.15 A.

vi) Reporting

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

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

10.7. Strengthening of Selected Village Shandies

i) Project Rationale

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

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

ii) Project Strategy

Strengthening of selected village shandies through, establishing grading facilities, standardization facilities, price display mechanism and electronic weighing machines.

iii) Project Components

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

iv) Project Cost and Financing

In this project, it is proposed to strengthen Village Shandies in Krishnagiri district over the period of four years. This will require resources of RS. 0.3 Lakh for a period of four years. The details are presented in Table 6.15 A.

v) Reporting

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

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

10.8. Capacity Building of Farmers' Skill

i) Project Rationale

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

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

attention to train the farmers in marketing related skills. All stakeholders in the Supply Chain (i.e. from farmers to consumers) should be exposed to the following characteristics and complexities of the marketing system to make it more efficient. Hence in this project the following training programmes are proposed with budget requirement of Rs. 50.28 Lakhs.

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

ii) Project Strategy

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

iii) Project Components

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

iv) Project Cost and Financing

In this project, it is proposed to organize about 436 trainings under Capacity Building of Farmers Skill titles for marketing of agricultural commodities in Krishnagiri district over a period of four years. This will require resources of Rs 50.28 Lakhs for a period of four years. The details are presented in Table 6.15 A.

v) Reporting

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

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

10.9. Strengthening of Selected Market Infrastructure (Equipments)

i) Rationale

Considering the importance of different markets, there is an urgent need to develop these markets in a phased manner with necessary infrastructural amenities to have a strong base of the marketing channel. Suitability and adequacy of marketing infrastructure depends on the type and quantity of marketed surpluses of agricultural produce in the State. The estimated marketed surpluses of various commodities given in the Table 6.14 reflected the need for improvement in the market infrastructure in coming years.

Table 6.14. 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).

ii) Project Components

1. Purchasing and establishing price display board and mobile controlled display board
2. Purchasing and establishing collection centres
3. Purchasing and establishing chilli dryers
4. Purchasing and establishing cool chambers/cold storage
5. Purchasing and establishing price display mechanism and electronic weighing machines
6. Purchasing and establishing moisture meter
7. Purchasing and distribution of tarpaulins, plastic crates and storage bins

iii) Project Cost and Financing

In this project, it is proposed to strengthen market infrastructure in Krishnagiri district over a period of four years. This will require resources of Rs.85.5 Lakhs for a period of four years. The details are presented in Table 6.15 A.

iv) Reporting

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

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

10.10. Establishment of Price Surveillance Mechanism

i) Rationale

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

ii) Project Components

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

iii) Project Cost and Financing

In this project, it is proposed to collect data at a minimum interval of one month from major assembly markets on a continuous basis in Krishnagiri district over a period of four years. This will require resources of Rs.5.52 Lakhs for a period of four years. The details are presented in Table 6.15 A.

iv) Reporting

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

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

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

i) Rationale

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

ii) Project Components

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

iii) Project Cost and Financing

In this project it is proposed to have the publicity programmes with the above components in this district with a financial outlay of Rs.23 Lakhs over a period of four years. The details are presented in Table 6.15 A.

iv) Reporting

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

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

11. Project Cost

The total cost for development of agricultural marketing so as to increase the profitability of farmers would be Rs.1030.85 Lakhs for this district for the next four years.

12. Implementation

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

13. Project Performance Monitoring System

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

14. Sustainability

Project sustainability refers to the continuation of benefits generated by the project even after project completion. Through the project activities, stakeholders will improve their capacity in identifying market opportunities and taking sound business decisions regarding investment, production and marketing. The improved capacity will result in the emergence of profitable enterprises better able to adapt to market conditions and seize existing opportunities and benefits; the enterprises and the benefits will continue to exist even after the completion of the project. However, the success of the project also depends on the sustainability of some of the institutional mechanisms (for example DEMIC) introduced by the project. In some cases, the institutional support will have to be continued for the benefits to continue to flow after the completion of the project and result in the models and practices introduced by the project to be replicated by other stakeholders in the agricultural sector in the state. The details of financial requirement are given in Table 6.15A.

Table 6.15A. Original Project Proposals for Agricultural Marketing and Agri-Business

(Rs. in lakhs)

S. No	Components	2008-09			2009-10			2010-11			2011-12			Total
		Unit cost	Physical	Financial	Unit cost	Physical	Financial	Unit cost	Physical	Financial	Unit cost	Physical	Financial	Financial
1	**Commodity Group Formation**													
	Paddy	0.20	10	2.00	0.22	5	1.10	0.24	5	1.20	0.26	5	1.30	**5.6**
	Ragi	0.20	10	2.00	0.22	5	1.10	0.24	5	1.20	0.26	5	1.30	**5.6**
	Maize	0.20	5	1.00	0.22	3	0.66	0.24	3	0.72	0.26	2	0.52	**2.9**
	Coconut	0.20	10	2.00	0.22	5	1.10	0.24	5	1.20	0.26	2	0.52	**4.82**
	Pulses	0.20	5	1.00	0.22	4	0.88	0.24	5	1.20	0.26	3	0.78	**3.86**
	Tomato	0.20	5	1.00	0.22	3	0.66	0.24	3	0.72	0.26	3	0.78	**3.16**
	Potato	0.20	5	1.00	0.22	3	0.66	0.24	3	0.72	0.26	3	0.78	**3.16**
	Cut flowers	0.20	2	0.40	0.22	3	0.66	0.24	3	0.72	0.26	3	0.78	**2.56**
	Total	**1.80**	**57**	**11.40**	**1.98**	**34**	**7.48**	**2.16**	**35**	**8.4**	**2.34**	**29**	**7.54**	**34.82**
2	**Market Intelligence Dissemination**													
	Farmers Meetings	0.10	10	1.00	0.11	10	1.10	0.12	10	1.20	0.13	10	1.30	**4.6**
	Village meetings	0.10	10	1.00	0.11	10	1.10	0.12	10	1.20	0.13	10	1.30	**4.6**
	Printing Leaflets	0.00002	25000	0.50	0.00003			0.00004			0.00005	0	0	**0.5**
	Local TV	0.10	5	0.50	0.11	5	0.55	0.12	5	0.60	0.13	5	0.65	**2.3**
	Block Infor Cen	2.00	10	20.00	0.11	0	0	0.12			0.13		0	**20**
	Purcahse Materials	0.10	1	0.10	0.11	1	0.11	0.12	1	0.12	0.13	1	0.13	**0.46**
	Total	**2.40**	**25036**	**23.10**	**0.55003**	**26**	**2.86**	**0.6004**	**6**	**0.72**	**0.65005**	**6**	**0.78**	**32.46**
3	**Facilitation of Contract Farming**													
	CF Cotton	0.15	2	0.30	0.17	2	0.33	0.18	1	0.18	0.195	1	0.195	**1.01**
	CF Maize	0.15	3	0.45	0.165	2	0.33	0.18	2	0.36	0.195	1	0.195	**1.34**
	Total	**0.30**	**5**	**0.75**	**0.335**	**4**	**0.66**	**0.36**	**3**	**0.54**	**0.39**	**2**	**0.39**	**2.34**

Table 6.15A Contd….

S. No	Components	2008-09			2009-10			2010-11			2011-12			Total
		Unit cost	Physical	Financial	Unit cost	Physical	Financial	Unit cost	Physical	Financial	Unit cost	Physical	Financial	Financial
4	**Trainings on**													
	Grading	0.10	10	1.00	0.11	10	1.10	0.12	10	1.20	0.13	10	1.30	**4.6**
	Commodity Markets	0.10	10	1.00	0.11	10	1.10	0.12	10	1.20	0.13	10	1.30	**4.6**
	GAP Food Safety	0.10	10	1.00	0.11	10	1.10	0.12	10	1.20	0.13	10	1.30	**4.6**
	Market intelligence	0.10	10	1.00	0.11	10	1.10	0.12	10	1.20	0.13	10	1.30	**4.6**
	Post Harvest	0.10	10	1.00	0.11	10	1.10	0.12	10	1.20	0.13	10	1.30	**4.6**
	SNX Farmers awareness	0.10	10	1.00	0.11	10	1.10	0.12	10	1.20	0.13	10	1.30	**4.6**
	Warehousing and Storage	0.10	10	1.00	0.11	10	1.10	0.12	10	1.20	0.13	10	1.30	**4.6**
	Export Training	0.10	7	0.70	0.11	7	0.77	0.12	7	0.84	0.13	5	0.65	**2.96**
	Buyer seller Meeting	0.10	7	0.70	0.11	7	0.77	0.12	7	0.84	0.13	5	0.65	**2.96**
	Group formation	0.10	7	0.70	0.11	7	0.77	0.12	7	0.84	0.13	5	0.65	**2.96**
	Group formation	0.10	10	1.00	0.11	10	1.10	0.12	10	1.20	0.13	10	1.30	**4.6**
	Post harvest training	0.10	10	1.00	0.11	10	1.10	0.12	10	1.20	0.13	10	1.30	**4.6**
	Total	**1.20**	**111**	**11.10**	**1.32**	**111**	**12.21**	**1.44**	**111**	**13.32**	**1.56**	**105**	**13.65**	**50.28**
5	**Exposure Visit to Markets**													
	Within State	0.20	10	2.00	0.22	10	2.20	0.24	10	2.40	0.26	10	2.60	**9.2**
	Outside state	0.75	10	7.50	0.825	10	8.25	0.90	10	9.00	0.975	10	9.75	**34.5**
	Visit to National Markets	1.50	3	4.50	1.65	3	4.95	1.82	3	5.45	1.997	3	5.99	**20.88**
	Total	**2.45**	**23**	**14.00**	**2.695**	**23**	**15.4**	**2.96**	**23**	**16.85**	**3.232**	**23**	**18.34**	**64.58**
6	Arrangement of buyer seller meetings	0.20	20	4.00	0.22	3	0.66	0.24	4	0.96	0.26	4	1.04	**6.66**

Table 6.15A Contd….

S.No	Components	2008-09			2009-10			2010-11			2011-12			Total
		Unit cost	Physical	Financial	Unit cost	Physical	Financial	Unit cost	Physical	Financial	Unit cost	Physical	Financial	Financial
7	Streng. of market extension centre	2.50	5	12.50	2.75	3	8.25	3.00			3.25			**20.75**
8	Streng. of village shandies	0.10	3	0.30		0								**0.3**
9	Market price surveillance	0.10	12	1.20	0.11	12	1.32	0.12	12	1.44	0.13	12	1.56	**5.52**
10	Publicity - regulated market	5.00	1	5.00	5.50	1	5.50	6.00	1	6.00	6.50	1	6.50	**23**
11	**Market Infrastructure Activities**													
	Min PH Loss Tarpaulin	0.5	300	15.00	0.055	200	11.00	0.06	200	12.00	0.065	200	13.00	**51**
	Mini PH Loss Plastic Crates	0.005	1000	5.00	0.0055	1000	5.50	0.006	1000	6.00	0.0065	1000	6.50	**23**
	Mango harvester	0.005	500	2.50	0.0055	500	2.75	0.006	500	3.00	0.0065	500	3.25	**11.5**
	Total	**0.51**	**1800**	**22.50**	**0.066**	**1700**	**19.25**	**0.078**	**1700**	**21**	**0.078**	**1700**	**22.75**	**85.5**
	Grand Total	**15.91**	**27068**	**240.85**	**15.30**	**1914**	**73.59**	**16.74**	**1912**	**71.63**	**18.13**	**1899**	**75.15**	**461.22**

Table 6.15B. Additional Project Proposals for Agricultural Marketing and Agri-Business DDA(AB)

Rs.in lakhs

Sl. No.	Possible Development Interventions	2009-10		2010-11		2011-12		Total	
		Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
I.	**Infrastructure**								
1	Construction of rural godowns in the premises of the regulated markets @ Rs.40.00 Lakhs/Per No.	1	40.00	1	40.00	1	40.00	3	120.00
2	Storage godowns for storing produce under lock and key for few days One storage godown/block @ Rs.100.00 Lakhs/Per No.	0	0.00	6	60.00	4	40.00	10	100.00
3	Construction of new drying yards/renovation of dilapidated ones One Drying yard at Krishnagiri @ Rs.6.00 Lakhs/Per No.	1	6.00	0	0.00	0	0.00	1	6.00
4	Construction of new auction halls/modernizing the existing ones @ Rs.30.00 Lakhs / Per No.	1	30.00	1	30.00	1	30.00	3	90.00
5	Construction of money disbursement halls/counters@ Rs.5.00 Lakhs/Per No.	1	5.00	1	5.00	1	5.00	3	15.00
6	Construction of office buildings and staff quarters	0	0.00	0	0.00	0	0.00	0	0.00
7	Installation of processing units/purchase of new instruments in the premises of the regulated markets								
	(i) Mechanical drier @ Rs.3.00 Lakhs / Unit	0	0.00	1	3.00	1	3.00	2	6.00
	(ii) Mechanical winnower @ Rs.1.50 Lakhs / Unit	0	0.00	1	2.00	1	2.00	2	4.00
	(iii) Groundnut decorticator @ Rs.3.00 Lakhs / Unit	0	0.00	1	3.00	0	0.00	1	3.00
	(iv) Sieving machine @ Rs.1.50 Lakhs / Unit	0	0.00	1	1.50	0	0.00	1	1.50
	(v) Cotton Ginning Unit / Pressing Unit	0	0.00	0	0.00	0	0.00	0	0.00
	(vi) Coconut Kernel drying and oil processing units @ Rs.6.00 Lakhs / Unit	0	0.00	1	6.00	0	0.00	1	6.00

Table 6.15B. Contd.,

Sl. No.	Possible Development Interventions	2009-10		2010-11		2011-12		Total	
		Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
	(vii) Packaging Units @ Rs.3.00 Lakhs / Unit	0	0.00	1	3.00	0	0.00	1	3.00
8	Strengthening the State Ghee and Oil Grading Laboratories	0	0.00	0	0.00	0	0.00	0	0.00
9	Strengthening the Commercial Grading Centres with Laboratory facilities (more numbers can also be included) @ Rs.5.00 Lakhs / Per No.	0	0.00	1	5.00	1	5.00	2	10.00
10	Strengthening the infrastructure facilities in the Uzhavar Shandies	2	13.30	0	0.00	0	0.00	2	13.30
11	Construction of cold storage facilities in Uzhavar Shandies and in rural godowns @ Rs.6.00 Lakhs / Per No.	0	0.00	1	6.00	0	0.00	1	6.00
12	Office automation with computer facility for billing etc. in regulated markets @ Rs.0.50 Lakhs / Per No.	1	0.50	1	0.50	1	0.50	3	1.50
13	Lawying and relawying of village link roads	0	0.00	0	0.00	0	0.00	0	0.00
14	Provision of Oil moisture meters @ Rs.0.20 Lakhs / Per No.	5	1.00	5	1.00	0	0.00	10	2.00
15	Provision of Oil testing machines	0	0.00	0	0.00	0	0.00	0	0.00
16	Provision of Electronic weighing machines @ Rs.60.25 Lakhs / Per No.	1	0.25	1	0.25	1	0.25	3	0.75
17	Others if any (Specify)	0	0.00	0	0.00	0	0.00	0	0.00
II.	**Publicity and Propaganda**								
1	Market committee-wise strengthening of the Publicity and Propaganda units	0	0.00	0	0.00	0	0.00	0	0.00

Table 6.15B. Contd.,

Sl. No.	Possible Development Interventions	2009-10		2010-11		2011-12		Total	
		Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
2	Market committee-wise purchase of extension education aids	0	0.00	0	0.00	0	0.00	0	0.00
3	Strengthening the regional Publicity and Propaganda wings of the Marketing Board and establishing more regional units	0	0.00	0	0.00	0	0.00	0	0.00
4	Pre-harvest campaigns on large scale @ Rs.0.05 Lakhs / Per No.	20	1.00	120	6.00	120	6.00	260	13.00
5	Others if any (Specify)								
	Demonstration @ Rs.0.04 Lakhs / Per No.	10	0.40	40	1.60	40	1.60	90	3.60
III.	**Public relations**								
1	Construction of bus-stop shed un front of the regulated markets and in selected villages @ Rs.0.20 Lakhs / Per No.	1	0.20	1	0.20	1	0.20	3	0.60
2	Taking up public relations activities in the villages @ One / Block @ Rs.0.20 Lakhs / Per Annum	2	0.40	3	0.60	5	1.00	10	2.00
3	Construction of common village threshing floors - Rs.3.00 Lakhs / Per No.	6	18.00	6	18.00	8	24.00	20	60.00
4	Construction of village common discussion (Chavadi) hall @ One / Block @ Rs.1.00 Lakhs / Per No.	3	3.00	3	3.00	4	4.00	10	10.00
5	Distribution of tarpaulins to small and marginal farmers @ Rs5000/- Unit (24Ftx18 Ft) Tarpaulins @ 90% Subsidy	150	7.50	150	7.50	200	10.00	500	25.00
6	Installation of electric light facilities including solar lights in the community threshing floors	0	0.00	0	0.00	0	0.00	0	0.00

Table 6.15B. Contd.,

Sl. No.	Possible Development Interventions	2009-10		2010-11		2011-12		Total	
		Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
7	Construction of over head tanks, laying of street pipelines and provision of public drinking water taps in a village or two wherein the market arrivals are more @ Rs.2.00 Lakhs	1	2.00	1	2.00	0	0.00	2	4.00
8	Provision of Education loan to the children of a few regular customers @ Rs.1.00 Lakhs	3	0.30	4	0.40	3	0.30	10	1.00
9	Celebrating the regulated market fortnight in each district (just like co-operative weeks/fortnight) @ Rs.0.25 Lakhs fortnight celebration	2	0.50	3	0.75	3	0.75	8	2.00
10	Others if any (Specify)	0	0.00	0	0.00	0	0.00	0	0.00
IV.	**Facilities to farmers / Stakeholders**								
1	Construction of rest/stay rooms for farmers I regulated markets @ Rs.10.00 Lakhs/Unit	0	0.00	1	10.00	1	10.00	2	20.00
2	Construction/modernization of the common toiletry facilities in the regulated markets @ Rs.2.00 Lakhs / (Male & Female Separately)	1	0.50	1	0.50	1	0.50	3	1.50
3	Provision of parking lot facilities in the needy centers	0	0.00	0	0.00	0	0.00	0	0.00
4	Providing drinking water facilities to animals	0	0.00	0	0.00	0	0.00	0	0.00
5	Provision of transport facilities/routing the vehicle to transport commodities to the regulated markets	0	0.00	0	0.00	0	0.00	0	0.00
6	Creating farm inputs retailing facilities @ Rs.10.00 Lakhs Unit at Hosur	1	10.00	0	0.00	0	0.00	1	10.00
7	Others if any (Specify)	0	0.00	0	0.00	0	0.00	0	0.00

Table 6.15B. Contd.,

Sl. No.	Possible Development Interventions	2009-10		2010-11		2011-12		Total	
		Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
V.	**Any other innovative interventions (specify)**								
1	Provision of electronic display board for price information @ Rs.1.00 lakhs/No.	3	3.00	3	3.00	5	5.00	11	11.00
2	Providing touch screen facilities depicting the Post Harvest Technologies @ Rs.1.00 lakhs/No.	3	3.00	3	3.00	5	5	11	11.00
3	Provision of toll free mobile phone charge @ Rs.6000/Annum x 16 Nos.	16	0.96	16	0.96	16	0.96	48	2.88
4	Provision of Computer with Laser Printer, Fax Machine, Lap-Top & Digital Camera, Xerox Machine, LCD Power Point Project with accessories	0	0.00	1	4.00	0	0.00	1	4.00
	Grand Total	**235**	**146.81**	**380**	**227.76**	**424**	**195.06**	**1039**	**569.63**

Budget Abstract

(Rs.in lakhs)

Sl.No.	Particulars	2008-09	2009-10	2010-11	2011-12	Total
A.	Original Project	240.85	73.59	71.63	75.15	461.22
B.	Additional Project DDA(AB)	-	146.81	227.76	195.06	569.63
	Grand Total	**240.850**	**220.40**	**299.39**	**270.21**	**1030.85**

6.7. Public Works Department – Action Plan - 2008-12

I) Rehabilitation and Improvements to PWD Tanks and Anicuts in Krishnagiri District

Agriculture is the dominant sector in the Indian economy. Tamil Nadu depends largely on the surface water irrigation as well as ground water irrigation. The State has used the surface and ground water potentials to the maximum limit and hence the future development and expansion depends only on the efficient and economical use of water potential and resources.

To achieve higher water use efficiency, it is necessary to improve and upgrade the existing conveyance system and also to introduce modern irrigation methods.

With the above objective, a comprehensive programme has been proposed with a multi disciplinary approach. The average rainfall in Krishnagiri District is 665 mm only.

i) Structural Status & Deficiencies in the System in Krishnagiri District

The following are the present structural conditions in Krishnagiri District.

- The systems are old system existing for more than 100 years and as such requires rehabilitation.
- Heavy accumulation of silt due to hilly region and contour nature of canal system.
- Lack of adequate control of regulation structures like Anicuts, Head Sluices, Sand/ scour vents etc.,
- The damaged (or) dilapidated condition of the existing anicuts, diversion head works etc., and supply channels causes to poor standard of the entire conveyance system.
- The system and non system tanks are to be rehabilitated.

ii) Salient Features of Proposals

In order to improve the conveyance and operational efficiency in irrigation, it is now proposed to improve and modernize the irrigation infrastructures.

- Repairs to the damaged Anicuts
- Providing Head Sluice to some of the supply channels to avoid breaches during floods and for better water management.
- Providing Scour vent in some Anicuts.
- Trimming the supply channels by earthwork excavation
- Providing revetments and retaining walls in selective area of the supply channels.
- Repairing and restoring the traditional water bodies (i.e. tanks)
    - Desilting the supply channels to tank.
    - Strengthening the bunds of the tanks and channels wherever necessary for effectively storing the water and conveying it to the entire command area and also for conveying agriculture inputs to the field.
    - Repairs to the damaged weirs.
    - Repairs to the damaged sluices
    - Providing revetments and retaining walls in selective area of the tanks
    - Providing S.G. Shutter/ Plug arrangements to sluices, head sluices, scour vents etc.,
    - Removing and repairing and refixing in position of the existing S.G.shuttering arrangements and providing locking arrangements etc.,

iii) Expected Outcome

1. Increase in conveyance efficiency from 53 percent to 100 percent
2. The present gap area of 829.23 hectares will be converted as a fully irrigated area.
3. The following irrigation infrastructure development works are proposed in this district.
    - Rehabilitation works for eight anicuts
    - Rehabilitation works for 54 tanks
    - Rehabilitation of supply channel for 20 km (5 nos).

The estimate has been prepared based on the current rates of 2008-09. It is proposed to execute the work in four years in phased manner from 2008-2012. The estimated amount works out of Rs. 900.00 Lakhs and the details are furnished in Table 6.16.

Table 6.16. Project Proposal of Public Works Department - 2008-2009 to 2011 -2012

No	Block	Name of Work	Estimate Amount (Rs.in lakhs)	Registered Ayacut (in ha.)	Irrigated area in Ha	Gap ha.
		2008-09				
1	Veppanapalli	Improvements and Rehabilitation of Jeenurtank, Nedumaruthi tank. Thipranapalli Big tank, Thipanapalli, C hina Eri, Marigownda tank, Bundapalli tank in Badathala supply change of Krishnagiri Taluk and District.	30.00	138.50	103.88	34.62
2	Krishnagiri	Improvements and Rehabilitation of Bunderi, Punganmal tak, Pachikarapalli tank, Thalavaipalli tank, Samanthamalai tank, Ramapuram tank Badathala supply change of Krishnagiri Taluk and District.	30.00	131.84	98.88	32.96
3	Bargur	Improvements to the supply channel from Theerthagiripatti tank to feed Chenrayanaickan tank in Battalapalli village, Bargur Union Krishngiri Taluk & District	20.00	161.94	98.50	63.44
4	Bargur	Improvements and Rehabilitation of Rasipalli Anicut Karaioddu Anicut, Animadu Anicut, Arimanapalli Anicut its supply channel in Bargur Block of Krishnagiri Taluk & District.	20.00	54.08	40.56	13.52
5	Bargur	Rehabilitation & improvements to supply channel from Barur EMC 4th sluice to Anandur tank of Bargur Union of Pochampalli Taluk of Krishnagiri District	20.00	55.63	45.00	10.63
6	Shoolagiri	Rehabilitation & improvements to the Brach tank in Kalingapuram village in Shoolagiri Black of Hosur Taluk, Krishnagiri District	20.00	35.23	0.00	35.23

Table 6.16 Contd….

No	Block	Name of Work	Estimate Amount (Rs.inLakhs)	Registered Ayacut (in ha.)	Irrigated area in Ha	Gap ha.
7	Shoolagiri	Rehabilitation & improvements to A-Chettipalli Anicut and Sevaganapalli Eri, Naganur Eri, Sokkarasangapalli Eri, Kummagoundan Eri, Devirapalli Eri, Lingapuram Eri in Shoolagiri Black of Krishnagiri District.	60.00	215.64	155.00	60.64
8	Hosur	Rehabilitation & improvements to Bagaulru PeriyaEri, Babalapuram Eri, Pruam Eri, Periya Eri, Muduganapalli Eri, Sokki Eri, Hosur Block of Hosur Taluk in Krishnagiri District.	48.00	132.54	99.40	33.14
9	Mathur	Construction of Check dam accrues mathru River in Mathur village of Pochampalli taluk	20.00	25.00	0.00	25.00
10	Mathur	Improvement to supply channel from Pennukondapuram tank to Athipallam Tank in Mathur Block of Pochampalli Taluk	15.00	88.93	65.00	23.93
11	Uthangarai	Improvements to Feeder channel from Palladhur tank to Athipadi village Uthangarai Taluk, Krishnagiri District	10.00	32.33	15.00	17.33
12	Thally	Rehabilitation & Improvements to Adavanaga tank, Malligarjunathurgam tank and Masthihalla tank in Denkanikottai Taluk of Krishnagiri District.	65.00	144.37	101.59	42.78
13	Kelaman-galam	Restoration of breached Bevanatham tank in Bevantham village of Kelamangalam block in Krishngiri District.	50.00	36.34	0.00	36.34
		Total	**408.00**	**1252.37**	**822.81**	**429.56**

Table 6.16 Contd….

No	Block	Name of Work	Estimate Amount (Rs.inLakhs)	Registered Ayacut (in ha.)	Irrigated area in Ha	Gap ha.
		2009-2010				
1	Krishnagiri	Rehabilitation & Improvements to badethalav tank in Krishnagiri Taluk & District	25.00	332.19	232.69	99.50
2	Bargur	Rehabilitation & Improvements to Pochampalli and Puliyampatti big tank and its supply channel in Pochampalli Taluk & District.	30.0	40.52	20.50	20.02
3	Hosur	Rehabilitation & Improvements to Dadarao Eri in Hosur Taluk of Krishnagiri District	10.00	31.95	22.36	9.59
4	Shoolagiri	Rehabilitation of Breached Lingojamman tank in Hosur Taluk of Krishnagiri Dist.	40.00	30.00	21.00	9.00
5	Tahlly	Rehabilitation and improvement to Hydershabib anicut, Sitheyagoundan eri and Veera rajan tank in Thally Block of Krishnagiri Dist.	45.00	131.42	92.00	39.42
6	Kelaman-galam	Rehabilitation of breached Nanjeagoundan tank in Prethireddi village of Kelamangalam Block of Krishnagiri Dist.	30.00	16.70	11.69	5.01
		Total	**180.00**	**582.78**	**400.24**	**182.54**

Table 6.16 Contd….

No	Block	Name of Work 2010 – 2011	Estimate Amount (Rs.inLakhs)	Registered Ayacut (in ha.)	Irrigated area in Ha	Gap ha.
1	Kaveripattinam	Rehabilitation and improvements to Pudur Eri, Nadu Eri, Errahalli tank feeding form RMC of KRP dam in Krishnagiri Taluk & Dist.	30.00	86.28	66.28	20.00
2	Kaveripattinam	Rehabilitation and improvements to Malappan tank in Penneswaramadam village of Krishnagiri taluk & Dist.	20.00	84.57	65.00	19.57
3	Bargur	Rehabilitation and improvements to Mavathur & Virupampatti tank and its supply channel in Pochampalli Taluk of Krishnagiri Dist.	20.00	38.08	23.90	14.18
4	Veppanapalli	Rehabilitation and improvements to Nachikuppam anicut & its supply channel in Krishnagiri Taluk & Dist.	25.00	32.39	18.49	13.90
5	Hosur	Rehabilitation and improvements to Chinnappareddy Kodigai tank in Hosur Taluk of Krishnagiri Dist.	20.00	48.18	33.72	14.46
6	Shoolagiri	Rehabilitation and improvements to Govindagoundan tank in Shoolagiri Block of Krishnagiri Dsit.	10.00	61.81	43.26	18.55
7	Kelamangalam	Resotration of breached Rathinagiri anicut in Kelamangalam Block of Krishnagiri Dist.	22.00	4.14	2.89	1.25
		Total	**147.00**	**355.45**	**253.54**	**101.91**

Table 6.16 Contd….

No	Block	Name of Work 2011-2012	Estimate Amount (Rs.inLakhs)	Registered Ayacut (in ha.)	Irrigated area in Ha	Gap ha.
1	Kaveripattinam	Rehabilitation and improvements to 5 Nos. of open off take channels & feeding tanks from Pennaiyar in Pochampalli taluk of Krishangiri Dist.	75.00	297.83	238.26	59.57
2	Bargur	Rehabilitation and improvements to Thippanakuttai & Kottapatti tanks & its supply channel in Pochampalli Taluk of Krishangiri Dist.	20.00	24.37	14.17	10.20
3	Uthangarai	Rehabilitation and improvements to Anandur tanks and its supply channel in Pochampalli Taluk of Krishangiri Dist.	15.00	55.63	42.50	13.13
4	Uthangarai	Rehabilitation and improvements to Thiruvanampatti tanks and its supply channel in Pochampalli Taluk of Krishangiri Dist.	15.00	55.19	42.00	13.19
5	Kaveripattinam	Rehabilitation and improvements to Chinnagoundan tank, malaiyandahalli tank, Annan kuttai tank feeding from LMC of KRP dam in Krishnagiri Taluk & District	30.00	83.28	70.28	13.00
6	Shoolagiri	Rehabilitation and improvements to Ayyarnapalli tank in Shoolagir Block of Kishnagiri Dist.	10.00	20.47	14.34	6.13
		Total	**165.00**	**536.77**	**421.55**	**115.22**
		Grand Total	**900.00**	**2727.37**	**1897.54**	**829.23**

Proceedings of the Meeting

The NADP district collector meeting was held on 16.5.08 at Krishnagiri collectorate under the chairmanship of District Revenue Officer. A large number of gatherings including village Panchayat presidents, union chairmen, farmers, line department officials, scientists from Tamil Nadu Agricultural University and Tamil Nadu Veterinary University participated in the meeting. The details about the district agriculture plan with the interventions from various departments were briefly presented in the meeting. The District Revenue Officer addressed the gatherings indicating the salient features and importance of the plan in his speech and called upon the line department officials to explain their action plan. The officials from agriculture, horticulture, agricultural engineering, animal husbandry and public works department explained about the components of district agriculture plan. The feed back from the village presidents and farmers were invited and they expressed that the subsidy component in all the schemes has to be increased so as to benefit the farming community. Finally, the PA (Agri) delivered the vote of thanks. Wide coverage was given in the media also.

Table of Contents

List of Tables

List of Tables Contd…

List of Figures

NADP Sensitization Workshop and Discussion on District Agriculture Plan - Krishnagiri District held on 16.05.2008

District Revenue Officer addresses the gathering

Professor and Head, RRS, Paiyur welcomes the gathering

Professor, RRS, Paiyur explains about the action plan

Executive Engineer (AED) explains about the project proposal

Participants in the Meetings

Participants in the Meetings

Participants in the Meetings

Participants in the Meetings