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# **NATIONAL AGRICULTURAL DEVELOPMENT PROGRAMME (NADP)**

## **DISTRICT AGRICULTURE PLAN DINDIGUL DISTRICT**

**Centre for Agricultural and Rural Development Studies  
(CARDS)**

**Tamil Nadu Agricultural University  
Coimbatore – 641 003**

**2008**

# **NATIONAL AGRICULTURE DEVELOPMENT PROJECT – DISTRICT AGRICULTURE PLAN**

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## FOREWORD

Date .....

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

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

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

  
(C. RAM AS AMY)

Coimbatore  
June 30, 2008



## **PREFACE**

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

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

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

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

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

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

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

Date: 30.06.2008

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

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## **EXECUTIVE SUMMARY**

Dindigul District is located between 10°5' and 1°09' North Latitude and 77°30' and 78°20' East Longitude. It is bound by Erode, Karur and Trichirapalli districts on the North and Madurai district on the East and South and Coimbatore district and Kerala State on the West. The district is divided into thirteen agricultural divisions.

Tanneries are densely located in this district. SIPCOT Industrial Complex, Nilakottai is located in Pallipattu village and the area of the complex is about 380 acres.

Maagrita Exports, Rs 10 crore mango processing unit, is located at the SIPCOT Industrial Estate at Nilakottai in Dindigul district. This project is a joint venture between Maagrita Exports Limited and the Agri Export Zone (AEZ).

### **SWOT Analysis of the District**

#### **Strength**

- The prevalence of three distinct climates namely temperate, subtropical and tropical provides an ideal environment for an array of agricultural and horticultural crops.
- The district has a good local market for its agricultural commodities especially for fruits and vegetables.

#### **Weakness**

- Limited availability of surface and groundwater is a major weakness for the agricultural development in the district.
- The area under rainfed crops in the district has been increasing over the years due to increasing scarcity of labour and stagnation in yield and profitability of crops.

## **Opportunities**

- There are opportunities to introduce water-saving technologies.
- Dry land agriculture has a good potential in this district by appropriate combination of crops, tree crops and livestock enterprises.

## **Threats**

- Increasing scarcity of water and labour in many parts of the district is a major threat to expansion of irrigated agricultural production.
- Lack of water harvesting structures to harness the rain water is another threat for sustaining irrigated agriculture in the district.

## **Development of Agricultural Sector**

Dindigul district with a net sown area of 2,53,541 hectares hosts a number of major agricultural crops, like paddy, maize, sugarcane, pulses, cotton etc. The average (50 years) rainfall of the district was 836.0 mm and maximum rainfall was received during the North East Monsoon (417.9mm).

Some of the on-going programmes in the district include Coconut Development Scheme, ICDP Rice, Intensive Cotton Development Programme (ICDP Cotton), ISOPOM – Maize III, ISOPOM – Pulses and Oilseed production Programme – ISOPOM – Oilseeds – I.

## **Major Interventions recommended under NADP**

- Hybrid seed distribution for major crops
- Distribution of micro nutrient mixture
- Promotion of SRI
- Distribution of tarpaulins
- Integrated Nutrient Management and Integrated Pest Management in pulses
- Distribution of Gypsum
- Distribution of Water soluble Inorganic Fertilizer and
- Establishment of Seed Testing Laboratory

### **Allied Agricultural Sectors**

Apart from agriculture, a number of allied activities are carried out in the district. Horticultural activities are predominant and the famous vegetable market of the State *viz.*, Ottanchathram Market is also located here. Apart from this, sericulture, animal husbandry and fisheries do play a significant role in the economy of the district.

### **Interventions recommended under NADP for Horticulture**

- Promotion of Vegetable Production
- Distribution of Plastic Crates for post harvest handling of vegetables and fruit crops
- Support system provision for Banana and Gloriosa
- Provision of sales outlet in District Head Quarter's Office.
- Organizing a district level Farmers' workshop.
- Encouraging the provision of Mango, Banana and Aonla fruits in noon meal scheme through TANHOPE SHG Tie-up arrangement
- Mega Demo plot for promotion of horticulture industry in the district and
- Encouraging Enterprising Farmers Association (EFA)

### **Major Interventions recommended under NADP for Animal Husbandry**

- Augmentation of fodder production
- Supplementation of mineral mixture
- Distribution of Bucks and Rams
- Distribution of TANUVAS-Nandanam III birds
- Strengthening of Veterinary Institutions with basic facilities and
- Farmers Study Tour

### **Interventions recommended under NADP for Fisheries**

- Creation of additional nursery space at Anaipatti
- Expansion of fish culture in hitherto unutilized waterbodies by stocking
- Subsidy assistance to private Fish Seed Rearing / Fish Seed Production
- Moped-cum-insulated Ice box for fish marketing
- Supply of fishing implements (craft and gear) and
- Setting up of modern fish retail outlet

### **Interventions recommended under NADP for Agricultural Engineering**

- Introduction of newly developed Agricultural Machinery / Implements
- Innovative Water Harvesting Structures & Thrashing Floor
- Promoting the concept of mechanized villages
- Special scheme for the beneficiaries of land reforms - Innovative scheme for On farm development with special focus on SC land holdings in Andipatti village of Palani taluk
- Popularization of Agricultural Mechanization thro' conventional machinery / equipments
- Water Harvesting Structures & Soil Conservation Works and
- Water Management works

### **Interventions recommended under NADP for Agricultural Marketing and Agri-Business**

- Establishment/ organization of commodity groups for marketing
- Facilitation of Contract Farming between farmers and bulk buyers
- Dissemination of Market intelligence
- Arrangement of Buyers - Sellers Meet
- Organizing the exposure visits to important markets within the State and outside 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 / Uzhavar Shandies Publicity and
- Market Infrastructure

#### **Interventions recommended under NADP for Sericulture**

- Increasing the area under high yielding mulberry plantation
- Providing subsidy for purchase of saplings
- Providing subsidy for construction of shed
- Providing silkworm rearing appliances at subsidized cost and
- Training to farmers

#### **Interventions recommended under NADP for PWD**

- Rehabilitation of Athoor anicut supply channel and restoration of its three tanks in Athoor village of Athoor taluk in Dindigul district of Tamil nadu
- Construction of Anicut across Vanjiodai in Mallanampatti village of Nilakkottai taluk in Dindigul district
- Modernisation of Ayyampalayam Rajavoikkal supply channel in Ayyampalayam village of Athur taluk in Dindigul district
- Modernisation of Rajavoikkal supply channel in Narsingapuram village of Authoor taluk in Dindigul district
- Modernisation of Mattaparai tank, Pillayarnatham tank, Eramankulam tank and Thathankulam tank in Nilakkottai taluk of Dindigul district
- Modernisation of Thamaraikulam and Vadikulam tank in Narasingapuram village of Authoor taluk in Dindigul district and
- Lining the left main canal of Palar Porundalar dam from L.S 0 KM to 18.520 KM in Palani Taluk of Dindigul district

The budget details (Department wise) for implementing various schemes under the NADP scheme are furnished below.

**BUDGET**

(Rs. in lakhs)

<b>S. No.</b>	<b>Department</b>	<b>2008-09</b>	<b>2009-10</b>	<b>2010 – 11</b>	<b>2011-12</b>	<b>Total</b>
1.	Agriculture	135.85	158.35	178.35	175.6	648.15
2.	Horticulture	371.15	292.9	427.8	402.8	1494.65
3.	Animal Husbandry	647.415	376.255	247.4	237.14	1508.21
4.	Fisheries	23.75	115.925	11.625	19.125	170.425
5.	Agricultural Engineering	210.823	217.556	213.963	212.513	854.855
6.	Agricultural Marketing and Agri Business	30.9	33.94	35.78	38.592	139.212
7.	Sericulture	13.25	13.25	13.25	13.25	53
8.	Public Works Department	854	942.5	125	60	1981.5
	<b>Total</b>	<b>2287.138</b>	<b>2150.676</b>	<b>1253.168</b>	<b>1159.02</b>	<b>6850.002</b>

## **CHAPTER - I**

### **INTRODUCTION**

Concerned by the slow growth in the Agriculture and allied sectors, the National Development Council (NDC), resolved that a special Additional Central Assistance Scheme, named National Agriculture Development Programme (NADP/RKVY) be launched. The NDC also felt that Agriculture Development strategies must be reoriented to meet the needs of farmers and called upon the Central and State governments to evolve a strategy to rejuvenate agriculture with a commitment to achieve four per cent annual growth in the agricultural sector during the 11<sup>th</sup> 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 (DAP)**

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**

- Integrated development of major food crops like paddy, coarse cereals, minor millets, pulses, oilseeds;
- Agriculture mechanization;
- Activities related to enhancement of soil health;
- Development of rainfed farming systems in and outside watershed areas, as also Integrated development of watershed areas, wastelands, river valleys;
- Integrated Pest Management schemes;
- Strengthening of Market Infrastructure and marketing development;
- Strengthening of Infrastructure to promote Extension Services;
- Activities relating to enhancement of horticultural production and popularization of micro irrigation systems;
- Animal husbandry and fisheries development activities;
- Study tours of farmers;
- Organic and bio-fertilizers;
- 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:

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

### **Sensitization Workshop**

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

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

### **Preparation of Draft Action Plan and Presentation in District Collectors Meeting**

Based on the baseline information and proposals, draft action plan was prepared and this was presented in the District Collectors Meeting held on 06.06.2008 under the chairmanship of District Collector. This meeting was attended by the scientists from TNAU, officials from line departments and the representatives of local bodies wide coverage was given in the media also.

### **Finalisation**

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

## CHAPTER - II

### GENERAL DISCRIPTION OF THE DISTRICT

#### 2.1 Introduction

Dindigul District is located between 10°5' and 1°09' North Latitude and 77°30' and 78°20' East Longitude. It is bound by Erode, Karur and Trichirapalli districts on the North, Madurai district on the East and South and Coimbatore district and Kerala State on the West. The district's head quarters is 65 Km away from Madurai lying on the south-west direction. The taluk wise and block wise maps are presented in Figures 1 and 2 respectively.

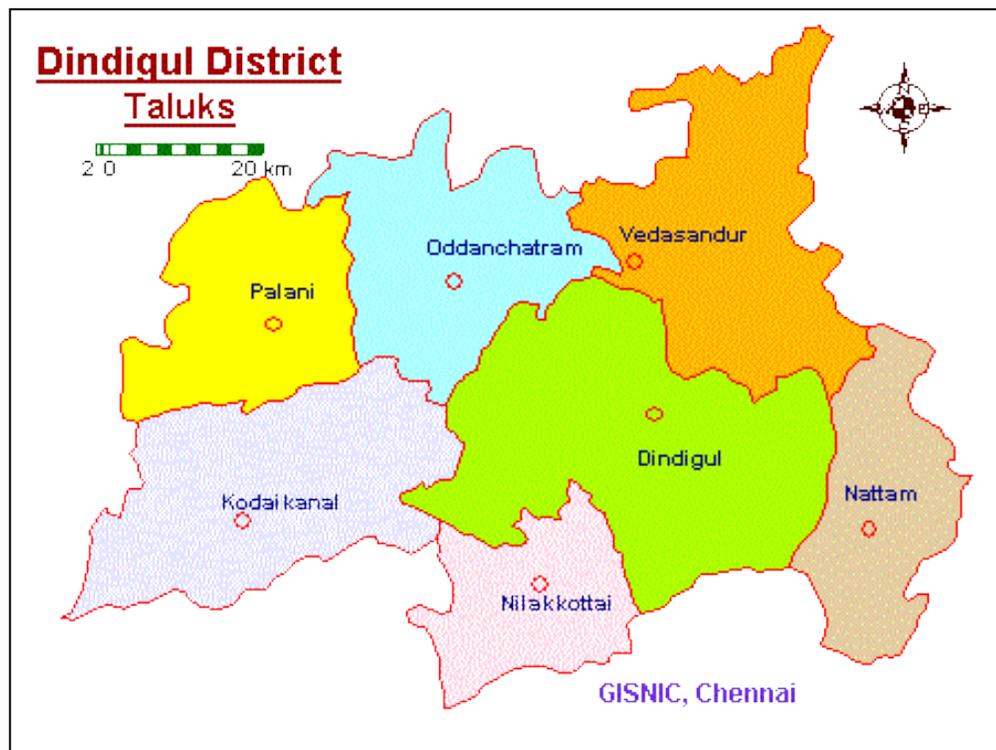
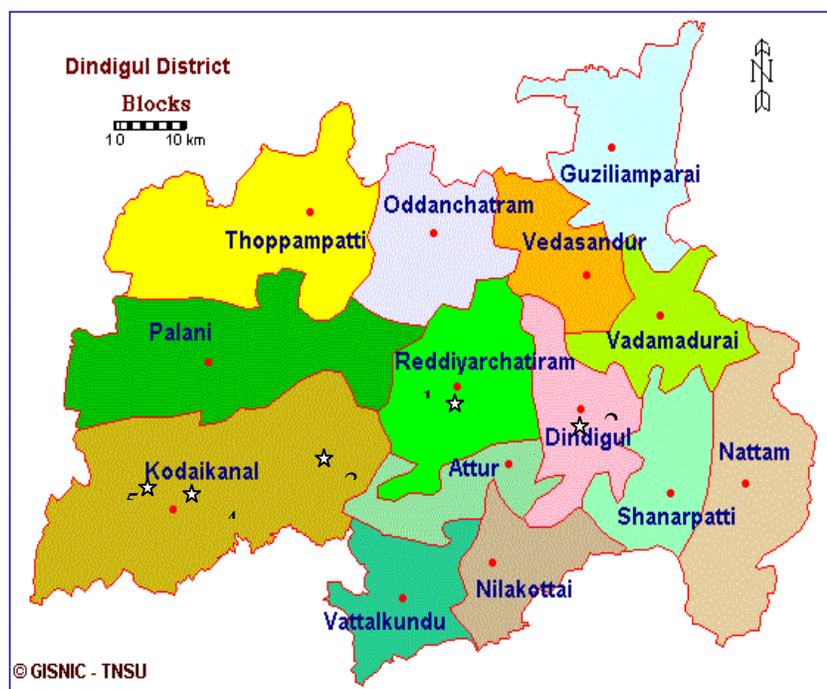


Figure.1 Taluk wise District Map



**Figure.2 Block wise District Map**

## 2.2 District at a Glance

### 2.2.1. Location and Geographic Units

The district is divided into thirteen Agricultural Divisions viz; Dindigul, Shanarpatty, Athur, Reddiarchatram, Nilakkottai, Batlagundu, Natham, Palani, Thoppampatti, Oddanchatram, Vadasandur, Vadamadurai and Gujiliamparai.

Dindigul city, an important wholesale market for Onion and Groundnut, has the network of inter-district roads connecting Coimbatore, Erode, Tiruchi, Karur, Madurai and Sivagangai Districts.

Kodaikanal, a popular summer resort, located at an altitude of 2,133 meters in the Western Ghats, is popularly called as “Princess of Hill Stations”.

Ottanchatram is a noted market centre for vegetables. It is also famous for the export of butter manufactured in the nearby villages using cream separators. Vathalagundu is an important market centre for tomato. Pattiveeranpatti in Vathalagundu block is famous for Cardamom and Coffee enterprises.

Tanneries are thickly located in this district. The finished and semi finished leather and other leather products have a good export market. A large number of Chamber Brick units are functioning in this district. Dindigul Lock and Iron Safes are famous for its quality. Hand loom, Rice milling, Groundnut and Vermicelli are the other types of food based industries functioning in this district. There is much scope for starting the Leather based units, Lock units, Brick Units and Food based units in this district.

SIPCOT Industrial Complex, Nilakottai is located in Pallipattu village and the area of the complex is about 380 acres (including land area of 100 acres allotted to Nilakottai food park Ltd.).

Maagrita Exports, a Rs 10-crore mango processing unit, is located at the SIPCOT Industrial Estate at Nilakottai in Dindigul district. This project is a joint venture between Maagrita Exports Limited and the Agri Export Zone (AEZ). The AEZ falls under the Agricultural and Processed Foods Export Development Authority (APEDA) of the Ministry of Commerce, Government of India

### 2.2.2 Demographic Profile

Population of the district as per the 2001 census and the decadal growth rate of population of the district are shown in Table 2.1.

**Table 2.1 Population and Decadal Growth Rate**

Name of the District	Population 2001 (in Nos.)			Decadal growth rate (in %)	
	Persons	Males	Females	1981-1991	1991-2001
Dindigul	1,918,960 (100.00)	966,201 (50.35)	952,759 (49.65)	12.54	8.99

Source: Census 2001

(Figures in the parentheses indicate percentage)

It could be observed that the population is equally distributed between the two sexes and there is a drastic fall of 3.55 percent in the decadal growth rate of population in the district in 1991 – 2001 as compared to 1981 – 1991.

The demographic particulars, classified, based on the age group, locality and literacy are depicted in Table 2.2.

**Table 2.2 Population, Children Population in the Age-Group 0-6 and Literates by Residence and Gender**

(Unit in numbers)

Dindigul District	Total/ Urban/ Rural	Population			Children population in the age-group 0-6			Literates		
		Persons	Male	Female	Persons	Male	Female	Persons	Male	Female
	<b>Total</b>	1,918,960	966,201	952,759	205,339	106,428	98,911	1,196,671	690,338	506,333
	<b>Rural</b>	1,246,956	627,672	619,284	134,784	70,111	64,673	721,003	427,879	293,124
	<b>Urban</b>	672,004	338,529	333,475	70,555	36,317	34,238	475,668	262,459	213,209

Source: Census 2001

It could be observed that the 64.98 percent of the population were rural dwellers and the literacy rate of the district was 62.36 percent. Comparatively, male literacy rate (71.49 percent) was much higher than that of the female literacy rate (53.17 percent) in the district.

### 2.2.3 Topography and Agro Climatic Characteristics

One of the special features of the district is the prevalence of three distinct climates viz., Temperate, Subtropical and Tropical. No other districts in Tamilnadu State have such unique agro climatic zones within the same district. To emphasize the relative importance of these climatic zones, little elaboration on the climatic zone, crops of the region and other relevant information are given in Table 2.3.

**Table 2.3 Classification of Areas based on the Climatic Zones**

Sl. No.	Climate	Zone	Temp (°C)		R.H. (%)
			Max	Min	
1.	Temperate	Upper Palani region comprising Kodaikanal, Mannavanur, Vilpatty, Poomparai	22°	18°	80-85
2.	Sub-tropical	Lower Palani region comprising Perumalmalai, Adalur, Pannaikadu, Perumparai, Thandiyankudisai, KC Patty, Pachalur and Sirumalai hills in eastern side	27 <sup>0</sup>	22 <sup>0</sup>	80
3.	Tropical	Rest of the taluks in plain.	36 <sup>0</sup>	31 <sup>0</sup>	65

Source: Records of Office of the Assistant Director of Statistics, Dindigul

The district comprises of a wide range of climatic zones and it paved way for the cultivation of a number of agricultural and horticultural crops. Within the district, Dindigul and Natham taluks fall under the Southern zone and Nilakottai and Palani taluks under the Western Zone.

### 2.2.4 Land Use Pattern

The land use pattern for the district for the year 2005-06 is shown in Table 2.4.

**Table 2.4 Land Use Pattern of Dindigul District – 2005-06**  
(Area in ha)

Sl. No	Land Use Classification	Area
1	Forest	138923 (22.17)
2	Barren and uncultivable lands	36210 (5.78)
3	Land put to non-agricultural uses	65148 (10.40)
4	Cultivable wastes	8931 (1.43)
5	Permanent pastures and other grazing lands	6946 (1.11)
6	Misc. tree crops and groves not included in net area sown	7414 (1.18)
7	Current fallow	15425 (2.46)
8	Other fallow lands	94126 (15.02)
9	Net Area sown	253541 (40.46)
	Total Geographical Area	626664 (100.00)

Source: Season and Crop Report of Tamil Nadu - 2005-2006

Figures in parentheses indicate percentage to total

It could be inferred from Table 2.4 that net sown area covered nearly 40 percent of the geographical area, forest nearly 22 percent, followed by the land put to non-agricultural uses with about 10 percent of the geographical area in the district.

## 2.2.5 Irrigation and Ground Water

### a) Irrigation Sources

The forests of this Division forms the catchments of important rivers of Kodaganaru, Palar, Kuthiraiyar, Porandalar, Varadhamanathi, Manjalar and Maruthanathi, which drains into Vaigai and Cauveri rivers. The dams that have been constructed across the aforesaid rivers are presented in Table 2.5.

**Table 2.5 List of Dams in the District**

Sl. No.	Name of Dam	Purpose
1.	Dharmathupatti Dam	Irrigation
2.	Kamarajar Dam	Irrigation and drinking water supply to Dindigul
3.	Manjalar Dam	Irrigation
4.	Marudhanadhi	Irrigation
5.	Pannapatti	Irrigation
6.	Parapalar Dam	Irrigation
7.	Palar- Porandalar Dam	Irrigation and drinking water supply to Palani
8.	Varadamanadhi Dam	Irrigation
9.	Kuthiraiyar Dam	Irrigation

Source: Records of Office of the Assistant Director of Statistics, Dindigul

Tables 2.6 and Table 2.7 show the net and gross area irrigated through different sources.

**Table 2.6 Net Area Irrigated through Different Sources - 2003-04**

S. No	Source of irrigation	Area (in hectares)	Percentage to total
1.	Canal	2790	4.02
2.	Tank	627	0.90
3.	Wells	64862	93.45
4.	Others	1130	1.63
	Total	69409	100.00

Source: Records of Office of the Assistant Director of Statistics, Dindigul

**Table 2.7 Gross Irrigated Area through different Sources****(Area in hectares)**

S.No	Source of Irrigation	2003-04	Percentage to total
1.	Canal	2790	3.77
2.	Tank	627	0.85
3.	Wells	69874	94.54
4.	Others	620	0.84
	Total	73911	100.00

Source: Records of Office of the Assistant Director of Statistics, Dindigul

It could be inferred that the wells formed a major source of irrigation both under net area irrigated (93.45 percent) and gross area irrigated (94.54 percent) followed by canals in both the cases.

**b) Ground Water Potential**

The level of exploitation of ground water in various blocks of the district is shown in Table 2.8.

**Table 2.8 Ground Water Potential**

Over exploited (100%)	Critical (85-100%)	Semi- Critical (60-85%)
Batlagundu and Gujiliamparai	Dindigul, Sanarpatti, Athur, Reddiarchatram, Nilakottai, Palani, Thoppampatti, Oddanchatram and Vadamadurai	Natham and Kodaikanal

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

It could be inferred that majority of the blocks fell under the critical category, while two blocks (Batlagundu, Gujiliamparai) were under over exploited category, and the other two blocks (Natham, Kodaikanal) were under the semi-critical category.

**c) Area of Irrigated Crops**

Area of crops irrigated in the district are given in Table 2.9.

**Table 2.9 Crop-wise Area Irrigated in Dindigul District - 2005-2006**  
(Area in 000'hectares)

Sl. No.	Crop	Area	Percentage to total
1.	Paddy	23735	34.14
2.	Cholam	2439	3.51
3.	Bajra	7832	11.27
4.	Ragi	8	0.01
5.	Redgram	5	0.01
6.	Greengram	34	0.05
7.	Blackgram	77	0.11
8.	Chilly	978	1.41
9.	Onion	3365	4.84
10.	Potato	512	0.74
11.	Tapioca	238	0.34
12.	Sugarcane	7014	10.09
13.	Cotton	1514	2.18
14.	Groundnut	12478	17.95
15.	Gingelly	148	0.21
16.	Tomato	2489	3.58
17.	Banana	1708	2.46
18.	Mango	2419	3.48
19.	Grapes	185	0.27
20.	Guava	893	1.28
21.	Sunflower	1449	2.08

Source: Records of Office of the Assistant Director of Statistics, Dindigul

The data inferred that nearly 34 percent of the area irrigated was covered by paddy crop followed by ground nut with about 18 percent and Bajra with about 11.30 percent. Rest of the crops accounted for around two percent only.

### Chapter - III

#### SWOT ANALYSIS OF THE DISTRICT

##### a) Strengths

- The prevalence of three distinct climates namely Temperate, Subtropical and Tropical provides an ideal environment for an array of agricultural and horticultural crops.
- Nine dams are located in the district and all of them serve as sources of irrigation water.
- The district has a good local market for its agricultural commodities especially for fruits and vegetables since the well known vegetable market of the State viz., Ottanchathram vegetable market is located in the district.
- District has potential and favorable agro-climatic conditions for cultivation of Rice, Maize, Cotton, Pulses, Sunflower, Ground nut and all other dry land crops.
- Infrastructural facilities like good road facilities, electrification of villages etc, support the growth of agriculture and allied industries in the district

##### b) Weakness

- Agriculture in the district depends on monsoon rains. Hence, probability of success is limited. The average rainfall of the District is 836 mm . Therefore, successful crop production depends heavily on the success / failure of monsoon thereby making agricultural production riskier in many parts of the district.
- Limited availability of surface and groundwater is a major weakness for the agricultural development in the district.
- Majority of the lands are fragmented.
- Increasing scarcity of labour due to tremendous increase in migration from rural to urban areas
- Owing to the raise in the agricultural labor wages, many of the farmers tend to shift from agricultural crops to perennial crops.
- The area under rainfed crops in the district has been increasing over the years due to increasing scarcity of labour and stagnation in yield and profitability of crops.

### c) Opportunities

- There are ample opportunities to promote new crop varieties and new technologies such as precision farming and System of Rice Intensification as the farmers are now educated on these aspects and willing to adopt the new varieties and technologies.
- Similarly, there is an opportunity to introduce water-saving technologies in irrigated agricultural systems in view of the huge seepage loss of water during flood irrigation of the fields. There is also scope for introducing water-saving technologies at farm level especially for high water-intensive crops such as paddy.
- Dry land agriculture has a good potential in this district by appropriate combination of crops, tree crops and livestock enterprises.
- Supporting institutions such as research station, banking institutions, agricultural inputs stores, farm machineries and state agricultural marketing institutions, extension functionaries for agriculture, horticulture, animal husbandry, fisheries, agricultural engineering etc., are available for the development of the farming community.
- In addition, the SEZ (Special Economic Zone) established at Nilakottai favors the over all socio-economic development of the district.

### d) Threats

- Increasing scarcity of water and labour in many parts of the district is a major threat to expansion of irrigated agricultural production.
- Lack of water harvesting structures to harness the rain water is another threat for sustaining irrigated agriculture in the district.
- Attractive urban employment opportunities not only absorb the agricultural labour population but also the farmers as well which poses a major threat to agricultural development.

## 3.1 Composite Index of Agricultural Development of Dindigul 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% 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 ( $i = 1, 2, 3 \dots m$ ,  $d = 1, 2, 3 \dots n$ ). First the values of development indicators for each district are to be standardized.

When the observed values are related positively to the development (as in the case of cropping intensity), the standardization is achieved by employing the formula

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

Where,  $\text{Min } X_{id}$  and  $\text{Max } X_{id}$  are the minimum and maximum of  $(X_{i1}, X_{i2}, \dots, X_{in})$  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.

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

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

The data base for the current study on Dindigul 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': *viz.*, (i) Crop-Area-Variables - 10 (ii) Irrigation -7 (iii) Livestock – 3 (iv) Fisheries - 1 (v) Fertilizer - 3 and (vi) Cultivators and Labourers - 2.

The analysis showed that Dindigul district was classified as 'backward' in agricultural development in all the four periods. In terms of overall agricultural development, its rank among the 29 districts of Tamil Nadu varied from 20 to 23 during the period from 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 in 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 22<sup>nd</sup> and 26<sup>th</sup> rank in all the four periods. Similarly in crop variables also it occupied between 21<sup>st</sup> and 24<sup>th</sup> rank.

**Table 3.1 Selected Indicators of Agricultural Development for Dindigul District**

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

**Table 3.2 Rank of Dindigul District in terms of Agricultural Development among Other Districts of Tamil Nadu during 1990-91 to 2005-06**

<b>Component of Composite Index</b>		<b>Crop-Area-Variables</b>	<b>Irrigation</b>	<b>Livestock</b>	<b>Fisheries</b>	<b>Fertilizer</b>	<b>Cultivators-Labourers</b>	<b>Overall</b>
<b>Period</b>	1990-91	21	22	12	-	-	6	20
	1995-96	22	26	14	22	22	14	23
	2000-01	24	22	11	24	19	9	20
	2005-06	23	23	13	16	20	11	23

## CHAPTER - IV

### DEVELOPMENT OF AGRICULTURAL SECTOR

#### 4.1 Introduction

Dindigul district with a net sown area of 2,53,541 hectares hosts a number of major agricultural crops, like Paddy, Maize, Sugarcane, Pulses, Cotton etc.

Dindigul Agricultural District is headed by Joint Director of Agriculture. Dindigul Agricultural District consists of five Agricultural Divisions, namely Dindigul, Natham, Nilakottai, Palani and Vedsandur. There were 13 Agricultural Development Officers and 28 Agricultural Extension Centres in the District. There is one Soil Testing Laboratory and one Fertilizer Testing Laboratory in the District.

Semi and tropical monsoon type of climate is prevailing in the plains of the District. However upper Palanis recorded low temperature and fairly heavy rainfall. In the plains, the maximum and minimum temperatures recorded were 37.5°C and 19.7°C while in the hill stations it was 20.0°C and 7.7°C respectively. Presence of such a highly varied type of climate paves way for cultivation of a number of agricultural and horticultural crops. The average (50 years) rainfall of the district was 836.0 mm and maximum rainfall was received during the North East Monsoon (417.9mm).

#### 4.2 Soil Health

##### 4.2.1 Soil Classification

Different types of soils found in the district are given below in Table 4.1 with their locations in the district.

**Table 4.1 Types of Soil in the District**

Sl.No.	Type of Soil	Places in District
1.	Red Loam	Except Kodaikanal
2.	Laterite Soil	Oddanchatram and Natham
3.	Black Soil	Dindigul, Nilakottai, Oddanchatram, Palani and Vedsandur
4.	Red Sandy Soil	Dindigul, Nilakottai, Oddanchatram, Palani

Source: Records of Office of the Assistant Director of Statistics, Dindigul

Red soil and Black soil are found predominantly in the district followed by red sandy soil. These soil types support the growth of an array of agricultural crops and horticultural crops. The soil types of the district are furnished in Table 4.2 along with the Figure of soil map.

**Table 4.2 Dindigul Soils and Area in Hectare**

<b>Soil Description</b>	<b>Area (ha)</b>
Moderately shallow, fine, mixed, Inceptisols	33315.08
Moderately shallow, fine loamy, mixed, Alfisols	31058.58
Moderately shallow, fine, mixed, Alfisols	30790.05
Very deep, fine loamy, mixed, Alfisols	29858.55
Deep, fine loamy, mixed, Alfisols	28499.94
Deep, fine, montmorillonitic, Inceptisols	20974.31
Deep, clayey skeletal, mixed, Alfisols	20611.53
Deep, coarse loamy, mixed, Mollisols	19822.60
Deep, fine, mixed, Alfisols	19714.46
Deep, fine loamy, mixed, Inceptisols	18988.71
Moderately shallow, loamy skeletal, mixed, Entisols	17615.29
Shallow, clayey, mixed, Alfisols	17079.55
Shallow, loamy, mixed, Inceptisols	17047.74
Very deep, coarse loamy, mixed, Mollisols	16848.37
Moderately deep, fine loamy, mixed, Alfisols	15597.84
Very deep, fine, montmorillonitic, Inceptisols	15432.23
Moderately shallow, loamy skeletal, mixed, Inceptisols	14105.66
Moderately shallow, clayey skeletal, mixed, Inceptisols	12137.36
Moderately deep, fine, mixed, Inceptisols	11582.03
Moderately deep, fine loamy, mixed, Inceptisols	11247.82
Shallow, loamy skeletal, mixed, Inceptisols	10930.50
Very deep, fine loamy, mixed, Inceptisols	10925.71
Moderately deep, loamy skeletal, mixed, Inceptisols	10553.11
Very deep, fine, mixed, Mollisols	10318.27
Deep, fine, montmorillonitic, Vertisols	9869.49
Moderately shallow, fine loamy, mixed, Entisols	9158.23
Moderately deep, clayey skeletal, mixed, Alfisols	8517.78

<b>Soil Description</b>	<b>Area (ha)</b>
Moderately shallow, coarse loamy, mixed, Entisols	7775.04
Moderately deep, fine, mixed, Alfisols	7597.76
Deep, coarse loamy, mixed, Inceptisols	7186.67
Shallow, clayey skeletal, mixed, Inceptisols	6878.95
Moderately deep, fine, montmorillonitic, Inceptisols	6417.74
Very deep, fine, mixed, Alfisols	6232.78
Very shallow, loamy, mixed, Entisols	5658.73
Shallow, clayey, mixed, Ultisols	5598.53
Very deep, very fine, montmorillonitic, Vertisols	5090.88
Shallow, loamy, mixed, Alfisols	5070.34
Deep, fine, mixed, Inceptisols	4959.26
Shallow, loamy skeletal, mixed, Alfisols	4732.82
Very deep, fine, montmorillonitic, Vertisols	4675.46
Shallow, clayey, mixed, Inceptisols	3595.12
Deep, coarse loamy, mixed, Ultisols	3580.44
Moderately shallow, clayey skeletal, mixed, Alfisols	3535.52
Very deep, fine, mixed, Inceptisols	2682.84
Shallow, clayey skeletal, mixed, Alfisols	2076.41
Shallow, loamy, mixed, Entisols	1405.48
Deep, fine, montmorillonitic, Entisols	1109.03
Deep, fine loamy, mixed, Entisols	1048.53
Deep, coarse loamy, mixed, Alfisols	1008.72
Very shallow, clayey skeletal, mixed, Entisols	938.63
Moderately deep, loamy skeletal, mixed, Alfisols	820.58
Deep, loamy skeletal, mixed, Inceptisols	649.18
Very deep, coarse loamy, mixed, Inceptisols	534.95
Deep, contrasting particle size, mixed, Entisols	466.27
Very deep, fine loamy, mixed, Ultisols	462.55
Very shallow, loamy, mixed, Inceptisols	122.31
Moderately shallow, fine loamy, mixed, Inceptisols	34.03
Deep, fine, kaolinitic, Inceptisols	21.12
Moderately deep, loamy skeletal, mixed, Ultisols	3.05
Very deep, loamy skeletal, mixed, Inceptisols	2.31





#### 4.2.2 Area under different Problem Soil Categories

The area affected by different soil problems are furnished in Table 4.3 along with the total area under the referred problem soil categories.

**Table 4.3 Area under different Problem Soil Categories**

(Area in hectares)

S.No	Block	Problem	Area
1.	Sanarpatti	Salt affected	545
2.	Athur	- do -	610
3.	Dindigul	- do -	140
4.	Palani	- do -	75
5.	Thoppampatti	- do -	540
6.	Oddanchatram	- do -	305
7.	Vedasandur	- do -	30
8.	Vadamadurai	- do -	10
9.	Guziliamparai	-do -	20

Source: Records of Office of the Assistant Director of Statistics, Dindigul

In the district, Athur, Sanarpatti and Thoppampatti blocks had large area under saline soils as compared to Ottanchatram and Dindigul blocks.

#### 4.3 Water Resources and Management

Annual rainfall recorded at different stations of the district during the period from 1985 to 2000 is depicted in Table 4.4.

**Table 4.4 Annual Abstract of Rainfall (in mm) in all Rain guage Stations of Dindigul District****(mm)**

Year	Dindigul	Nilakottai	Natham	Palani	Chatrapatti	Vedasandur		Kodaikanal	
						Taluk Office	Tobacco Station	Boat Club	Observatory
1985	818.40	623.70	668.20	511.75	608.50	590.50	557.40	1068.20	1233.66
1986	578.10	741.56	1028.62	618.35	505.97	693.36	616.64	764.95	859.78
1987	986.95	959.60	1041.06	735.40	725.90	767.70	681.60	1276.37	1568.31
1988	684.60	704.60	641.10	409.20	585.20	662.72	616.88	577.14	1181.66
1989	1210.40	623.78	1054.00	783.60	771.40	714.00	637.20	948.25	1525.50
1990	970.40	633.90	988.52	775.50	518.80	552.51	503.12	1183.20	1588.90
1991	922.70	827.10	1560.10	854.95	649.30	737.30	737.00	1197.71	1238.35
1992	868.90	1034.90	1047.70	772.70	784.00	772.80	755.20	828.32	1508.90
1993	1452.20	987.90	1389.74	982.80	1158.60	1053.60	850.50	2172.81	2281.11
1994	964.23	1055.83	967.66	722.00	741.52	746.93	512.32	1290.95	1304.64
1995	720.80	738.00	857.40	459.70	447.90	685.10	606.27	1204.55	1071.77
1996	998.30	1058.90	1045.80	905.60	938.20	1104.40	1069.24	1662.99	1547.98
1997	1295.08	1335.08	1284.20	699.60	824.60	969.91	903.60	2091.54	1819.86
1998	980.07	889.80	1374.20	742.50	1109.50	934.70	869.10	1801.21	1890.62
1999	811.30	626.32	801.68	543.55	711.60	886.15	815.60	1468.52	1337.59
2000	831.30	841.10	854.10	623.70	805.70	779.90	760.00	1981.15	1914.77

Source: Records of Office of the Assistant Director of Statistics, Dindigul

It could be seen from the table that in Dindigul, the annual rainfall varied from 578.10 mm in 1986 to 1295.08 mm in 1997.

#### 4.4 Major Crops and Varieties in the District

##### Cropping Pattern

The cropping pattern of the district in wet lands, garden lands and dry land are detailed below.

##### (a) Wet Lands

I Crop	: Paddy (Oct – Feb)
II Crop	: Paddy (Feb – March)
I Crop	: Paddy (Oct – Feb)
II Crop	: Pulses (March – May)
Single Crop	: Sugarcane / Banana (Dec – Jan) (June – July)

##### (b) Garden Lands

I Crop	: Paddy (Aug – Dec)
II Crop	: Millets / Pulses / Groundnut/ Vegetables (Dec, Jan – March)
I Crop	: Cotton (Sept – Feb)
II Crop	: Millets / Pulses / Vegetables (Feb – March)
Single Crop	: Sugarcane / Banana (Dec – Jan) (June – July)

##### (c) Dry Lands

- (i) **Red Soils** : Cholam (June – Aug), Cumbu (Aug – Sept),  
Groundnut (June – July); Minor Millets; Horsegram (Sept – Oct)
- (ii) **Black Soils** : Cholam (Sept-Oct); Cotton (Sept-Oct); Sunflower (Sept – Oct).

#### Major Crops in the District

##### (1) Irrigated Crops

Area, source of irrigation and the season of cultivation of major irrigated crops in the district are shown in Table 4.5.

**Table 4.5 Area, Source of Irrigation and Season for Major Irrigated Crops-2006-07**  
(Area in hectares)

Sl. No.	Name of the Crop	Area		Season
		Irrigated	Source	
1.	Paddy	9675	Ayacut	Oct - Nov Feb.
		6000	Well	Aug - Dec.
		9000	Tank	Aug -Feb
2.	Sugarcane	395	Ayacut	Throughout year
		5500	Well / Tank	
3.	Millet	800	Ayacut	Feb- May
		20000	Well/ Tank	Feb- May
4.	Pulses	300	Ayacut	
		6000	Tank/Well	Feb - May
5.	Cotton	5000	Well/Tank	Sep – Feb
6.	Oilseed	20000	Well/Tank	Dec. Jan-March

Source: Records of Office of the Assistant Director of Statistics, Dindigul,

From the table, it could be inferred that nearly 40 percent of the area under paddy was cultivated during Oct Nov - Feb, as it coincides with the water release in the ayacut. Nearly 36 percent of paddy was irrigated by tank and is cultivated during Aug – Feb. Well and tank irrigation formed a major source of irrigation for sugarcane, millets and pulses, and it formed the only source of irrigation for cotton and oilseed crops.

## (2) Rainfed Crop

Area and the season of cultivation of major rain-fed crops in the district are shown in Table 4.6.

**Table 4.6. Area and Season for Major Rainfed Crops– 2006-07**  
(Area in hectares)

Sl.No	Crop	Area - Rainfed / Dry	Season
1.	Millets	80000	June – Sep
2.	Pulses	34000	Sep-October
3.	Cotton	1000	Sep-October
4.	Oilseed	10000	Sep-October & June - July

Source: Records of Office of the Assistant Director of Statistics, Dindigul

It is observed that nearly 64 percent of the rainfed cultivation was under millets, followed by pulses with 27 percent and oilseeds with eight percent.

### Production and Productivity of Major Crops

Production and productivity of major crops grown in the district are shown in Table 4.7 and Table 4.8 respectively.

**Table 4.7 Production of Major Crops– 2006-07**  
(Tons)

Sl. No.	Name of Crop	Production	Production
		Rainfed/Dry	Irrigated
1	Paddy	-	74231
2	Cholam	69100	-
3	Maize	-	61783
4	Cumbu	9890	2030
5	Ragi	716	-
6	Black gram	1052	2592
7	Redgram	895	14
8	Greengram	1074	984
9	Groundnut	1320	23450
10	Gingelly	-	784
11	Cotton	218	566
12	Sugarcane	-	57821

Source: Records of Office of the Assistant Director of Statistics, Dindigul, Dindigul

**Table 4.8 Productivity of Major Crops– 2006-07**  
(Kgs / Ha.)

Sl.No.	Name of the Crop	Yield Rainfed/Dry	Yield (Irrigated)
1	Paddy	-	4829
2	Cholam	1555	-
3	Maize	-	1985
4	Cumbu	968	2256
5	Ragi	1440	-
6	Blackgram	285	603
7	Redgram	305	681
8	Greengram	328	579
9	Groundnut	1650	2645
10	Gingelly	-	654
11	Cotton	218	422
12	Sugarcane	-	10021

Source: Records of Office of the Assistant Director of Statistics, Dindigul

#### 4.5 Input Management

Quantity of various inputs used for local varieties of paddy, maize, cholam and pulses are given in Table 4.9.

**Table 4.9 Quantity of Inputs used for Local Varieties**  
(Per hectare)

S.No	Name of the Input	Rainfed / Dry		Irrigated		Season
		Cholam	Pulses	Paddy	Maize	
1.	Crop	Cholam	Pulses	Paddy	Maize	
2.	Seed (Kg)	15kg	20kg	50kg	20kg	Sep-Oct
3.	Fertilizer (Kg)					
	N	40	12.5	100	132.5	Sep-Oct
	P	20	25	50	62.5	Sep-Oct
	K	20	0	50	50	Sep-Oct
3.	Pesticides (litres)	1000 ml	1000ml			
4.	Weedicides (Kg/L)	500 ml	500ml			
5.	FYM	12.5 T/Ha				
6.	Micro nutrient deficiencies identified if any	Paddy – Zinc Deficiency Maize – Mg Deficiency				

Source: Records of Office of the Assistant Director of Statistics, Dindigul

It could be noted from the table that fertilizer consumption was relatively more for paddy and maize while for cholam and pulses the pesticide and weedicide consumptions were relatively higher. Micronutrient deficiencies were identified in paddy and maize crops.

Popular high yielding varieties of cholam, maize and paddy are as follows:

1. Cholam – Co26, Co27
2. Maize – CoHM4, COHM3, Maharaja
3. Paddy – ASD 19, ADT 45

Quantity of various inputs used for High Yielding varieties of paddy, maize, and cholam are given in Table 4.10.

**Table 4.10 Quantity of Inputs used for High Yielding Varieties**

S.No	Name of the Input	Rainfed / Dry		Irrigated		Season
		Cholam		Paddy	Maize	
1.	Crop	Cholam		Paddy	Maize	
2.	Seed (Kg)	15kg		50kg	20kg	Sep-Oct
3.	Fertilizer (Kg)					
	N	40		100	132.5	Sep-Oct
	P	20		50	62.5	Sep-Oct
	K	20		50	50	Sep-Oct
3.	Pesticides (litres)	1000 ml			1000ml	
4.	Weedicides (Kg/ L)	500 ml			500 ml	
5.	FYM	12.5 T/Ha			12.5 T/Ha	
6.	Micro nutrient deficiencies identified if any	Paddy – Zinc Deficiency Maize – Mg Deficiency		Maize – Mg Deficiency		

Source: Records of office of the Assistant Director of Statistics, Dindigul

It is inferred that unlike the local varieties, pesticide, weedicide and Farm yard manure applications were taken up for high yielding varieties of maize.

#### 4.6 On-going Special Projects in the District

The details of various ongoing programmes of the agricultural sector in Dindigul district are furnished in Table 4.11.

**Table 4.11 On-going Projects of the Department of Agriculture**

S. No	Scheme/ Component	Physical		Financial (in lakhs)		Remarks
		Annual target	Achievement upto Feb 2008	Annual target	Achievement upto Feb 2008	
<b>I. Coconut Development Scheme – Coconut Board, Cochin</b>						
1.	Expansion of area under coconut (Ha)	68	18	-	-	
2.	a. Laying out of Demonstration 2007-2008	10	7	1.75	1.225	
	b. Laying out of Demonstration 2006-2007	25	25	4.375	4.375	
3.	Organic manure units (Nos.)	1	-	0.2	-	
4.	Management of diseases affected palms (Nos.)	1500	800	1.8	2.00	
<b>II. Coconut Development Schemes</b>						
	Distribution of coconut seedlings					
1.	Tall (Nos)	10000	10000			
2.	T x D (Nos)		1000			
3.	Biological Control - Release of parasites (Ha)	710	140			
4.	Farmers Interest Group – Formation Nos. (Office Automation & Library)	30	30	1.50	0.50	
5.	Training to FIG Groups (Nos.)	30	30	1.20	1.20	
6.	Issue of ID Cards (Nos.)	30	30	0.12	0.10	

Table 4.11 Contd...

S. No	Scheme/ Component	Physical		Financial (in lakhs)		Remarks
		Annual target	Achievement upto Feb 2008	Annual target	Achievement upto Feb 2008	
<b>III.TANMABE</b>						
1.	Setting up of small units	5 groups	5 groups	0.50	0.50	
<b>IV. ICDP RICE – 2007 2008</b>						
1.	Distribution of paddy seed (Mt)	250	250	5.00	5.30	
2.	Crop - production Demonstration in SRI (Nos.) 1 No./10 Hec	10	10	2.5	2.5	
3.	1. IPM Demonstration (Nos.)	5	5	0.85	0.85	
4.	P.O.L	-	-	0.30	0.253	
<b>V. Intensive Cotton Development Programme(ICDP Cotton)</b>						
1.	Breeder seed procurement (Kg)	6	6	0.008	0.008	
2.	Foundation seed procurement (Qtls)	3	10.43	0.150	0.2086	
3.	Certified Seed production (Qtls)	40	80.35	0.600	0.7795	
4.	Certified Seed Distribution (Qtls)	40	67.38	0.800	0.877	
<b>VI. ISOPOM – Maize III</b>						
1.	Distribution of certified seeds (Qtls)	25	41.07	0.20	0.251	Pioneer 30 V-92 and Hisheel seeds were distributed
2.	Distribution of Minikit (Nos)	3977	3977			Bio 9637 – 3400 Kit CoHM5 – 577 KIT
3.	Block Demonstration (Nos)	15	15	0.60	0.60	
4.	IPM Demonstration (Nos)	2	2	0.454	0.35	

Table 4.11 Contd...

S. No	Scheme/ Component	Physical		Financial (in lakhs)		Remarks
		Annual target	Achievement upto Feb 2008	Annual target	Achievement upto Feb 2008	
5.	Training to framers (Nos) 9	2	2	0.30	0.30	
6.	Publicity			0.025	0.025	
7.	POL			6.169	1.70	
<b>VII. ISOPOM – PULSES</b>						
1.	Procurement of breeder seeds (Qtls)	5.2	1.10	0.26	0.055	
2.	Procurement of Foundation seed (Qtls)	64.93	96.5	0.325	0.900	
3.	Certified Seed production(Qtls)	811.60	411.10	4.058	3.830	
4.	Certified Seed Distribution(Qtls)	811.60	307.20	6.493	3.380	
5.	Biofertilizer distribution (Nos.)	2352	3073	1.176	1.176	
6.	Large Scale Distribution (Ha) CBD	188	162	3.76	2.000	
7.	IPM Demonstration (Nos.)	9	9	1.108	0.716	
8.	Micro nutrient spary (Ha)	3330	1323	2.331	1.224	
9.	DAP Sparying (Ha)	1414	1437	1.414	1.414	
10.	Farmers Training	9	4	1.35	0.60	
<b>VIII. Oilseed production Programme – ISOPOM – Oilseeds - I</b>						
1.	Purchase of Breeder seeds (Qtls)	9	5.70	0.405	0.089	
2.	Foundation seed procurement (Qtls)	220	100	1.1	0.655	
3.	Certified seed distribution(Qtls)	1100	454.25	8.8	5.427	
4.	Certified seed procurement (Qtls)	1100	338.6	5.5	3.360	
5.	Groundnut CBD (Nos.)	28	12	1.12	0.480	

Table 4.11 Contd...

S. No	Scheme/ Component	Physical		Financial (in lakhs)		Remarks
		Annual target	Achievement upto Feb 2008	Annual target	Achievement upto Feb 2008	
6	Gingelly CBD (Nos)	8	6	0.12	0.075	
7	Sunflower CBD Nos	24	12	0.60	0.30	
8	Gypsum Distribution (Ha)	1000	400	6.5	1.872	
9	Rhizobium Distribution (Ha)	4000	4133	2.00	2.00	
10.	Weedicide Distribution (Ha)	4	4	0.02	0.02	
11	Framers Training (Nos)	10	5	1.5	0.75	
12	I.P.M Demonstration (No)	4	4	0.90	0.560	
13	Combined Nutrient spray on Groudnut (Ha)	28	28	0.056	0.056	

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

#### 4.7 Interventions Recommended under NADP

- Hybrid seed distribution for major crops
- Distribution of micro nutrient mixture
- Promotion of SRI
- Distribution of tarpaulins
- Integrated Nutrient Management and Integrated Pest Management in pulses
- Distribution of Gypsum
- Distribution of Water soluble Inorganic Fertilizer and
- Establishment of seed testing laboratory

## **CHAPTER - V**

### **ALLIED SECTORS**

#### **Introduction**

Apart from agriculture, a number of allied activities are present in the district. Horticultural activities are predominant and the famous vegetable market of the State *viz.*, Ottanchathram Market is also located here. Apart from this, sericulture, animal husbandry and fisheries do play a significant role in the economy of the district.

#### **5.1. Horticulture**

Dindigul district is endowed with diverse climate ranging from tropical to subtropical to temperate and this varied climatic condition is much conducive to grow an array of horticultural crops. These crops assume greater significance as they provide nutritional security, facilitate employment generations and aid in supply of raw materials for growing agro-processing industries.

Dindigul district is a notable contributor to the supply chain of Fruits, Vegetables, Spices and Plantation Crops, Flowers, Medicinal and Aromatic Plants with a total production for 2.96 lakh M.Tons of Fruits, 2.70 lakh M.Tons of Vegetables, 0.20 lakh Tons of Spices, 0.095 lakh Ton of Plantation Crops and 20.24 lakh Tons of Flowers. Improved cultivars, new production and utilization of modern technologies are feeding the Horticulture industry's growth. Recent trend in horticulture development warrants a paradigm shift from traditional agriculture to corporate sector by adopting improved technology, greater commercialization and professionalism in the management of production and marketing.

Future thrust & Strategies visioned by Horticulture department considering the vast scope for the promotion of horticulture based food Industries, Dept of Horticulture formulated future thrust & strategies for sustainable horticulture development in Tamil Nadu State. They are listed below:

- Land development through alternate land use system there by promoting diversification in the cropping system.
- Strengthening of extension net work on par with line departments.
- Standardization of quality norms for the planting materials and seeds.
- Specific needs for development of different kinds of fruits, vegetables, plantation crops, spices, flowers, medicinal & aromatic plants, mushroom etc.
- Exploitation of the unique features in the crop production like off-season mango, grapes etc.
- Efficient and economic water management through micro-irrigation system.
- Strengthening of marketing arrangements for the promotion of Agri business.
- Development of export promotion zones.
- Promotion of Hi-tech Horticulture.
- Organic farming.
- Processing and value addition products and
- Building up reliable database.

### **On-Going Schemes in the Department of Horticulture**

Presently, the following horticulture development schemes are being implemented in this district to cater to the needs of the farmers.

#### **5.1.1. Integrated Horticulture Development Scheme**

Essential inputs like vegetable seeds and planting materials of various horticulture crops are distributed at 50% subsidized cost. In the case of vegetable crops, the subsidy is extended to 0.50 ha while in fruit crops; it is 1 ha per beneficiary. The financial allocation for the year 2007-08 was Rs. 9.23 lakhs to cover an extent of 305 ha in vegetables and 132 ha in rest of the horticulture crops.

#### **5.1.2. Western Ghats Development Scheme**

Mostly fund is allotted for the maintenance of State Horticulture Farm created under this scheme during 1994-95. Training-cum- exposure tour also has been conducted for the farmer's benefit at an outlay of Rs. 2.50 lakhs. The allocation for farm maintenance was Rs.17.00 lakhs.

### **5.1.3. National Horticulture Mission**

National Horticulture Mission is being implemented in this district with a view to realize the following objectives.

- (i) to provide holistic growth of horticulture sector through an area based and regionally differentiated strategies in consonance with comparative advantage of the State and its diverse agro-climatic features.
- (ii) to enhance horticulture production, improve nutritional security and income support to farm house-holds and
- (iii) to promote, develop and disseminate technologies through a seamless blend of traditional wisdom and state of the art of scientific knowledge.

### **5.1.4. Micro Irrigation Scheme**

Although water is a renewable resource, its availability in optimum quality and quantity is under severe stress due to increasing demand from various sectors. Agriculture is the largest user of water. It consumes more than 80% of the country's exploitable water resources. The conventional methods of water conveyance and irrigation being highly inefficient, has led not only to colossal wastage of water but also several ecological problems like water-logging, rendering the agriculture lands to be unproductive in due course etc., Hence, drip irrigation is the only alternative for efficient use of water. 50% subsidy is provided on the cost of installation of micro irrigation system to increase the area under drip and sprinkler irrigation systems.

For 2007-08, a sum of Rs. 488.26 lakhs had been sanctioned to cover an area of 2,830 ha including sugar-cane crop.

For Dindigul district, Mango, Aonla and Banana are identified as focus crops to be encouraged under Area Expansion Programme (AEP). The component wise allocation of funds along with physical programme for the year 2007-08 is furnished in Table 5.1.

**Table 5.1 Ongoing Programmes of the Department of Horticulture**

<b>Sl. No</b>	<b>Details</b>	<b>Unit</b>	<b>Physical Programme</b>	<b>Funds allotted (Rs in lakhs)</b>
1	Establishment of new Gardens			
	(i) Fruit Crops	Ha	1800	180.00
	(ii) Flowers	Ha	435	75.45
	(iii) Spices	Ha	600	67.50
	(iv) Aromatic Plants	Ha	100	11.25
	(v) Medicinal Plants	Ha	100	11.25
	(vi) Plantation Crops	Ha	200	11.25
	<b>Sub Total</b>		<b>3235</b>	<b>356.70</b>
2	II & III year maintenance Program	Ha	2820	152.927
3	Rejuvenation/ Replacement of senile plantation	Ha	715	107.25
	<b>Sub Total</b>		<b>3530</b>	<b>260.177</b>
4	Protected Cultivation	Sq.m	100,000	270.00
5	Promotion of INM/IPM	Ha	1500	15.00
6	Organic Farming	Ha	600	63.00
7	Pollination Support through Bee-keeping	No	50	0.40
	<b>Grand Total</b>			<b>965.277</b>

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

### 5.1.5 Interventions Recommended for Horticulture

- Promotion of shade net house in Vegetable Production.
- Provision of Pandal structures for Pandal type gourds.
- Special plant protection packages for Vegetable production.
- Distribution of Plastic Crates for post harvest handling of vegetables and fruit crops.
- Distribution of power weeder / Vegetable waste shredder.
- Financial assistance of bore well with casing pipe.

- Programme for the promotion of enriching humus and effective microbes in soil.
- Support system provision for Banana and Gloriosa.
- Distribution of special plant production equipments for horticulture crops.
- Distribution of Mango harvester.
- Provision of sales outlet in District Head Quarters Office.
- Organizing a district level Farmers' workshop.
- Conducting interstate exposure visit (5 days duration).
- Encouraging the provision of Mango, Banana and Aonla fruits in noon meal scheme through TANHOPE SHG Tie-up arrangement.
- Mega Demo plot for promotion of horticulture industry in the district and
- Encouraging Enterprising Farmers Association (EFA)

## **5.2. Animal Husbandry**

Dindigul District has a reputation of being located in the white belt of Tamilnadu. Animal Husbandry shares equal importance along with Horticulture as a remunerative occupation. Part of Dindigul District *viz.*, Palani and Vedasandur taluks lie in the Kangayam Breeding tract.

Dindigul District has favorable environment for breeding pure exotic milk breeds like Jersey in Kodaikanal, Palani and Sirumalai Hill ranges. Palani, Vedasandur and part of Dindigul taluks are unique in buffalo breeding in the sense that buffaloes are highly productive in this dry tract.

From this dry tract, butter and curd are exported to other states and the area is dotted with creameries. Buffalo is the 'Bread Winner' of many families. Kodaikanal, Dindigul, Natham and Nilakottai taluks have good population of cross bred cows with different level of exotic inheritance.

The density of sheep and goat population is high in Palani and Vedasandur and Dindigul taluks. The flourishing sheep breeds in these areas are the reputed Macheri breed. Goats are multiplying without any directional breeding.

There are two Poultry Extension Centres at Gandhigram and Kodaikanal. These Poultry Extension Centres serve as Model Units in Poultry Management. Also they distribute hatching eggs and pullets to the farmers around the units.

Infrastructure for Cattle and Buffalo Breeding is extended through a wide network of insemination centers in this district.

Animal Health Cover is extended through a network of Veterinary Institutions distributed uniformly in this district.

#### **A. Baseline Information - 2004**

• Cattle	–	245116
• Buffalo	–	68112
• Sheep	–	214143
• Goat	–	351211
• Poultry	–	2037985
• Pigs	–	6443

#### **B. Productivity - 2006-07**

• Cattle (Milk yield(kgs/day/animal)		
• Indigenous cows	:	2.446 percent
• Exotic & Crossbred	:	5.797 percent
• Buffalo	:	3.804 percent
• Desi egg	:	- 1.1 percent
• Green fodder deficit	:	87.50 percent
• Dry fodder excess	:	25.32 percent
• Breedable population	:	132600 cattle
• Number of A.I.	:	167817 / year
• Milk production	:	1.26 lakh lit/day by Aavin

### **C. Major Interventions Recommended for Animal Husbandry**

#### **(i) Cattle and Buffalo**

- Augmentation of fodder production (Co3) through Self Help Groups/ Livestock farmers
- Mobile Veterinary Clinics
- Supplementation of mineral mixture

#### **(ii) Sheep and Goat**

- Semi intensive sheep/ goat farming to improve meat production by SHGs
- Distribution of Bucks and Rams
- Control of parasitic diseases through treatment to enhance vaccine response

#### **(iii) Poultry**

- Distribution of TANUVAS-Nandanam III birds
- Immunization against RD

#### **(iv) Others**

- Strengthening of Veterinary Institutions with basic facilities like fencing bore wells, water troughs, minor repair works etc.
- Supply of milk cooler
- Supply of by-pass protein feed to the milch animals
- Milking machines and portable milking machines For ID Farms (DDD)
- P.C.based automatic milk collection stations to IDF Villages Milk Producers Cooperative Societies
- Quality assurance lab strengthening
- Farmers study tour
- Strengthening of TANUVAS centre for Training (Training cum conference hall for farmers), mobile disease investigation and training unit, LCD projector, Microscope etc.

### 5.2.1 Fisheries Development

#### Baseline information

- Inland water resources - 12123 ha
- Reservoir - 1420 ha
- Long seasonal tanks - 4411 ha
- Short seasonal tanks - 6292 ha
- Inland fishermen population - 15,000
- Total fish seed requirement - 60.00 lakhs
- Fish seed rearing centre at Anaipatti (Govt.) – capacity 5.00 lakhs - only seed farm
- Inland fishermen Cooperative Societies – 5 (Members - 2670)
- Great scope for improvement in fish seed production & reservoir fish catch
- Good scope for retail outlet at Palani, Kodaikanal & Dindigul taluks

### 5.2.2 Interventions Recommended for Fisheries

- Creation of additional nursery space at Anaipatti
- Expansion of fish culture in hitherto unutilized water-bodies by stocking
- Subsidy assistance to Private Fish Seed Rearing / Fish Seed Production
- Moped-cum-insulated Ice box for fish marketing
- Supply of fishing implements (craft and gear) and
- Setting up of modern fish retail outlet

### 5.3 Ongoing Schemes under the Department of Agricultural Engineering

The details of the various ongoing schemes in the district under the Department of Agricultural Engineering are presented in Table 5.2.

**Table 5.2 Ongoing Programmes of the Department of Agricultural Engineering****1. Western Ghats Development Programme**

Sl. No.	Name of Work	Unit	On Going Programme	
			Phy.	Fin. (in lakhs)
1	<i>In situ</i> rain soil moisture conservation	Ha	20.00	0.500
2	Land Shaping	Ha	11.00	0.825
3	Contour rubble bund – General	Ha	12.00	1.200
4	Contour rubble bund - SC/ST	Ha	5.00	0.500
5	Masonry checkdam-Middle Reaches – General	Nos.	6	3.000
6	Masonry checkdam-Middle Reaches - SC/ST	Nos.	1	0.500
7	Masonry checkdam-Lower Reaches	Nos.	10	10.000
8	Gabion structures – General	Nos.	53	13.250
9	Gabion structures - SC/ST	Nos.	3	0.750
10	Village Pond – General	Nos.	1	2.000
11	Village Pond -SC/ST	Nos.	1	2.000
12	Farm Pond	Nos.	5	2.000
13	DLT works in upper reaches – General	Nos.	93	2.790
14	DLT works in upper reaches - SC/ST	Nos.	10	0.300
15	DLT works in middle reaches – General	Nos.	67	6.700
16	DLT works in middle reaches - SC/ST	Nos.	7	0.700
17	Water harvesting Structures	Nos.	1	0.660
18	Retaining wall – General	Nos.	29	9.570
19	Retaining wall - SC/ST	Nos.	4	1.320
		<b>Ha</b>	<b>48.000</b>	
	<b>Total</b>			<b>58.565</b>
		<b>Nos.</b>	<b>291</b>	

Source: Records of Office of the Executive Engineer (Agrl. Engg.), Dindigul

**2. Schemes for Development of Kodaikanal under WGD**

Sl. No.	Name of Work	Unit	On Going Programme	
			Phy.	Fin. (in lakhs)
1	Rehabilitation of existing tank at Poondi hamlet of Poondi village in Kodaikanal taluk	Nos.	1	10.00
2	Rehabilitation of existing tank at Klavarai hamlet of Poondi village in Kodaikanal taluk	Nos.	1	5.00
3	Construction of Water Harvesting Structure at Arampillaiparai of Kavunchi hamlet of Mannavanur village in Kodaikanal taluk	Nos.	1	15.00
4	Construction of Earth slide protection wall near Govt. Higher Secondary School, Kodaikanal	Nos.	1	10.00
5	Construction of Earth slide protection wall near the entrance of Villpatti village, Kodaikanal	Nos.	1	10.00
6	Construction of Earth slide protection wall near Kurinji Andavar Temple, Kodaikanal	Nos.	1	10.00
7	Rehabilitation of Irrigation Channel in Klavarai Tank of Poondi village	Nos.	1	10.00
8	Rehabilitation of Irrigation Channel in Mannavanur Tank of Mannavanur village	Nos.	1	10.00
9	Construction of Gabion Check Dams in Adukkam, Kamanur & Pannaikadu villages (40 nos x 0.250) (for preventing siltation of reservoirs below)	Nos.	40	10.00
	<b>Total</b>		<b>48</b>	<b>90.00</b>

Source: Records of Office of the Executive Engineer (Agrl.Engg), Dindigul

### 3. Rainwater Harvesting and Runoff Management Programme under Soil Conservation Scheme

Sl. No.	Name of Work	Unit	On Going Programme	
			Phy. in Nos.	Fin. (Rs. in lakhs)
1	Minor Check dam	Nos.	15	3.75
2	Medium Check dam	Nos.	20	10.00
3	Major Check dam	Nos.	10	10.00
4	Percolation Pond	Nos.	3	9.00
5	Rejuvenation of wells	Nos.	21	5.46
6	Farm ponds	Nos.	14	5.60
7	Recharge Shaft	Nos.	9	2.25
	<b>Total</b>	<b>Nos.</b>	<b>92</b>	<b>46.06</b>

Source: Records of Office of the Executive Engineer (Agrl.Engg), Dindigul

### 4. NABARD - Rural Infrastructure Development Fund - XI Rainwater Harvesting Structures

Sl. No.	Name of Work	Unit	On Going Programme	
			Phy. in Nos.	Fin. (Rs. in lakhs)
1	Minor check dam	Nos	56	5.60
2	Medium check dam	Nos	41	20.50
3	Major check dam	Nos	52	39.00
4	Percolation pond	Nos	27	54.00
5	Farm pond	Nos	66	26.40
6	Rejuvenation of wells	Nos	58	15.08
	<b>Total</b>	<b>Nos</b>	<b>300</b>	<b>160.58</b>

Source: Records of Office of the Executive Engineer (Agrl.Engg), Dindigul

**5. Agricultural Mechanization Programme**

Item No	Machinery	Subsidy %	On Going Programme	
			Phy. in Nos.	Fin. (Rs. in lakhs)
1	Tractors delivering up to 35 HP	25 % - Maximum Rs.30000	2	0.600
2	Power Tiller	25 % - Maximum Rs.30000	40	12.000
3	Rotavator	25 % - Maximum Rs.20000	12	2.400
	<b>Total</b>		<b>54</b>	<b>15.000</b>

Source: Records of Office of the Executive Engineer (Agrl.Engg), Dindigul

**6. Micro Irrigation Scheme (Drip Irrigation)**

Sl.No	Crop	Subsidy %	On Going Programme	
			Nos.	Extent (Ha)
1	Mango	50% of the cost per Ha fixed in Govt.of India Guidelines	10	25.035
2	Amla		39	92.755
3	Cashew		1	1.450
4	Sapota		11	18.110
5	Drumstick		2	5.610
	<b>Total</b>		<b>63</b>	<b>142.960</b>

Source: Records of Office of the Executive Engineer (Agrl.Engg), Dindigul

**7. Integrated Wasteland Development Programme (IWDP)**

Sl.No	Details of works	Unit cost in Rs.	On Going Programme	
			Physical	Fin (Rs. in lakhs)
1	Earthen bund	2000	350.750	7.015
2	Land shaping	2000	311.000	6.225
3	Checkdam	50000	11	5.500
4	Channel Renovation	27500	1	0.275
5	Farm pond	15000	23	3.450
6	New pond	15000	27	4.000
7	Cattle pond	15000	27	4.050
8	Gabion check dam	40000	8	3.100
9	Fruit plantation	6000	179.530	10.710
10	Agro forestry	6000	58.590	3.515
11	Social forestry	6000	26.500	1.600
12	Vegetable development	5000	70.400	3.515
13	Herbal development	5000	12.000	0.600
14	Fodder development	3600	77.920	2.805
15	Stone wall	3000	7.000	0.210
16	Renovation of pond	50000	9	4.050
17	Self Help Group (Revolving fund)	10000	16	1.600
	<b>Total</b>	<b>Ha</b>	<b>1093.690</b>	<b>62.220</b>
		<b>Nos.</b>	<b>122</b>	

Source: Records of Office of the Executive Engineer (Agrl.Engg), Dindigul

**8. Interventions Recommended for Agricultural Engineering****I Stream: 1 (Part – A)****A. Introduction of Newly Developed Agrl. Machinery / Implements**

- Mini Combined Harvester (TNAU)
- Multi Crop Thrasher
- Power Weeder with attachment
- Paddy Transplanter
- Maize Husker Sheller
- Coconut De-husker

**B. Innovative Water Harvesting Structures & Thrashing Floor**

- Lined Farm Pond with mobile sprinkler
- Thrashing Floor

**C. Promoting the concept of Mechanized villages**

- Chisel Plough
- Sub soil coir pith applicator
- Ridger – Tractor operated
- Raised bed seed drill – Tractor operated
- Power Weeder – Oleo Mac
- Maize Husker Sheller (Tractor PTO)

**II a) Stream: 1 (Part – B)**

Special scheme for the Beneficiaries of land reforms - Innovative scheme for On farm development with special focus on SC land holdings in Andipatti village of Palani taluk

- Soil and moisture conservation works
- On Farm Development
- Infrastructure (Farm roads & Cart Track crossing)
- Agricultural Mechanization

**II b) Stream: 2****A. Popularization of Agricultural Mechanization thro' Conventional Machinery / Equipments**

- Power Tiller
- Rotavator
- Cultivator
- Offset Disc harrow
- Disc Plough

**B. Water Harvesting Structures & Soil Conservation Works**

- Farm Ponds unlined
- Compartmental bunding
- Land Shaping
- Terrace support wall

### **C. Water Management works**

- PVC Pipe laying
- Ground Level Reservoir
- Fertigation assembly

### **5.4 Interventions Recommended for Agricultural Marketing and Agri-Business**

- Establishment/ organization of commodity groups for marketing in the State with financial assistance from NADP
- Facilitation of Contract Farming between farmers and bulk buyers in the State with financial assistance from NADP
- 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 with financial assistance from NADP
- Capacity building of farmer's skill
- Price surveillance
- Regulated Market / uzhavar Shandies Publicity and
- Market Infrastructure

### **5.5. Sericulture**

Dindigul district is one of the traditional districts among the southern districts of the State. It has the unique distinction of having all the three main activities of sericulture, i.e. production of cocoon, silk reeling and weaving of silk sarees. Mulberry cultivation, cocoon production and silk reeling activities are coming under the jurisdiction of Asst. Director of Sericulture, Dindigul.

There are about five technical service centers functioning in the district to support the sericulture extension activities. One model mulberry plantation farm is functioning at Chinnakalaiyamputhur, to serve as a model silk farm. It is proposed to start a mobile

cocoon market at Palani to facilitate local producers and reelers. One private Chawkie rearing centre is functioning at V.Kurumbapatty near Gopalpaty for helping new sericulturists and to produce robust worms. Two new reeling entrepreneurs have started their cottage basin reeling units at Palaniyur near Tarmathupatty of Reddiar chatham block and Alagampatty of Nilakottai Taluk.

There are about 1,505 sericulture families involved in silkworm rearing in the district. The details of area under mulberry and production of cocoons are furnished in Table 5.3.

**Table 5.3 Area under Mulberry and Production of Cocoons - 2005-06**

<b>Name of the block</b>	<b>Area under Mulberry (Ha.)</b>	<b>Production of Cocoons (Kgs.)</b>	<b>Value (Rs.)</b>
Dindigul	63.65	51569.200	5247318
Nilakkottai	6.84	2876.200	413491
Natham	9.50	3057.000	305967
Vedasandur	46.45	15117.500	2071097
Palani	108.65	80883.000	14228340
Oddanchatram	50.00	14384.000	1726080
Kodaikanal	--	--	---
<b>Total</b>	<b>285.09</b>	<b>167886.9</b>	<b>23992293</b>

Source: Records of Office of the Assistant Director of Statistics, Dindigul

About 40 percent of the area under mulberry in the district is in Palani block followed by Dindigul block with 22 percent. Similar trend is reflected in the production of cocoons as well.

### **5.5.1 Interventions Recommended for Sericulture**

- Increasing the area under high yielding mulberry plantation
- Providing subsidy for purchase of saplings
- Providing subsidy for construction of shed
- Providing Silkworm rearing appliances at subsidized cost and
- Training to farmers

### **5.6 Interventions Recommended for PWD**

- Rehabilitation of Athoor anicut supply channel and restoration of its three tanks in Athoor village of Athoor taluk in Dindigul district of Tamil nadu
- Construction of Anicut across Vanjiodai in Mallanampatti village of Nilakkottai taluk in Dindigul district
- Modernisation of Ayyampalayam Rajavoikkal supply channel in Ayyampalayam village of Athur taluk in Dindigul district
- Modernisation of Rajavoikkal supply channel in Narsingapuram village of Athoor taluk in Dindigul district
- Modernisation of Mattaparai tank, Pillayarnatham tank, Eramankulam tank and Thathankulam tank in Nilakkottai taluk of Dindigul district
- Modernisation of Thamaraikulam and Vadikulam tanks in Narasingapuram village of Athoor taluk in Dindigul district and
- Lining the left main canal of Palar Porundalar dam from L.S 0 KM to 18.520 KM in Palani Taluk of Dindigul district.

## **CHAPTER - VI**

### **DISTRICT PLAN**

#### **6.1 Agriculture**

The National Agricultural Development programme aims at improving the GDP to minimum of four percent by way of meeting the yield gaps in crops and improving the productivity of crops and the economic status of the farmers.

#### **Background and Problem Focus**

Dindigul District is located between 10°05' and 1°09' North latitude and 77°30' and 78°20' East longitude. It is bound by Erode Karur and Trichirapalli Districts on the North and Madurai District on the East and South, and Coimbatore District and Kerala State on the West.

The District consists of eight taluks viz. Dindigul, Aathoor, Nilakottai, Natham, Palani, Oddanchatram, Veda sandur and Kodaikanal and 14 Blocks.

The average rainfall of the District was 836 mm. The maximum and minimum temperature recorded was 37.5° C and 19.4° C respectively.

The major problem/constraints faced by the farmers are (i) scarcity of labour, (ii) low water table and (iii) lesser nutritive soil. This plan has been drawn by considering the above problems. If the above problems are solved, the productivity could be improved, thereby the GDP will also go up.

For solving the above mentioned problems, under the NADP, importance has been given to Agricultural Mechanisation so as to meet the agricultural labour scarcity. Precision farming techniques like Drip Irrigation, Water carrying mechanisms etc., will solve the low water table problem i.e. using every droplet of water to its utmost efficiency. With regard to the soil, all the nutrients which are needed for the crop production will be considered through the INM method.

### **6.1.1 Detailed Project Proposals - Crops**

#### **(i) Project Rationale**

In Dindigul District, the major crops are Paddy, Maize, Pulses, Cotton, Groundnut, Sunflower and Coconut.

The total production of the crops in the District aimed to be increased, through technology transmission. Most of the farmers of the region are applying major nutrient fertilizers only. Hence, it is important to train the farmers in adopting INM technology. The farmers are not fully aware of the latest agricultural technologies like System of Rice Intensification (SRI), Precision Farming Techniques etc.

Another major problem of the District is the labour scarcity. So it has been planned to mechanise the agricultural operations to the maximum extent possible.

The farmers are in the practice of using the conventional variety of seeds for cultivation. To change this attitude, it has been planned to create awareness to the farmers on the usage of high yielding varieties and hybrid seeds.

#### **(ii) Project Strategy**

The farmers are practicing the conventional agricultural practices like using conventional seeds which are low yielding instead of using hybrid seeds. Fertilizers are used indiscriminately without following the soil test report.

The scheme aims at acquainting the farmers with the knowledge of using hybrid seeds, micronutrients, bio Fertilizers and latest agricultural technologies like System of Rice Intensification, Precision Farming using farm implements etc.

To promote the practice of modern agricultural practices, the subsidies are given under various components.

The compact block demonstrations and the precision farming demonstration in the fields will help the farmers to know the modern agricultural practices and the optimum usage of inputs and equipment.

To meet the agricultural labour problems, the agricultural mechanization is given importance. The power thrasher, power tiller and power operated maize sheller are planned to be distributed to the farmers at 75 percent cost subsidy.

Farmers can be easily educated about the latest agricultural technology through training and publicity and the same will be made available to the farmers. It will induce and motivate the farmers to adopt the latest technologies in their own field.

### **(iii) Project Goals**

- To popularize the modern agricultural practices and skills to farmers.
- To improve the latest knowledge of farmers about the agricultural inputs and agricultural equipments used in modern agricultural practices.
- Improving adoption of farm mechanization so as to overcome the farm labour scarcity, thus enhancing the farm productivity.
- Arranging compact block demonstrations and precision farming demonstrations to enable the farmers to know the impact and optimum usage of agricultural inputs.
- To improve the knowledge of farmers on the use of bio fertilizers, micro nutrients and Integrated Nutrient Management.
- To make aware of the farmers on the use of high yielding hybrids.
- To assist the farmers in the adoption of post harvest methods by supplying tarpaulins and construction of thrashing floor.
- To meet the yield gaps in the production of important crops.
- To maximize returns to the farmers in agriculture and
- To maximize the production and productivity of major crops.

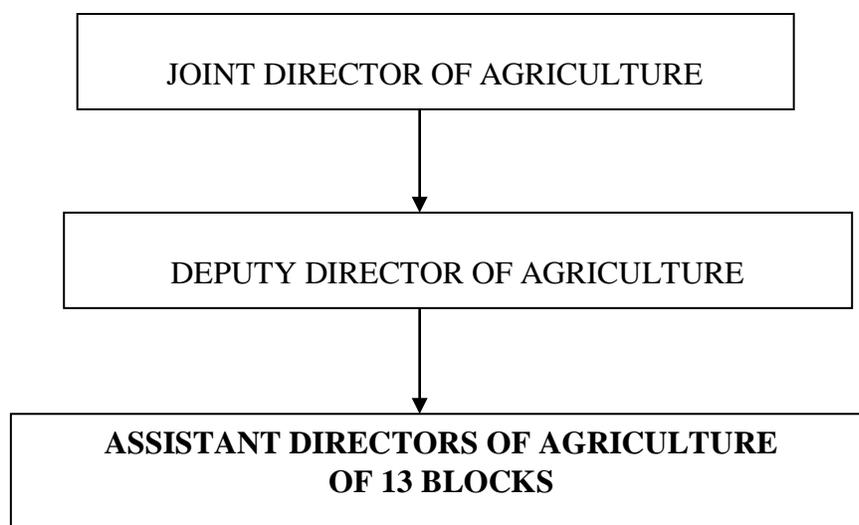
The details of interventions and the costs involved are furnished in Table 6.1.

**Table 6.1 Proposed Projects for Agricultural Development****(Rs. in lakhs)**

Sl. No.	Proposed Interventions	Overall Budget				
		2008-09	2009-10	2010-11	2011-12	Total
1.	Integrated Scheme for Paddy	29.10	43.00	49.75	56.00	<b>177.85</b>
2.	NADP – Maize for Irrigated Areas	11.50	19.00	19.00	19.00	<b>68.50</b>
3.	NADP – Maize for Rainfed Areas	13.75	21.25	28.00	19.00	<b>82.00</b>
4.	Pulses Development Programme	44.95	42.55	42.55	42.55	<b>172.60</b>
5.	Oilseed Production Programme - Groundnut	14.85	15.35	15.35	15.35	<b>60.90</b>
6.	Integrated Programme for Sunflower Development	8.00	9.50	9.50	9.50	<b>36.50</b>
7.	Intensive Programme for Cotton Development	7.70	7.70	14.20	14.20	<b>43.80</b>
8.	Establishment of seed testing laboratory	6.00	-	-	-	<b>6.00</b>
	<b>Total</b>	<b>135.85</b>	<b>158.35</b>	<b>178.35</b>	<b>175.60</b>	<b>648.15</b>

**(iv) Implementation**

The NADP Scheme is proposed to be implemented as detailed below:



It is proposed to implement the NADP and its components through the field functionaries already existing in the system.

**(v) Reporting**

Reporting the progress through monthly reports from the block level and consolidated at District Level.

The progress will be reviewed every month by the Joint Director of Agriculture.

**(vi) Crop wise Recommended Interventions**

The crop wise recommended interventions for four years along with the budget are in furnished in Table 6.2.

**Table 6.2 Crop wise recommended Interventions of the Department of Agriculture****(Rs. in lakhs)**

Sl. No	Paddy	Unit	2008-09		2009-10		2010-11		2011-12		Total	
			Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
1	Hybrid seed Distribution Subsidy @ Rs 50/Kg	Tons	1.0	0.50	1.5	0.75	2.0	1.00	2.5	1.25	7	3.50
2	Distribution of green manure seeds @ 75% or Rs 20/Kg Subsidy	Ton	5.0	1.00	5.0	1.00	7.5	1.50	7.5	1.50	25.0	5.00
3	Distribution of soil health card @ Rs 25/ Card	Nos	10000	2.50	10000	2.50	10000	2.50	10000	2.50	40000	10.00
4	Distribution of micro nutrient mixture @ Rs.500/Ha or 50% subsidy	Ha	1000	5.00	1000	5.00	1000	5.00	1000	5.00	4000	20.00
5	Promotion of SRI - CBD Rs 3000/ Ha	Nos	400	12.00	600	18.00	800	24.00	1000	30.00	2800	84.00
6	Distribution of tarpaulins @ Rs 7500 or 75% subsidy	Nos	100	7.50	200	15.00	200	15.00	200	15.00	700	52.50
7	Distribution of bio fertilizer @ Rs 3/ No or 50% subsidy	Nos	20000	0.60	25000	0.75	25000	0.75	25000	0.75	95000	2.85
	<b>Total</b>			<b>29.10</b>		<b>43.00</b>		<b>49.75</b>		<b>56.00</b>		<b>177.85</b>

Table 6.2 Contd.....

(Rs in lakhs)

Sl. No	Maize –Irrigated	Unit	2008-09		2009-10		2010-11		2011-12		Total	
			Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
1	Distribution of high yielding hybrid seeds @ 50% subsidy ltd to Rs 75/Kg	Tons	10	7.50	20	15.00	20	15.00	20	15.00	70	52.5
2	Publicity and provision of AV aids @ Rs.2,00,000	Nos	1	2.00	1	2.00	1	2.00	1	2.00	4	8.00
3	Precision Farming @ 90% Subsidy ltd to Rs.1,00,000/Ha	Ha	2	2.00	2	2.00	2	2.00	2	2.00	8	8.00
	<b>Sub Total</b>			<b>11.50</b>		<b>19.00</b>		<b>19.00</b>		<b>19.00</b>		<b>68.50</b>
	<b>Maize –Rainfed</b>											
1	Distribution of high yielding hybrid seeds @ 50% subsidy ltd to Rs 75/Kg	Tons	10	7.50	20	15.00	20	15.00	20	15.00	70	52.5
2	Publicity and provision of AV aids @ Rs.2,00,000	Nos	2	4.00	2	4.00	2	4.00	2	4.00	8	16
3	Distribution of Bio-fertilizers @ 50% subsidy @Rs.3/No.	Nos	75000	2.25	75000	2.25	300000	9.00	-	-	450000	13.5
	<b>Sub Total</b>			<b>13.75</b>		<b>21.25</b>		<b>28.00</b>		<b>19.00</b>		<b>82.00</b>

Table 6.2 Contd.....

(Rs in lakhs)

Sl. No.	Pulses	Units	2008-09		2009-10		2010-11		2011-12		Total	
			Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
1	Distribution of Bio fertilizer @ 50% subsidy or Rs 3/ No	Nos.	10000	0.30	10000	0.30	10000	0.30	10000	0.30	40000	1.2
2	INM @ Rs.1250/Ha	Ha.	2000	25.00	2000	25.00	2000	25.00	2000	25.00	8,000	100
3	IPM @ Rs 750/Ha	Ha.	2000	15.00	2000	15.00	2000	15.00	2000	15.00	8,000	60
4	Farmers Training 50 farmers for 2 days @ Rs.15,000/Training	Nos.	15	2.25	15	2.25	15	2.25	15	2.25	60	9
5	DAP 2 % spray for pulses*	Ha.	1200	2.40	-	-	-	-	-	-	-	2.40
	<b>Total</b>			<b>44.95</b>	-	<b>42.55</b>	-	<b>42.55</b>		<b>42.55</b>		<b>172.60</b>

\*Special interventions

Table 6.2 Contd.....

(Rs in lakhs)

Sl. No.	Groundnut	Unit	2008-09		2009-10		2010-11		2011-12		Total	
			Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
1	Distribution of Bio - fertilizer @ Rs.3/No	Nos	20000	0.60	20000	0.60	20000	0.60	20000	0.60	80000	2.40
2	Distribution of MN mixture @ 50% cost ltd to Rs.500/Ha	Ha	500	2.50	600	3.00	600	3.00	600	3.00	2300	11.50
3	Distribution of Gypsum subsidy 50% ltd to Rs.750/Ha	Ha	1000	7.50	1000	7.50	1000	7.50	1000	7.50	4000	30.00
4	Distribution of Tarpaulins @ subsidy of Rs.7500/No or 75%	Nos	30	2.25	30	2.25	30	2.25	30	2.25	120	9.00
5	Publicity/POL Rs.2,00,000 per year per district		–	2	–	2.00	–	2.00	–	2.00		8.00
	<b>Total</b>			<b>14.85</b>		<b>15.35</b>		<b>15.35</b>		<b>15.35</b>		<b>60.90</b>

Table 6.2 Contd.....

(Rs in lakhs)

Sl. No.	Sunflower	Unit	2008-09		2009-10		2010-11		2011-12		Total	
			Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
1	Distribution of Hybrid seed @ 50%subsidy ltd to Rs.150/Kg	Kgs	2000	3.00	3000	4.50	3000	4.50	3000	4.5	11000	16.50
2	Crop production technology Demonstration @ 90% subsidy ltd Rs 5000/Ha	Nos	20	1.00	20	1.00	20	1.00	20	1.00	80	4.00
3	Distribution of hybrid seed mini kit at free of cost – 1 Kg Kit (Rs.400/Kit)	Nos	500	2.00	500	2.00	500	2.00	500	2	2000	8.00
4	Precision farming 90% subsidy ltd to Rs 1,00,000/Ha	Ha	2	2.00	2	2.00	2	2.00	2	2	8	8.00
	<b>Total</b>			<b>8.00</b>		<b>9.50</b>		<b>9.50</b>		<b>9.50</b>		<b>36.50</b>

Table 6.2 Contd.....

(Rs in lakhs)

Sl. No.	Cotton	Units	2008-09		2009-10		2010-11		2011-12		Total	
			Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.
1	BT cotton Seed distribution @ 50% subsidy Rs.400/Packet	Nos.	50	0.2	50	0.2	50	0.2	50	0.2	200	0.8
2	Precision farming @ 90% subsidy ltd to 1,00,000 / Ha	Ha	1	1	1	1	1	1	1	1	4	4
3	Distribution of Water soluble Inorganic Fertilizer @90% subsidy	Tons	13	6.5	13	6.5	26	13.0	26	13.0	78	39.0
	<b>Total</b>			<b>7.70</b>		<b>7.70</b>		<b>14.20</b>		<b>14.20</b>		<b>43.80</b>

## **6.1. 2. Establishment of Seed Testing Laboratory at Dindigul District**

### **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 Agriculture Development Programme (NADP) aims in bringing about quantifiable changes in production and productivity of various components of Agriculture and allied structure in a holistic manner. The purchase of equipments for New Seed Testing Laboratories is not covered under the components under NADP (a to p) and hence the purchase of Equipments for the Dindigul 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 Dindugul district.

**a) Objectives of Seed Testing**

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

**b) 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.

**c) 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.

#### **d) 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 Madurai 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 Dindigul 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.

#### **e) 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 for testing to Seed Testing Laboratory. In the present scenario, where Seed Testing Laboratory is not available in the district, the seed producers, seed dealers and farmers find it very difficult to send the seed samples for analysis. Hence, facilitating the seed producers, seed dealers and farmers by establishing Seed Testing Laboratory in the district will be of much use. Accordingly, a Seed Testing Laboratory is proposed to be established in Dindugul 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 Dindugul district under National Agricultural Development Programme at a financial outlay of Rs.6.00 lakhs towards provision of laboratory equipments.

#### **f) 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.

### **6.1.3 Requirement of Equipments for Establishing Seed Testing Laboratory**

#### **1. Mixing and Dividing Equipments**

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

#### **2. Moisture Testing Equipment**

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

### **3. Weighing Equipments**

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

### **4. Purity Analysis Equipment**

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

### **5. Germination Equipment**

Seed Germination in the laboratory should be made under ideal conditions. This necessitates controlled temperature and humidity. For conducting germination test under prescribed temperature and humidity for various agricultural and horticultural crop seed samples Cabinet germinator is very much required. Germination Trays 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 temperature is required. Work table and chair are necessary for carrying out various works like germination, purity analysis and for working of equipments etc.

### **8. Computers with Accessories**

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

**a) Cost Aspects**

The Seed Testing Laboratory that is to be established should have the following equipments for the purpose of analyzing seed samples for moisture, physical purity, germination and Other Distinguishable Varieties (Table 6.3).

**Table 6.3 Project Components for Establishment of Seed Testing Laboratory**

Sl.No.	Name of the Instrument/Equipment	Approx. Qty required for One lab	Approx . Cost Per unit (Rupees)	Aprox. Cost for One lab. (Rupees)
1	Weighing Balance-Top Loading	1	5000	5000
2	Illuminated purity Work board	1	4000	4000
3	Electronic Weighing balance (0.1 mg)	1	30000	30000
4	Soil type divider	1	7500	7500
5	Digital moisture meter with stabiliser	1	17500	17500
6	Germination trays	200	175	35000
7	Petri dishes	50	300	15000
8	Thermometer	1	300	300
9	Hygrometer	1	1500	1500
10	Cabinet Germinator (Double door) along with stabliser	1	225000	225000
11	Air Conditioner (split type) along with stabilizer	2	35000	70000
12	Work Table	5	4000	20000
13	Work Chair	4	2500	10000
14	Trolley(Movable)	1	5000	5000
15	Computer with accessories	1	60000	60000
16	Germination Paper (Roll towel) in Kgs	200	165	33000
17	Filter paper (Nos)	50	35	1750
18	Seed Storage Rack	2	6000	12000
19	Telephone Connection with Broad band	1	1250	1250
20	Miscellaneous items			46200
	<b>Total</b>			<b>6,00,000</b>

(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.

**b) 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.

**c) Benefits**

The Seed Testing laboratory is an important institution in carrying out the seed production and seed certification program. The accuracy and reproducibility in the analyzed results is of paramount importance to the seed producer, processor, certification and seed law enforcement officials. Establishment of seed testing laboratory at Dindugul 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.

**d) Expected Date of Completion**

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

**e) Monitoring and Evaluation**

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

**6.2 Horticulture**

The area and production of horticulture crops show a steady increase and yet to meet the growing demand for horticultural produces, both for domestic and export purpose, besides horizontal expansion in area, vertical growth in productivity is also much important. This can be achieved by planned execution of developmental schemes/programmes in horticulture sector. With this backdrop, the horticulture programmes are

proposed under NADP during XI FYP period. Component wise the interventions recommended and required budget are presented in Table 6.4 through Table 6.14.

### **6.2.1 Promotion of Vegetable Cultivation**

#### **(i) Project Goal**

To increase the area, production and productivity of vegetable crops.

#### **(ii) Present Problem in Production**

Certain Hybrid Vegetables like Paprika require protected condition for optimum production. Shade net house is the optimum structure but farmers are not in affordable position.

Similarly, there is a tremendous scope in increasing the area under pandal type gourds. But the initial investment for erecting pandal structure is heavy and hence the farmers are reluctant to enter this venture on large scale.

Post harvest practices are not properly attended to by farmers. This will lead to quick loss of consumer preference for produces in market which would in turn affect the income of the farmers.

#### **(iii) Project Strategy**

For the first problem, it is proposed to promote shade net house structures and encourage the farmers to take up cultivation under protected condition.

As regards pandal type gourds, it is desirable by the farmers to have some financial assistance on capital investment on pandal erection.

Special package of plant protection chemicals have to be provided to the farmers at subsidized cost in order to make them to attend the plant protection on time.

Finally, plastic crates have to be provided to the farmers for proper handling of vegetables and fruits after harvest.

### **6.2.2 Promotion of Shade Net House in Vegetable Production**

To promote the hybrid vegetable cultivation, it is proposed to provide financial assistance to the tune of Rs. 1lakh /300 Sq.m at 50% subsidy rate for the construction of shade net house in farmer's field. This structure may be used by the farmers to raise nursery as well as main crop cultivation in a controlled condition.

### **6.2.3 Provision of Pandal Structures for Pandal type Gourds**

In Oddanchatram block, a notable Vegetable belt, Pandal gourds cultivation is picking up. All though land and sufficient water is available, farmers due to their poor economic conditions are not able to take up gourds cultivation as pandal erection requires heavy initial investment on their part. Hence, it is not possible to bring more area under pandal gourds. Hence it is proposed to provide financial assistance to the tune of Rs.50000/-Ha. @ 50% subsidy rate.

### **6.2.4 Special Plant Production Packages for Vegetable Production**

Broad spectrum plant protection chemicals worth of Rs.3000/ha can be provided to the farmers at 50% subsidy cost in order to take up timely plant protection measures for vegetable crops.

### **6.2.5 Distribution of Plastic Crates**

To ensure smooth handling of vegetable produces, it is proposed to distribute 50 no. of plastic crates for an extent of one ha at 50% subsidy cost. The details of interventions along with the costs involved are furnished in Table 6.4.

**Table 6.4 Project Proposals for Promotion of Vegetable Cultivation**

S.No.	Name of the Component	Unit Cost	Physical Programme Proposed for 4 years	Financial requirement (Rs. in lakhs)
1	Promotion shade net house in Vegetable production	Rs. 1.00 lakh/ 300 Sq. m.	40	20.00
2	Provision of Pandal structures for pandal type gourds	Rs. 1.00 lakh/Ha.	100	50.00
3	Special Plant protection packages for Vegetable production	Rs.3000/Ha.	4000	60.00
4	Distribution of Plastic crates for handling of Vegetables	Rs.250/No.	60000	75.00
<b>Total</b>				<b>205.00</b>

### 6.2.6 Promotion of Mechanization in Vegetable Cultivation

#### (i) Project Goal

To encourage and promote the mechanization in possible areas of vegetable cultivation.

#### (ii) Problems

For most of the Vegetable crops, weeding demands considerable expenditure in crop production. Also it requires heavy labour. Due to urbanization coupled with industry development, labour shortage is acute in this district.

#### (iii) Project Strategy

In order to overcome the labour shortage and its negative impact in vegetable production, it is proposed to provide at least one power weeder or one power weeder and one vegetable waste shredder to the farmers at 50% subsidy cost. Vegetable shredder can be used to utilize the farm waste and vegetable waste by shredding them into farm fields. This will enrich the organic content of the soil for next crop.

**(iv) Project Component**

In order to take up the weeding operation with minimum labour, it is proposed to provide power weeder to each farmer and vegetable shredder for proper farm waste management at subsidized cost.

The details of cost involved are furnished in Table 6.5.

**Table 6.5 Project Proposal for Promotion of Mechanization in Vegetable Cultivation**

S.No.	Name of the component	Unit cost	Physical Programme Proposed for 4 years	Financial requirement (Rs in lakhs)
1	Power weeder Vegetable shredder	Rs.40000/No.	400	80.00

**6.2.7. Promotion of Irrigation Source****(i) Project Goal**

To tap the irrigation sources and utilize the water source judiciously.

**(ii) Present Problem**

As the water table goes down every year, it is not possible to dig the open well beyond certain depth.

**(iii) Project Strategy**

Barring grey and dark areas of the district, it is proposed to provide 50% financial assistance for tube well and casing pipe in needy areas.

**(iv) Project Component**

It is proposed to provide 50 percent financial assistance subject to a maximum of Rs. 75000/- beneficiary, for digging bore well and casing pipe. The details of cost are furnished in Table 6.6.

**Table 6.6 Project Proposal for Promotion of Irrigation Source**

<b>S.No.</b>	<b>Name of the Component</b>	<b>Unit cost</b>	<b>Physical Programme Proposed for 4 years</b>	<b>Financial requirement (Rs. in lakhs)</b>
1	Digging of Bore well and casing pipe provision	Rs.75000/unit	200	150.00

**6.2.8. Promoting the use of Effective Microbes****(i) Project Goal**

To motivate the farmers so as to develop micro organisms in their field.

**(ii) Present Problem**

Due to indiscriminate use of chemical fertilizers and pesticides, the microbial load in the soil depletes at faster rate. As such, optimum yield can not be obtained. More over, the quality of produces is also affected.

**(iii) Project Strategy**

It is proposed to distribute Humic acid/Effective microbes to the farmers by extending 50% subsidy to them.

**(iv) Project Component**

It is programmed to distribute either Humic acid or Effective microbes or in combination for the worth of Rs 4000/ ha. A farmer can avail subsidy in this component to a maximum of five hectares. The details are furnished in Table 6.7.

**Table 6.7 Project Proposal for Promoting the use of Effective Microbes**

<b>Sl.No</b>	<b>Name of the component</b>	<b>Unit Cost in Rs.</b>	<b>Physical Programme Proposed for 4 years</b>	<b>Financial requirement (Rs in lakhs)</b>
1	Distribution of Humic acid/Effective microbes	400/ litre	4000	8.00

### 6.2.9. Support System Provision

#### (i) Project Goal

To provide support system for Banana and Gloriosa crops.

#### (ii) Present Problem

The bunch weight of high yielding variety banana like Robusta, Rasthali and Grand 9 is heavy and it needs support system in order to avoid the toppling of plants. If support system is not provided, the plant will be uprooted even in slight wind resulting in heavy loss to the farmer.

Similarly, Gloriosa for its effective cropping, needs proper support and mini pandal system. If the system is not provided, yield will be much below the expected level.

#### (iii) Project Strategy

It is proposed to provide back -end subsidy to the farmers for supporting the banana during bunch developing phase. Similar provision may also be extended to Gloriosa growers for training structures and support system provision in the field.

#### (iv) Project Component

Bamboo poles are used to provide support to the banana plants and cane sticks are used to provide training structures for Gloriosa medicinal plant. It is estimated that Rs.1.5 lakhs will be required for Banana and Rs.40000 required in case of Gloriosa. It is proposed to provide 50% financial assistance as back-end subsidy. The details are furnished in Table 6.8.

**Table 6.8 Project Proposals for Provision of Support System**

S.No.	Name of the component	Unit cost	Physical Programme Proposed for 4 years	Financial requirement (Rs. in lakhs)
1	<b>Support System for</b>			
i	Banana	Rs.1.5lakh/Ha.	600	675.00
ii	Gloriosa	Rs.40000/Ha.	200	40.00
	<b>Total</b>			<b>715.00</b>

**6.2.10. Harvest Aider****(i) Project Goal**

To facilitate an easy harvesting of fruits especially mango fruits.

**(ii) Present Problem**

The existing mango orchards were developed three - four decades ago. As the farmers had failed to train the young trees properly, they attain height even to a height of 15-20ft. As such, plucking of mango fruits in high branches poses a problem.

**(iii) Project Strategy**

Of late, mango harvester has been developed at various research institutes keeping in mind the design issues of local people needs. It is proposed to distribute the mango harvester at subsidized cost with a view to facilitate smooth and easy harvest of fruits.

**(iv) Project Component**

It involves the distribution of mango harvester to mango growers at 50% subsidy cost. The details are furnished in Table 6.9.

**Table 6.9 Project Proposal for Supply of Harvest Aider**

S.No.	Name of the component	Unit cost	Physical Programme Proposed for 4 years	Financial requirement (Rs in lakhs)
1	Distribution of mango harvester	Rs.500/No.	2000	5.00

**6.2.11 Retail Outlet for Urban People****(i) Project Goal**

1. To provide quality and viable vegetable seeds for kitchen garden and
2. To promote backyard cultivation in urban houses / holdings.

**(ii) Present Problem**

As per ICMR recommendation, every individual should consume 400g vegetables daily. In India, the per capita consumption is much below this recommendation, resulting in vitamin deficiency leading to lack of vision at early age etc.,

**(iii) Project Strategy**

With a view to attain nutritional security, it is proposed to promote kitchen garden concept among the city dwellers. The required inputs such as vegetable seeds, plant nutrients and plant protection chemicals along with technical guidance are to be provided at the single point. With this backdrop, the opening of sales outlet point is proposed.

**(iv) Project Component**

It is proposed to establish a sales outlet attached with Deputy Director of Horticulture office in District Head quarters and other important towns in the district. If immediate construction is not possible, the outlet may be put up even in a rental building. All the inputs will be stored and sold to the urban dwellers at reasonable cost. The details of cost involved are furnished in Table 6.10.

**Table 6.10 Project Proposal for Establishment of Retail Outlet for Urban People**

S.No.	Name of the component	Unit cost	Physical Programme Proposed for 4 years	Financial requirement (Rs in lakhs)
1	Establishment of Retail outlet along with salesman on contract basis	Rs.2.60 lakh/unit	2	5.20

**6.2.12. Workshop Organization****(i) Project Goal**

1. To impart technical skill and infuse confidence in farmers mind and
2. Organizing exposure visit on all India basis to learn the latest crop protection techniques adopted in other neighboring States.

**(ii) Present Problem**

Advancement in horticulture is taking place at faster pace and farmers are not in a position to keep abreast of the latest knowledge. This situation will lead to decline in productivity which should not be allowed to happen.

**(iii) Project Strategy**

Mostly technologies are developed at leading Research Institutes and Agricultural universities. Hence, it is proposed to organize inter state exposure tour for gaining first hand knowledge on the latest developments.

**(iv) Project Component**

The training programme is devised into two parts;

First part deals with organizing workshop for one day for the benefit of farmers at district level and the second part involves conducting inter-state tour to have an exposure visit to latest crop science in various places of the country. The costs involved for organising workshop are furnished in Table 6.11.

**Table 6.11 Project Proposal for Organizing Workshop**

S.No.	Name of the component	Unit cost	Physical Programme Proposed for 4 years	Financial requirement (Rs. in lakhs)
1	District level Farmers Workshop	Rs 400/head /day	800	3.20
2	Inter-State exposure visit	Rs 5000/head	400	20.00
	<b>Total</b>			<b>23.20</b>

**6.2.13. Encouraging the Provision of Mango/Aonla in Noon Meal Scheme through TANHOPE**

**(i) Project Goal**

- (1) to provide vitamin rich fruits like mango/ Aonla to children of noon meal scheme in Government schools and
- (2) to ensure a reasonable price to the growers.

**(ii) Present Problem**

Noon meals are provided to poor children of rural areas. Their parents are not in a position to afford to provide fruits for their wards. Hence, rural school children are more prone to vitamin deficiency, disorder and diseases.

**(iii) Project Strategy**

In order to avoid the favoritism in procurement, it is desirable to involve a co-operative concern like TANHOPE. The TANHOPE will procure the required fruits from the growers and distribute the same to the different noon meal scheme centers in the district. Its advantages are dichotomous in nature. While the farmers are assured of fair price for their produces, the children are also provided with nutritious fruits in their noon meal. Hence, this component must be given much thrust among other components.

**(iv) Project Component**

As TANHOPE is already functioning in the district, the procurement and disbursement of fruits may just be entrusted with it on pilot basis. The costs involved are furnished in Table 6.12.

**Table 6.12 Project proposal for encouraging the provision of Mango/Aonla in Noon Meal Scheme through TANHOPE**

Sl.No	Name of the component	Unit cost in Rs	Physical Programme Proposed for 4 years	Financial requirement (Rs in lakhs)
1	Procurement by TANHOPE	50,000 for 1 <sup>st</sup> year.	1	3.25

**6.2.14. Establishment of Mega Demo Plot****(i) Project Goal**

- (1) to establish a Mega Demo plot with all Hi-tech facilities and
- (2) to demonstrate the Hi-tech activities to the neighbouring farmers.

**(ii) Present Problem**

Presently, all Hi-tech facilities are available only in TNAU controlled research stations and college campuses. As these institutes are far away, a poor farmer can not have a chance to visit these facilities and be familiar with them.

**(iii) Project Strategy**

A contiguous area measuring 10 Ha with assured irrigation source/ irrigation potential may be selected in the district. Here, all the infrastructure facilities including hi-tech facilities will be provided on demo basis.

**(iv) Project Component**

It includes

- Selection of 10 Ha extent contiguous land.
- Provision of Hi-tech facilities and
- Demonstration of Hi-tech Horticulture activities.

The cost details are furnished in Table 6.13.

**Table 6.13 Project Proposal for Establishment of Mega Demo Plot**

Sl.No	Name of the component	Unit cost in Rs	Physical Programme Proposed for 4 years	Financial requirement (Rs in lakhs)
1	Establishment of 10 Ha Mega Demo plot	25,00,000/ unit	10	250.00

**6.2.15. Encouraging Enterprising Farmers Association****(i) Project Goal**

To encourage the Enterprising Farmers Association and venture into Corporate farming.

**(ii) Present Problem**

At present, individual farmer produces in the field and sell the produces in the market without any label or brand name. As such, fair price is not assured to him. This situation will, in turn, lead to income loss to a considerable extent.

**(iii) Project Strategy**

The proposed project aims at uniting the individual farmers under one umbrella via Association. This association will function as per democratic norms applicable to it. The resource persons from TNAU will come to their land and develop the land by using latest scientific crop techniques. The farm thus developed will be maintained by the university scientists for three years and later handed over to the responsible person nominated by Association. Department Officer in the rank of Assistant Director of Horticulture will act as a Liaison Officer in this joint venture.

**(iv) Project Component**

It Involves

- Identifying the area in a contiguous manner.
- Identifying the farmers concerned in that area and bring them into Association and
- Developing the Association member's land with the technical help rendered by university crop scientists.

The details of project cost are furnished in Table 6.14.

**Table 6.14 Project Proposal for Encouraging Enterprising Farmers Association**

Sl.No	Name of the component	Unit Cost in Rs.	Physical Programme Proposed for 4 years	Financial requirement (Rs in lakhs)
1	Encouragement of Enterprising farmers Association	25,00,000/ Association	2	50.00

## 6.3. Animal Husbandry

Table. 6.15. Budget Proposal - Animal Husbandry Sector - 2008- 2012

(Rs. in lakhs)

Sl. No	Scheme Components	Unit cost	2008-09		2009-2010		2010-2011		2011-2012		Total	
			No. of units	Total cost								
<b>1</b>	<b>FEED &amp; FODDER DEVELOPMENT ( Implementing agency: DAH &amp; DDD)</b>											
	<b>CATTLE, SHEEP AND GOAT</b>											
	Augmentation of fodder production (Co3) through Self Help Groups/ Livestock farmers. 10 acre/ block /year for 4 years total 13 blocks (DAH)	0.235	140	32.9	140	32.9	140	32.9	100	23.5	520	122.2
	Fodder development activities( 500 acres in 100 IDF villages in each for 2 years & 1850 acres in farmers field (DDD)	0.235	20	4.7	125	29.38	15	3.525	15	3.525	175	41.13
	Provision of chaff cutter @ 1/block / year for SHG/ elite farmers (DAH)	0.1	14	1.4							14	1.4
	Chaff cutters for IDF villages on community basis (Mechanised) (DDD)				25	17.5					25	17.5
	Chaff cutters for elite farmers (small type) @ Rs. 20,000/- as 100% grant (DDD)	0.2	10	2	8	1.6	6	1.2	6	1.2	30	6
<b>2</b>	<b>GENETIC UPGRADATION : (IMPLEMENTING AGENCY : DAH)</b>											
	<b>CATTLE</b>											
	Buffalo calf development programme (2000 calves/year) DDD	<b>0.148</b>	<b>100</b>	<b>14.8</b>	<b>100</b>	<b>14.8</b>	<b>100</b>	<b>14.8</b>	<b>100</b>	<b>14.8</b>	<b>400</b>	<b>59.2</b>
	Identification and traceability of breedable bovine population (DAH)	0.0002	132600	26.52							132600	26.52

Sl. No	Scheme Components	Unit cost	2008-09		2009-2010		2010-2011		2011-2012		Total	
			No. of units	Total cost								
	Programmed breeding indigenous cattle & buffalo to increase conception rate (DDD)	0.007	1200	8.4	1200	8.4	1200	8.4	1200	8.4	4800	33.6
	<b>SHEEP</b>											
	Distribution of Rams(125 X 4) (DAH)	0.04	125	5	125	5	125	5	125	5	500	20
	<b>GOAT</b>											
	Distribution of Bucks(125 X 4) (DAH)	0.04	125	5	125	5	125	5	125	5	500	20
	<b>POULTRY</b>											
	Distribution of TANUVAS-Nandanam III birds (DAH)	0.005	500	2.5	500	2.5	500	2.5	500	2.5	2000	10
<b>3</b>	<b>Improvement of Livestock Health ( Implementing Agency : DAH &amp; DDD)</b>											
	<b>CATTLE</b>											
	Mobile Vet. Clinics- 1 / taluk (DAH)	5.85	7	40.95							7	40.95
	Supplementation of min. mix. to prevent infertility and augment production to farmers. @ Rs. 600/cow/ year @ Rs. 50/kg ( 5000 cow/year) (DAH)	0.006	5000	30	5000	30	5000	30	5000	30	20000	120
	Mobile vet. Lab. (DAH)	12.00	1	12.00							1	12.00
	Mobile input units (ONE PER 50 DCS) (DDD)	<b>4.50</b>	2	9.00							2	9.00
	Supply of mineral mixture to the milch animals at subsidised cost (50% ) @ 18 KG/ YEAR (DDD)	<b>0.005</b>	600	3.00	700	3.50	600	3.00	600	3.00	2500	12.50
	Supply of by-pass protein feed to the milch animals (360KGS/ YEAR/ANIMAL @ 50% subsidised cost of Rs.9/- per KG.) (DDD)	<b>0.033</b>	1250	41.25	1250	41.25	1250	41.25	1250	41.25	5000	165.00

Sl. No	Scheme Components	Unit cost	2008-09		2009-2010		2010-2011		2011-2012		Total	
			No. of units	Total cost								
	<b>SHEEP AND GOAT</b>											
	Control of parasitic diseases through treatment to enhance vaccine response (DAH)			14.675		14.675		14.675		14.675		58.7
	<b>POULTRY</b>											
	Distribution of TANUVAS - Nandanam III birds (DAH)	0.005	500	2.5	500	2.5	500	2.5	500	2.5	2000	10
<b>4</b>	<b>STRENGTHENING OF DDD, DINDIGUL</b>											
	<b>CATTLE</b>											
	Milking machines for ID Farms (DDD)	<b>1.00</b>	25	25.00							25	25.00
	Portable milking machines for farmers (DDD)	<b>0.18</b>	10	1.80	8	1.44	6	1.08	6	1.08	30	5.40
	Bulk milk cooler (DDD)	<b>30.00</b>	1	30.00							1	30.00
	Walk - in coolers (DDD)	<b>30.00</b>	1	30.00	1	30.00					2	60.00
	Revival of dormant MPCS (DDD)	<b>1.00</b>	7	7.00	6	6.00	6	6.00	6	6.00	25	25.00
	Manufacturing facilities for milk khoa(DDD)	<b>0.77</b>	1	0.77							1	0.77
	Milk weighing machine for milk producers co-op societies (DDD)	<b>0.17</b>	22	3.74	15	2.55	10	1.70	10	1.70	57	9.69
	P.C.Based automatic milk collection stations to IDF villages milk producers co operative societies (DDD)	<b>1.75</b>	8	14.00	25	43.75					33	57.75
	Quality assurance lab (DDD)				1	10					1	10.00
	Energy management system (DDD)	<b>10.00</b>	1	10.00							1	10.00
<b>5</b>	<b>EXTENSION FACILITIES ( IMPLEMENTING AGENCIES: DAH, DDD)</b>											
	Farmers study tour @ Rs.5000/- Per farmer (DDD)	<b>0.05</b>	40	2.00	40	2.00	40	2.00	30	1.50	150	7.50
	Skill development for technical staff (DDD)	<b>0.05</b>	11	0.55	11	0.55	11	0.55	11	0.55	44	2.20

Sl. No	Scheme Components	Unit cost	2008-09		2009-2010		2010-2011		2011-2012		Total	
			No. of units	Total cost								
	Orientation training /workshop for milk producers at society level (DDD)	0.20	4	0.80	4	0.80	4	0.80	4	0.80	16	3.20
	Institutional development – Strengthening of Vet. Institutions with basic facilities like fencing Bore wells, water troughs, Minor repair works etc. @ RS. 5.0 lakh/ Institution (DAH)	5	27	135							27	135
	Strengthening of training equipments for technology dissemination and training to farmers with laptop computer with printer, teaching aids etc. at TANUVAS centre, Dindigul (TANUVAS)	10	1	10							1	10
	Strengthening of TANUVAS centre for Training (Training cum conference hall for farmers), mobile disease investigation and training unit, LCD projector, Microscope etc. (TANUVAS)	50	1	50							1	50
	Training programmes on modern livestock farming Capacity building Training for farmers (TANUVAS)	0.003	1000	3	1000	3	1000	3	1000	3	4000	12
	For conducting MCP, Conference etc. (TANUVAS)	0.03	12	0.36	12	0.36	12	0.36	12	0.36	48	1.44
	Capacity building Training for officers (Vets/ NGOs/ Line dept staff (TANUVAS)	0.05	50	2.5	50	2.5	50	2.5	50	2.5	200	10



## V. Annexure

### I. Feed and Fodder Development

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

##### Abstract

Intensive fodder production activity will be taken up by the Department of Animal Husbandry, Dindigul, through, farmers and Self Help Group women entrepreneurs at a total cost of Rs. 122.2 Lakhs. The Aavin, Dindigul will also take up fodder cultivation activity in the proposed Integrated Dairy Farm (IDF) villages at a total cost of Rs. 41.13 lakhs.

Hand operated chaff cutters will be supplied by the Department of Animal Husbandry, Dindigul to the SHG farmers at Rs.10,000/- per unit 1/per block and 14 units for 14 blocks at a total cost of Rs1.34 Lakhs. The Aavin, Dindigul will supply 25 numbers of mechanically operated chaff cutters to the 25 IDF Villages @ Rs. 0.70 Lakhs/unit, at one unit per IDF Village, at a total cost of Rs. 17.50 Lakhs and 30 numbers of hand operated chaff cutters @ Rs.0.20 Lakh/unit will be supplied to the elite members at one unit/farmer at a total cost of Rs. 6.00 Lakhs.

##### Budget

(Rs. in lakhs)

Sl. No.	Particulars	Amount
1.	Augmentation of fodder production (CO-3) through SHG/women entrepreneurs, Rs. 0.235 Lakhs/acre, 10 acres/block/year, 14 blocks, for 4 years, 520 acres totally (DAH)	122.20
2.	Fodder development activities( 500 acres in 100 IDF villages in each for 2 years & 1850 acres in farmers field (DDD)	41.13
3.	Supply of hand operated chaff cutters to SHG farmers @ Rs.0.10 Lakhs/unit, 1 unit/block/year for 14 units for 14 blocks (DAH)	1.40

4.	Provision of mechanically operated chaff cutters, @ Rs. 0.70 Lakhs/unit, for 25 IDF Villages @ one unit/IDFV, 25 units totally (DDD)	17.50
5	Provision of hand operated chaff cutters to elite farmers @ Rs.0.20 Lakh/unit, one unit/farmer, 30 units totally for 30 farmers (DDD)	6.00
	<b>Total</b>	<b>188.23</b>

### **Background/Problem Focus**

Fodder production in Dindigul district is not satisfactory and the deficit of green fodder is 87.5 %. It is essential to feed the crossbred milch animals with nutrient rich perennial fodder and tree fodder biomass to explore the full genetic potential of the livestock. The present background with regard to dairy, sheep and goat farming in this district is mainly grazing wherever possible, feeding with available greens in the market and feeding the milch animals with polish, bran, oil cakes, cotton seed. Sheep and goat are taken for grazing only. No supplemental feed, grains, concentrate is given to them. So to meet out the fodder requirement of large and small ruminants in order to augment the livestock production the action plan is proposed .

### **Rationale for this Project**

Green fodder production is about 87.5% shortage in Dindigul district. There is an acute shortage of fodder and the farmers find it difficult to maintain high producing dairy cows owing to the huge demand for green and dry fodder. Hence intensive fodder production activity has to be taken up to meet this heavy demand. Green fodder is one of the important and inevitable component in dairy farming and sheep and goat farming. Moreover deficit in green fodder is one of the major causes of infertility and poor productivity. Therefore, enhancement of green fodder production is essential to augment the livestock production. Chopping of fodder will help in the effective utilization of nutrients.

### **Project Strategy**

Based on current background of livestock sector, project strategy is proposed involving Department of Animal Husbandry, Dindigul District Co-operative Milk Producers Union ( the implementing agencies) to achieve the target with technical interventions for the target group namely the rural women, farmers and entrepreneurs. The project strategy is proposed to strengthen the existing infrastructure and expansion of ongoing development scheme of the implementing agencies.

Self Help Groups, interested women entrepreneurs and farmers will be selected from each block by Aavin and Animal husbandry department, Dindigul. Training on scientific fodder production will be given to the SHGs. Fodder production will be taken up by Aavin, Dindigul in all the proposed 25 IDF Villages.

Hand operated chaff cutters will be supplied by the Department of Animal Husbandry, Dindigul to the SHG farmers at Rs.10,000/- per unit , one unit per block totally 14 units @ 1.4 lakhs. Mechanized chaff cutters @ Rs.0.70 Lakhs per unit will be supplied at one unit per IDFV, 25 units for all the 25 IDFV. This project will be implemented by Aavin, Dindigul at a total cost of Rs. 17.5 Lakhs. Hand operated chaff cutters will be supplied to elite farmers @ Rs.0.20 Lakh/unit at one unit/farmer as 100% subsidy, for 30 farmers totally at a cost of Rs.6.00 Lakhs.. This project will be implemented by Aavin, Dindigul.

### **Project Goals**

1. Augmentation of fodder production to meet the fodder shortage
2. Enhancement of nutrient utilization in fodder by use of hand-operated and mechanized chaff cutters to minimize fodder wastage and to enhance the nutrient utilization.
3. Establishment of cattle feed unit.
4. Improved fertility in cows.
5. Improved health status of dairy animals.

### Project Components

1. Fodder production in 695 acres
2. Provision of mechanized chaff cutters 25 units at IDFV on community basis
3. Provision of hand operated chaff cutters to elite farmers & SHG women – 44 units

### Action Plan

- The farmers/ SHG women will be identified by Aavin, Dindigul and will be motivated to register their farms with TANUVAS
- Development of village fodder nursery and green fodder cultivation in registered/ identified farmers will be implemented by DAH and Aavin , Dindigul.
- Village fodder nurseries will be developed @ 10 acres / taluk / year .
- Green fodder will be cultivated @ 10 acres / block/ year in private / registered farmers land. .
- Chaff cutters will be provided to SHG/elite farmers/ IDF villages

### Project Cost and Financing

#### I. Fodder Production

1. Fodder Production by the Department of Animal Husbandry and the Aavin, Dindigul - Rs. 0.235 Lakhs/Acre:

#### I. Training Cost

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

**II.-Fodder Cultivation of Fodder (Co-3) per Acre-**

<b>S.No.</b>	<b>Name of Operation</b>	<b>Amount (in Rs.)</b>
1 a)	Bush clearance and land reclamation	2,600.00
1.b)	Cost of ploughing	1,600.00
2.	Formation of ridges and furrows/beds and irrigation channels	500.00
3.a)	Cost of fym 10 mt. @ Rs.300/mt.	3,000.00
3.b)	Labour cost for transportation and application, loading and unloading	1,000.00
4.a)	Cost of slips 16,000 numbers @ Rs.0.25 /slip	4,000.00
4.b)	Planting cost	840.00
5.a)	Cost of chemical fertilizers N 150 Kg @ Rs.5.48/kg – 822.00 P 50 Kg @ Rs.10.88/kg – 544.00 K 40 Kg @ Rs.3.85/Kg - 154.00	1,520.00
5. b)	Cost of labour for application	200.00
6.	After cultivation weeding	840.00
7.	Cleaning the channels	500.00
8.	Irrigation charges	800.00
9.	Harvesting charges and transportation	1,600.00
10.	Miscellaneous expenses	800.00
	<b>Total Cost Required Per Acre</b>	<b>20,000.00</b>

	<b>Financial Requirement Per Self Help Group:</b>	<b>Rs. in Lakhs</b>
1.	Cost of training per SHG	0.035
2.	Cost of fodder cultivation	0.20
	Total Requirement per SHG	0.235
	Total requirement for 520 acres totally	122.20
	Total requirement for production of 175 acres of fodder by the Aavin, Dindigul	41.13

**II. Supply of Chaff Cutters**

<b>Sl. No.</b>	<b>Particulars</b>	<b>Amount (Rs. in lakhs)</b>
1.	Provision of mechanically operated chaff cutters, @ Rs. 0.70 Lakhs/unit, for 25 IDF Villages @ one unit/IDFV, 28 units totally	17.50
2.	Provision of hand operated chaff cutters to elite farmers @ Rs.0.20 Lakh/unit, 30 units, one unit/farmer, totally for 300 farmers, 100% subsidy	6.00
3.	Provision of hand operated chaff cutters to SHG farmers @ Rs.0.20 Lakh/unit, 50 % subsidy, one unit/ block/year, 14 blocks, 14 units totally	1.40

**Implementing Chart of the Project. (Year wise-2008-09; 2009-10; 2010-11; 2011-12)**

<b>Activity</b>	<b>2008-2009</b>	<b>2009-2010</b>	<b>2010-2011</b>	<b>2011-2012</b>
Augmentation of fodder production (CO-3) through SHG/women entrepreneurs, Rs. 0.235 Lakhs/acre, 10 acres/block/year, 13 blocks, for 4 years, 520 acres totally (DAH)	140 acres	140 acres	140 acres	100 acres
Fodder development activities( 500 acres in 100 IDF villages in each for 2 years & 1850 acres in farmers field (DDD)	20 acres	125 acres	15 acres	15 acres
Provision of chaff cutter @ 1/block / year for SHG/ elite farmers (DAH)	14 units	-	-	-
Provision of mechanically operated chaff cutters, @ Rs. 0.70 Lakhs/unit, for 28IDF Villages @ one unit/IDFV, 28 units totally (DDD)	25 units	-	-	-
Provision of hand operated chaff cutters to elite farmers @ Rs.0.20 Lakh/unit, one unit/farmer, 30 units totally for 30 farmers (DDD)	10 units	8 units	6 units	6 units

**Reporting: By Implementing Agency AHD/ Aavin, Dindigul**

**1. Fodder Production**

The Regional Joint Director of Animal Husbandry, Dindigul and the General Manager,

Dindigul District Co-operative Milk Producers Union Limited, Dindigul will implement the projects. Monthly progress of the projects will be submitted to the concerned higher authorities.

**2. Provision of mechanized chaff cutters to IDF villages and hand operated chaff cutters to SHG and elite farmers:**

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

**II. Genetic Upgradation**

“ Genetic Upgradation of Cattle, Buffaloes, Sheep , Goats and poultry”

**ABSTRACT**

Buffalo calf development programme will be implemented at the total cost of Rs. 59.2 lakhs.

It is estimated that the district has a total number of 1,32,600 breedable bovine population. Tracking the breedable bovines with an ear tag and a passbook at a cost of Rs.20/- per animal is proposed. The total outlay is Rs. 26.52 Lakhs. The project will be implemented by the Department of Animal Husbandry, Dindigul.

Programmed breeding will be carried out in 4800 numbers of cattle and buffaloes to increase the conception rate at a total cost of Rs. 33.6 Lakhs @ Rs.700 / animal. The project will be implemented by Aavin, Dindigul

Superior germplasm – Mecheri rams and Tellicherry bucks will be maintained by the Self Help Group Women in the district for cross-breeding of the non-descript poorly performing sheep and goats to augment the mutton and chevon production. Each active SHG will be provided with one Mecheri ram and one Tellicherry buck @ Rs. 4,000/- per ram/buck. A total number of 500 rams and 500 bucks will be supplied at a total cost of Rs. 40.00 Lakhs. The project will be implemented by the Department of Animal Husbandry, Dindigul.

Nandanam III birds will be distributed @ Rs. 500/unit for 2000 selected farmers/SHG women at the total cost of Rs. 10.00 lakhs to improve the poultry production .

**Budget: (Rupees in Lakhs)**

<b>Sl. No.</b>	<b>Particulars</b>	<b>Amount (Rs. in lakhs)</b>
1.	Tracking the breedable bovine population with an ear tag and a passbook @ Rs.20/- animal, for 1,32,600 animals (DAH and DDD)	26.52
2.	Buffalo calf development programme	59.20
2.	Programmed breeding of cattle buffaloes @ Rs.700/animal, for 2400 cows and buffaloes (DDD)	33.60
3.	Supply of 500 Mecheri rams to the self help groups @ Rs.4,000/- per buck/ram	20.00
4.	Supply of 500 Tellicherry bucks to the self help groups @ Rs.4,000/- per buck/ram	20.00
5.	Distribution of TANUVAS Nandanam III birds (DAH)	10.00
	<b>Total</b>	<b>169.32</b>

**Background/ Problem Focus****a. Tracking the Breedable Bovines in the District**

It is estimated that the district has a total number of 1,18,000 breedable bovine population. Tracking the breedable bovines with an ear tag and a passbook will help to follow the animals and will be the first step in the registration of bovines with accurate details about the animal, its health status etc.

**b. Buffalo calf Development**

A substantial decrease in buffalo population (around 40% in last 8 years) is observed in this district. Calf mortality and breeding problems are the major problems in buffalo rearing. To arrest the fall and to stabilize the Buffalo population support need to be provided to the buffalo rearers to rear female buffalo calves up to first calving.

**C. Programmed Breeding of Cattle and Buffaloes**

Estrus synchronization will be planned in indigenous cattle and buffaloes to increase conception rate. Buffaloes exhibit silent heat and hence become difficult to inseminate them for conception.

**d. Genetic Upgradation of Sheep and Goats**

The present stock of sheep and goats available with the farmers in the district are inferior in terms of production and performance. Poor weight gain and low kidding / lambing rate in sheep and goat are main problems encountered. Mecheri is a proven mutton sheep breed and Tellicherry goat breed performs well under field conditions. Cross-breeding of the non-descript sheep and goats with such superior germplasm will augment mutton and chevon production in the district.

**e. Distribution of TANUVAS Nandanam III Birds**

Nandanam III birds will be distributed to the selected farmers/ SHG women to improve the poultry production.

**Project Rationale****Tracking the Breedable Bovines in the District**

Tracking the breedable bovines with an ear tag and a passbook will help to follow the animals and will be the first step in the registration of bovines with accurate details about the animal, its health status etc.

**Buffalo Calf Development**

A substantial decrease in buffalo population (around 40% in last 8 years) is observed in this district. There is mortality in the buffalo calves due to under nourishment. To arrest the fall and to stabilize the Buffalo population support need to be provided to the buffalo rearers to rear female buffalo calves up to first calving.

**Programmed Breeding of Cattle and Buffaloes**

Buffaloes exhibit silent heat and it becomes difficult to provide timely insemination services leading to huge economic losses. Because of this reason, the farmers are reluctant to rear buffaloes. Estrus synchronization will bring all the animals to heat at a specific time and will help to provide timely insemination.

**Genetic Upgradation of Sheep and Goats**

Almost more than 90% of the poor families in Dindigul district are small, marginal and landless farmers and are mainly local breeds of sheep and goats for their livelihood. Since the poor farmers are possessing local breeds the weight gain and low kidding/ lambing rate farmers are getting only meager income out of their sheep and goats. So genetic upgradation of local breeds using elite rams and bucks will improve their germ plasm inturn there will be increase weight gain and kidding rate / lambing rate. Cross-breeding of the non-descript sheep and goats with such superior germplasm will augment mutton and chevon production in the district.

**Distribution of TANUVAS Nandanam III birds**

Nandhanam III birds will be distributed to the selected farmers/ SHG women to improve the poultry production.

**Project Strategy****Tracking the Breedable Bovines in the District**

Tracking the breedable bovines with an ear tag and a passbook at a cost of Rs.20/- per animal is proposed. The total outlay is Rs. 23.6 Lakhs.

**Buffalo Calf Development**

The total cost for the supply of feed, vaccines and deworming will be Rs.14,800/- /buffalo calf. A total number of 400 calves will be benefited at a period of 4 years @ 100 calves per year. The total project cost will be Rs.59.20 Lakhs. The project will be implemented by the Aavin, Dindigul.

**Programmed Breeding of Cattle and Buffaloes**

Buffaloes exhibit silent heat and it becomes difficult to provide timely insemination services leading to huge economic losses. Because of this reason, the farmers are reluctant to rear buffaloes. Estrus synchronization will bring all the animals to heat at a specific time and will help to provide timely insemination.

**Genetic Upgradation of Sheep and Goats**

Mecheri rams and Tellicherry bucks will be maintained by the Self Help Group Women in the district for cross-breeding of the non-descript poorly performing sheep and goat breeds to augment the mutton and chevon production. Each active SHG will be provided with one Mecheri ram and one Tellicherry buck @ Rs. 4,000/- per ram or buck. Totally 500 sheep farmers and 500 goat farmers will be selected for four years period and 1000 elite rams and bucks will be supplied with the total cost of Rs.40.00 lakhs.

**Distribution of TANUVAS Nandanam III birds**

Totally 2000 SHG women/ farmers will be identified and Nandanam III birds will be distributed with the total cost of Rs. 10.00 lakhs. Each unit consisting of 9 hens and a cock will be provided to the beneficiaries. The cost of one bird is Rs.50/- and thus the total cost per unit is Rs.500/-

**Project Goals**

- Tracing the breedable bovines in the district.
- To develop 400 buffalo calves through supply of feed.
- Estrus synchronization in selected 6400 cattle and buffaloes
- The existing germplasm may be improved through incorporation of superior germ plasm by supplying elite bucks and rams for cross breeding purpose .
- Avoiding inbreeding
- Improved weight gain of sheep and goats
- Improved kidding /lambing rate.
- Increased mutton and chevon production
- Improvement in poultry production.

**Project Components:**

1. Animal card distribution to the owners of breedable cattle
2. Sheep and goat farmers / SHG women will be identified by DAH .
3. Distribution of buffalo calves.
4. Distribution of elite bucks.
5. Distribution of elite rams.
6. Distribution of TANUVAS – Nandanam III birds for 2000 SHG women

**Project Cost and Financing****(Amount in Rs. Lakhs)**

<b>Activity</b>	<b>2008-2009</b>	<b>2009-2010</b>	<b>2010-2011</b>	<b>2011-2012</b>	<b>Total Cost</b>
Tracking the breedable bovine population with an ear tag and a passbook @ Rs.20/- animal, for 1,18,000 animals (DAH, DDD)	26.52	-	-	-	26.52
Buffalo calf development programme (@ Rs. 0.148 lakhs/ calf	14.80	14.80	14.80	14.80	59.20
Programmed breeding of cattle and buffaloes @ Rs.700/animal, for 4800 animals.(DDD)	8.40	8.40	8.40	8.40	33.60
Distribution of Mecheri rams to the self help groups @ Rs. 4,000/- per ram (DAH)	5.00	5.00	5.00	5.00	20.00
Distribution of Tellicherry bucks to the self help groups @ Rs.4,000/- per buck (DAH)	5.00	5.00	5.00	5.00	20.00
Distribution of TANUVAS Nandanam birds (DAH) Each unit consisting of 9 hens and a cock will be provided to the beneficiaries. The cost of one bird is Rs.50/- and thus the total cost per unit is Rs.500/-	2.50	2.50	2.50	2.50	10.00
<b>TOTAL</b>	<b>62.22</b>	<b>35.70</b>	<b>35.70</b>	<b>35.70</b>	<b>169.32</b>

### Implementation Chart of the Project

Activity	2008-2009	2009-2010	2010-2011	2011-2012
Tracking the breedable bovine population with an ear tag and a passbook	1,32,600 cows	-	-	-
Buffalo calf development programme	100	100	100	100
Programmed breeding of cattle and buffaloes	1200 animals	1200 animals	1200 animals	1200 animals
Supply of Mecheri rams to the self help groups	125 animals	125 animals	125 animals	125 animals
Supply of Tellicherry bucks to the self help groups	125 animals	125 animals	125 animals	125 animals
Distribution of TANUVAS Nandanam III birds	500 birds	500 birds	500 birds	500 birds

### Reporting

#### Tracking the Breedable Bovines in the District

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

#### Buffalo Calf Development Programme

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

#### Programmed Breeding of Cattle and Buffaloes

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

**Genetic Upgradation of Sheep and Goats**

The Regional Joint Director of Animal Husbandry, Dindigul will implement the scheme and periodical monthly reports will be submitted to the appropriate authorities.

**Distribution of TANUVAS Nandanam III birds**

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

**III. Improvement of Livestock Health****Abstract (Summary of the Project)**

To provide comprehensive livestock health cover including immunization against important viral, bacterial diseases and to cover almost all animals including poultry to protect livestock and poultry from diseases and overall improvement in health mobile veterinary clinic will be established in 7 taluks at the total cost of Rs. 40.95 lakhs and 1 mobile veterinary laboratory will be established at the total cost of Rs. 12.00 lakhs by department of animal husbandry. Two mobile input units to cover the health of animals by Aavin will be established at the total cost of Rs9.00 lakhs.

To maintain livestock health micronutrients and mineral mixture to be supplied. Mineral mixture will be supplied to the dairy cows through the Department of Animal Husbandry, Dindigul to the small farmers at Rs.600/- per cow per year (One kg/animal/month, 12 kg for one year, @ Rs.50/kg) at subsidized rate @ 5000 farmers per year, for 4 years. A total of 20,000 cows will be supplemented with mineral mixture at a total cost of Rs.120.00 Lakhs. The Aavin, Dindigul will supply mineral mixture to the milch animals of the society members at subsidized cost (50 % subsidy) @ Rs. 500/- for 18 kg per year/cow, A total number of 2500 animals will be benefited at a total cost of Rs. 12.50 Lakhs.

The Aavin, Dindigul will supply by-pass protein feed to the milch animals of the members of the society (360 kg/animal/year) for 5000 cows @ 50% subsidy of Rs.9/- per kg. The total cost will be Rs. 165.00 Lakhs. Control of parasitic diseases to enhance vaccine response in sheep and goat will be carried out at the cost of Rs. 58.70 lakhs and desi birds will be immunized against Ranikhet disease at the cost of Rs. 10.00 lakhs.

**Budget**

		<b>(Rs. in lakhs)</b>
<b>Sl. No.</b>	<b>Particulars</b>	<b>Amount</b>
1	Mobile Vet. Clinics- 1 / taluk (DAH)	40.95
2	Supplementation of min. mix. To prevent infertility and augment production to farmers. @ Rs. 600/cow/ year @ Rs. 50/kg (5000cow/year) (DAH)	120.00
3.	Mobile vet. Lab (DAH)	12.00
3	Mobile input units (ONE PER 50 DCS) (DDD)	9.00
4	Supply of mineral mixture to the milch animals at Subsidized cost (50% ) @ 18 KG/ YEAR (DDD)	12.50
5	Supply of by-pass protein feed to the milch animals (360KGS/ YEAR/ANIMAL @ 50% subsidized cost of Rs.9/- per KG.) (DDD)	165.00
6	Control of parasitic diseases through treatment to enhance vaccine response (DAH)	58.70
7	Immunization against RD for Desi birds Rs. 500 / unit (DAH)	10.00
	<b>Total</b>	<b>428.15</b>

**Background / Problem Focus**

Even though veterinary dispensaries and sub centres are located in rural and semi urban areas there are still villages which are beyond the reach of veterinary services. Hence mobile veterinary clinic and mobile input units facility will help to provide comprehensive livestock health cover and to protect livestock and poultry from diseases and overall improvement in health. Further almost all the domestic animals are deficient in micro nutrients since most of the animals are allowed only for grazing especially sheep and goat. For better digestibility of feed consumed and also to satisfy the micro nutrient requirements it is proposed to supplement the livestock with mineral mixture. Economical production of milk depends largely upon efficiency of animals, its nutrition and management.

**Project Rationale**

The landless agricultural labourers and small farmers who own the cattle are unable to take their livestock to the nearest veterinary institution as they are pre-occupied in agricultural work. Further, the agricultural labourers have to forego half a day work in bringing their livestock to the veterinary institution /sub centres for treatment or artificial insemination.

In order to avoid such suffering and loss to the farmers and to provide veterinary services and breeding support in time at the doorsteps of the farmers, Mobile Veterinary Clinics are proposed . Dairy cattle requires at least 17 minerals in their diet for optimal milk production, reproductive performance and herd health. . Infertility, poor health status due to mineral deficiency is common in the dairy cattle and small ruminants. As milk producing ability increase, more minerals in their ration is needed and hence their adequate level should be ensured in feed to achieve optimum performance and herd health. To provide optimum health cover of livestock through quick, effective and timely disease diagnosis one Mobile veterinary laboratory facility is proposed.

Supplementing livestock with micro nutrients would ensure their optimal health cover. Controlling parasitic diseases will ensure optimum immunity. Supplementation of micronutrients and by-pass protein feed to dairy cows and micronutrients to goats is not a common practice and sensitization of the farmers through supply of mineral mixture for their cows and goats for one year will help them to realize their importance. Improper and irregular vaccination of poultry leads death of desi birds which causes economic loss to the poor farmers. So immunization against RD for desi birds and turkeys is important to avoid mortality in poultry. Timely diagnosis of livestock diseases is essential to safeguard the livestock from death and to avoid economic loss to the farmers.

### **Project Strategy**

Mobile veterinary clinic Mobile veterinary clinic and mobile input units facility will be established to provide comprehensive livestock health cover and to protect livestock and poultry from diseases and overall improvement in health. Further almost all the domestic animals are deficient in micro nutrients since most of the animals are allowed only for grazing especially sheep and goat. For better digestibility of feed consumed and also to satisfy the micro nutrient requirements it is proposed to supplement the livestock with mineral mixture. Economical production of milk depends largely upon efficiency of animals, its nutrition and management. laboratory facility will help in disease diagnosis, disease mapping and disease forecasting easily and quickly. Supplementing livestock with micro nutrients would ensure their optimal health cover. Immunization against Newcastle disease is proposed.

### **Project Goals**

Farmers in remote villages can get veterinary assistance and breeding support at their villages itself. To provide optimum health cover to livestock and poultry including immunization for Ranikhet disease. It is proposed to supplement the livestock with micro nutrients which will result in optimum performance of livestock and poultry which will ensure improved productivity and production. To increase milk production and also to produce clean, quality milk effectively and economically. Providing mineral mixture daily will enhance milk production, reduce breeding problem and will reduce intercalving period.

### **Project Components**

- Mobile Veterinary Clinics

#### **Non-recurring expenditure**

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

**Recurring Expenditure**

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

- **Mobile veterinary laboratory – Rs. 12.00 laksh / unit**

The Cost of vehicle is approximately Rs. 11.00 laksh. The cost of microscope will be Rs.0.50 lakh cost of refrigerator will be Rs.0.25 lakh, cost of centrifuge will be Rs.0.15 lakh, cost of post mortem kits and other chemicals and chemical reagents will be Rs. 0.10 lakh.

- Mobile input units
- Popularizing Mineral mixture by supplying at subsidized cost
- Supplementation of micronutrients in the feed of dairy cows and goats to enhance production and fertility.
- Supply of by-pass protein to milch animals to enhance production.
- Control of parasitic diseases

**Project Cost and Financing : Rs. in lakhs**

Activity	2008-2009	2009-2010	2010-2011	2011-2012	Total Cost
Mobile vet. Clinic 1/ taluk (DAH) Rs. 5.85 lakhs/ unit	40.95	-	-	-	<b>40.95</b>
Mineral mix @ Rs. 600/cow/year @ RS. 50/ kg ( 5000 cow/year) (DAH)	30.00	30.00	30.00	30.00	<b>120.00</b>
Mobile vet. Diag. lab. (DAH) @ Rs. 12.00 lakh/unit	12.00	-	-	-	<b>12.00</b>
Mobile input units (one per 50 DCS) (DDD) @ 4.50 lakhs/ unit . The cost is inclusive of salary for the veterinarian, medicines, veterinary equipment and other expenses.	9.00	-	-	-	<b>9.00</b>
Supply of mineral mixture to the milch animals at subsidized cost ( 50%) @ 18kg/ year (DDD) @ RS. 500/unit	3.00	3.50	3.00	3.00	<b>12.50</b>

Supply of By-pass protein feed to the milch animals ( 360kgs/year/animal @ 50 % subsidized cost of Rs. 9/-per kg (DDD) @ Rs. 3300/unit	41.25	41.25	41.25	41.25	<b>165.00</b>
Control of parasitic diseases to enhance vaccine response @ Rs.1/-per sheep or goat and Rs.3/- per calf below one year, 4 times /year, Rs. 14.675 Lakhs/year, for 4 years (237903 calves, 214143 sheep and 351211 goats) (DAH)	14.675	14.675	14.675	14.675	<b>58.70</b>
Immunization against RD for Desi birds .Rs. 500 / unit (DAH)	2.50	2.50	2.50	2.50	<b>10.00</b>
<b>Total</b>	<b>153.375</b>	<b>91.925</b>	<b>91.425</b>	<b>91.425</b>	<b>428.15</b>

### Implementation Chart of the Project

<b>Works proposed</b>	<b>2008-09</b>	<b>2009-10</b>	<b>2010-2011</b>	<b>2011-2012</b>
Mobile vet. Clinic (DAH)	7	-	-	-
Supplementation of Min. mix. For cows (DAH)	5000 animals	5000 animals	5000 animals	5000 animals
Mobile Vet. Diag. Lab (DAH)	1	-	-	-
Mobile input units (DDD)	2	-	-	-
Supply of Min. mixture at subsidized cost (DDD)	600 animals	700 animals	600 animals	600 animals
Supply of Bypass protein (DDD)	1250 animals	1250 animals	1250 animals	1250 animals
Control of parasitic diseases through treatment to enhance vaccine response (DAH)				
Immunization of desi birds against RD (DAH)	500 unit	500 unit	500 unit	500 unit

### Reporting

The implementing agencies viz. Department of Animal Husbandry and Dindigul District Co-operative Milk Producers Union will submit periodical project report to their controlling officers. Supply of mineral mixture and by-pass protein feed to the dairy cows and salt licks to goat farmers:

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

#### **IV. Strengthening of Aavin, Dindigul**

##### **“Improvement of Milk Collection, Processing, Value-addition and Marketing Facilities”**

###### **Abstract**

Twenty-five milking machines will be provided to the Integrated Dairy Farms at one unit per IDF Village at a total cost of Rs. 25 Lakhs @ Rs. 1.0 Lakh/unit. Thirty portable milking machines will be supplied to the members of the society at a total cost of Rs.5.40 Lakhs @ Rs.0.18 Lakhs/unit. Provision of milking machines will help to improve the collection and quality of milk.

One bulk milk cooler will be established @ Rs. 30.0 lakhs to improve the keeping quality of milk until it is processed. Two unit of walk-in-cooler will be established at a total cost of Rs. 60.0 Lakhs. A total number of 25 dormant societies will be revived with necessary inputs @ Rs.1.0 Lakh per unit at a total cost of Rs. 25Lakhs. One khoa manufacturing units at the cost of Rs.0.77 Lakhs to promote value-addition of milk.

A total of 57 numbers of milk weighing machines will be established at milk producers’ co-operative societies for accurate weighment of milk at a total cost of 9.69 Lakhs. A total number of 33 PC-based automatic milk collection stations will be established at IDF villages and milk producers’ co-operative societies at a total cost of Rs.57.75 Lakhs @ Rs.1.75 Lakhs/unit. A quality assurance laboratory will be established at the total cost of Rs. 10.00. A project on energy management system will be implemented at a total cost of Rs.10.0 Lakhs.

**Budget: (Rs in lakhs)**

<b>S. No</b>	<b>Project</b>	<b>Total Cost</b>
1	Milking machines for ID Farms (DDD @ Rs. 1.00 lakh/farm	<b>25.00</b>
2	Portable milking machines for farmers (DDD) @ Rs. 18,000/ unit)	<b>5.40</b>
3	Bulk milk cooler (DDD) @ Rs. 30 lakh/ unit	<b>30.00</b>
4	Walk in coolers(DDD) @ 30 lakhs/unit)	<b>60.00</b>
5	Revival of dormant MPCS (DDD) @ Rs. 1 lakh/unit	<b>25.00</b>
6	Manufacturing facilities for milk khoa (DDD) @ Rs. 0.77 lakh/unit	<b>0.77</b>
7	Milk weighing machine for milk producers co- op. societies (DDD) @ Rs. 17,000/unit)	<b>9.69</b>
8	P.C based automatic milk collection stations to IDF villages (DDD) @ 1.75 lakh/ unit	<b>57.75</b>
9	Quality assurance lab (DDD) @ Rs. 1.75 lakh/unit	<b>10.00</b>
10	Energy management system (DDD)	<b>10.00</b>
	<b>Total</b>	<b>233.61</b>

**Background/ Problem Focus**

Presently hand-milking is practiced by the farmers. There is shortage of milkmen and problems of mastitis are common in hand milking. Automatic milking machines saves time, labour and prevents the occurrence of mastitis in cows.

Establishment of a bulk milk coolers and walk-in-coolers will help to maintain the quality of milk until it is processed and marketed. A total number of 25 milk producers' co-operative societies are dormant. This leads to decrease in the quantity of milk procured. They have to be revived with necessary inputs to improve the quantum of milk production in the district.

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

Further, in societies handling more than 500 litres of milk per day, it is essential to establish PC- based automatic milk collection stations.

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

### **Project Rationale**

Milking machines will save labour, time and prevent the occurrence of mastitis in dairy cows. Bulk milk coolers and walk-in-coolers will help to keep the quality of milk until it is processed and marketed. Revival of dormant milk producers' co-operative societies will boost the milk production. Establishment of manufacturing unit for khoa will help in value-addition of milk.

Provision of milk weighing machines to societies will help in the accurate weighment of milk. Automatic PC-based milk collection stations will save time, manpower, provide accurate weighment of milk, stores the milk data for several months and provide confidence among the members of the societies. The quality assurance laboratory at the Aavin main dairy will be strengthened with certain basic facilities for assessment of milk quality at different stages of processing and marketing. Energy management system in the main processing plant will save power and will be economical.

**Project Strategy**

Milking machines for ID farms, Portable milking machines for farmers, bulk milk coolers, walk in coolers, revival of dormant MPCs, manufacturing facilities for milk khoa, milk weighing machine for milk producers co- op, societies, P.C based automatic milk collection stations to IDF and MMPO laboratory will be developed.

**Project Goals**

1. Clean milk production, saving labour and time and prevention of mastitis through installation of milking machines.
2. Improvement of the milk quality until processing and marketing through establishment of bulk milk coolers and walk-in-coolers.
3. Augmentation of milk production through revival of dormant societies.
4. Value-addition of milk by establishing khoa making units.
5. Accurate weighment of milk in societies through supply of weighing machines.
6. Saving time, labour and accurate weighment of milk through establishment of automatic PC-based milk collection stations.
7. Improvement of quality standards for milk and milk products, prevention of adulteration, analysis of statutory samples and third party samples for quality through establishment of quality assurance laboratory.

**Project Components**

- Milking machines
- Bulk milk cooler
- Walk in coolers
- Manufacturing facilities for milk khoa
- Milk weighing machine
- P. C based automatic milk collection stations.
- Quality assurance laboratory
- Energy management system.

**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
	<b>Total</b>	<b>10.00</b>

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

S. No	Project	2008-09	2009-10	2010-11	2011-12	Total Cost
1	Milking machines for ID Farms (DDD @ Rs. 1.00 lakh/farm)	0.00	25.00	0.00	0.00	<b>25.00</b>
2	Portable milking machines for farmers (DDD) @ Rs. 18,000/ unit)	1.80	1.44	1.08	1.08	<b>5.40</b>
3	Bulk milk cooler (DDD) @ Rs. 30 lakh/ unit)	30.00	-	-	-	<b>30.00</b>
4	Walk in coolers(DDD) @ 30 lakhs/ unit)	30.00	30.00	-	-	<b>60.00</b>

5	Revival of dormant MPCs (DDD) @ Rs. 1 lakh/unit	7.00	6.00	6.00	6.00	<b>25.00</b>
6	Manufacturing facilities for milk khoa (DDD) @ Rs. 0.77 lakh/unit	0.77	-	-	-	<b>0.77</b>
7	Milk weighing machine for milk producers co- op. societies (DDD) @ Rs. 17,000/unit	3.74	2.55	1.70	1.70	<b>9.69</b>
8	P.C based automatic milk collection stations to IDF villages (DDD) @ 1.75 lakh/ unit	14.00	43.75	0.00	0.00	<b>57.75</b>
9	Quality assurance lab (DDD)	10.00	0.00	0.00	0.00	<b>10.00</b>
10	Energy management system (DDD)	10.00	-	-	-	<b>10.00</b>
	<b>Total</b>	<b>87.31</b>	<b>118.74</b>	<b>8.78</b>	<b>8.78</b>	<b>233.61</b>

### Implementation Chart of the Project

Activity	2008-2009	2009-2010	2010-2011	2011-2012
Milking machines for ID farms	25units	-	-	-
Supply of portable milking machines to members of the Society	10 units	8 units	6 units	6 units
Provision of bulk milk cooler	1 unit	-	-	-
Provision of a walk-in-coolers	1 unit	1 unit	-	-
Revival of 25 dormant milk producers' co-operative societies	7 societies	6 societies	6 societies	6 societies
Establishment of four khoa manufacturing units	1 unit	1 unit	2	-
Supply of 57 milk weighing machines to milk producers' co-operative societies	22 units	15 units	10 units	10 units
Provision of PC-based automatic milk collection stations to IDF villages and milk producers' co-operative societies	8 units	25 units	-	-
Quality assurance laboratory	1	-	-	-
Energy management system	1	-	--	-

**Reporting**

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

**V. Extension Facilities****“Training Programmes on Livestock Farming and Value-addition of Milk and Meat to the Farmers and Women SHGs under Capacity Building for Adoption of Technology , Training for Technical staff and Dairy Farmers”****Abstract**

Farmers study tour @ Rs. 5000/ per farmer will be carried out at the total cost of Rs. 7.50 lakhs. Skill development for technical staff will be carried out @ Rs. 5000/ per staff at the total cost of Rs. 2.20 lakhs. Orientation training/ workshop for milk producers at society level will be conducted @ Rs. 0.20 lakh/ programme at the total cost of Rs. 3.20 lakhs. For institutional development Rs. 135 lakhs, strengthening of training equipments and strengthening of TANUVAS centre for training and technology dissemination will be carried out at the total cost of Rs. 195 lakhs. To conduct training programmes to empower knowledge of stake holders, to impart skill, to transfer technologies Rs. 12 lakhs will be utilized. MCP, conference will be conducted @ RS. 3000/ programme at the total cost of Rs. 1.44 lakhs. Capacity building training for officers will be conducted at the total cost of Rs. 10 lakhs. Touch screen facilities will be established at the total cost of Rs. 20.00 lakhs @ Rs. 1 lakh/unit. Eight field tours will be conducted for the farmers at the total cost of Rs. 2.00 lakhs. Semi intensive sheep/ goat farming to improve meat production will be established at the total cost of Rs. 235.20 lakhs.

**Budget**

<b>Activity</b>	<b>Amount (Rs. Lakhs)</b>
Farmers study tour @ RS. 5000/ per farmer (DDD)	<b>7.50</b>
Skill development for technical staff (DDD) @ Rs. 5.000/- per staff	<b>2.20</b>
Orientation training/workshop for milk producers at society level (DDD) @ Rs. 0.20 lakh/ programme	<b>3.20</b>
Institutional development – Strengthening of Vet. Institutions @ RS. 5.0 lakh/ institution (DAH)	<b>135</b>
Strengthening of training equipments for technology dissemination and training to farmers at TANUVAS centre, Dindigul (TANUVAS)@ Rs. 10.00 lakhs	<b>10.00</b>
Strengthening of TANUVAS centre for training ( Training cum conference hall farmers) mobile disease investigation and training unit, LCD projector, Microscope etc. (TANUVAS) ( Rs. 50 lakhs)	<b>50.00</b>
Training programmes on modern livestock farming for farmers (TANUVAS) @ Rs. 300/ farmer	<b>12.00</b>
For conducting MCP, conference etc. (TANUVAS) @ Rs. 3000/programme	<b>1.44</b>
Capacity building training for officers ( Vets/ NGOs/ Line dept staff (TANUVAS) @ Rs. 5,000/ staff	<b>10.00</b>
Touch screen facilities (TANUVAS) @ RS. 1 lakh / unit	<b>20.00</b>
Field tours for the farmers (RS. 25,000/ tour)	<b>2.00</b>
Semi intensive sheep/goat farming to improve meat production by SHGs @ 10/block (DAH @ Rs. 0.42 lakh/unit)	<b>235.20</b>
<b>Total</b>	<b>488.54</b>

**Background/ Problem Focus**

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

**Project Rationale**

To ensure quality in milk .To empower stake holders, officers on recent advances in technology and user friendly technologies like touch screen facility for easy access.

**Project Strategy**

As the rural poor follow only traditional methods of livestock rearing and do not have adequate experience in the best practices in animal husbandry activities, exposure to modern and scientific animal rearing is rather limited, the project will adopt the strategy of awareness creation, group mobilisation and motivation and capacity building. Knowledge sharing, capacity building exercise for farmers, women, officers, etc. will be carried out by Tamilnadu veterinary and Animal Sciences University, Department of Animal Husbandry and Aavin. Intensive system of model sheep/goat unit will motivate the farmers to adopt such technologies for sustainable and economically viable farming wherever possible.

**Project Goals**

Capacity building in the areas of livestock farming, value-addition of milk and meat, sheep and goat rearing and hygienic meat production, processing and establishment of modern retail meat units.

Intensive system of model sheep/goat unit will motivate the farmers to adopt such technologies for sustainable and economically viable farming wherever possible.

Sheep/Goat rearing will become a sustainable alternative livelihood opportunity which can supplement the income generation activities of the rural farmers thereby additional income can be generated on a sustainable basis.

Improvement in nutritional standards of the rural people. Enlightening the technical staff and dairy farmers on latest developments in the dairy industry through training programmes and study tours.

### Project Components

- Strengthening of TANUVAS centre through Infrastructure development for training/ extension programmes including Audio visual / communication tools

Sl. No.	Particulars	Amount (Rs. in lakhs)
1.	Training Hall (1000 sq. ft.)	15.00
2.	Audio visual equipments for Training hall	5.00
3.	Conference Hall (1000 sq. ft.)	15.00
4.	Audio visual equipments for Conference hall	5.00
5.	Mobile Disease Investigation Unit (Microscope, Laminarflow, centrifuge, Hot air oven, autoclave)	4.00
6.	Vehicle	6.00

- Training farmers and officers
- Specialised training to field veterinarians and officers.
- Field tours of farmers, MCP, Infertility camps, farmers workshop, conference, etc.
- Touch screen facilities

**Project Cost and Financing****(Amount in Rs. Lakhs)**

<b>Activity</b>	<b>2008- 2009</b>	<b>2009 -2010</b>	<b>2010- 2011</b>	<b>2011- 2012</b>	<b>Total Cost</b>
Farmers study tour @ Rs.5000 per farmer 150 farmers for 4 years (120 farmers for first three years and 30 farmers for fourth year) (DDD)	2.00	2.00	2.00	1.50	<b>7.50</b>
Skill development training for technical staff of DDD @ Rs.5000/- per staff, 44 persons for 4 years 11 staff per year (DDD)	0.55	0.55	0.55	0.55	<b>2.20</b>
Orientation training/workshop for milk producers' at society level Rs.20,000 per programme, 4 programmes/year, for 4 years (DDD)	0.80	0.80	0.80	0.80	<b>3.20</b>
Institutional development – Strengthening of Vet. Institutions with basic facilities like fencing Bore wells, water troughs, Minor repair works etc. @ Rs. 5.0 lakh/ Institution (DAH)	135	-	-	-	<b>135</b>
Strengthening of training equipments for technology dissemination and training to farmers with laptop computer with printer, teaching aids etc. at TANUVAS centre, Dindigul (TANUVAS)	10	-	-	-	<b>10</b>

Strengthening of TANUVAS centre for training (Training cum conference hall farmers) mobile disease investigation and training unit, LCD projector, Microscope etc. (TANUVAS) (Rs. 50 lakhs)	50.00	-	-	-	<b>50.00</b>
Training programmes on modern livestock farming for farmers TANUVAS) @ Rs. 300/ farmer for 4000 farmer for 4 years	3.00	3.00	3.00	3.00	<b>12.00</b>
For conducting MCP, conference etc. (TANUVAS) @ Rs. 3000/programme	0.36	0.36	0.36	0.36	<b>1.44</b>
Capacity building training for officers (Vets/ NGOs/ Line dept staff (TANUVAS) @ Rs. 5,000/ staff for 200 staff for four years	2.50	2.50	2.50	2.50	<b>10.00</b>
Touch screen facilities (TANUVAS) @ RS. 1 lakh / unit	5.00	5.00	5.00	5.00	<b>20.00</b>
Field tours for the farmers (RS. 25,000/ tour)	0.50	0.50	0.50	0.50	<b>2.00</b>
Semi intensive sheep/goat farming to improve meat production by SHGs @ 10/block (DAH @ Rs. 0.42 lakh/unit)	58.8	58.8	58.8	58.8	<b>235.20</b>
<b>Total</b>	<b>268.51</b>	<b>73.51</b>	<b>73.51</b>	<b>73.01</b>	<b>488.54</b>

**Implementation Chart of the Project**

<b>Works proposed</b>	<b>2008-2009</b>	<b>2009-2010</b>	<b>2010-2011</b>	<b>2011-2012</b>
Farmers study tour	40	40	40	30
Skill development for technical staff	11	11	11	11
Orientation training/ workshop for milk producers	4	4	4	4
Institutional development	27	-	-	-
Strengthening of training equipments for technology transfer	1	-	-	-
Strengthening of TANUVAS centre for training	I year – tender processing and placing orders	II year – Expansion processes	Put in to use	Put in to use
Training programmes on livestock farming	1000 farmers	1000 farmers	1000 farmers	1000 farmers
Conducting MCP/ Conference etc	12	12	12	12
Training to the officers	50	50	50	50
Establishment of kiosk at VUTRC	tender processing and placing orders	Establishment processes	Put in to use	Put in to use
Touch screen facilities	5	5	5	5
Field tours for the farmers	2	2	2	2
Semi intensive sheep/goat farming	130	130	130	130

**Reporting**

The Head of the Veterinary University Training and Research Centre, Dindigul, Regional Joint Director, Animal Husbandry Department, Dindigul and the General Manager, Aavin, Dindigul will submit to periodical progress report to the higher authorities.

**Table. 6.16 Budget Proposal - Fisheries Sector 2008-2012**

(Rs.in lakhs)

Sl. No.	Components	Implementing Agency	Unit cost	Total units	2008-09		2009-10		2010-11		2011-12		Total cost
					Units	cost	Units	cost	Units	cost	Units	cost	
1	Creation of additional nursery space at Anaipatti	Fisheries Department	98.30	1			1	98.30					98.30
2	Expansion of fish culture in hitherto unutilized water bodies by stocking (50% subsidy)	Fisheries Department	0.06	2500	1000	6.25	500	3.125	500	3.125	500	3.125	15.63
3	Subsidy assistance to Private Fish Seed Rearing / Fish Seed Production (50% subsidy)	Fisheries Department	10.00	4	1	5.00	1	5.00	1	5.00	1	5.00	20.00
4	Moped-cum-insulated Ice box for fish marketing (50% subsidy)	TAFCPFED	0.15	50	10	1.50	10	1.50	10	1.50	20	3.00	7.50
5	Supply of fishing implements (craft and gear) (50% subsidy)	Fisheries Department	0.10	40	20	2.00	10	1.00			10	1.00	4.00
6	Setting up of modern fish retail outlet (50% subsidy)	TNFDC	5.00	3	1	5.00	1	5.00			1	5.00	15.00
	<b>Fisheries - Total</b>					<b>19.75</b>		<b>113.925</b>		<b>9.625</b>		<b>17.125</b>	<b>160.425</b>
1	Capacity building	TANUVAS	0.10	100.00	40	4.00	20	2.00	20	2.00	20	2.00	10.00
	<b>TANUVAS Total</b>					<b>4.00</b>		<b>2.00</b>		<b>2.00</b>		<b>2.00</b>	<b>10.00</b>
	<b>Grand Total</b>			<b>2698.00</b>		<b>23.75</b>		<b>115.93</b>		<b>11.63</b>		<b>19.13</b>	<b>170.425</b>

## **V. Project**

### **1. Creation of Additional Nursery Space at Anaipatti**

#### **Abstract**

The inland water resources in Dindugul district is 12,123 ha. The total seed requirement is 60.00 lakhs. Area of implementation will be Anaipatti, Nilakottai Taluk, Dindigul district

**Budget :** Rs.98.30 lakhs

#### **Background/Problem Focus**

The Dindugul District does not have water facility throughout the year hence only short term fish culture can be carried out.No self sufficiency in fish seed production.

At present only 5.0 lakhs fingerlings are reared and supplied by the fish seed rearing centre and Anaipatti. This meager quantity is not even sufficient to stock in Departmental tanks and reservoirs.

#### **Project Rationale**

To overcome this problem, proposal for additional fish seed rearing centre at Anaipatti is inevitable. In the unutilised area of available farm, we can create additional rearing space by constructing new nurseries.

#### **Project Strategy**

- To strengthen the Government Fish Seed Farm at Annaaipatti.
- To increase the seed production to fill the requirements of the district.
- To increase the fish production to the optimum level.

### Project Goals

- To create additional facility for seed production
- To make use of the vacant space for fish seed production unit
- To attain fish seed production - 5.00 lakhs against the requirement of 60.00 lakhs.
- To fulfil the present gap of fingerlings requirement is 55.00 lakhs at present level.

### Project Components

Fish seed production hatcheries and nurseries-seed production

### Project Cost and Financing

The cost towards construction of additional nurseries in vacant space of existing Anaipatti Fish Seed Farm is as follows: -

Unit cost	:	Rs.98,30,000/-
No. of units	:	1No.
Total cost	:	Rs.98,30,000/-

### Civil works

Sl. No.	Name of the work	Cost Estimate Rs.
1)	10mx6mx1.2m 40 nurseries at Rs.82126.75x40	32,85,070
2)	15mx8mx1.2m. 20 nurseries at Rs.1,64,253.50x20	32,85,070
3)	2mx1.5m conditioning pond at Rs.11507x6	69,042
	<b>Total</b>	<b>66,39,182</b>
4)	Provision of pipe line 7.5% of total cost of Rs.	4,97,940
5)	6.2mx8m. of one store room and a laboratory	5,92,020
6)	Electrical appliances 30% of Rs.5,92,020/-	1,77,600
7)	One over head tank 45,000 Lt. capacity	3,00,000
8)	15m depth & 10m dia. of open well	7,00,000
9)	10 HP Motor with accessories	30,000
	<b>Total</b>	<b>89,36,742</b>
10)	Provision of unexpected expenses & escalation of price 10%	8,93,674
	<b>Grand Total</b>	<b>98,30,416</b> <b>or rounded to</b> <b>Rs.98,30,000</b>

**Implementation Chart of the Project**

S.No.	particulars	2008-09	2009-10	2010-11	2011-12
1.	Creation of nursery space in Govt. fish seed farm.	√	√	√	√

**Reporting**

The project will be implemented by the Department of Fisheries.

**2. Expansion of Fish Culture in Hitherto Unutilized Water Bodies by Stocking (50% subsidy)**

**Abstract**

It is proposed to cover 2500 ha of water bodies additionally to bring under by extending 50% subsidy assistance for stocking fingerlings.

**Budget : Rs. 15.63 lakhs**

**Background / Problem Focus**

- The District has good scope for fish
- Non availability of stock size fish seeds through out the year

**Project Rationale**

To stock fish seeds in the 2500 ha water bodies.

**Project Strategy**

To stock of fish seeds for enhanced production.

**Project Goals**

To stock suitable fish seeds for enhanced fish production.

**Project Components**

Seeds stocking , rearing of fishes , sampling and harvesting

**Project Cost and Financing**

Cost of fingerlings per Unit : Rs.1250

Subsidy(50%) : Rs.625

Total number units : 2500 ha

Total cost 2500 x 625 : 15.63 lakhs

**Implementation Chart of the Project**

S.No.	particulars	2008-09	2009-10	2010-11	2011-12
1.	Selection of water bodies	√			
2.	Procurement of fish seeds and stock		√	√	√

**Reporting**

The project will be implemented by the Department of Fisheries.

### 3. Subsidy Assistance to Private Fish Seed Rearing / Fish Seed Production (50% Subsidy)

**Abstract**

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

Sathiar fish seed farm has the following infrastructures:

Fish Seed Rearing ponds (Defunct) : 30m X 15mX2=900m<sup>2</sup>

Cement nurseries (14 functional + 6 Defunct) 6M X3mX20 = 360 m<sup>2</sup>

**Budget : Rs. 20.00 lakhs**

### **Background / Problem focus**

- ❖ Vaigai river flows across the district and has major beneficiary of Periyar – Vaigai river system
- ❖ Inadequate infrastructure development causing problems to attain self Sufficiency in seed production
- ❖ Fish seed production / Rearing is not adequate. The fish seed demand is mostly met Import from other Districts / States near by.
- ❖ Fish seed production / rearing in private sector has been not encouraged to minimize intake from neighboring States.
- ❖ Fish culture activity shall be encouraged by extending 50% subsidy on inputs.
- ❖ Dindigul district's water potential gives more opportunity for fish seed production

### **Project Rationale**

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

### **Project Strategy**

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

**Project Goals**

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

**Project Components**

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

**Project cost and Financing** – Unit cost Rs. 10.00 lakhs

**Cost of One Unit**

<b>S. No.</b>	<b>Particulars</b>	<b>Amount (in lakhs)</b>
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
<b>Total</b>		<b>10.00</b>

Subsidy component	:	5 lakhs ( 50%)
Total number of units	:	4
Total cost 4 units x 5 lakhs	:	20 lakhs

**Implementation Chart of the Project**

S.No.	particulars	2008-09	2009-10	2010-11	2011-12
1.	Completion of civil works	√	√	√	√
2.	Rearing of seeds	√	√	√	√

**Reporting**

The project will be implemented by Department of Fisheries.

**4. Moped-cum-Insulated Ice Box for Fish Marketing (50% subsidy)****Abstract**

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

**Budget : Rs. 7.50 lakhs**

**Background / Problem Focus**

For transporting and progressing fish hygienically.

**Project Rationale**

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

**Project Strategy**

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

**Project Goals**

To promote and sale of fish of high quality with hygiene

**Project Components**

Supply of 50 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	:	50 units
<b>Total cost</b>	:	<b>50 x .15 = 7.5 lakhs</b>

**Implementation Chart of the Project**

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

**Reporting**

Progress of the project will be reported periodically.

**5. Capacity building****Abstract**

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

**Budget : Rs. 10.00 lakhs****Background / Problem Focus**

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

**Project Rationale**

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

**Project Strategy**

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

**Project Goals**

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

**Project Components**

1. Composite fish culture
2. Ornamental fish culture
3. Integrated fish farming
4. Cat fish culture
5. 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 100 x Rs.10000		10 lakhs

**Implementation of Client 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

**6. Supply of Fishing Implements (Craft and Gear) – 50% Subsidy****Abstract**

Fishermen will be provided with gill nets for effective fishing.

**Budget : Rs 4.00 lakhs**

**Background / Problem Focus**

To provide gillnets to the fishermen at 50% subsidy

**Project Rationale**

To enhance fish production through capture fisheries.

**Project Strategy**

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

**Project Goals**

To intervene fishing in natural water bodies.

**Project Components**

Supply of gillnets at 50% subsidy

**Project Cost and Financing**

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	:	40
<b>Total cost ( 40 X 0.1 )</b>	<b>:</b>	<b>4 lakhs</b>

**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.

**7. Setting up of Modern Fish Retail Outlet (50% Subsidy)****Abstract**

In Dindigul 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 Dindigul.

**Budget : Rs. 15.00 lakhs**

**Background / Problem Focus**

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

**Project Rationale**

To avoid fish spoilage & loss of quality & revenue.

**Project Strategy**

The facility will be established at Dindigul.

**Project Goals**

To avoid loss of revenue this outlet will be established.

**Project Cost and Financing**

<b>S. No.</b>	<b>Particulars</b>	<b>Amount (in lakhs)</b>
1	Installation of Modern fish stall including water facilities wall, drainage, grill gates and floor etc.	Rs.3.00 lakhs
2	Fish storage cabin	Rs. 1.00 lakh
3	Glass Display Cabinet	Rs.1.00 lakh
<b>Total</b>		<b>Rs. 5.00 lakhs</b>

**Implementation chart of the project**

TNFDC will be established and monitored the retail outlet.

**Reporting**

The progress report will be reported periodically.

#### 6.4. Agricultural Engineering

Under the Department of Agricultural Engineering, various proposals have been recommended and the budget details are detailed in the Table 6.17 through 6.24.

**Table 6.17 Abstract of the Proposals of Agricultural Engineering Department**

(Rs. in lakhs)

Sl. No	Activity	Proposed Outlay for four years (2008-09 to 2011-12)
<b>Stream: 1 (Part – A)</b>		
1	Introduction of newly developed Agri. Machinery / Implements	60.6000
2	Innovative Water Harvesting Structures & Thrashing Floor	221.6000
3	Promoting the concept of Mechanized villages	2.0925
<b>Sub Total for Stream 1 (Part A)</b>		<b>284.2925</b>
<b>Stream: 1 (Part – B)</b>		
1	Special scheme for the Beneficiaries of land reforms Innovative scheme for On farm development with special focus on SC land holdings in Andipatti village of Palani taluk	195.5900
<b>Sub Total for Stream 1 (Part A &amp; B)</b>		<b>479.8825</b>
<b>Stream: 2</b>		
1	Popularization of Agricultural Mechanization thro' conventional machinery / equipments	24.5700
2	Water Harvesting Structures & Soil Conservation Works	208.8000
3	Water Management works	141.6000
<b>Sub Total for Stream 2</b>		<b>374.9700</b>
<b>Grand Total</b>		<b>854.8525</b>

#### Stream : 1 (Part –A)

#### Introduction of Newly Developed Agricultural Machinery / Implements

The interventions and costs involved are furnished in Table 6.18.

**Table 6.18 Project Proposals for Introduction of Newly Developed Agricultural Machinery / Implements**

(Rs in lakhs)

Sl. No	Component	Unit	2008-09	2009-10	2010-11	2011-12	Total
1	Mini Combined Harvester (TNAU)	Phy	2	2	2	2	8
		Fin	2.50	2.50	2.50	2.50	10.00
2	Multi Crop Thrasher	Phy	4	4	4	4	16
		Fin	4.20	4.20	4.20	4.20	16.80

3	Power Weeder with attachment	Phy	1	1	1	1	4
		Fin	0.50	0.50	0.50	0.50	2.00
4	Paddy Transplanter	Phy	1	1	1	1	4
		Fin	0.70	0.70	0.70	0.70	2.80
5	Maize Husker Sheller	Phy	4	4	4	4	16
		Fin	1.80	1.80	1.80	1.80	7.20
6	Coconut De-husker	Phy	8	8	8	8	32
		Fin	2.40	2.40	2.40	2.40	9.60
7	Chisel Plough	Phy	10	10	10	10	40
		Fin	0.60	0.60	0.60	0.60	2.60
8	Power Weeder	Phy	2	2	2	2	8
		Fin	0.65	0.65	0.65	0.65	2.40
9	Gender Friendly equipments	Phy	30	30	30	30	120
		Fin	1.80	1.80	1.80	1.80	7.20
	<b>Total</b>	Phy	<b>62</b>	<b>62</b>	<b>62</b>	<b>62</b>	<b>248</b>
		Fin	<b>15.15</b>	<b>15.15</b>	<b>15.15</b>	<b>15.15</b>	<b>60.60</b>

(Financial figure given is the subsidy amount)

### Budget

Total Cost of the Activity	:	Rs. 116.40 Lakhs
Cost of Subsidy	:	Rs. 60.60 Lakhs
Farmer's Contribution	:	Rs. 55.80 Lakhs

Dindigul district is pre-dominantly agriculture oriented. Around 65 percent of the population is living in rural areas and the economic development of the district depends on the sustainability of agriculture.

It is observed that the productivity of major crops in the district is below average levels. Another disturbing fact is that the ground water potential in this district is over exploited and fast depleting. The ground water potential of ten blocks is over exploited and only one block is in safe position.

The constraints can be summarized as under;

- Inadequate labour availability for agricultural operations viz., transplantation, weeding, harvesting, thrashing etc., resulting in decrease in crop area and low productivity.
- Inadequate rain water harvesting leading to declining ground water table and decrease in ground water/irrigation potential.
- Low farm productivity due to soil erosion and poor soil moisture regime
- Lack of knowledge in adoption of new agriculture and post harvest technologies and
- Poor marketing facilities and un-remunerative prices resulting in low income to the farmers.

#### **(i) Project Rationale**

Currently, the production and productivity of crops decline due to non- scientific cultivation practices, erratic distribution of rainfall and poor economic condition of the farmers. The agricultural operations starting from preparatory cultivation, transplanting, removal of weeds, application of pesticides, harvesting to post harvesting operations should be carried out timely. Mostly the problems arise due to the shortage of labour and non-adoption of improved agricultural machineries in farming operations. The poor resources available with the farmers make the use of improved machineries more difficult. These machineries are not easily available for hiring. So to overcome these obstacles, the introduction of newly developed agricultural machineries / implements by supplying them at subsidized rates, is proposed.

#### **(ii) Project Strategy**

The innovative work components are proposed in Stream-I which would be beneficial to the farming community in respect of introduction of new technology measures, adoption of new methodologies and promotion of new concepts.

**(iii) Project Goals**

To make agriculture a viable proposition for the farming community and to make sustainable through necessary and timely interventions and improving the rural economy.

This is possible through

- Timeliness of agricultural operations involved by eliminating shortage of labour
- Efficient application and utilization of agricultural inputs and
- Saving in labour, time and cost of operations

**Introduction of Newly Developed Agricultural Machinery / Implements****(i) Project Components**

- ❖ Mini combined Harvester (TNAU model)
- ❖ Multi Crop thrasher
- ❖ Power Weeder
- ❖ Paddy Transplanter
- ❖ Maize Husker Sheller
- ❖ Coconut De-husker
- ❖ Chisel Plough and
- ❖ Gender friendly equipments

**(ii) Purpose**

Popularization and adoption of labour saving package for timely operation through agricultural implements and reducing post harvest losses for improving income and value addition

**(iii) Objectives**

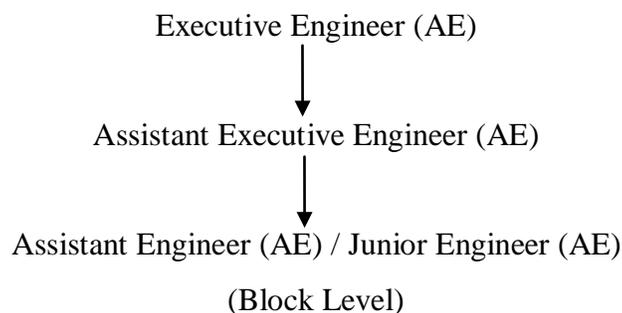
- Supply of agricultural implements for the various unit operations from seedbed preparation to harvest at subsidized and affordable rates.

**(iv) Project Cost and Financing**

Total Cost of the Activity	:	Rs. 116.40 Lakhs
Cost of Subsidy	:	Rs. 60.60 Lakhs
Farmer's Contribution	:	Rs. 55.80 Lakhs

**Year wise Cost of the Scheme (Subsidy portion only)**

2008 – 2009	:	Rs. 15.15 Lakhs
2009 – 2010	:	Rs. 15.15 Lakhs
2010 – 2011	:	Rs. 15.15 Lakhs
2011 – 2012	:	Rs. 15.15 Lakhs
<b>Total</b>	:	<b>Rs. 60.60 Lakhs</b>

**(v) Implementation Chart of the Project****Man Power for Project implementation (District Level)****Implementation Chart of the Programme (Annual programme)**

Sl. No	Activity	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
1	Identification of Beneficiaries	☆	☆	☆						
2	Supply of machineries at subsidized rates		☆	☆	☆	☆	☆			
3	Evaluation							☆	☆	☆

**(vi) Reporting**

The Executive Engineer (AE), Dindigul will prepare the documentation on achievements of targets, financial progress, impacts and indicators of the technologies and net benefits for the project area. Based upon the data monitored during the project period, the mid-term corrections and final evaluation on implementation along with the suitable biophysical and economical indices will be carried out.

**6.4.2 Innovative Water Harvesting Structures & Thrashing Floor**

The details of costs involved are given in Table 6.19.

**Table 6.19 Project Proposals on Innovative Water Harvesting Structures & Thrashing Floor**

(Rs. in lakhs)

Sl. No	Component	Unit	2008-09	2009-10	2010-11	2011-12	Total
1	Lined Farm Pond with mobile sprinkler	Phy	2	2	2	2	8
		Fin	5.40	5.40	5.40	5.40	21.60
2	Thrashing Floor	Phy	25	25	25	25	100
		Fin	50.00	50.00	50.00	50.00	200.00
	<b>Total</b>	Phy	<b>27</b>	<b>27</b>	<b>27</b>	<b>27</b>	<b>108</b>
		Fin	<b>55.40</b>	<b>55.40</b>	<b>55.40</b>	<b>55.40</b>	<b>221.60</b>

(Financial figure given is the Subsidy Amount)

**Budget**

Total Cost of the Activity	:	Rs. 224.00 Lakhs
Cost of Subsidy	:	Rs. 221.60 Lakhs
Farmer's Contribution	:	Rs. 2.40 Lakhs

**(i) Project Rationale**

Currently, the production and productivity of dry land crops are declining due to non-scientific cultivation practices, erratic distribution of rainfall and poor economic condition of the dry land farmers. The major dry land crops under this category includes

milletts (sorghum, fodder maize, pearl millet, finger millet and minor millets), fodder crops (forage legumes, cereal fodder and forage grass), pulses (black gram, green gram, cowpea, horse gram, dew gram etc) and oilseeds (groundnut, castor, sesamum and sunflower). As the water becomes the main constraint in the dry lands, the usage of inputs has become marginalized. Therefore, the potential yield of the crops could not be realized.

Rainwater harvesting and recycling for supplemental irrigation is the basic need for increasing agricultural productivity in dry lands. It also enhances the use of other agricultural inputs/ technologies to a higher level by providing improved soil moisture regime during critical stages of crop growth. Farm ponds are considered to be the suitable structure to store excess rain water from dry land farm plots and to store it sufficiently for a long time (say 3 to 4 months) so as to give supplemental irrigation during critical stage of crop growth at times of failure or non – receipt of rainfall . This technique should be given prime importance particularly in the present content of erratic distribution of rainfall.

It is important to identify and develop a durable plastic lining materials suited for different soils and depth of storages. The films are available in LDPE, HDPE, PVC, EPDM (Ethylene propylene Diane Monomer) and CSPE (Chlorsulfonated polythene). The laying technologies are fine tuned and model scale experiments in farmer's fields with dryland horticultural systems revealed that there is a potential scope to use this lining technology for effective water storage in entire crop season and could be used for supplemental irrigation. As the power is the constraint in dry lands, the supplemental irrigation is possible through portable sprinkler system during critical stages of crop growth.

For some of the crops, to perform effective post harvest operations like thrashing and drying, Drying Yards / Thrashing Floors are necessary. They go a long way in reducing post harvest losses there by increasing production and productivity.

**(ii) Project Strategy**

The innovative work components are proposed in Stream-I which would be beneficial to the farming community in respect of introduction of new technology measures, adoption of new methodologies and promotion of new concepts.

**(iii) Project Goals**

Making agriculture a viable proposition for the farming community, by making agriculture sustainable through necessary and timely intervention and improving the rural economy.

This is possible through,

- Enhancing water use efficiency in dry lands
- Soil erosion control and prevention of nutrient loss
- Aids in flood mitigation
- Improvement in sub surface water storage
- Reducing post harvest losses and
- Enhancing crop yields

**(iv) Project Components**

- Data on soil profile, rainfall pattern, slope of land, crops grown etc.,
- Plastic lining materials and sealing materials for farm ponds and
- Portable sprinklers

**(v) Purpose**

- to improve soil moisture regimes in dry lands
- to harvest the rainwater effectively and reuse for supplemental irrigation
- mitigating stress in intervening dry spells during crop growth and
- providing necessary infrastructure for post harvesting operations

**(vi) Objectives**

- to conserve soil moisture through rainwater harvesting
- to popularize the plastic lining technology for farm ponds

- to introduce mobile sprinkler units for efficient utilization of harvested rain
- water during critical stages for supplemental irrigation and
- reducing post harvest losses by providing thrashing floors

**(vii) Activities**

- Site selection and design for farm ponds
- Procurement of plastic lining material
- Fabrication of sealing machines
- Construction and laying of structures and
- Procurement and use of portable sprinkler units

**(viii) Project Cost and Financing**

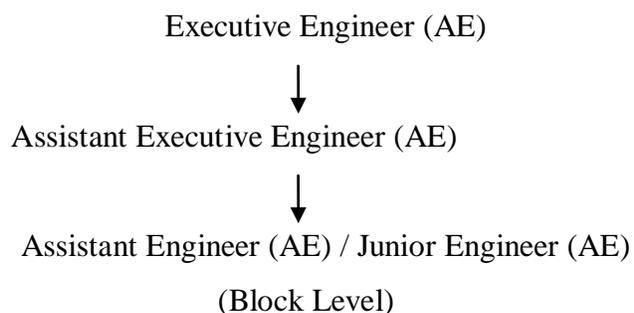
Total Cost of the Activity	:	Rs. 224.00 Lakhs
Cost of Subsidy	:	Rs. 221.60 Lakhs
Farmer's Contribution	:	Rs. 2.40 Lakhs

**Year wise Cost of the Scheme: (Subsidy portion only)**

2008 – 2009	:	Rs. 55.40 Lakhs
2009– 2010	:	Rs. 55.40 Lakhs
2010 – 2011	:	Rs. 55.40 Lakhs
2011 – 2012	:	Rs. 55.40 Lakhs
<b>Total</b>	:	<b>Rs. 221.60 Lakhs</b>

**(ix) Implementation Chart of the Project**

**Man Power for Project implementation (District Level)**



**Implementation Chart of the Programme (Annual Programme)**

Sl. No	Activity	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Jan
1	Selection of suitable sites	☆	☆	☆							
2	Procurement of plastic lining material & fabrication of sealing machines		☆	☆	☆						
3	Construction of Structures			☆	☆	☆	☆	☆			
4	Procurement & use of portable sprinklers							☆	☆	☆	☆

**x) Reporting**

The Executive Engineer (AE), Dindigul will prepare the document on achievements of targets, financial progress, impacts and indicators of the technologies and net benefits for the project area. Based upon the data monitored during the project period, the mid –term corrections and final evaluation on implementation along with the suitable biophysical and economical indices will be carried out.

**6.4.3. Promoting the Concept of Mechanized Villages****Distribution of Crop based Package of Agri. Machinery / Implements on Cluster basis in the Adopted Villages – Maize**

The details of the components and costs involved are furnished in Table 6.20.

**Table 6.20 Project Proposal for Distribution of Crop based Package of Agrl. Machinery / Implements****(Rs in lakhs)**

<b>Sl. No</b>	<b>Component</b>	<b>Unit</b>	<b>2009-10</b>	<b>Total</b>
1	Chisel Plough	Phy	1	1
		Fin	0.0675	0.0675
2	Sub soil coir pith applicator	Phy	1	1
		Fin	0.1875	0.1875
3	Ridger – Tractor operated	Phy	1	1
		Fin	0.1125	0.1125
4	Raised bed seed drill – Tractor operated	Phy	1	1
		Fin	0.3000	0.3000
5	Power Weeder – Oleo Mac	Phy	1	1
		Fin	0.4875	0.4875
6	Maize Husker Sheller (Tractor PTO)	Phy	1	1
		Fin	0.9375	0.9375
	<b>Total</b>	Phy	1	1
		Fin	<b>2.0925</b>	<b>2.0925</b>

(Financial figure given is the Subsidy Amount)

**2. Budget**

Total Cost of the Activity	:	Rs. 2.7500 Lakhs
Cost of Subsidy	:	Rs. 2.0925 Lakhs
Farmer's Contribution	:	Rs. 0.6575 Lakhs

**(i) Project Rationale**

Currently, the production and productivity of crops are declining due to non-scientific cultivation practices, erratic distribution of rainfall and poor economic conditions of the farmers. The agricultural operations starting from preparatory cultivation, transplanting, removal of weeds, application of pesticides, harvesting to post

harvesting operations should be carried out timely. Mostly the problems arise due to the shortage of labour and non-adoption of improved agricultural machineries in farming operations. The poor resources available with the farmers make the use of improved machineries more difficult. These machineries are not easily available for hiring as well. So to overcome these obstacles, promoting the concept of mechanized village, through distribution of agrl. machineries / implements on cluster basis in the adopted village by supplying them at subsidized rates, is proposed.

### **(ii) Project Strategy**

The innovative work components are proposed in Stream-I which would be beneficial to the farming community in respect of introduction of new technology measures, adoption of new methodologies and promotion of new concepts.

### **(iii) Project Goals**

Making agriculture a viable proposition for the farming community, by making agriculture sustainable thro' necessary and timely intervention and improving the rural economy. This is possible through

- timeliness of agricultural operations involved by eliminating shortage of labour
- efficient application and utilization of agricultural inputs and
- saving in labour, time and cost of operation

### **(iv) Project Components**

- Chisel Plough
- Sub soil pith applicator
- Ridger – tractor operated
- Raised bed seed drill – tractor operated
- Power Weeder – Oleo Mac and
- Maize Husker Sheller (Tractor – PTO)

**(v) Purpose**

Popularization and adoption of labour saving package for timely operations through agricultural implements and reducing post harvest losses for improving income and value addition.

**(vi) Objectives**

Supply of agricultural implements for the various unit operations from seedbed preparation to harvest at subsidized and affordable rates.

**(vii) Outputs (deliverables)**

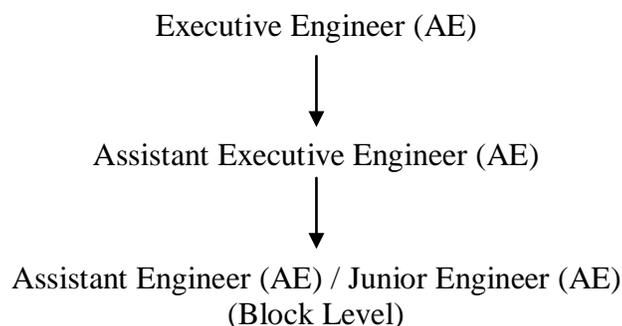
- timeliness of agricultural operations involved, eliminating shortage of labour
- efficient application and utilization of agricultural inputs
- saving in labour, time and cost of operation and
- increase in production and productivity

**(viii) Project Cost and Financing**

Total Cost of the Activity	:	Rs.	2.7500 Lakhs
Cost of Subsidy	:	Rs.	2.0925 Lakhs
Farmer's Contribution	:	Rs.	0.6575 Lakhs

**Year wise Cost of the Scheme (Subsidy portion only)**

2009– 2010	:	Rs. 2.0925 Lakhs
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**(ix) Implementation Chart of the Project****Man Power for Project implementation (District Level)****Implementation Chart of the Programme (Annual programme)**

Sl. No	Activity	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
1	Identification of Beneficiaries	☆	☆	☆						
2	Supply of machineries at subsidized rates		☆	☆	☆	☆	☆			
3	Evaluation							☆	☆	☆

**(x) Reporting**

The Executive Engineer (AE), Dindigul will prepare the document on achievements of targets, financial progress, impacts and indicators of the technologies and net benefits for the project area. Based upon the data monitored during the project period, the mid –term corrections and final evaluation on implementation along with the suitable biophysical and economical indices will carried out.

**Stream : 1 (Part – B)****Special Scheme for the Beneficiaries of Land Reforms****6.4.4. Innovative Scheme for On Farm Development with Special Focus on SC Land Holdings in Andipatti Village of Palani Taluk**

The details of components and costs involved are furnished in Table 6.21.

**Table 6.21 Project proposal on Special Scheme for the Beneficiaries of Land Reforms**

(Rs. in lakhs)

Sl. No	Component	Unit	2008-09	2009-10	2010-11	2011-12	Total
1	Soil & Moisture Conservation Works	Nos	14	18	15	14	61
		Ha	125.000	125.000	125.000	125.000	500.000
		Fin	10.86	12.41	10.91	10.86	45.04
2	On Farm Development	Nos	5	7	7	6	25
		Ha	42.000	43.000	43.000	42.000	170.000
		Fin	16.95	21.10	21.10	20.20	79.35
3	Infrastructure (Farm roads & Cart Track crossing)	Phy	4	5	5	4	18
		Fin	3.50	4.50	4.50	4.00	16.50
4	Agricultural Mechanization	Phy	24	22	22	22	90
		Fin	15.22	13.16	13.16	13.16	54.70
	<b>Total</b>	<b>Nos</b>	<b>47</b>	<b>52</b>	<b>49</b>	<b>46</b>	<b>194</b>
		<b>Ha</b>	<b>167.000</b>	<b>168.000</b>	<b>168.000</b>	<b>167.000</b>	<b>670.000</b>
		<b>Fin</b>	<b>46.53</b>	<b>51.17</b>	<b>49.67</b>	<b>48.22</b>	<b>195.59</b>

(Financial figure given is the Subsidy Amount)

**Budget**

Total Cost of the Activity	:	Rs. 195.59 Lakhs
Cost of Subsidy	:	Rs. 195.59 Lakhs
Farmer's Contribution	:	Nil

**(i) Project Rationale**

The farmers are the beneficiaries of land reforms with the land assigned to them from surplus lands taken under land ceiling act. The lands are pre-dominantly rainfed with very less or no land development. The beneficiaries are resource poor and they are still working as laborers in nearby fields. They are economically most backward people. Only a special project like NADP can provide suitable solutions to this area, as other schemes running at present cannot pool resources in entity to area such as this. Hence, it has been decided to take up this area under NADP.

**(ii) Project Strategy**

The innovative work components are proposed in Stream - I which would be beneficial to the farming community in respect of introduction of new technology measures, adoption of new methodologies and promotion of new concepts.

**(iii) Project Goals**

Making agriculture a viable proposition for the resource poor SC farming community, through necessary and timely intervention, improving the net minimum income of the target group with capital investment on land development, irrigation, mechanization and infrastructure are the avowed goals of the project. The emphasis will be on:-

- Land development and Soil & Moisture Conservation
- Scientific farming practices
- Creating basic infrastructure and
- Saving labour, time and cost of operations through mechanisation

**(iv) Project Components****I. Soil & Moisture Conservation Works**

- (i) **Compartmental bunding** to prevent soil erosion and for *insitu* moisture conservation
- (ii) **Deep ploughing** to improve soil moisture regime
- (iii) **Land Shaping** for better water management, to improve soil moisture regime and to reduce soil erosion
- (iv) **Loose Rock & Gabion Checks** to stabilize the streams in upper reaches & reduce further development of soil eroding gullies
- (v) **Masonry Check Dams** to stabilize the gullies, to improve soil moisture regime in adjoining lands, to replenish ground water and to reduce silting of irrigation sources downstream and
- (vi) **Stream training works** to prevent stream bank erosion

**II. On Farm Development Works**

- (i) **Improvement to the existing wells** to put the available water resources into proper & efficient use
- (ii) **Community bore well with energisation** to develop common resources for tapping available potential with limited investment
- (iii) **PVC Pipe line** for reducing conveyance losses to achieve more yield per unit of water available
- (iv) **Horticulture Plantation with Drip Irrigation** to utilize limited available resources in a better way to increase the net minimum income of the farmers

**III. Providing Basic Infrastructure**

- (i) **Farm Roads & Cart Track Crossings** to connect the farms to the main thoroughfares to facilitate easy transport of inputs and farm produces and to facilitate movement of agricultural machineries.

#### IV. Agricultural Mechanization

##### (i) Popularization of conventional Agrl.Machinaries / Implements for

- timeliness of agricultural operations involved and eliminating shortage of labour
- efficient application and utilization of agricultural inputs and
- saving in labour, time and cost of operation

##### (v) Project Cost and Financing

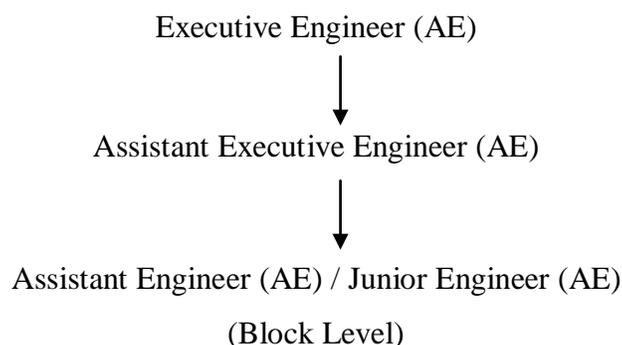
Total Cost of the Activity	:	Rs. 195.59 Lakhs
Cost of Subsidy	:	Rs. 195.59 Lakhs
Farmer's Contribution	:	Nil

##### Year wise cost of the Scheme: (Subsidy portion only)

2008 – 2009	:	Rs. 46.53 Lakhs
2009 – 2010	:	Rs. 51.17 Lakhs
2010 – 2011	:	Rs. 49.67 Lakhs
2011 – 2012	:	Rs. 48.22 Lakhs
<b>Total</b>	:	<b>Rs. 195.59 Lakhs</b>

##### (vi) Implementation Chart of the Project

##### Man Power for Project implementation (District Level)



**Implementation Chart of the Programme (Annual programme)**

Sl. No	Activity	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
1	Selection of appropriate sites	☆	☆	☆						
2	Supply of machineries		☆	☆	☆	☆	☆			
3	Construction of structures & Creation of water sources		☆	☆	☆	☆	☆	☆		
4	Plantation & allied works					☆	☆	☆	☆	

**(vii) Reporting**

The Executive Engineer (AE), Dindigul will prepare the documentation on achievements of targets, financial progress, impacts and indicators of the technologies and net benefits for the project area. Based upon the data monitored during the project period, the mid –term corrections and final evaluation on implementation along with the suitable biophysical and economical indices will be carried out.

**Stream : 2****6.4.5 Popularization of Agricultural Mechanization through Conventional Machinery / Equipments**

The details of components and costs involved are furnished in Table 6.22.

**Table 6.22 Project Proposal on Popularization of Agricultural Mechanization through Conventional Machinery / Equipments**

(Rs. in lakhs)

Sl. No	Component	Unit	2008-09	2009-10	2010-11	2011-12	Total
1	Power Tiller	Phy	10	10	10	10	40
		Fin	2.90	2.90	2.90	2.90	11.60
2	Rotavator	Phy	10	10	10	10	40
		Fin	2.25	2.25	2.25	2.25	9.00
3	Cultivator	Phy	8	8	8	8	32
		Fin	0.32	0.32	0.32	0.32	1.28
4	Offset Disc harrow	Phy	2	2	2	2	8
		Fin	0.235	0.235	0.235	0.235	0.94
5	Disc Plough	Phy	5	5	5	5	20
		Fin	0.4375	0.4375	0.4375	0.4375	1.75
	<b>Total</b>	<b>Phy</b>	<b>35</b>	<b>35</b>	<b>35</b>	<b>35</b>	<b>140</b>
		<b>Fin</b>	<b>6.1425</b>	<b>6.1425</b>	<b>6.1425</b>	<b>6.1425</b>	<b>24.57</b>

(Financial figure given is the Subsidy Amount)

**Budget**

Total Cost of the Activity	:	Rs. 98.28 Lakhs
Cost of Subsidy	:	Rs. 24.57 Lakhs
Farmer's Contribution	:	Rs. 73.71 Lakhs

**(i) Project Rationale**

Currently, the production and productivity of crops have declined due to non-scientific cultivation practices, erratic distribution of rainfall and poor economic condition of the farmers. The agricultural operations starting from preparatory cultivation, transplanting, removal of weeds, application of pesticides, harvesting to post harvesting operations should be carried out timely. Mostly the problems arise due to the shortage of labour and non-adoption of improved agricultural machineries in farming operations. The poor resources available with the farmers make the use of improved machineries more difficult. These machineries are not easily available for hiring as well. So to overcome these obstacles, the introduction of newly developed agricultural machinery / implements by supplying them at subsidized rates, is proposed.

**(ii) Project Strategy**

The popularization of agricultural mechanization through conventional Machinery/Equipments which is already running thro' other schemes is proposed in Stream-2, which would be beneficial to the farming community in respect of introduction of new technology measures, adoption of new methodologies and promotion of new concepts.

**(iii) Project Goals**

Making Agriculture a viable proposition for the farming community, by making agriculture sustainable through necessary and timely intervention and improving the rural economy. This is possible through

- timeliness of agricultural operations involved and eliminating shortage of labour
- efficient application and utilization of agricultural inputs and
- saving labour, time and cost of operations

**(iv) Purpose**

Popularization and adoption of labour saving package for timely operation through conventional agricultural machinery and equipments.

**(v) Objectives**

- Supply of agricultural machinery and implements for the various unit operations from seedbed preparation to harvest at subsidized and affordable rates.

**(vi) Outputs**

- Timeliness of agricultural operations involved and eliminating shortage of labour
- Efficient application and utilization of agricultural inputs
- Saving labour, time and cost of operations and
- Increase in production and productivity

**(vii) Inputs**

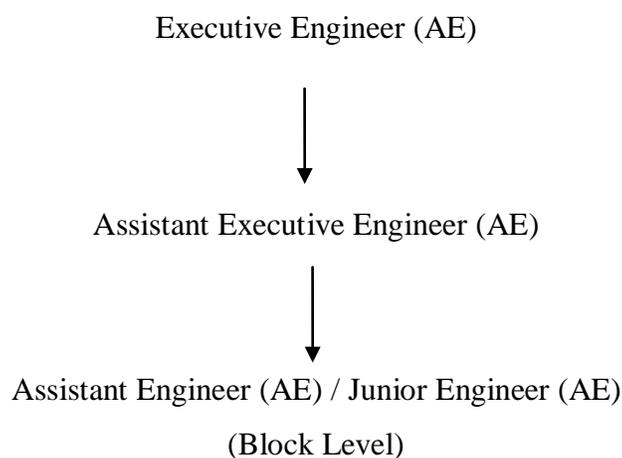
- ✓ Power Tiller
- ✓ Rotavator
- ✓ Cultivator
- ✓ Offset Disc Harrow and
- ✓ Disc Plough

**(viii) Project Cost and Financing**

Total Cost of the Activity	:	Rs. 98.28 Lakhs
Cost of Subsidy	:	Rs. 24.57 Lakhs
Farmer's Contribution	:	Rs. 73.71 Lakhs

**Year wise cost of the Scheme: (Subsidy portion only)**

2008 – 2009	:	Rs. 6.1425 Lakhs
2009 – 2010	:	Rs. 6.1425 Lakhs
2010 – 2011	:	Rs. 6.1425 Lakhs
2011 – 2012	:	Rs. 6.1425 Lakhs
<b>Total</b>	:	<b>Rs. 24.57 Lakhs</b>

**(ix) Implementation Chart of the Project****Man Power for Project implementation (District Level)****Implementation Chart of the Programme (Annual programme)**

Sl. No	Activity	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
1	Identification of Beneficiaries	☆	☆	☆						
2	Supply of machineries at subsidized rates		☆	☆	☆	☆	☆			
3	Evaluation							☆	☆	☆

**(x) Reporting**

The Executive Engineer (AE), Dindigul will prepare the document on achievements of targets, financial progress, impacts and indicators of the technologies and net benefits for the project area. Based upon the data monitored during the project period, the mid –term corrections and final evaluation on implementation along with the suitable biophysical and economical indices will be carried out.

### 6.4.6 Water Harvesting Structures and Soil Conservation Works

The details of components and costs involved are given in Table 6.23.

**Table 6.23 Project Proposal on Soil & Moisture Conservation and Supplemental Irrigation**

(Rs in Lakhs)

Sl. No	Component	Unit	2008-09	2009-10	2010-11	2011-12	Total
1	Farm Ponds unlined (Nos)	Phy	4	4	4	4	16
		Fin	1.80	1.80	1.80	1.80	7.20
2	Compartmental bunding (Ha)	Phy	200.000	200.000	200.000	200.000	800.000
		Fin	5.40	5.40	5.40	5.40	21.60
3	Land Shaping (Ha)	Phy	200.000	200.000	200.000	200.000	800.000
		Fin	18.00	18.00	18.00	18.00	72.00
4	Terrace support wall (Nos)	Phy	100	100	100	100	400
		Fin	27.00	27.00	27.00	27.00	108.00
	<b>Total</b>	<b>Nos</b>	<b>104</b>	<b>104</b>	<b>104</b>	<b>104</b>	<b>416</b>
		<b>Ha</b>	<b>400.000</b>	<b>400.000</b>	<b>400.000</b>	<b>400.000</b>	<b>1600.00</b>
		<b>Fin</b>	<b>52.20</b>	<b>52.20</b>	<b>52.20</b>	<b>52.20</b>	<b>208.80</b>

(Financial figure given is the Subsidy Amount)

#### Budget

Total Cost of the Activity	:	Rs. 232.00 Lakhs
Cost of Subsidy	:	Rs. 208.80 Lakhs
Farmer's Contribution	:	Rs. 23.20 Lakhs

**(i) Project Rationale**

Currently, the production and productivity of dry land crops have declined due to non- scientific cultivation practices, erratic distribution of rainfall and poor economic condition of the dry land farmers. The major dry land crops under this category includes millets (sorghum, fodder maize, pearl millet, finger millet and minor millets), fodder crops (forage legumes, cereal fodder and forage grass), pulses (black gram, green gram, cowpea, horse gram, dew gram etc) and oilseeds (groundnut, castor, sesamum and sunflower). As the water becomes the main constraint in the dry lands, the usage of input has become marginalized. Therefore, the potential yield of the crops could not be realized.

Rainwater harvesting and recycling for supplemental irrigation is the basic need for increasing agricultural productivity in dry lands. It also enhances the use of other agricultural inputs/ technologies to a higher level by providing improved soil moisture regime during critical stages of crop growth. Farm ponds are considered to be the suitable structure to store excess rain water from dry land farm plots and to store it sufficiently for a long time (say 3 to 4 months) so as to give supplemental irrigation during critical stage of crop growth at times of failure or non – receipt of rainfall . This technique should be given prime importance particularly in the present content of erratic distribution of rainfall in dry land eco-system.

Another foremost issue in dry land farming, as well as in certain parts of well irrigated lands, is loss of fertile top soil due to soil erosion. The cultivable lands adjoining to small streams and gullies get degraded due to bank erosion. In hilly tracts where the existance of terrace type fields are common, the cultivable lands get degraded due to landslides. In some cases, the lands need to be shaped to improve soil moisture retention as well as soil erosion. With a view to conserve soil and as well as *insitu* moisture, Compartmental bunding, Land shaping and Terrace support wall works are proposed.

**(ii) Project Strategy**

The Soil & Moisture conservation and supplemental irrigation works which are already running through other schemes are proposed in Stream-2, which would be beneficial to the farming community in respect of introduction of new technology measures, adoption of new methodologies and promotion of new concepts.

**(iii) Project Goals**

Making Agriculture a viable proposition for the farming community, by making agriculture sustainable through necessary and timely intervention and improving the rural economy.

This is possible through,

- Enhancing water use efficiency in dry lands
- Soil erosion control and prevention of fertile top soil loss
- Aids in flood mitigation
- Improvement in sub surface water storage and
- Enhancing crop yields

**(iv) Project Components****(i) Water Harvesting Structures****Components**

- ❖ Data on soil profile, rainfall pattern, slope of land, crops grown etc.,

**(i) Purpose**

- ❖ to improve soil moisture regimes in dry lands
- ❖ to harvest the rainwater effectively and reuse for supplemental irrigation and
- ❖ mitigating stress in intervening dry spells during crop growth

**(ii) Objectives**

- ❖ to conserve soil moisture through rainwater harvesting and
- ❖ water during critical stages for supplemental irrigation

**(iii) Outputs**

- ❖ Enhancing water use efficiency in dry lands
- ❖ Soil erosion control and prevention of nutrient loss
- ❖ Aids in flood mitigation
- ❖ Improvement in sub surface water storage and
- ❖ Enhancing crop yields

**(iv) Activities**

- Site selection and design for farm ponds and
- Formation of Farm Ponds

**(ii) Soil Conservation Works**

**(i) Purpose**

- ❖ to prevent soil erosion
- ❖ to harvest the rainwater *insitu* i.e in the fields it self and
- ❖ mitigating stress in intervening dry spells during crop growth

**(ii) Objectives**

- ❖ to preserve fertile top soil of lands
- ❖ to conserve soil moisture through *insitu* moisture conservation and
- ❖ to prevent degradation of cultivable lands due to land slides

**(iii) Outputs**

- ❖ Soil erosion control and prevention of fertile top soil
- ❖ Improvement in soil moisture regime
- ❖ Aids in flood mitigation
- ❖ Improvement in sub surface water storage and
- ❖ Results in improved land capability & better crop yields

**(iv) Activities**

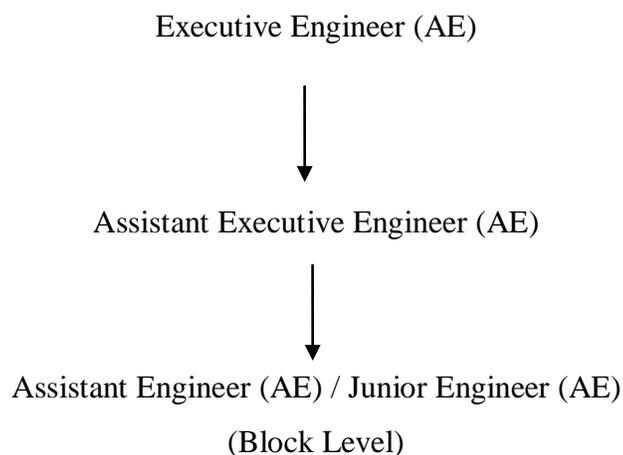
- Site selection
- Design of appropriate, location specific structures and
- Formation & Construction of Structures

**(v) Project Cost and Financing**

Total Cost of the Activity	:	Rs. 232.00 Lakhs
Cost of Subsidy	:	Rs. 208.80 Lakhs
Farmer's Contribution	:	Rs. 23.20 Lakhs

**Year wise Cost of the Scheme:(Subsidy portion only)**

2008 – 2009	:	Rs. 52.20 Lakhs
2009– 2010	:	Rs. 52.20 Lakhs
2010 – 2011	:	Rs. 52.20 Lakhs
2011 – 2012	:	Rs. 52.20 Lakhs
<b>Total</b>	:	<b>Rs. 208.80 Lakhs</b>

**(vi) Implementation Chart of the Project****Man Power for Project implementation (District Level)**

**Implementation Chart of the Programme (Annual programme)**

Sl. No	Activity	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Jan
1	Selection of suitable sites	☆	☆	☆							
2	Construction of Structures			☆	☆	☆	☆	☆	☆	☆	

**(vii) Reporting**

The Executive Engineer (AE), Dindigul will prepare the document on achievements of targets, financial progress, impacts and indicators of the technologies and net benefits for the project area. Based upon the data monitored during the project period, the mid-term corrections and final evaluation on implementation along with the suitable biophysical and economical indices will be carried out.

**6.4.7 Water Management Works**

The components and costs involved are furnished in Table 6.24.

**Table 6.24 Project Proposal on Water Management Works****(Rs. in lakhs)**

S No	Component	Unit	2008-09	2009-10	2010-11	2011-12	Total
1	PVC Pipe laying (Area in Ha)	Phy	100.000	100.000	100.000	100.000	<b>400.000</b>
		Fin	13.50	13.50	13.50	13.50	<b>54.00</b>
2	Ground Level Reservoir (Nos)	Phy	30	30	30	30	<b>120</b>
		Fin	21.60	21.60	21.60	21.60	<b>86.40</b>
3	Fertigation assembly (Nos)	Phy	5	5	5	5	<b>20</b>
		Fin	0.30	0.30	0.30	0.30	<b>1.20</b>
	<b>Total</b>	<b>Nos</b>	<b>35</b>	<b>35</b>	<b>35</b>	<b>35</b>	<b>140</b>
		<b>Ha</b>	<b>100.000</b>	<b>100.000</b>	<b>100.000</b>	<b>100.000</b>	<b>400.000</b>
		<b>Fin</b>	<b>35.40</b>	<b>35.40</b>	<b>35.40</b>	<b>35.40</b>	<b>141.60</b>

(Financial figure given is the Subsidy Amount)

**Budget**

Total Cost of the Activity	:	Rs. 158.40 Lakhs
Cost of Subsidy	:	Rs. 141.60 Lakhs
Farmer's Contribution	:	Rs. 16.80 Lakhs

**(i) Project Rationale**

In irrigated agriculture, on farm water management is one of the most essential ingredient to make it more viable. Higher input cost and low returns from agriculture makes it less remunerative and largely affects the economic well being of the farming community. Higher demand on ground water resources with ever depleting ground water table makes water more precious. As the water becomes the main constraint, the usage of input has become marginalized. Therefore, the potential yield of the crops could not be realized.

Various studies and research activities in on farm water management which are well documented, revealed that the conveyance losses on farm is the major draw back as far as the individuals are concerned. In a national perspective, indiscrete use of non – renewable source like electricity is a huge burden on the State. Improper application of one of the major inputs i.e fertilizer for which the government is heavily subsidizing, is another factor affecting farm income.

**(i) Project Strategy**

Water Management works which are already running thro' other schemes are proposed in Stream-2, which would be beneficial to the farming community in respect of introduction of new technology measures, adoption of new methodologies and promotion of new concepts.

**(ii) Project Goals**

Making Agriculture a viable proposition for the farming community and making agriculture sustainable thro' necessary and timely intervention and improving the rural economy.

This is possible through,

- Enhancing irrigation efficiency
- Reducing the usage of non-renewable energy and
- Improved application of inputs

**(iv) Project Components**

Water Management Works

**(v) Purpose**

- ❖ to improve irrigation efficiency
- ❖ to conserve non-renewable energy and
- ❖ to enhance better application of costly inputs

**(vi) Objectives**

- ❖ to reduce water conveyance losses on farm
- ❖ to reduce the usage of electricity and
- ❖ better application of fertilizers

**(vii) Outputs**

- ❖ Enhancing water use efficiency
- ❖ Reducing dependence on electricity & diesel
- ❖ Better usage of fertilizers with lesser input cost and
- ❖ Enhancing crop yields

**(viii) Activities**

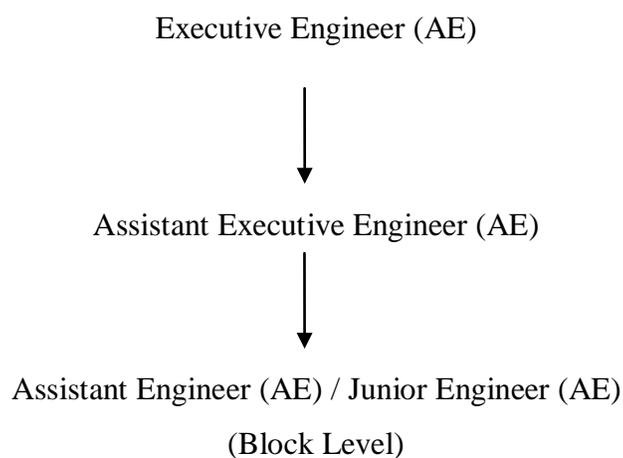
- Site selection and design of pipe laying and GLR
- Laying & Construction and
- Fixing Fertigation assembly in Drip Irrigated fields

**(ix) Project Cost and Financing**

Total Cost of the Activity	:	Rs. 158.40 Lakhs
Cost of Subsidy	:	Rs. 141.60 Lakhs
Farmer's Contribution	:	Rs. 16.80 Lakhs

**Year wise Cost of the Scheme: (Subsidy portion only)**

2008 – 2009	:	Rs. 35.40 Lakhs
2009– 2010	:	Rs. 35.40 Lakhs
2010 – 2011	:	Rs. 35.40 Lakhs
2011 – 2012	:	Rs. 35.40 Lakhs
<b>Total</b>	:	<b>Rs. 141.60 Lakhs</b>

**(ix) Implementation Chart of the Project****Man Power for Project implementation (District Level)**

**Implementation Chart of the Programme (Annual programme)**

Sl. No	Activity	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Jan
1	Selection of suitable sites	☆	☆	☆							
2	Laying of Pipe Lines & Construction of Structures			☆	☆	☆	☆	☆	☆	☆	
3	Supply of Fertigation assembly			☆	☆	☆	☆	☆	☆	☆	

**(x) Reporting**

The Executive Engineer (AE), Dindigul will prepare the document on achievements of targets, financial progress, impacts and indicators of the technologies and net benefits for the project area. Based upon the data monitored during the project period, the mid-term corrections and final evaluation on implementation along with the suitable biophysical and economical indices will be carried out.

**6.5 Strengthening of Agricultural Marketing and Agribusiness Development in Tamil Nadu****1. Current Status of Agribusiness**

Agriculture, as a primary sector provides livelihood to 56 percent of the population and contributes to 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 four percent in Agriculture during XI Plan period. Though fertile soil, good quality water and long period of sunlight which are the basic requirements for Agriculture are available in abundance in Tamil Nadu, still the productivity has not been enhanced to its potential level.

The Government is taking efforts to attain sustainable agricultural development by bringing agriculture as a commercial venture by switching over from the present method of cultivation through adoption of new scientific method of cultivation to increase the productivity to manifold, value addition, processing and utilization of marketing opportunities. To improve the marketing opportunities for agricultural produce, the Uzhavar Santhai, post harvest management, cold storage facilities for perishables, food processing, establishment of export zones, terminal markets have been taken up. To reduce the loss of the food products which are upto 30 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 1 percent to 10 percent, out of the total production, increasing value addition from 7 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 one block have been posted as per restructuring to regulate Agri Business and encourage entrepreneurs. In 103 Uzhavar Shandies, 51 Agricultural Officers and 52 Deputy Agricultural Officers are posted. After restructuring 239 original posts have been enhanced to 906 posts in Agricultural Marketing and Agri Business Department.

## **2. Agribusiness and the National Development Goals**

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

revamping and modernizing the extension systems and encouraging the private sector to provide extension services; and (v) bridging the gap between research and farmers' yields.

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

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

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

Current agricultural marketing and agribusiness system in the state is the outcome of several years of Government intervention. The system has undergone several changes

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

Agricultural development continues to remain the most important objective of State planning and policy. The experience of agricultural development in the state has shown that the existing systems of delivery of agricultural inputs and marketing of agricultural output have not been efficient in reaching the benefits of technology to all the sections of farmers. The timely, quality and cost effective delivery of adequate inputs still remains a dream despite the marketing attempts of the corporate sector and the developmental programmes of the state. Also, the farmers are not able to sell their surplus produce remuneratively. There are plenty of distress sales among farmers both in agriculturally developed as well as backward regions in the State. There are temporal and spatial variations in the markets and the producers' share in consumers' rupee has not been satisfactory, except for a few commodities. In fact, in some commodities like tomato in some regions in State, producers end up making net losses at the same time when traders make substantial profits from the same crop. However, it needs to be recognized that producers' relative share in the final price of a product certainly goes down with the increase in the number of value-adding stages, and therefore, cannot be used as an indicator of a market's efficiency or inefficiency. Nevertheless, the other aspects of the market performance like absolute share of the producer in terms of remunerability, fluctuations in prices across seasons, large spatial price differences and lack of proper market outlets itself, are the issues which have become increasingly crucial

in the present context. There are structural weaknesses of agricultural markets like unorganized suppliers as against organized buyers, weak holding capacity of the producers and the perishable nature of the produce in the absence of any storage infrastructure. In the presence of these characteristics of the market, the rural producers cannot simply be left to fend for themselves so far as marketing of their produce is concerned. And if the marketing system does not assure good returns to producers, not much can be achieved in the field of product quality and delivery which are critical for processing and manufacturing sectors. In the environment of liberalization and globalization, the role of the state in agricultural marketing and input supply is being reduced, and an increasing space is being provided to the private sector to bring about better marketing efficiency in input and output markets. On the other hand, processors and/or marketers face problems in obtaining timely, cost effective, and adequate supply of quality raw materials.

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

#### **4. Sector Problem Analysis**

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

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

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

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

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

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

## **5. Project Rationale**

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

1. The rate of agricultural growth over the past decade has been declining in Tamil Nadu. Agribusiness through its linkages to production, industry and services has the potential to transform the agricultural system into a more dynamic sector.
2. As urbanization and incomes grow, there is a growing demand for a wider range of agrifood products, of higher quality and greater convenience, in Tamil Nadu. Meeting this demand requires organized retailing and effective agribusiness supply chains.
3. Agribusiness contributes to the production of higher value products and diversification away from staple foods. Through this diversification and the development of the value chain between producers and consumers, the rural economy benefits from innovation and the creation of non-farm employment.

4. Tamil Nadu has a comparative advantage in a number of agricultural commodities. Increasing integration with global markets and the potential to become a stronger player in agricultural trade requires quality assurance and competitive advantage.
5. The State Government has identified agribusiness development as a strategic priority. In Tamil Nadu, agribusiness has a significant role to play in rural and economic development, and agro-enterprises could be a major source of rural non-farm employment and income.
6. The existing government programs to promote agricultural diversification are broad-based programs with multiple objectives. For agribusiness development to happen a more focused approach is needed to complement the initiatives already covered by the different national programs.

## **6. Project Strategy**

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

## **7. Project Approach**

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

## **8. Project Goals**

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

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

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

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

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

## **9. Project Components**

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

### **Project Components Description**

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

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

**(ii) Project Strategy**

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

**(iii) Project Goals**

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

**(iv) Project Components**

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

**(v) Project Cost and Financing**

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

In this project it is proposed to organize 68 commodity groups in eight commodities for marketing of agricultural commodities in Dindigul district over the period of four years. This will require resources of Rs 15.64 Lakhs for the period of four years. The details are presented in Table 6.26.

**(vi) Reporting**

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

**6.5.2. 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 incomes and employment. CF is also seen as a way to reduce costs of cultivation as it can provide access to better inputs and more efficient production methods. The increasing cost of cultivation was the reason for the emergence of CF in Japan and Spain in the 1950s and in the Indian Punjab in the early 1990s. Though there are concerns about the ability of the small farms and firms to survive in the changing environment of agribusiness, still there are opportunities for them to exploit like in product differentiation with origin of product or organic products and other niche markets. But, the major route has to be through exploitation of other factors like external economies of scale through networking or clustering and such other alliances like CF.

Marketing tie-ups between farmers and processors or bulk purchasers have special significance for small farmers, who have small marketed surplus and do 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 the last more than 50 years in Tamil Nadu. In case of cotton, maize and medicinal plants there are few cases of contract farming. Contract farming in milk, eggs and broiler production is successfully taking place in large scale in Tamil Nadu. The lessons learnt in case of sugarcane, cotton and other commodities have to be taken into account during formulation of the project. For this in this NADP programme facilitation contract farming between the traders and producer is proposed.

### **(ii) Project Strategy**

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

**(iii) Project Components**

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

**(iv) Project Cost and Financing**

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

In this project it is proposed to organize the meeting on various crops regarding contract farming between farmers and bulk buyers in DIndigul district for marketing of agricultural commodities in Tamil Nadu over the period of four years. This will require resources of Rs 3.45 lakhs for the period of four years. The details are presented in Table 6.26.

**(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).

### **6.5.3. Dissemination of Market Intelligence**

#### **(i) Project Rationale**

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

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

**(ii) Project Strategy**

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

**(iii) Project Components**

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

**(iv) Project Cost and Financing**

In this project it is proposed to disseminate Market intelligence of agricultural commodities to all the Stake holders through different mass media in Dindigul district over the period of four years. This will require resources of Rs.2.3 Lakhs for the period of four years. The details are presented in Table 6.26.

**(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).

**6.5.4. Arrangement of Buyers - Sellers Meet****(i) Project Rationale**

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

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

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

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

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

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

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

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

**(ii) Project cost and Financing**

In this project it is proposed to arrange for 16 buyers sellers meet in Dindigul district over the period of four years. This will require resources of Rs.3.68 Lakhs for the period of four years. The details are presented in Table 6.26.

**6.5.5. Organizing the Exposure Visits to Important Markets within the State and Outside the State by Commodity Groups / Farmers and Extension Functionaries****(i) Project Rationale**

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

**(ii) Project Strategy**

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

**(iii) Project Goals**

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

**(iv) Project Components**

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

**(v) Project Cost and Financing**

Visit of important markets, where new opportunity for marketing of the commodity and consumer preference i.e., exposure visits SAFAL market Bangalore is an important thing to enlighten the farmers for marketing their produce as well as consumer preference. It is easy to know the marketing of the commodity through observation and participation in the well developed markets. Farmers will be selected to visit different market places within the State where the new opportunities for marketing of commodities exist. This will require resources of Rs.13.86 Lakhs for the period of four years. The details are presented in Table 6.26.

**(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)

### **6.5.6. Strengthening of Market Extension Centre at each District / Block level for Capacity Building and Dissemination of Marketing Information**

#### **(i) Project Rationale**

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

#### **(ii) Project Strategy**

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

#### **(iii) Project Goals**

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

**(iv) Project Components**

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

**(v) Project Cost and Financing**

Over the last few years mass media has seen a phenomenal growth in the country both in terms of reach and advance in technology. This medium has not been exploited to its full potential for the purpose of agricultural extension specifically market led extension. A concerted and well-coordinated effort now needs to be made to use the electronic media in the Extension strategy by strengthening infrastructure facility. In this project it is proposed to strengthening market extension centre in Dindigul district over the period of four years. This will require resources of Rs.11.50 Lakhs for the period of four years. The details are presented in Table 6.26.

**(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)

**6.5.7. 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 Dindigul district over the period of four years. This will require resources of RS.2.355 Lakhs for the period of four years. The details are presented in Table 6.26.

**(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)

### **6.5.8. 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. 11.99 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 104 trainings under Capacity Building of Farmers Skill titles for marketing of agricultural commodities in Dindigul district over the period of four years. This will require resources of Rs 11.99 Lakhs for the period of four years. The details are presented in Table 6.26.

### **(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)

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

#### (i) Rationale

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

#### Estimates of Marketed Surpluses of Various Commodities

Commodity	Marketed Surplus Ratio (%)
Rice	51.9
Wheat	53.8
Jowar	39.7
Bajra	45.4
Maize	46.2
Other Coarse Cereals	57.1
Pulses	53.9
Food grains	
Oilseeds	79.6
Sugarcane	92.9
Fruits and Vegetables**	88.2
Cotton	100.0
Fish	100.0
Milk	60.0
Mutton and Goat Meat	100.0
Beef and Buffalo Meat	100.0
Meat(Total)	100.0
Eggs	88.2

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

**(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 Dindigul district over the period of four years. This will require resources of Rs.46 Lakhs for the period of four years. The details are presented in Table 6.26.

**(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)

**6.5.10. 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 Dindigul district over the period of four years. This will require resources of RS.4.60 Lakhs for the period of four years. The details are presented in Table 6.26.

**(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)

**6.5.11. Strengthening of Regulated Market and *Uzhavar Shandies* Publicity****(i) Rationale**

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

**(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.3.18 Lakhs over the period of four years. The details are presented in Table 6.26.

**(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)

**Project Cost**

The total cost for development of agricultural marketing so as to increase the profitability of farmers would be Rs. 139.20 Lakhs for this district for the next four years.

**Implementation**

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

**Project Performance Monitoring System**

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

**Sustainability**

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

**Table 6.25 Project Proposals for Agricultural Marketing and Agri-Business****(Finance: Rs. in lakhs)**

Sl. No	Components	2009			2010			2011			2012			Amount
		Unit cost	Phy	Fin	Unit cost	Phy	Fin	Unit cost	Phy	Fin	Unit cost	Phy	Fin	Total
<b>1</b>	<b>Commodity Group Formation</b>													
	Paddy	0.2	2	0.4	0.22	2	0.44	0.24	2	0.48	0.26	2	0.52	1.84
	Pulses	0.2	2	0.4	0.22	2	0.44	0.24	2	0.48	0.26	2	0.52	1.84
	Tamarind	0.2	1	0.2	0.22	1	0.22	0.24	1	0.24	0.26	1	0.26	0.92
	Vegetables	0.2	2	0.4	0.22	2	0.44	0.24	2	0.48	0.26	2	0.52	1.84
	Groudnut	0.2	2	0.4	0.22	2	0.44	0.24	2	0.48	0.26	2	0.52	1.84
	Maize	0.2	4	0.8	0.22	4	0.88	0.24	4	0.96	0.26	4	1.04	3.68
	Coconut	0.2	2	0.4	0.22	2	0.44	0.24	2	0.48	0.26	2	0.52	1.84
	Sunflower	0.2	2	0.4	0.22	2	0.44	0.24	2	0.48	0.26	2	0.52	1.84
<b>2</b>	<b>Market Intelligence Dissemination</b>													
	Maize Training	0.1	2	0.2	0.11	2	0.22	0.12	2	0.24	0.13	2	0.26	0.92
	Paddy Training	0.1	2	0.2	0.11	2	0.22	0.12	2	0.24	0.13	2	0.26	0.92
	Purchase of marketing materials	0.1	1	0.1	0.11	1	0.11	0.12	1	0.12	0.13	1	0.13	0.46
<b>3</b>	Facilitation of contract farming	0.15	5	0.75	0.165	5	0.825	0.18	5	0.9	0.195	5	0.975	3.45
<b>4</b>	Trainings on													
	Warehousing and Storage	0.1	4	0.4	0.11	4	0.44	0.12	4	0.48	0.13	4	0.52	1.84
	Grading	0.1	4	0.4	0.11	4	0.44	0.12	4	0.48	0.13	4	0.52	1.84

Table 6.25 Contd....

(Finance: Rs. in lakhs)

Sl. No	Components	2009			2010			2011			2012			Amount
		Unit cost	Phy	Fin	Unit cost	Phy	Fin	Unit cost	Phy	Fin	Unit cost	Phy	Fin	Total
	Commodity Markets	0.1	4	0.4	0.11	4	0.44	0.12	4	0.48	0.13	4	0.52	1.84
	Post Harvest	0.1	4	0.4	0.11	4	0.44	0.12	4	0.48	0.13	4	0.52	1.84
	Market Intelligence	0.1	4	0.4	0.11	4	0.44	0.12	4	0.48	0.13	4	0.52	1.84
	Value addition – Training	0.1	2	0.2	0.11	2	0.22	0.12	2	0.24	0.13	2	0.26	0.92
	Export promotion	0.1	3	0.3	0.11	4	0.44	0.12	4	0.48	0.13	5	0.65	1.87
5	Exposure visit to markets			0			0			0			0	0
	Outside state	0.75	2	1.5	0.825	2	1.65	0.9	2	1.8	0.975	2	1.95	6.9
	Visit to National Markets	1.5	1	1.5	1.65	1	1.65	1.815	1	1.815	1.9965	1	1.9965	6.9615
6	Arrangement of buyer seller meetings	0.2	4	0.8	0.22	4	0.88	0.24	4	0.96	0.26	4	1.04	3.68
7	Streng. Of market extension centre	2.5	1	2.5	2.75	1	2.75	3	1	3	3.25	1	3.25	11.5
8	Streng. Of village shandies	0.015	80	1.2	0.0165	70	1.155	0	0	0	0	0	0	2.355
	Display board	0.25	1	0.25	0.275	1	0.275	0.3	1	0.3				0.825
10	Market price surveillance	0.1	10	1	0.11	10	1.1	0.12	10	1.2	0.13	10	1.3	4.6
11	Publicity - regulated market	5	1	5	5.5	1	5.5	6	1	6	6.5	1	6.5	23
12	Market infrastructure activities			0			0			0			0	0
	Mar Infra Others	5	0	0	5.5	0	0	6	0	0	6.5	0	0	0
	Mini PH Loss Plastic Crates	0.005	2000	10	0.0055	2000	11	0.006	2000	12	0.0065	2000	13	46
	<b>Total</b>		<b>2152</b>	<b>30.9</b>		<b>2143</b>	<b>33.94</b>		<b>2073</b>	<b>35.78</b>		<b>2073</b>	<b>38.592</b>	<b>139.2015</b>

## **6.6 Department of Sericulture**

Under the NADP programme, 100 hectares are to be planted with high yielding mulberry varieties. All the latest technologies in mulberry cultivation and silkworm rearing are to be promoted. They included paired row system of plantation, saplings plantation, usage of vermi-compost, disinfection, chawkie concept, shoot feeding method in separate rearing shed, usage of rotary moutage in separate spinning hall etc., It is proposed to provide assistance to the sericulturists for creating infrastructures like separate rearing shed and improved rearing appliances. In addition, one multi end reeling unit with 10 basins will be established during the year. It is proposed to produce 671 metric tons of cocoons by rearing 10.75 lakhs layings of which 250 metric tons would be bivoltine cocoon. About 2.00 lakhs layings will be supplied as chawkie worms through private CRC. The average capacity would then be increased to 800 DFLs from 700 DFLs per acre per annum and the expected average yield would be 65 kgs/100DFLs.

### **Sericulture Development Programme**

#### **6.6.1. Nursery Development**

For raising 100 hectares of high yielding mulberry varieties, 15.00 lakhs sapling are required. The Kisan Nurseries would be arranged by the extension staff from the nursery growers and also from the government farms.

#### **6.6.2. Training Programmes**

Training programmes on all new technologies to be adopted in cultivation and maintenance of mulberry gardens, silkworm rearing techniques, integrated pest and disease management etc., are being imparted at Tamilnadu Sericulture Training Institute, Hosur and Central Silk Board Institutions.

In addition to this in Government farms at C.K.Pudur, Kundrakudi and O.Pudur farmers training programme will be conducted.

**6.6.3. Supply of Silkworm Seed**

CB layings will be supplied from the Govt. grainage, Dindigul and Bivoltine layings will be supplied from the Govt. grainage, Coimbatore (160 Km)

**6.6.4. Rearing Shed**

It is proposed to assist 100 farmers for five Years for the construction of separate rearing houses for conducting silkworm rearing hygienic condition, with 50 percent subsidy assistance of the unit cost. (at maximum Rs 27500).

**6.6.5. Rearing Equipments**

It is proposed to supply improved rearing equipments to 100 farmers at Rs 30,000 per beneficiary.

**6.6.6. Marketing of Cocoons**

The cocoons produced by the farmers will be procured by the new silk reelers of this district through the mobile cocoon market going to function at Palani. It is proposed to establish one additional multiend silk reeling unit with 10 basins which will increase the reeling capacity to 23 devices. The raw silk produced by the silk reelers will be disposed within the district for silk saree weavers on handloom.

The total requirement under NADP scheme for sericulture is presented in Table 6.26.

**Table 6.26 Project Proposals of the Department of Sericulture****(Rs. in lakhs)**

S. No	Activities	2008-09		2009-2010		2010-2011		2011-2012		Total	
		Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
1	Mulberry plantation (acres)	50		50		50		50		200	
2	Saplings/ Subsidy (Rs 1500/ Beneficiary)	50	0.75	50	0.75	50	0.75	50	0.75	200	3.00
3	Construction of shed/ subsidy (Rs 27500/- per beneficiary)	20	5.50	20	5.50	20	5.50	20	5.50	80	22.00
4	Silkworm rearing appliances/ subsidy (Rs 30000/- Per beneficiary)	20	6.00	20	6.00	20	6.00	20	6.00	80	24.00
5	Training for farmers	50	1.00	50	1.00	50	1.00	50	1.00	200	4.00
	<b>Total</b>		<b>13.25</b>		<b>13.25</b>		<b>13.25</b>		<b>13.25</b>		<b>53.00</b>

### **6.7. Public Works Department**

Most of the existing irrigation systems in the country have lesser water carrying capacities and there is a considerable wastage of water in them. Moreover, the large scale introduction of high yielding varieties of crops since 1965 has rendered it necessary to review the canal capacities, because these crops are more sensitive to moisture stress during the critical stages of growth compared to traditional varieties and the yields are adversely affected if right quantities of water are not available in time.

The deficiencies of existing irrigation systems pertaining to losses and wastages of water and inadequacy to meet the existing demands of high yielding varieties of crops could be removed by thoroughly modernizing these systems. Such modernization/rehabilitation can result not only in considerable economy in water use and extension of irrigation, but also provide other benefits by way of minimizing problems of water logging and soil salinisation.

Modern irrigated agriculture is the application of a complex combination of several disciplines and covers not only the engineering aspects of irrigation systems but also agro economic and management aspects.

With this background, seven interventions are proposed for the district under NADP by this department. Various project proposals along with the budget requirement are dealt in Table 6.28 through Table 6.27.

**Table 6.27 Project Proposals recommended by Public Works Department**

<b>S.No</b>	<b>Year of Implementation</b>	<b>Intervention</b>	<b>Budget (Rs. in lakhs)</b>
1	2008-09	Rehabilitation of Athoor anicut supply channel and restoration of its three tanks in Athoor village of Athoor taluk in Dindigul district of Tamil Nadu	830.00
2	2008-09	Modernisation of Thamaraikulam and Vadikulam tank in Narasingapuram village of Authoor taluk in Dindigul district	24.00
3	2009-10	Modernisation of Rajavoikkal supply channel in Narsingapuram village of Authoor taluk in Dindigul district	500.00
4	2009-10	Report to accompany for the work of Lining the left main canal From LS 0m to 18520m of Palar Porundalar dam in Palani T.K. of Dindigul District	442.50
5	2010-11	Modernisation of Ayyampalayam Rajavoikkal supply channel in Ayyampalayam village of Athur taluk in Dindigul district	125.00
6	2011-12	Construction of Anicut across Vanjiodai in Mallanampatti village of Nilakkottai taluk in Dindigul district	15.00
7	2011-12	Modernisation of Mattaparai tank, Pillayarnatham tank, Eramankulam tank and Thathankulam tank in Nilakkottai taluk of Dindigul district	45.00
		<b>Total</b>	<b>1981.50</b>

### **6.7.1. Rehabilitation of Athoor Anicut Supply Channel and Restoration of its three tanks in Athoor Village of Athoor Taluk in Dindigul District of Tamil Nadu**

#### **(i) Project Rationale**

By designing the supply channel with pucca lining arrangements through out the length, the carrying capacity of the channel is standardized to the requirement and thus reducing the loss of seepage and evaporation to an extent of 15 percent.

In turn, the channel will be capable of irrigating the ayacut by bridging the gap of 20 percent of 1<sup>st</sup> crop and will enable cultivation of second crop.

Also due to this rehabilitation of the channel and desilting of three tanks fed by this channel, it will be possible to feed an assured supply in the stipulated period.

### (ii) Project Components

The main components of the projects are

- (i) Standardisation of Athoor supply channel
- (ii) Lining the bed with cast *insitu* concrete and sides of the channel using RR masonry for an average height of 1.45m above bed level and
- (iii) Reconstruction of head sluice and direct sluices

### (iii) Project Cost and Financing

The details of cost involved are furnished in Table 6.28.

**Table 6.28 Project Components**

S.No	Project components	Budget (Rs.)
1	Rehabilitation works	7,13,38,785
2	Lump sum provision viz., Repairing the cross masonry works, shutters, forming bund in eroded portion, labour welfare fund, fluctuation in rates, PS charges, tender advertisement and documentation charges.	1,16,61,215
	<b>Total</b>	<b>8,30,00,000</b>

The components and costs of rehabilitation work are furnished in Table 6.29.

**Table 6.29 Budget Details for Rehabilitation Work**

Sl. No.	Name of Work	Amount (in lakhs)
1	Lining with RR Masonry and Cement Concrete for Athoor Anicut channel 0m-6980m	565.00
2	Desilting the Karunkulam Tank	34.00
3	Desilting the Pagadaikulam Tank	79.00
4	Desilting the Pulvettikulam Tank	148.00
5	Provision for Tender Advertisement and documentation charges	4.00
	<b>Total</b>	<b>830.00</b>

### **6.7.2. Modernisation of Thamaraiikulam and Vadikulam Tank in Narasingapuram Village of Authoor Taluk in Dindigul District**

#### **(i) Project Components**

1. Earthwork for foundation.
2. Earthwork for strengthening.
3. Cement Concrete 1:4:8 using 40mm.jelly for foundation.
4. Cement Concrete 1:3:6 using 20mm.jelly for Apron wearing coat.
5. Random rubble masonry in Cement Mortar 1:4 using new stones.
6. Plastering in Cement Mortar 1:4,20mm.thick.

#### **Hydraulic Particulars**

##### **a) Thamaraiikulam Tank**

This tank is situated about 0.5 Kilometre west of Narasingapuram village in Authoor Taluk. It receives supply from its free basin and supply channel from Narasingapuram Rajavoikkal from Periyar river tributary of Kodaganar.

The Bund is 1550metre long and a top width of 3m. There is one head wall type sluice at L.S.1320m. for Irrigation.The registered ayacut is 60.60 Ha and the capacity of the tank is 1.2084 M.Cum.

**b) Vadikulam Tank**

This tank is situated just east of Bodikamanvadi village in Authoor taluk of Dindigul District. It receives supply from its free basin besides the surplus of Thamaraikulam, Sengulam and Palasamudram tanks. The tank surpluses over weir 21.40 metre long. The bund for this tank is 934 metres long with a top width of 3m. There are two wingwall type sluices for irrigation. The registered ayacut 27.33 Ha and the capacity of tank is 0.2196 M.Cu.M.

The details of work and costs involved for Thamaraikulam and Vandikulam tanks are furnished in Table 6.30 and Table 6.31 respectively.

**Table 6.30 Budget details for Modernisation of Thamaraikulam tank**

Sl. No	Qty.	Description of work	Rate	Unit	Amount (Rs)
1	600.00 M <sup>2</sup>	Clearing the light jungel	1.65	M <sup>2</sup>	990.00
2	3000.00 R.M.	Benching the old embankment slopes of size 45x45cm.	1.30	R.M.	3900.00
3	16750.00M <sup>3</sup>	Earthwork excavating and depositing on bank with an initial lead of 10m.and initial lift of 2m.SS20B	28.75	M <sup>3</sup>	481563.00
4	51500.00M <sup>3</sup>	Extra for every additional 10m. lead or part thereof over the initial lead	3.65	M <sup>3</sup>	187975.00
5	27200.00M <sup>3</sup>	Extra for every additional 1m. lift or part thereof over the initial lift.	2.95	M <sup>3</sup>	80240.00
6	8750.00M <sup>3</sup>	Earthwork deploying earth moving machineries for desliting and forming bund complete having width of 3m.-10m.	24.95	M <sup>3</sup>	218313.00
7	144.00M <sup>3</sup>	Earthwork excavation for foundation .	60.50	M <sup>3</sup>	8712.00
8	45.00M <sup>3</sup>	Cement concrete 1:4:8 ( One cement, four sand and eight aggregate ) using 40mm ISS hard stone jelly for foundation.	1779.75	M <sup>3</sup>	80089.00
9	195.00M <sup>3</sup>	Random Rubble masonry in cement mortar 1:4 for masonry structures using New stones.	1605.80	M <sup>3</sup>	313131.00
10	36.00M <sup>2</sup>	Plastering with cement mortar 1:4 - 20mm thick	131.90	M <sup>2</sup>	4748.00
11	L.S.	Provisions for shuttering arrangements		L.S.	20339.00
		<b>Total</b>			<b>1400000.00</b>

**Table 6.31 Budget details for Modernisation of Vadikulam tank**

Sl. No	Qty.	Description of work	Rate	Per	Amount (Rs)
1	600.00 M <sup>2</sup>	Clearing the light jungel	1.65	M <sup>2</sup>	990.00
2	1868.00 R.M.	Benching the old embankment slopes of size 45x45cm.	1.30	R.M.	2428.00
3	13900.00M <sup>3</sup>	Earthwork excavating and depositing on bank with an initial lead of 10m.and initial lift of 2m.SS20B	28.75	M <sup>3</sup>	399625.00
4	38300.00M <sup>3</sup>	Extra for every additional 10m. lead or part thereof over the initial lead	3.65	M <sup>3</sup>	139795.00
5	19400.00M <sup>3</sup>	Extra for every additional 1m. lift or part thereof over the initial lift.	2.95	M <sup>3</sup>	57230.00
7	144.00M <sup>3</sup>	Earthwork excavation for foundation .	60.50	M <sup>3</sup>	8712.00
8	45.00M <sup>3</sup>	Cement concrete 1:4:8 ( One cement, four sand and eight aggregate ) using 40mm ISS hard stone jelly for foundation.	1779.75	M <sup>3</sup>	80089.00
9	175.00M <sup>3</sup>	Random Rubble masonry in cement mortar 1:4 for masonry structures using New stones.	1605.80	M <sup>3</sup>	281015.00
10	70.00M <sup>2</sup>	Plastering with cement mortar 1:4 - 20mm thick	131.90	M <sup>2</sup>	9233.00
11	L.S.	Provisions for shuttering arrangements		L.S.	20883.00
		<b>Total</b>			<b>1000000.00</b>

### 6.7.3. Modernisation of Rajavoikkal Supply Channel in Narsingapuram Village of Authoor Taluk in Dindigul District

#### (i) Project Components

1. Regardation of Rajavoikkal.
2. Raising on bothsides of channel using C.C.1:3:6 Graded metal of an average height of 2.00m.
3. Lining the bed using Cement Concrete 1:3:6 20mm. ISS,HBG metal of10cm.thick.
4. Standardisation of the existing Jeep Track to a width of 4.0m and
5. Providing shutters to the sluices.

**(ii) Project Cost and Financing**

Modernisation works : 496.00 Lakhs.

Lumpsum provision *viz* Labour

Welfare, Drainage facilities P.S.

charges, shuttering arrangements: 4.00 Lakhs.

**Total : 500.00 Lakhs.**

The details of work involved along with cost estimates are furnished in Table 6.32.

**Table 6.32 Budget details for Modernisation of Rajavoikkal Supply Channel**

Sl.No	Qty.	Description of work	Rate	Per	Amount
1	7700.00 M <sup>3</sup>	Earthwork excavating and depositing on bank with initial lead of 10m & initial lift of 2m in sand or other loose soil-excavated earth S.S 20B	19.25	M <sup>3</sup>	148225.00
2	15400.00 M <sup>3</sup>	Earthwork excavation in all soils - lead of 1KMCT.etc.	35.65	M <sup>3</sup>	549010.00
3	1840.00 M <sup>3</sup>	Collection and Supplying the Gravel including stalling premeasurement as directed by the departmental officers.	110.25	M <sup>3</sup>	202860.00
4	10400.00 M <sup>3</sup>	Earth work excavation for foundation	57.50	M <sup>3</sup>	598000.00
5	2400.00 M <sup>3</sup>	Cement concrete 1:4:8- using 40mm ISS gauge hard granite broken stone jelly for foundation	1876.50	M <sup>3</sup>	4503600.00
6	29760.00 M <sup>2</sup>	Supplying and erecting, water tight steel centering for sides			
		The payment will be made after concrete is laid	240.00	M <sup>2</sup>	7142400.00
7	15050.00 M <sup>3</sup>	Cement concrete 1:3:6- using Grade metal of 10 to 40mm ISS gauge hard granite broken stone jelly for side wall	2138.85	M <sup>3</sup>	32189693.00
8	1600.00 M <sup>3</sup>	Supplying and filling in clean river sand etc.,	393.30	M <sup>3</sup>	629280.00
9	1600.00 M <sup>3</sup>	Cement concrete 1:3:6- using Grade metal of 20mm ISS gauge hard granite broken stone jelly for bed Concrete	2312.10	M <sup>3</sup>	3699360.00
10	--LS --	Provision for Drainage works	--LS --		50000.00
11	--LS --	Provision for labour welfare fund 0.30%	--LS --		148931.00
12	--LS --	Provision for P.S.Charges and Contingencies	--LS --		38641.00
13	--LS --	Provisions for shuttering arrangements to the sluice	--LS --		100000.00
					<b>50000000.00</b>

#### **6.7.4. Report to Accompany for the Work of Lining the left main Canal from LS 0m to 18520m of Palar Porundalar Dam in Palani T.K. of Dindigul District**

The Palar Porundalar Reservoir is constructed across the two streams such as Palar and Porundalar river (sub tributaries in Amaravathy river in Cauvery Basin) in Balasamudram village in Palani taluk of Dindigul district. The scheme was started in the year 1970 and completed in the year 1978 and functioning from the year 1979.

The capacity of the reservoir is 43.15 m.cum (1524 MC ft). The length of the reservoir is 2450m. Having two masonry dams of length 30m and 33m, the palar perundalar reservoir irrigates about 3800 ha of new ayacut and stabilizing old ayacut to an extent of 4047 ha (10,000). The depth of the reservoir is 65 feet.

##### **(i) Project Components**

The stretch of the initial reach of canal of 0 km to 2.00 km has been proposed to strengthen with CNS soil, since the stretch is naturally silt mixed with black cotton soil.

The project components include

1. Removal of deposited earth
2. Strengthening the weaker portion of the left side bank with suitable soil.
3. Gravel packing to reshape the side slopes of the canal.
4. Trimming the bed of canal upto a thickness of 7.50 cm
5. Conveyance of slates to work spot etc. and
6. Manufacturing the PCC Slab with mix 1:3:6 in size 0.30 x 0.45 x 0.065 m and laying the same in canal slopes.

Necessary lump sum provision is made in this estimate for providing casting yard, curing bond water supply arrangements, S.G. Shutter Arrangements for sluice labour welfare fund etc.

The details of work to be carried out along with the estimate of costs are furnished in Table 6.33.

**Table 6.33 Budget details for Lining the Left Main Canal of Palar - Porundalar Dam from L.S. 0 km to 18.520 km**

<b>S.No.</b>	<b>Reach Details</b>	<b>Amount in lakhs</b>
1.	Lining the left Main canal of Palanr Porundalar Dam From L.S. 0 m to 6600 M in Palani Taluk	143.50
2.	Lining the left Main canal of Palanr Porundalar Dam From L.S. 6600 m to 13040 M in Palani Taluk	162.00
3.	Lining the left Main canal of Palanr Porundalar Dam From L.S. 13040 m to 18520 M in Palani Taluk	137.00
	<b>Total</b>	<b>442.50</b>

### **6.7.5. Modernisation of Ayyampalayam Rajavoikkal Supply Channel in Ayyampalayam Village of Athur Taluk in Dindigul District**

#### **(i) Project Components**

1. Modernisation of Rajavoikkal from L.S. 1000m to 2250m.
2. Raising on both sides of channel using C.C. 1:3:6 Graded metal of an average height of 2.00 m
3. Lining the bed using CC 1:3:6, 20mm ISS, HBG metal of 15 cm thick and
4. Providing shutters to the sluices.

#### **(ii) Project Cost and Financing**

Modernisation works	:	122.00 Lakhs
Lumpsum Provision viz., Labour	:	3.00 Lakhs
Welfare, Documentation, Investigation, P.S. Charges etc.,		

**Total** : 125.00 Lakhs

Budget requirement and other project details are presented in Table 6.34.

**Table 6.34 Budget details for Modernisation of Ayyampalayam Rajavoikkal in Ayyampalayam Village of Athur Taluk**

Sl. No.	Qty.	Description of the Work	Rate	Per	Amount (Rs)
1	690.00 m <sup>3</sup>	Earthwork excavation and depositing on bank with an initial lead of 10m and initial lift of 2m in sand, silt or other loose soil, ordinary soil including excavated earth for foundation for canal bed	19.25	m <sup>3</sup>	13283.00
2	3036.00 m <sup>3</sup>	Earthwork excavation and depositing on bank with an initial lead of 10m and initial lift of 2m in sand, silt or other loose soil, ordinary soil including excavated earth for foundation for retaining wall	57.50	m <sup>3</sup>	174570.00
3	4750.00 m <sup>3</sup>	Earthwork excavating and depositing on bank with initial lead and initial lift in hard stiff lay, stiff black cotton, hard red earth, sales, muram, gravel, stone earth and earth mixed with small size boulders and hard gravelly soiling from barrow area, loading the earth in to the tipper or tractor, conveying the earth with the lead of 0 to 2 KMCT, unloading at the place including compaction as directed by the departmental officers.	40.25	m <sup>3</sup>	191188.00
4	828.00 m <sup>3</sup>	CC 1:4:8 using 40mm HBG stone aggregate for foundation etc., including dewatering, laying concrete in layers of not more than 15cm thick, compacting are finishing the surface curing as directed by the departmental officers complying with standard specification.	1779.75	m <sup>3</sup>	1473633.00
5	8970.00m <sup>2</sup>	Supplying and erecting steel centring shuttering for sides and soffits including strutting upto 3 meters height using MS sheet of size 90cm x 60cm x 10mm gauge stiffened with welded mild steel angles of size 25mm x 25mm x 3mm laid over silver oak joints of 10 cm x 6.5cm spaced at 90 cm centre to centre suitably supported including cost of all materials complete complying with standard specification.	228.50	m <sup>2</sup>	2049645.00

Table 6.34 Contd....

Sl. No.	Qty.	Description of the Work	Rate	Per	Amount (Rs)
6	3312.00m <sup>3</sup>	CC 1:3:6 using 2/3 rd of 40mm stone and 1/3 rd of 20mm stone jelly including laying concrete in layers of not more than 15cm thick	2101.50	m <sup>3</sup>	6960168.00
7	1242.00m <sup>3</sup>	Supplying and filling good river sand	341.40	m <sup>3</sup>	424019.00
8	460.00 m <sup>3</sup>	CC 1:3:6 using 20mm Jelly for bed lining	2035.50	m <sup>3</sup>	936330.00
9	LS	Provision for labour welfare fund 0.30%	LS		36500.00
10	LS	Provision for PS charges and contingencies	LS		20000.00
11	LS	Provision for shutter arrangements to the sluices.	LS		100000.00
12	LS	Provision for Sub soil treatment	LS		50000.00
13	LS	Provision for expansion joints	LS		20000.00
14	LS	Provision for Unforeseen items	LS		25644.00
15	LS	Provision for documentation charges and photographic charges	LS		25000.00
		<b>Total</b>			<b>12500000.00</b>

### 6.7.6. Construction of Anicut across Vanjiodai in Mallanampatti Village of Nilakkottai Taluk in Dindigul District

#### (i) Project Components

1. Earth work excavation for foundation.
2. Cement Concrete 1:4:8 using 40mm.jelly.
3. Random rubble masonry in Cement Mortar for U/S and D/S.apron.
4. Plastering in Cement Mortar 1:4
5. Earthwork for desilting the channel.
6. Earthwork for Bund formation.

#### (ii) Project Cost and Financing

Construction works : 1348863.00

Lumpsum, Provision viz. Labour  
Welfare, Drainage facilities,P.S.Charges etc : 151137.00

**Total Rs. : 15,00,000**

The budget details for construction of anicut are detailed in Table 6.35.

**Table 6.35 Budget details for Construction of Anicut across Vangiodai in Mallanampatti Village of Nilakkottai Taluk**

Sl.No	Quantity	Description of the work	Rate	Unit	Amount (Rs.)
1	310.00 M <sup>3</sup>	Earth work excavation for foundation	60.50	M <sup>3</sup>	18755.00
2	129.00M <sup>3</sup>	Cement concrete 1:4:8- using 40mm ISS gauge hard granit broken stone jelly for foundation	1789.60	M <sup>3</sup>	225490.00
3	495.00 M <sup>3</sup>	RR masonry in cement mortar 1:4 using New stones.	1606.45	M <sup>3</sup>	795193.00
4	11.00 M <sup>3</sup>	Cement concrete 1:3:6 - using 20mm ISS gauge hard granite broken stone jelly for wearing coat.	2226.15	M <sup>3</sup>	24488.00
5	106.00M <sup>2</sup>	Plastering with cement mortar 1:4 - 20mm thick .	120.25	M <sup>2</sup>	12747.00
6	1800.00 M <sup>3</sup>	Earth work deploying earthmoving machineries for desilting channel - Having width upto3.00	20.50	M <sup>3</sup>	36900.00
7	6600.00 M <sup>3</sup>	Earthwork excavation in all soils - lead of 1KMCT.etc.	35.65	M <sup>3</sup>	235290.00
8	--LS --	Provision for Drainage works	--LS --		50000.00
9	--LS --	Provision for labour welfare fund 0.30%	--LS --		4047.00
10	--LS --	Provision for P.S.Charges and Contingencies2.5%	--LS --		97090.00
		<b>Total</b>			<b>1500000.00</b>

**6.7.7. Modernisation of Mattaparai Tank, Pillayarnatham Tank, Eramankulam Tank and Thathankulam Tank in Nilakkottai Taluk of Dindigul District.**

**(i) Project Components**

1. Earthwork for foundation.
2. Earthwork for strengthening.
3. Cement Concrete 1:4:8 using 40mm.jelly for foundation.
4. Cement Concrete 1:3:6 using 20mm.jelly for Apron wearing coat.
5. Random Rubble masonry in Cement Mortor 1:4 using new stones.
6. Plastering in Cement Mortar 1:4,20mm.thick.

**(ii) Project Cost and Financing**

Modernisation works	: 41.00
Lumpsum provision viz. Labour Welfare, P.S.charges, shuttering arrangements etc.	: 4.00
<b>Total</b>	<b>: 45.00 Lakhs</b>

**Hydraulic Particulars****a) Mattaparai Tank**

This tank is situated at about 1.7 Km. north west of Mattaparai village in Nilakkottai Taluk of Dindigul district.

It receives the supply from its free basin besides the surplus of upper tanks of Reddikulam, Duraikulam, Karuthandipatti Kanmoi, Avarampatty Kanmoi, Thirupathi Chetti Kanmoi, Theppankulam, Ponnankulam and Agaramkulam.

The tank surpluses over two surplus weir length of 39.70 and 7.70m. The bund of this tank is 2880 metre long. There are four sluices in the tank for distribution of water. The register Ayacut is 60.06 Ha. The capacity of the tank is 1.31 M.cu.M. in two fillings.

**b) Pillayarnatham Tank**

This tank is situated about 1.5km south of Pillayarnatham village in Nilakkottai taluk of Dindigul district.

It receives the supply from its free basin besides the surplus of Kalkottai Kanmoi and a channel from Sirukulam. The bund is 1095m. long and width of 3m.

There are four sluices in this tank for irrigation and the registered ayacut is 57.20 ha. The capacity of Tank is 0.0959M.Cu.M.

**c) Eramankulam Tank**

This tank is situated about 0.65km. south west of Ammapatti a hamlet of Malayagoundanpatti village, in the Nilakkottai taluk of Dindigul district.

It receives the supply from its free basin besides the surplus of upper tanks of Kamalapuram Kanmoi, Alagampatti Kanmoi, Pudukottai Kanmoi, Nattamai Kanmoi, Kosavankulam Kanmoi.

The tank surpluses over a weir of 18.85 metre long at the left flank. There are three sluices in this tank for irrigation and the registered ayacut is 63.40 ha. The capacity of the tank 0.462M.Cu.M.

### **Thathankulam Tank**

This tank is situated about 1.20km, north east of Mattapara Village in Nilakkottai taluk of Dindigul district.

It receives the supply from its free basin besides the surplus of upper tank Ponnankulam. There are three sluices available for irrigation. The capacity of the tank is 0.3959M.Cu.M and the registered ayacut is 52.83 Ha.

The expenditure details for modernization of the tanks are shown in Table 6.36.

**Table 6.36 Budget for Modernisation of Mattaparai Tank, Pillaiyarnatham Tank, Eramankulam Tank and Thathankulam Tank District**

<b>Sl.No</b>	<b>Description of the work</b>	<b>Amount (Rs.)</b>
1	Modernisation of Mattaparai tank	1500000.00
2	Modernisation of Pillaiyarnatham tank	900000.00
3	Modernisation of Eramankulam tank	800000.00
4	Modernisation of Thathankulam tank	900000.00
5	Provisions for Catchment Treatments	100000.00
7	Provisions for Labour welfare fund	12300.00
8	Provisions for P.S charges and Contingencies	87700.00
9	Provisions for unforeseen items	100000.00
	<b>Total</b>	<b>4500000.00</b>

Table. 6.14 a Horticulture Year-wise abstract of Expenditure

S.No	Activities	Unit cost	2008-09		2009-10		2010-2011		2011-12		Total	
			Physical	Financial	Physical	Financial	Physical	Financial	Physical	Financial	No	Cost
1	Net House structure	Rs. 1.00 lakh / 300 Sq.m	10	5	10	5	10	5	10	5	40	20
2	Pandal for vegetable production	Rs. 1.00 lakh / ha	25	12.5	25	12.5	25	12.5	25	12.5	100	50
3	Package for plant protection	Rs. 3,000 / ha	1000	15	1000	15	1000	15	1000	15	4000	60
4	Plastics Crates for Vegetable handling and transport	Rs. 250 / crate	15000	18.75	15000	18.75	15000	18.75	15000	18.75	60000	75
5	Farm waste shredder / vegetable waste Shredder	Rs. 40,000 / No.	100	20	100	20	100	20	100	20	400	80
6	Cashew high density planting	Rs. 9,000 / ha										
7	Borewell with casing pipe	Rs. 1.5 lakh / No.	50	37.5	50	37.5	50	37.5	50	37.5	200	150
8	Banana Bunch cover											
9	Humic acid / Effective E Microbes	Rs.400/litre	1000	2	1000	2	1000	2	1000	2	4000	8
10	Support system for crops											
	a. Banana	Rs. 1.5 lakhs / ha	100	112.5	100	112.5	200	225	200	225	600	675
	b. Gloriosa	Rs. 40,000 / ha	50	10	50	10	50	10	50	10	200	40
11	Banana Corm injector											
12	Mango harvester	Rs. 500 / No.	500	1.25	500	1.25	500	1.25	500	1.25	2000	5
13	Sales outlet points in districts (Rent and infrastructure)	Rs. 2.60 lakhs / No.	1	2.6	1	2.6					2	5.2
14	District Level Farmers Workshop	Rs. 400 / farmer / day	200	0.8	200	0.8	200	0.8	200	0.8	800	3.2
15	Inter State Exposure visit (5 days)	Rs. 5,000 /farmer	100	5	100	5	100	5	100	5	400	20
16	Banana / Amla in noon meal scheme (TANHOPE)	Rs. 50,000 / group / district	1	3.25							1	3.25
17	10 hectare mega demo plot for the districts	Rs. 25.00 lakhs each	3	75	2	50	3	75	2	50	10	250
18	Enterprising framers associations	Rs. 25.00 lakhs each	2	50							2	50
	<b>Total</b>		<b>18142</b>	<b>371.15</b>	<b>18138</b>	<b>292.9</b>	<b>18238</b>	<b>427.8</b>	<b>18237</b>	<b>402.8</b>	<b>72755</b>	<b>1494.65</b>



## ANNEXURE

### I. Feed and Fodder Development

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

#### Abstract

Intensive fodder production activity will be taken up by the Department of Animal Husbandry, Dindigul, through, farmers and Self Help Group women entrepreneurs at a total cost of Rs. 122.2 Lakhs. The Aavin, Dindigul will also take up fodder cultivation activity in the proposed Integrated Dairy Farm (IDF) villages at a total cost of Rs. 41.13 lakhs.

Hand operated chaff cutters will be supplied by the Department of Animal Husbandry, Dindigul to the SHG farmers at Rs.10,000/- per unit 1/per block and 14 units for 14 blocks at a total cost of Rs1.34 Lakhs. The Aavin, Dindigul will supply 25 numbers of mechanically operated chaff cutters to the 25 IDF Villages @ Rs. 0.70 Lakhs/unit, at one unit per IDF Village, at a total cost of Rs. 17.50 Lakhs and 30 numbers of hand operated chaff cutters @ Rs.0.20 Lakh/unit will be supplied to the elite members at one unit/farmer at a total cost of Rs. 6.00 Lakhs.

#### Budget

Sl. No.	Particulars	Amount (Rs. in lakhs)
1.	Augmentation of fodder production (CO-3) through SHG/women entrepreneurs, Rs. 0.235 Lakhs/acre, 10 acres/block/year, 14 blocks, for 4 years, 520 acres totally (DAH)	122.20
2.	Fodder development activities( 500 acres in 100 IDF villages in each for 2 years & 1850 acres in farmers field (DDD)	41.13
4.	Supply of hand operated chaff cutters to SHG farmers @ Rs.0.10 Lakhs/unit, 1 unit/block/year for 14 units for 14 blocks (DAH)	1.40
5.	Provision of mechanically operated chaff cutters, @ Rs. 0.70 Lakhs/unit, for 25 IDF Villages @ one unit/IDFV, 25 units totally (DDD)	17.50
6.	Provision of hand operated chaff cutters to elite farmers @ Rs.0.20 Lakh/unit, one unit/farmer, 30 units totally for 30 farmers (DDD)	6.00
<b>Total</b>		<b>188.23</b>

**Back ground/Problem Focus**

Fodder production in Dindigul district is not satisfactory and the deficit of green fodder is 87.5 per cent. It is essential to feed the crossbred milch animals with nutrient rich perennial fodder and tree fodder biomass to explore the full genetic potential of the livestock. The present background with regard to dairy, sheep and goat farming in this district is mainly grazing wherever possible, feeding with available greens in the market and feeding the milch animals with polish, bran, oil cakes, cotton seed. Sheep and goat are taken for grazing only. No supplemental feed, grains, concentrate is given to them. So to meet out the fodder requirement of large and small ruminants in order to augment the livestock production the action plan is proposed.

**Rationale for this Project**

Green fodder production is about 87.5 per cent shortage in Dindigul district. There is an acute shortage of fodder and the farmers find it difficult to maintain high producing dairy cows owing to the huge demand for green and dry fodder. Hence intensive fodder production activity has to be taken up to meet this heavy demand. Green fodder is one of the important and inevitable component in dairy farming and sheep and goat farming. Moreover deficit in green fodder is one of the major causes of infertility and poor productivity. Therefore, enhancement of green fodder production is essential to augment the livestock production. Chopping of fodder will help in the effective utilization of nutrients.

**Project Strategy**

Based on current background of livestock sector, project strategy is proposed involving Department of Animal Husbandry, Dindigul District Co-operative Milk Producers Union (the implementing agencies) to achieve the target with technical interventions for the target group namely the rural women, farmers and entrepreneurs. The project strategy is proposed to strengthen the existing infrastructure and expansion of ongoing development scheme of the implementing agencies.

Self Help Groups, interested women entrepreneurs and farmers will be selected from each block by Aavin and Animal husbandry department, Dindigul. Training on scientific fodder production will be given to the SHGs. Fodder production will be taken up by Aavin, Dindigul in all the proposed 25 IDF Villages.

Hand operated chaff cutters will be supplied by the Department of Animal Husbandry, Dindigul to the SHG farmers at Rs.10,000/- per unit , one unit per block totally 14 units @ 1.4 lakhs. Mechanized chaff cutters @ Rs.0.70 Lakhs per unit will be supplied at one unit per IDFV, 25 units for all the 25 IDFV. This project will be implemented by Aavin, Dindigul at a total cost of Rs. 17.5 Lakhs. Hand operated chaff cutters will be supplied to elite farmers @ Rs.0.20 Lakh/unit at one unit/farmer as 100 per cent subsidy, for 30 farmers totally at a cost of Rs.6.00 Lakhs.. This project will be implemented by Aavin, Dindigul.

### **Project Goals**

1. Augmentation of fodder production to meet the fodder shortage
2. Enhancement of nutrient utilization in fodder by use of hand-operated and mechanized chaff cutters to minimize fodder wastage and to enhance the nutrient utilization.
3. Establishment of cattle feed unit.
4. Improved fertility in cows.
5. Improved health status of dairy animals.

### **Project Components**

1. Fodder production in 695 acres
2. Provision of mechanized chaff cutters 25 units at IDFV on community basis
3. Provision of hand operated chaff cutters to elite farmers & SHG women – 44 units.

### Action Plan

- The farmers/ SHG women will be identified by Aavin, Dindigul and will be motivated to register their farms with TANUVAS
- Development of village fodder nursery and green fodder cultivation in registered/ identified farmers will be implemented by DAH and Aavin , Dindigul.
- Village fodder nurseries will be developed @ 10 acres / taluk / year .
- Green fodder will be cultivated @ 10 acres / block/ year in private / registered farmers land.
- Chaff cutters will be provided to SHG/elite farmers/ IDF villages

### Project Cost and Financing

#### I. Fodder Production

##### 1. Fodder Production by the Department of Animal Husbandry and the Aavin, Dindigul - Rs. 0.235 Lakhs/Acre

<b>I.</b>	<b>Training cost</b>	
<b>S. No</b>	<b>Details</b>	<b>Amount ( in Rs)</b>
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
	<b>Total training cost per SHG</b>	<b>3,525.00</b>

**II. Fodder Cultivation of Fodder (Co-3) per Acre**

<b>S.No.</b>	<b>Name of Operation</b>	<b>Amount (in Rs.)</b>
1 a)	Bush clearance and land reclamation	2,600.00
1.b)	Cost of ploughing	1,600.00
2.	Formation of ridges and furrows/beds and irrigation channels	500.00
3.a)	Cost of fym 10 mt. @ Rs.300/mt.	3,000.00
3.b)	Labour cost for transportation and application, loading and unloading	1,000.00
4.a)	Cost of slips 16,000 numbers @ Rs.0.25 /slip	4,000.00
4.b)	Planting cost	840.00
5.a)	Cost of chemical fertilizers N 150 Kg @ Rs.5.48/kg – 822.00 P 50 Kg @ Rs.10.88/kg – 544.00 K 40 Kg @ Rs.3.85/Kg - 154.00	1,520.00
5. b)	Cost of labour for application	200.00
6.	After cultivation weeding	840.00
7.	Cleaning the channels	500.00
8.	Irrigation charges	800.00
9.	Harvesting charges and transportation	1,600.00
10.	Miscellaneous expenses	800.00
	<b>Total Cost Required Per Acre</b>	<b>20,000.00</b>

	<b>Financial Requirement Per Self Help Group</b>	<b>Rs. in Lakhs</b>
1.	Cost of training per SHG	0.035
2.	Cost of fodder cultivation	0.20
	Total Requirement per SHG	0.235
	Total requirement for 520 acres totally	122.20
	Total requirement for production of 175 acres of fodder by the Aavin, Dindigul	41.13

**II. Supply of Chaff Cutters**

<b>Sl. No.</b>	<b>Particulars</b>	<b>Amount (Rs. in lakhs)</b>
1.	Provision of mechanically operated chaff cutters, @ Rs. 0.70 Lakhs/unit, for 25 IDF Villages @ one unit/IDFV, 28 units totally	17.50
2.	Provision of hand operated chaff cutters to elite farmers @ Rs.0.20 Lakh/unit, 30 units, one unit/farmer, totally for 300 farmers, 100% subsidy	6.00
3.	Provision of hand operated chaff cutters to SHG farmers @ Rs.0.20 Lakh/unit, 50 % subsidy, one unit/ block/year, 14 blocks, 14 units totally	1.40

**Implementing Chart of the Project (year wise-2008-09;2009-10;2010-11;2011-12)**

<b>Activity</b>	<b>2008-2009</b>	<b>2009-2010</b>	<b>2010-2011</b>	<b>2011-2012</b>
Augmentation of fodder production (CO-3) through SHG/women entrepreneurs, Rs. 0.235 Lakhs/acre, 10 acres/block/year, 13 blocks, for 4 years, 520 acres totally (DAH)	140 acres	140 acres	140 acres	100 acres
Fodder development activities( 500 acres in 100 IDF villages in each for 2 years & 1850 acres in farmers field (DDD)	20 acres	125 acres	15 acres	15 acres
Provision of chaff cutter @ 1/block / year for SHG/ elite farmers (DAH)	14 units	-	-	-
Provision of mechanically operated chaff cutters, @ Rs. 0.70 Lakhs/unit, for 28IDF Villages @ one unit/IDFV, 28 units totally (DDD)	25 units	-	-	-
Provision of hand operated chaff cutters to elite farmers @ Rs.0.20 Lakh/unit, one unit/farmer, 30 units totally for 30 farmers (DDD)	10 units	8 units	6 units	6 units

**Reporting: By Implementing Agency AHD/ Aavin, Dindigul****1. Fodder Production**

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

**2. Provision of Mechanized Chaff Cutters to IDF Villages and Hand Operated Chaff Cutters to SHG and Elite Farmers**

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

**II. Genetic Upgradation**

*“ Genetic Upgradation of Cattle, Buffaloes, Sheep , Goats and poultry”*

**Abstract**

Buffalo calf development programme will be implemented at the total cost of Rs. 59.2 lakhs.

It is estimated that the district has a total number of 1,32,600 breedable bovine population. Tracking the breedable bovines with an ear tag and a passbook at a cost of Rs.20/- per animal is proposed. The total outlay is Rs. 26.52 Lakhs. The project will be implemented by the Department of Animal Husbandry, Dindigul.

Programmed breeding will be carried out in 4800 numbers of cattle and buffaloes to increase the conception rate at a total cost of Rs. 33.6 Lakhs @ Rs.700 / animal. The project will be implemented by Aavin, Dindigul

Superior germplasm – Mecheri rams and Tellicherry bucks will be maintained by the Self Help Group Women in the district for cross-breeding of the non-descript poorly performing sheep and goats to augment the mutton and chevon production.

Each active SHG will be provided with one Mecheri ram and one Tellicherry buck @ Rs. 4,000/- per ram/buck. A total number of 500 rams and 500 bucks will be supplied at a total cost of Rs. 40.00 Lakhs. The project will be implemented by the Department of Animal Husbandry, Dindigul.

Nandanam III birds will be distributed @ Rs. 500/unit for 2000 selected farmers/ SHG women at the total cost of Rs. 10.00 lakhs to improve the poultry production.

### Budget

(Rupees in Lakhs)

Sl. No.	Particulars	Amount (Rs. in lakhs)
1.	Tracking the breedable bovine population with an ear tag and a passbook @ Rs.20/- animal, for 1,32,600 animals (DAH and DDD)	26.52
2	Buffalo calf development programme	59.20
2.	Programmed breeding of cattle buffaloes @ Rs.700/animal, for 2400 cows and buffaloes (DDD)	33.60
3.	Supply of 500 Mecheri rams to the self help groups @ Rs.4,000/- per buck/ram	20.00
4.	Supply of 500 Tellicherry bucks to the self help groups @ Rs.4,000/- per buck/ram	20.00
5.	Distribution of TANUVAS Nandanam III birds (DAH)	10.00
	<b>Total</b>	<b>169.32</b>

### Background/ Problem Focus

#### a. Tracking the Breedable Bovines in the District

It is estimated that the district has a total number of 1,18,000 breedable bovine population. Tracking the breedable bovines with an ear tag and a passbook will help to follow the animals and will be the first step in the registration of bovines with accurate details about the animal, its health status etc.

#### b. Buffalo Calf Development

A substantial decrease in buffalo population (around 40% in last 8 years) is observed in this district. Calf mortality and breeding problems are the major problems

in buffalo rearing. To arrest the fall and to stabilize the Buffalo population support need to be provided to the buffalo rearers to rear female buffalo calves up to first calving.

### **C. Programmed Breeding of Cattle and Buffaloes**

Estrus synchronization will be planned in indigenous cattle and buffaloes to increase conception rate. Buffaloes exhibit silent heat and hence become difficult to inseminate them for conception.

### **d. Genetic Upgradation of Sheep and Goats**

The present stock of sheep and goats available with the farmers in the district are inferior in terms of production and performance. Poor weight gain and low kidding / lambing rate in sheep and goat are main problems encountered. Mecheri is a proven mutton sheep breed and Tellicherry goat breed performs well under field conditions. Cross-breeding of the non-descript sheep and goats with such superior germplasm will augment mutton and chevon production in the district.

### **e. Distribution of TANUVAS Nandanam III Birds**

Nandanam III birds will be distributed to the selected farmers/ SHG women to improve the poultry production.

## **Project Rationale**

### **Tracking the Breedable Bovines in the District**

Tracking the breedable bovines with an ear tag and a passbook will help to follow the animals and will be the first step in the registration of bovines with accurate details about the animal, its health status etc.

### **Buffalo Calf Development**

A substantial decrease in buffalo population (around 40% in last 8 years) is observed in this district. There is mortality in the buffalo calves due to under nourishment. To arrest the fall and to stabilize the Buffalo population support need to be provided to the buffalo rearers to rear female buffalo calves up to first calving.

**Programmed Breeding of Cattle and Buffaloes**

Buffaloes exhibit silent heat and it becomes difficult to provide timely insemination services leading to huge economic losses. Because of this reason, the farmers are reluctant to rear buffaloes. Estrus synchronization will bring all the animals to heat at a specific time and will help to provide timely insemination.

**Genetic upgradation of Sheep and Goats**

Almost more than 90 per cent of the poor families in Dindigul district are small, marginal and landless farmers and are mainly local breeds of sheep and goats for their livelihood. Since the poor farmers are possessing local breeds the weight gain and low kidding/ lambing rate farmers are getting only meager income out of their sheep and goats. So genetic upgradation of local breeds using elite rams and bucks will improve their germ plasm inturn there will be increase weight gain and kidding rate / lambing rate. Cross-breeding of the non-descript sheep and goats with such superior germplasm will augment mutton and chevon production in the district.

**Distribution of TANUVAS Nandanam III Birds**

Nandhanam III birds will be distributed to the selected farmers/ SHG women to improve the poultry production.

**Project Strategy****Tracking the Breedable Bovines in the District**

Tracking the breedable bovines with an ear tag and a passbook at a cost of Rs.20/- per animal is proposed. The total outlay is Rs. 23.6 Lakhs.

**Buffalo Calf Development**

The total cost for the supply of feed, vaccines and deworming will be Rs.14,800/-/buffalo calf. A total number of 400 calves will be benefited at a period of 4 years @ 100 calves per year. The total project cost will be Rs.59.20 Lakhs. The project will be implemented by the Aavin, Dindigul.

### **Programmed Breeding of Cattle and Buffaloes**

Buffaloes exhibit silent heat and it becomes difficult to provide timely insemination services leading to huge economic losses. Because of this reason, the farmers are reluctant to rear buffaloes. Estrus synchronization will bring all the animals to heat at a specific time and will help to provide timely insemination.

### **Genetic Upgradation of Sheep and Goats**

Mecheri rams and Tellicherry bucks will be maintained by the Self Help Group Women in the district for cross-breeding of the non-descript poorly performing sheep and goat breeds to augment the mutton and chevon production. Each active SHG will be provided with one Mecheri ram and one Tellicherry buck @ Rs. 4,000/- per ram or buck. Totally 500 sheep farmers and 500 goat farmers will be selected for four years period and 1000 elite rams and bucks will be supplied with the total cost of Rs.40.00 lakhs.

### **Distribution of TANUVAS Nandanam III Birds**

Totally 2000 SHG women/ farmers will be identified and Nandanam III birds will be distributed with the total cost of Rs. 10.00 lakhs. Each unit consisting of 9 hens and a cock will be provided to the beneficiaries. The cost of one bird is Rs.50/- and thus the total cost per unit is Rs.500/-

### **Project Goals**

- Tracing the breedable bovines in the district.
- To develop 400 buffalo calves through supply of feed.
- Estrus synchronization in selected 6400 cattle and buffaloes
- The existing germplasm may be improved through incorporation of superior germ plasm by supplying elite bucks and rams for cross breeding purpose .
- Avoiding inbreeding
- Improved weight gain of sheep and goats
- Improved kidding /lambing rate.
- Increased mutton and chevon production
- Improvement in poultry production.

### Project Components

1. Animal card distribution to the owners of breedable cattle
2. Sheep and goat farmers / SHG women will be identified by DAH .
3. Distribution of buffalo calves.
4. Distribution of elite bucks.
5. Distribution of elite rams.
6. Distribution of TANUVAS – Nandanam III birds for 2000 SHG women

### Project Cost and Financing

(Amount in Rs. Lakhs)

Activity	2008-2009	2009-2010	2010-2011	2011-2012	Total Cost
Tracking the breedable bovine population with an ear tag and a passbook @ Rs.20/- animal, for 1,18,000 animals (DAH, DDD)	26.52	-	-	-	26.52
Buffalo calf development programme (@ Rs. 0.148 lakhs/ calf	14.80	14.80	14.80	14.80	59.20
Programmed breeding of cattle and buffaloes @ Rs.700/animal, for 4800 animals.(DDD)	8.40	8.40	8.40	8.40	33.60
Distribution of Mecheri rams to the self help groups @ Rs. 4,000/- per ram (DAH)	5.00	5.00	5.00	5.00	20.00
Distribution of Tellicherry bucks to the self help groups @ Rs.4,000/- per buck (DAH)	5.00	5.00	5.00	5.00	20.00
Distribution of TANUVAS Nandanam birds (DAH) Each unit consisting of 9 hens and a cock will be provided to the beneficiaries. The cost of one bird is Rs.50/- and thus the total cost per unit is Rs.500/-	2.50	2.50	2.50	2.50	10.00
<b>Total</b>	<b>62.22</b>	<b>35.70</b>	<b>35.70</b>	<b>35.70</b>	<b>169.32</b>

**Implementation Chart of the Project**

<b>Activity</b>	<b>2008-2009</b>	<b>2009-2010</b>	<b>2010-2011</b>	<b>2011-2012</b>
Tracking the breedable bovine population with an ear tag and a passbook	1,32,600 cows	-	-	-
Buffalo calf development programme	100	100	100	100
Programmed breeding of cattle and buffaloes	1200 animals	1200 animals	1200 animals	1200 animals
Supply of Mecheri rams to the self help groups	125 animals	125 animals	125 animals	125 animals
Supply of Tellicherry bucks to the self help groups	125 animals	125 animals	125 animals	125 animals
Distribution of TANUVAS Nandanam III birds	500 birds	500 birds	500 birds	500 birds

**Reporting****Tracking the Breedable Bovines in the District**

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

**Buffalo Calf Development Programme**

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

**Programmed Breeding of Cattle and Buffaloes**

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

**Genetic Upgradation of Sheep and Goats**

The Regional Joint Director of Animal Husbandry, Dindigul will implement the scheme and periodical monthly reports will be submitted to the appropriate authorities.

**Distribution of TANUVAS Nandanam III Birds**

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

**III. Improvement of Livestock Health*****Abstract (Summary of the Project)***

To provide comprehensive livestock health cover including immunization against important viral, bacterial diseases and to cover almost all animals including poultry to protect livestock and poultry from diseases and overall improvement in health mobile veterinary clinic will be established in 7 taluks at the total cost of Rs. 40.95 lakhs and 1 mobile veterinary laboratory will be established at the total cost of Rs. 12.00 lakhs by department of animal husbandry. Two mobile input units to cover the health of animals by Aavin will be established at the total cost of Rs9.00 lakhs.

To maintain livestock health micronutrients and mineral mixture to be supplied. Mineral mixture will be supplied to the dairy cows through the Department of Animal Husbandry, Dindigul to the small farmers at Rs.600/- per cow per year (One kg/animal/month, 12 kg for one year, @ Rs.50/kg) at subsidized rate @ 5000 farmers per year, for 4 years. A total of 20,000 cows will be supplemented with mineral mixture at a total cost of Rs.120.00 Lakhs. The Aavin, Dindigul will supply mineral mixture to the milch animals of the society members at subsidized cost (50 % subsidy) @ Rs. 500/- for 18 kg per year/cow, A total number of 2500 animals will be benefited at a total cost of Rs. 12.50 Lakhs.

The Aavin, Dindigul will supply by-pass protein feed to the milch animals of the members of the society (360 kg/animal/year) for 5000 cows @ 50% subsidy of Rs.9/- per kg. The total cost will be Rs. 165.00 Lakhs. Control of parasitic diseases to enhance vaccine response in sheep and goat will be carried out at the cost of Rs. 58.70 lakhs and desi birds will be immunized against Ranikhet disease at the cost of Rs. 10.00 lakhs.

**Budget**

<b>Sl. No.</b>	<b>Particulars</b>	<b>Amount (Rs. in lakhs)</b>
1	Mobile Vet. Clinics- 1 / taluk (DAH)	40.95
2	Supplementation of min. mix. To prevent infertility and augment production to farmers. @ Rs. 600/cow/ year @ Rs. 50/kg (5000cow/year) (DAH)	120.00
3.	Mobile vet. Lab (DAH)	12.00
3	Mobile input units (ONE PER 50 DCS) (DDD)	9.00
4	Supply of mineral mixture to the milch animals at Subsidized cost (50% ) @ 18 KG/ YEAR (DDD)	12.50
5	Supply of by-pass protein feed to the milch animals (360KGS/ YEAR/ANIMAL @ 50% subsidized cost of Rs.9/- per KG.) (DDD)	165.00
6	Control of parasitic diseases through treatment to enhance vaccine response (DAH)	58.70
7	Immunization against RD for Desi birds Rs. 500 / unit (DAH)	10.00
	<b>Total</b>	<b>428.15</b>

**Background / Problem Focus**

Even though veterinary dispensaries and sub centres are located in rural and semi urban areas there are still villages which are beyond the reach of veterinary services. Hence mobile veterinary clinic and mobile input units facility will help to provide comprehensive livestock health cover and to protect livestock and poultry from diseases and overall improvement in health. Further almost all the domestic animals are deficient in micro nutrients since most of the animals are allowed only for grazing especially sheep and goat. For better digestibility of feed consumed and also to satisfy the micro nutrient requirements it is proposed to supplement the livestock with mineral mixture. Economical production of milk depends largely upon efficiency of animals, its nutrition and management.

**Project Rationale**

The landless agricultural labourers and small farmers who own the cattle are unable to take their livestock to the nearest veterinary institution as they are pre-occupied in agricultural work. Further, the agricultural labourers have to forego half a day work in bringing their livestock to the veterinary institution /sub centres for treatment or artificial insemination.

In order to avoid such suffering and loss to the farmers and to provide veterinary services and breeding support in time at the doorsteps of the farmers, Mobile Veterinary Clinics are proposed. Dairy cattle requires at least 17 minerals in their diet for optimal milk production, reproductive performance and herd health. Infertility, poor health status due to mineral deficiency is common in the dairy cattle and small ruminants. As milk producing ability increase, more minerals in their ration is needed and hence their adequate level should be ensured in feed to achieve optimum performance and herd health. To provide optimum health cover of livestock through quick, effective and timely disease diagnosis one Mobile veterinary laboratory facility is proposed.

Supplementing livestock with micro nutrients would ensure their optimal health cover. Controlling parasitic diseases will ensure optimum immunity. Supplementation of micronutrients and by-pass protein feed to dairy cows and micronutrients to goats is not a common practice and sensitization of the farmers through supply of mineral mixture for their cows and goats for one year will help them to realize their importance. Improper and irregular vaccination of poultry leads death of desi birds which causes economic loss to the poor farmers. So immunization against RD for desi birds and turkeys is important to avoid mortality in poultry. Timely diagnosis of livestock diseases is essential to safeguard the livestock from death and to avoid economic loss to the farmers.

### **Project Strategy**

Mobile veterinary clinic Mobile veterinary clinic and mobile input units facility will be established to provide comprehensive livestock health cover and to protect livestock and poultry from diseases and overall improvement in health. Further almost all the domestic animals are deficient in micro nutrients since most of the animals are allowed only for grazing especially sheep and goat. For better digestibility of feed consumed and also to satisfy the micro nutrient requirements it is proposed to supplement the livestock with mineral mixture. Economical production of milk depends largely upon efficiency of animals, its nutrition and management. laboratory facility will help in disease diagnosis, disease mapping and disease

forecasting easily and quickly. Supplementing livestock with micro nutrients would ensure their optimal health cover. Immunization against Newcastle disease is proposed.

### **Project Goals**

Farmers in remote villages can get veterinary assistance and breeding support at their villages itself. To provide optimum health cover to livestock and poultry including immunization for Ranikhet disease. It is proposed to supplement the livestock with micro nutrients which will result in optimum performance of livestock and poultry which will ensure improved productivity and production. To increase milk production and also to produce clean, quality milk effectively and economically. Providing mineral mixture daily will enhance milk production, reduce breeding problem and will reduce intercalving period.

### **Project Components**

- Mobile Veterinary Clinics

#### **Non-Recurring Expenditure**

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

#### **Recurring Expenditure**

Diesel 90 Lit x 12 xRs.40 = Rs.0.432 lakh

**Total cost = Rs. 5.832 lakh**

**Mobile Veterinary Laboratory = Rs. 12.00 laksh / unit**

The Cost of vehicle is approximately Rs. 11.00 lakh. The cost of microscope will be Rs.0.50 lakh cost of refrigerator will be Rs.0.25 lakh, cost of centrifuge will be Rs.0.15 lakh, cost of post mortem kits and other chemicals and chemical reagents will be Rs. 0.10 lakh.

- Mobile input units
- Popularizing Mineral mixture by supplying at subsidized cost
- Supplementation of micronutrients in the feed of dairy cows and goats to enhance production and fertility.
- Supply of by-pass protein to milch animals to enhance production.
- Control of parasitic diseases

### Project Cost and Financing

(Rs. in Lakhs)

Activity	2008-2009	2009-2010	2010-2011	2011-2012	Total Cost
Mobile vet. Clinic 1/ taluk (DAH) Rs. 5.85 lakhs/ unit	40.95	-	-	-	40.95
Mineral mix @ Rs. 600/cow/year @ Rs. 50/ kg (5000 cow/year) (DAH)	30.00	30.00	30.00	30.00	120.00
Mobile vet. Diag. lab. (DAH) @ Rs. 12.00 lakh/unit	12.00	-	-	-	12.00
Mobile input units (one per 50 DCS) (DDD) @ 4.50 lakhs/ unit . The cost is inclusive of salary for the veterinarian, medicines, veterinary equipment and other expenses.	9.00	-	-	-	9.00
Supply of mineral mixture to the milch animals at subsidized cost (50%) @ 18kg/ year (DDD) @ Rs. 500/unit	3.00	3.50	3.00	3.00	12.50
Supply of By-pass protein feed to the milch animals (360kgs/year/animal @ 50 % subsidized cost of Rs. 9/-per kg (DDD) @ Rs. 3300/unit	41.25	41.25	41.25	41.25	165.00
Control of parasitic diseases to enhance vaccine response @ Rs.1/- per sheep or goat and Rs.3/- per calf below one year, 4 times /year, Rs. 14.675 Lakhs/year, for 4 years (237903 calves, 214143 sheep and 351211 goats) (DAH)	14.675	14.675	14.675	14.675	58.70
Immunization against RD for Desi birds .Rs. 500 / unit (DAH)	2.50	2.50	2.50	2.50	10.00
<b>Total</b>	<b>153.375</b>	<b>91.925</b>	<b>91.425</b>	<b>91.425</b>	<b>428.15</b>

**Implementation Chart of the Project**

<b>Works proposed</b>	<b>2008-2009</b>	<b>2009-2010</b>	<b>2010-2011</b>	<b>2011-2012</b>
Mobile vet. Clinic (DAH)	7	-	-	-
Supplementation of Min. mix. For cows (DAH)	5000 animals	5000 animals	5000 animals	5000 animals
Mobile Vet. Diag. Lab (DAH)	1	-	-	-
Mobile input units (DDD)	2	-	-	-
Supply of Min. mixture at subsidized cost (DDD)	600 animals	700 animals	600 animals	600 animals
Supply of Bypass protein (DDD)	1250 animals	1250 animals	1250 animals	1250 animals
Control of parasitic diseases through treatment to enhance vaccine response (DAH)				
Immunization of desi birds against RD (DAH)	500 unit	500 unit	500 unit	500 unit

**Reporting**

The implementing agencies *viz.* Department of Animal Husbandry and Dindigul District Co-operative Milk Producers Union will submit periodical project report to their controlling officers. Supply of mineral mixture and by-pass protein feed to the dairy cows and salt licks to goat farmers:

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

**IV. Strengthening of Aavin, Dindigul**

**“Improvement of Milk Collection, Processing, Value-addition and Marketing Facilities”**

**Abstract**

Twenty-five milking machines will be provided to the Integrated Dairy Farms at one unit per IDF Village at a total cost of Rs. 25 Lakhs @ Rs. 1.0 Lakh/unit. Thirty

portable milking machines will be supplied to the members of the society at a total cost of Rs.5.40 Lakhs @ Rs.0.18 Lakhs/unit. Provision of milking machines will help to improve the collection and quality of milk.

One bulk milk cooler will be established @ Rs. 30.0 lakhs to improve the keeping quality of milk until it is processed. Two unit of walk-in-cooler will be established at a total cost of Rs. 60.0 Lakhs. A total number of 25 dormant societies will be revived with necessary inputs @ Rs.1.0 Lakh per unit at a total cost of Rs. 25Lakhs. One khoa manufacturing units at the cost of Rs.0.77 Lakhs to promote value-addition of milk.

A total of 57 numbers of milk weighing machines will be established at milk producers' co-operative societies for accurate weighment of milk at a total cost of 9.69 Lakhs. A total number of 33 PC-based automatic milk collection stations will be established at IDF villages and milk producers' co-operative societies at a total cost of Rs.57.75 Lakhs @ Rs.1.75 Lakhs/unit. A quality assurance laboratory will be established at the total cost of Rs. 10.00. A project on energy management system will be implemented at a total cost of Rs.10.0 Lakhs.

### Budget

(Rupees in Lakhs)

S. No	Project	Total Cost
1	Milking machines for ID Farms (DDD @ Rs. 1.00 lakh/farm	25.00
2	Portable milking machines for farmers (DDD) @ Rs. 18,000/unit)	5.40
3	Bulk milk cooler (DDD) @ Rs. 30 lakh/ unit	30.00
4	Walk in coolers(DDD) @ 30 lakhs/unit)	60.00
5	Revival of dormant MPCS (DDD) @ Rs. 1 lakh/unit	25.00
6	Manufacturing facilities for milk khoa (DDD) @ Rs. 0.77 lakh/unit	0.77
7	Milk weighing machine for milk producers co- op. societies (DDD) @ Rs. 17,000/unit)	9.69
8	P.C based automatic milk collection stations to IDF villages (DDD) @ 1.75 lakh/ unit	57.75
9	Quality assurance lab (DDD) @ Rs. 1.75 lakh/unit	10.00
10	Energy management system (DDD)	10.00
	<b>Total</b>	<b>233.61</b>

**Background/ Problem Focus**

Presently hand-milking is practiced by the farmers. There is shortage of milkmen and problems of mastitis are common in hand milking. Automatic milking machines saves time, labour and prevents the occurrence of mastitis in cows.

Establishment of a bulk milk coolers and walk-in-coolers will help to maintain the quality of milk until it is processed and marketed. A total number of 25 milk producers' co-operative societies are dormant. This leads to decrease in the quantity of milk procured. They have to be revived with necessary inputs to improve the quantum of milk production in the district.

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

Further, in societies handling more than 500 litres of milk per day, it is essential to establish PC- based automatic milk collection stations.

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

**Project Rationale**

Milking machines will save labour, time and prevent the occurrence of mastitis in dairy cows. Bulk milk coolers and walk-in-coolers will help to keep the quality of milk until it is processed and marketed. Revival of dormant milk producers' co-operative societies will boost the milk production. Establishment of manufacturing unit for khoa will help in value-addition of milk.

Provision of milk weighing machines to societies will help in the accurate weighment of milk. Automatic PC-based milk collection stations will save time, manpower, provide accurate weighment of milk, stores the milk data for several months and provide confidence among the members of the societies. The quality assurance laboratory at the Aavin main dairy will be strengthened with certain basic facilities for assessment of milk quality at different stages of processing and marketing. Energy management system in the main processing plant will save power and will be economical.

### **Project Strategy**

Milking machines for ID farms, Portable milking machines for farmers, bulk milk coolers, walk in coolers, revival of dormant MPCs, manufacturing facilities for milk khoa, milk weighing machine for milk producers co- op, societies, P.C based automatic milk collection stations to IDF and MMPO laboratory will be developed.

### **Project Goals**

1. Clean milk production, saving labour and time and prevention of mastitis through installation of milking machines.
2. Improvement of the milk quality until processing and marketing through establishment of bulk milk coolers and walk-in-coolers.
3. Augmentation of milk production through revival of dormant societies.
4. Value-addition of milk by establishing khoa making units.
5. Accurate weighment of milk in societies through supply of weighing machines.
6. Saving time, labour and accurate weighment of milk through establishment of automatic PC-based milk collection stations.
7. Improvement of quality standards for milk and milk products, prevention of adulteration, analysis of statutory samples and third party samples for quality through establishment of quality assurance laboratory.

**Project Components**

- Milking machines
- Bulk milk cooler
- Walk in coolers
- Manufacturing facilities for milk khoa
- Milk weighing machine
- P. C based automatic milk collection stations.
- Quality assurance laboratory
- Energy management system.

**Quality Assurance Lab**

<b>Sl. No.</b>	<b>Name of the equipment</b>	<b>Amount in Lakhs</b>
1.	Incubator	0.35
2.	Hot air oven	0.35
3.	Water bath	0.35
4.	Autoclave	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
	<b>Total</b>	<b>10.00</b>

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

S. No	Project	2008-09	2009-10	2010-11	2011-12	Total Cost
1	Milking machines for ID Farms (DDD @ Rs. 1.00 lakh/farm)	0.00	25.00	0.00	0.00	25.00
2	Portable milking machines for farmers (DDD) @ Rs. 18,000/ unit)	1.80	1.44	1.08	1.08	5.40
3	Bulk milk cooler (DDD) @ Rs. 30 lakh/ unit)	30.00	-	-	-	30.00
4	Walk in coolers(DDD) @ 30 lakhs/ unit)	30.00	30.00	-	-	60.00
5	Revival of dormant MPCS (DDD) @ Rs. 1 lakh/unit)	7.00	6.00	6.00	6.00	25.00
6	Manufacturing facilities for milk khoa (DDD) @ Rs. 0.77 lakh/unit)	0.77	-	-	-	0.77
7	Milk weighing machine for milk producers co- op. societies (DDD) @ Rs. 17,000/unit)	3.74	2.55	1.70	1.70	9.69
8	P.C based automatic milk collection stations to IDF villages (DDD) @ 1.75 lakh/ unit)	14.00	43.75	0.00	0.00	57.75
9	Quality assurance lab (DDD)	10.00	0.00	0.00	0.00	10.00
10	Energy management system (DDD)	10.00	-	-	-	10.00
	<b>Total</b>	<b>87.31</b>	<b>118.74</b>	<b>8.78</b>	<b>8.78</b>	<b>233.61</b>

**Implementation Chart of the Project**

Activity	2008-2009	2009-2010	2010-2011	2011-2012
Milking machines for ID farms	25units	-	-	-
Supply of portable milking machines to members of the Society	10 units	8 units	6 units	6 units
Provision of bulk milk cooler	1 unit	-	-	-
Provision of a walk-in-coolers	1 unit	1 unit	-	-
Revival of 25 dormant milk producers' co-operative societies	7 societies	6 societies	6 societies	6 societies
Establishment of four khoa manufacturing units	1 unit	1 unit	2	-
Supply of 57 milk weighing machines to milk producers' co-operative societies	22 units	15 units	10 units	10 units
Provision of PC-based automatic milk collection stations to IDF villages and milk producers' co-operative societies	8 units	25 units	-	-
Quality assurance laboratory	1	-	-	-
Energy management system	1	-	--	-

## **Reporting**

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

## **V. Extension Facilities**

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

### **Abstract**

Farmers study tour @ Rs. 5000/ per farmer will be carried out at the total cost of Rs. 7.50 lakhs. Skill development for technical staff will be carried out @ Rs. 5000/ per staff at the total cost of Rs. 2.20 lakhs. Orientation training/ workshop for milk producers at society level will be conducted @ Rs. 0.20 lakh/ programme at the total cost of Rs. 3.20 lakhs. For institutional development Rs. 135 lakhs, strengthening of training equipments and strengthening of TANUVAS centre for training and technology dissemination will be carried out at the total cost of Rs. 195 lakhs. To conduct training programmes to empower knowledge of stake holders, to impart skill, to transfer technologies Rs. 12 lakhs will be utilized. MCP, conference will be conducted @ RS. 3000/ programme at the total cost of Rs. 1.44 lakhs. Capacity building training for officers will be conducted at the total cost of Rs. 10 lakhs. Touch screen facilities will be established at the total cost of Rs. 20.00 lakhs @ Rs.1 lakh/unit. Eight field tours will be conducted for the farmers at the total cost of Rs.2.00 lakhs. Semi intensive sheep/ goat farming to improve meat production will be established at the total cost of Rs. 235.20 lakhs.

**Budget**

<b>Activity</b>	<b>(Rs. Lakhs)</b> <b>Amount</b>
Farmers study tour @ RS. 5000/ per farmer (DDD)	7.50
Skill development for technical staff (DDD) @ Rs. 5.000/- per staff	2.20
Orientation training/workshop for milk producers at society level (DDD) @ Rs. 0.20 lakh/ programme	3.20
Institutional development – Strengthening of Vet. Institutions @ RS. 5.0 lakh/ institution (DAH)	135
Strengthening of training equipments for technology dissemination and training to farmers at TANUVAS centre, Dindigul (TANUVAS)@ Rs. 10.00 lakhs	10.00
Strengthening of TANUVAS centre for training ( Training cum conference hall farmers) mobile disease investigation and training unit, LCD projector, Microscope etc. (TANUVAS) ( Rs. 50 lakhs)	50.00
Training programmes on modern livestock farming for farmers TANUVAS) @ Rs. 300/ farmer	12.00
For conducting MCP, conference etc. (TANUVAS) @ Rs. 3000/programme	1.44
Capacity building training for officers ( Vets/ NGOs/ Line dept staff (TANUVAS) @ Rs. 5,000/ staff	10.00
Touch screen facilities (TANUVAS) @ RS. 1 lakh / unit	20.00
Field tours for the farmers (RS. 25,000/ tour)	2.00
Semi intensive sheep/goat farming to improve meat production by SHGs @ 10/block (DAH @ Rs. 0.42 lakh/unit)	235.20
<b>Total</b>	<b>488.54</b>

**Background/ Problem Focus**

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

**Project Rationale**

To ensure quality in milk .To empower stake holders, officers on recent advances in technology and user friendly technologies like touch screen facility for easy access.

**Project Strategy**

As the rural poor follow only traditional methods of livestock rearing and do not have adequate experience in the best practices in animal husbandry activities, exposure to modern and scientific animal rearing is rather limited, the project will adopt the strategy of awareness creation, group mobilisation and motivation and capacity building. Knowledge sharing, capacity building exercise for farmers, women, officers, etc. will be carried out by Tamilnadu veterinary and Animal Sciences University, Department of Animal Husbandry and Aavin. Intensive system of model sheep/goat unit will motivate the farmers to adopt such technologies for sustainable and economically viable farming wherever possible.

**Project Goals**

Capacity building in the areas of livestock farming, value-addition of milk and meat, sheep and goat rearing and hygienic meat production, processing and establishment of modern retail meat units.

Intensive system of model sheep/goat unit will motivate the farmers to adopt such technologies for sustainable and economically viable farming wherever possible. Sheep/Goat rearing will become a sustainable alternative livelihood opportunity which can supplement the income generation activities of the rural farmers thereby additional income can be generated on a sustainable basis.

Improvement in nutritional standards of the rural people. Enlightening the technical staff and dairy farmers on latest developments in the dairy industry through training programmes and study tours.

**Project Components**

- Strengthening of TANUVAS centre through Infrastructure development for training/ extension programmes including Audio visual / communication tools

**(Rs. in lakhs)**

Sl. No.	Particulars	Amount
1.	Training Hall (1000 sq. ft.)	15.00
2.	Audio visual equipments for Training hall	5.00
3.	Conference Hall (1000 sq. ft.)	15.00
4.	Audio visual equipments for Conference hall	5.00
5.	Mobile Disease Investigation Unit (Microscope, Laminarflow, centrifuge, Hot air oven, autoclave)	4.00
6.	Vehicle	6.00

- Training farmers and officers
- Specialised training to field veterinarians and officers.
- Field tours of farmers, MCP, Infertility camps, farmers workshop, conference, etc.
- Touch screen facilities

**Project Cost and Financing****(Amount in Rs. Lakhs)**

Activity	2008-2009	2009-2010	2010-2011	2011-2012	Total Cost
Farmers study tour @ Rs.5000 per farmer 150 farmers for 4 years (120 farmers for first three years and 30 farmers for fourth year) (DDD)	2.00	2.00	2.00	1.50	7.50
Skill development training for technical staff of DDD @ Rs.5000/- per staff, 44 persons for 4 years 11 staff per year (DDD)	0.55	0.55	0.55	0.55	2.20

Orientation training/workshop for milk producers' at society level Rs.20,000 per programme, 4 programmes/year, for 4 years (DDD)	0.80	0.80	0.80	0.80	3.20
Institutional development – Strengthening of Vet. Institutions with basic facilities like fencing Bore wells, water troughs, Minor repair works etc. @ Rs. 5.0 lakh/ Institution (DAH)	135	-	-	-	135
Strengthening of training equipments for technology dissemination and training to farmers with laptop computer with printer, teaching aids etc. at TANUVAS centre, Dindigul (TANUVAS)	10	-	-	-	10
Strengthening of TANUVAS centre for training (Training cum conference hall farmers) mobile disease investigation and training unit, LCD projector, Microscope etc. (TANUVAS) (Rs. 50 lakhs)	50.00	-	-	-	50.00
Training programmes on modern livestock farming for farmers TANUVAS) @ Rs. 300/ farmer for 4000 farmer for 4 years	3.00	3.00	3.00	3.00	12.00
For conducting MCP, conference etc. (TANUVAS) @ Rs. 3000/programme	0.36	0.36	0.36	0.36	1.44
Capacity building training for officers (Vets/ NGOs/ Line dept staff (TANUVAS) @ Rs. 5,000/ staff for 200 staff for four years	2.50	2.50	2.50	2.50	10.00
Touch screen facilities (TANUVAS) @ RS. 1 lakh / unit	5.00	5.00	5.00	5.00	20.00
Field tours for the farmers (RS. 25,000/ tour)	0.50	0.50	0.50	0.50	2.00
Semi intensive sheep/goat farming to improve meat production by SHGs @ 10/block (DAH @ Rs. 0.42 lakh/unit)	58.8	58.8	58.8	58.8	235.20
<b>Total</b>	<b>268.51</b>	<b>73.51</b>	<b>73.51</b>	<b>73.01</b>	<b>488.54</b>

**Implementation Chart of the Project**

<b>Works proposed</b>	<b>2008-2009</b>	<b>2009-2010</b>	<b>2010-2011</b>	<b>2011-2012</b>
Farmers study tour	40	40	40	30
Skill development for technical staff	11	11	11	11
Orientation training/ workshop for milk producers	4	4	4	4
Institutional development	27	-	-	-
Strengthening of training equipments for technology transfer	1	-	-	-
Strengthening of TANUVAS centre for training	I year – tender processing and placing orders	II year – Expansion processes	Put in to use	Put in to use
Training programmes on livestock farming	1000 farmers	1000 farmers	1000 farmers	1000 farmers
Conducting MCP/ Conference etc	12	12	12	12
Training to the officers	50	50	50	50
Establishment of kiosk at VUTRC	tender processing and placing orders	Establishment processes	Put in to use	Put in to use
Touch screen facilities	5	5	5	5
Field tours for the farmers	2	2	2	2
Semi intensive sheep/goat farming	130	130	130	130

**Reporting**

The Head of the Veterinary University Training and Research Centre, Dindigul, Regional Joint Director, Animal Husbandry Department, Dindigul and the General Manager, Aavin, Dindigul will submit to periodical progress report to the higher authorities.

## **FISHERIES SECTOR**

### **1. Creation of additional nursery space at Anaipatti**

#### **Abstract**

The inland water resources in Dindugul district is 12,123 ha. The total seed requirement is 60.00 lakhs. Area of implementation will be Anaipatti, Nilakottai Taluk, Dindigul district.

#### **Budget**

Rs.98.30 lakhs.

#### **Background/Problem Focus**

The Dindugul District does not have water facility throughout the year hence only short term fish culture can be carried out. No self sufficiency in fish seed production.

At present only 5.0 lakhs fingerlings are reared and supplied by the fish seed rearing centre and Anaipatti. This meager quantity is not even sufficient to stock in Departmental tanks and reservoirs.

#### **Project Rationale**

To overcome this problem, proposal for additional fish seed rearing centre at Anaipatti is inevitable. In the unutilised area of available farm, we can create additional rearing space by constructing new nurseries.

#### **Project Strategy**

- To strengthen the Government Fish Seed Farm at Annaaipatti.
- To increase the seed production to fill the requirements of the district.
- To increase the fish production to the optimum level.

#### **Project Goals**

- To create additional facility for seed production
- To make use of the vacant space for fish seed production unit
- To attain fish seed production - 5.00 lakhs against the requirement of 60.00 lakhs.
- To fulfil the present gap of fingerlings requirement is 55.00 lakhs at present level.

### Project Components

Fish seed production hatcheries and nurseries-seed production.

### Project Cost and Financing

The cost towards construction of additional nurseries in vacant space of existing Anaipatti Fish Seed Farm is as follows:

Unit cost	:	Rs.98,30,000/-
No. of units	:	1 No.
Total cost	:	Rs.98,30,000/-

### Civil Woks

Sl. No.	Name of the work	Cost Estimate Rs.
1)	10mx6mx1.2m 40 nurseries at Rs.82126.75x40	32,85,070
2)	15mx8mx1.2m. 20 nurseries at Rs.1,64,253.50x20	32,85,070
3)	2mx1.5m conditioning pond at Rs.11507x6	69,042
	<b>Total</b>	<b>66,39,182</b>
4)	Provision of pipe line 7.5% of total cost of Rs.	4,97,940
5)	6.2mx8m. of one store room and a laboratory	5,92,020
6)	Electrical appliances 30% of Rs.5,92,020/-	1,77,600
7)	One over head tank 45,000 Lt. capacity	3,00,000
8)	15m depth & 10m dia. of open well	7,00,000
9)	10 HP Motor with accessories	30,000
	<b>Total</b>	<b>89,36,742</b>
10)	Provision of unexpected expenses & escalation of price 10 per cent	8,93,674
	<b>Grand Total</b>	<b>98,30,416</b> <b>or rounded to</b> <b>Rs.98,30,000</b>

**Implementation Chart of the Project**

S.No.	Particulars	2008-09	2009-10	2010-11	2011-12
1.	Creation of nursery space in Govt. fish seed farm.	√	√	√	√

**Reporting**

The project will be implemented by the Department of Fisheries.

**2. Expansion of Fish Culture in hitherto unutilized Water Bodies by Stocking (50 per cent subsidy)**

**Abstract**

It is proposed to cover 2500 ha of water bodies additionally to bring under by extending 50% subsidy assistance for stocking fingerlings.

**Budget** : Rs. 15.63 lakhs

**Background / Problem Focus**

- The District has good scope for fish
- Non availability of stock size fish seeds through out the year

**Project Rationale**

To stock fish seeds in the 2500 ha water bodies.

**Project Strategy**

To stock of fish seeds for enhanced production.

**Project Goals**

To stock suitable fish seeds for enhanced fish production.

**Project Components**

Seeds stocking, rearing of fishes , sampling and harvesting

**Project Cost and Financing**

Cost of fingerlings per Unit	: Rs.1250
Subsidy (50 per cent)	: Rs.625
Total number units	: 2500 ha
Total cost 2500 x 625	: 15.63 lakhs

**Implementation Chart of the Project**

S.No.	Particulars	2008-09	2009-10	2010-11	2011-12
1.	Selection of water bodies	√			
2.	Procurement of fish seeds and stock		√	√	√

**Reporting**

The project will be implemented by the Department of Fisheries.

**3. Subsidy Assistance to Private Fish Seed Rearing / Fish Seed Production (50 per cent subsidy)****Abstract**

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

Sathiar fish seed farm has the following infrastructures:

Fish Seed Rearing ponds (Defunct) : 30m X 15mX2=900m<sup>2</sup>

Cement nurseries (14 functional + 6 Defunct) 6M X3mX20 = 360 m<sup>2</sup>

**Budget** : Rs. 20.00 lakhs

### **Background / Problem Focus**

- ❖ Vaigai river flows across the district and has major beneficiary of Periyar – Vaigai river system
- ❖ Inadequate infrastructure development causing problems to attain self Sufficiency in seed production
- ❖ Fish seed production / Rearing is not adequate. The fish seed demand is mostly met Import from other Districts / States near by.
- ❖ Fish seed production / rearing in private sector has been not encouraged to minimize intake from neighboring States.
- ❖ Fish culture activity shall be encouraged by extending 50% subsidy on inputs.
- ❖ Dindigul district's water potential gives more opportunity for fish seed production

### **Project Rationale**

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

### **Project Strategy**

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

### **Project Goals**

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

**Project Components**

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

**Project Cost and Financing**

Unit cost Rs. 10.00 lakhs.

**Cost of one unit**

S. No.	Particulars	Amount (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
<b>Total</b>		<b>10.00</b>

Subsidy component	:	5 lakhs ( 50%)
Total number of units	:	4
Total cost 4 units x 5 lakhs	:	20 lakhs

**Implementation Chart of the Project**

S.No.	Particulars	2008-09	2009-10	2010-11	2011-12
1.	Completion of civil works	√	√	√	√
2.	Rearing of seeds	√	√	√	√

**Reporting**

The project will be implemented by Department of Fisheries.

#### **4. Moped-cum-insulated Ice box for Fish Marketing (50 per cent subsidy)**

##### **Abstract**

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

**Budget** : Rs. 7.50 lakhs

##### **Background / Problem Focus**

For transporting and progressing fish hygienically.

##### **Project Rationale**

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

##### **Project Strategy**

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

##### **Project Goals**

To promote and sale of fish of high quality with hygiene.

##### **Project Components**

Supply of 50 units of mopeds with ice box at 50 per cent 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	:	50 units
<b>Total Cost</b>	<b>:</b>	<b>50 x .15 = 7.5 lakhs</b>

**Implementation Chart of the Project**

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

**Reporting**

Progress of the project will be reported periodically.

**5. Capacity Building****Abstract**

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

**Budget** : Rs. 10.00 lakhs

**Background / Problem Focus**

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

**Project Rationale**

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

**Project Strategy**

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

**Project Goals**

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

**Project Components**

1. Composite fish culture
2. Ornamental fish culture
3. Integrated fish farming
4. Cat fish culture
5. Economies and Marketing

**Project Cost and Financing**

<b>S.No.</b>	<b>Particulars</b>	<b>App. Budget</b>
1.	DA/TA for participants	4000
2.	Extension materials	4000
3.	Refreshments	2000
<b>Total</b>		<b>10000</b>
<b>Total number of participants 100 x Rs.10000</b>		<b>10 lakhs</b>

**Implementation of Client of the Project**

<b>S.No</b>	<b>Particulars</b>	<b>2008-09</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>
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.

**6. Supply of Fishing Implements (Craft and Gear) – 50 per cent subsidy****Abstract**

Fishermen will be provided with gill nets for effective fishing.

**Budget** : Rs 4.00 lakhs

### **Background / Problem Focus**

To provide gillnets to the fishermen at 50 per cent subsidy.

### **Project Rationale**

To enhance fish production through capture fisheries.

### **Project Strategy**

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

### **Project Goals**

To intervene fishing in natural water bodies.

### **Project Components**

Supply of gillnets at 50 per cent 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	:	40
<b>Total cost (40 X 0.1 )</b>	<b>:</b>	<b>4 lakhs</b>

### **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.

## 7. Setting up of Modern Fish Retail Outlet (50 per cent subsidy)

### Abstract

In Dindigul 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 Dindigul.

**Budget** : Rs. 15.00 lakhs

### Background / Problem Focus

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

### Project Rationale

To avoid fish spoilage & loss of quality & revenue.

### Project Strategy

The facility will be established at Dindigul.

### Project Goals

To avoid loss of revenue this outlet will be established.

### Project Cost and Financing

S. No.	Particulars	Amount (in lakhs)
1	Installation of Modern fish stall including water facilities wall, drainage, grill gates and floor etc.	Rs.3.00 lakhs
2	Fish storage cabin	Rs. 1.00 lakh
3	Glass Display Cabinet	Rs.1.00 lakh
<b>Total</b>		<b>Rs. 5.00 lakhs</b>

### Implementation Chart of the Project

TNFDC will be established and monitored the retail outlet.

### Reporting

The progress report will be reported periodically.

## **MEETING PROCEEDINGS**

The District Level Meeting for preparation of District Agriculture Plan of Dindigul District was held on 06.0.2008. District Collector, Officials of the Line Departments, Panchayat Union Chairmen, Panchayat Presidents and progressive farmers of the district attended the meeting. With a small introduction about NADP, various interventions recommended by the line departments were presented to the participants.

Later, the project rationale and distribution of the project components to various blocks and the probable period of implementation of these projects in the district were explained by the representatives of various line departments namely, Agriculture, Horticulture, Seed certification, Animal Husbandry, Fisheries, Agricultural Engineering, and PWD.

Following that, feedback was obtained from the participants regarding the project components to be added or deleted. The participants expressed the need for more number of tarpaulins and the introduction of new machinery for taking up various inter - cultural activities and harvesting of maize crop was felt as the need of the hour.

Finally, the draft report was prepared including the changes suggested by the participants with the approval of the District Collector and the line department officials.

**National Agricultural Development Programme –  
Sensitization Workshop Meeting held on 06.06.2008 at Dindigul District**



**Discussion with the District Collector**



**TNAU Scientist explains about the District Agriculture Plan**



**Line Department Officials explain about the Action Plan**



**Line Department Official explains about the Action Plan**



**Farmers participation in the meeting**



**Participants of the meeting**



**Farmer raising queries about the projects**