NATIONAL AGRICULTURE DEVELOPMENT PROGRAMME (NADP)

DISTRICT AGRICULTURE PLAN

PERAMBALUR

CENTRE FOR AGRICULTURAL AND RURAL DEVELOPMENT STUDIES
TAMIL NADU AGRICULTURAL UNIVERSITY
COIMBATORE -641 003

NATIONAL AGRICULTURE DEVELOPMENT PROGRAMME (NADP / RKVY)

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2017

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EXECUTIVE SUMMARY

Composite Perambalur district came into existence after trifurcation of Tiruchirappalli district with effect from 30.09.1995. The district was again bifurcated as Perambalur and Ariyalur district in 19.11.2007. The Perambalur district with Headquarters at Perambalur consists of Revenue Division of Perambalur and Four Taluk of Perambalur, Kunnam, Veppanthattai and Alathur. It is a centrally located inland district spread over an area of 1, 75,735 ha. The district lies between 10°53'to11°31' Northern latitude and 78°38' to 79°31' Eastern longitude. The soil is predominantly black and red loamy soil. The climate is tropical and district falls under the category of medium and heavy rainfall region with average rainfall of 927.0 mm (Mean of 110 years). Most of the rain is received through North East Monsoon (October to early December). Millets, Paddy, Cotton, Sugarcane and Pulses are the major agriculture crops. Onion (*Aggregatum*), Tapioca, Turmeric, Vegetable crops are the major horticultural crops cultivated in the district.

Cotton is an important commercial fibre crop normally cultivated in an area of 29000 to 30000 ha in Perambalur district. The crop is grown as a rainfed crop in black cotton soil (winter rainfed- August – September to January – February). The productivity of cotton is low (1,200kg/ha) due to erratic rainfall during the cropping season, poor infiltration rate, labour scarcity for carrying out intercultural operation, monocropping resulted in depletion of soil macro and micro nutrients, occurrence of sucking pest during the entire crop growth period. Hence adoption of integrated management technologies to enhance the rainfed cotton productivity is essential.

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

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

The District Plan at a Glance

The district plan covers a range of activities involving crop-specific as well as non-crop-specific developmental activities. Allied sectors such as horticulture, agricultural engineering, agricultural marketing and animal husbandry are proposed to be developed under the NADP with investments on popularization of latest technologies, strengthening extension support, farmers training as well as through strengthening the required infrastructure facilities needed to energize the growth in agricultural and rural sectors. The Agricultural Engineering Department and the Water Resources Organization Public Work Department have submitted proposals to conserve water and improve water conveyance efficiency under various river and tank irrigation projects in the district. The abstract of the activities and the proposed budgetary requirements are givenin the following table.

Budget Abstract for Perambalur District

(₹. In lakhs)

Sl. No	Sectors	2017-18	2018-19	2019-20	2020-21	2021-22	Total
1	Agriculture	3639.61	2911.30	3091.77	2349.94	2524.99	14517.58
2	Agricultural Research (TNAU)	0.00	0.00	0.00	0.00	0.00	0.00
3	Horticulture	2066.14	2110.84	2236.25	2327.75	2410.03	11151.00
4	Agricultural Engineering	432.40	446.80	343.65	341.15	343.15	1907.15
5	Agricultural Marketing	179.30	513.00	201.10	240.40	91.60	1225.40
6	Seed Certification & Organic Certification	5.00	13.36	0.00	0.00	0.00	18.36
7	Animal Husbandry	456.85	661.85	422.85	372.85	171.60	2086.00
8	Animal Science Research (TANVAS)	0.00	0.00	0.00	0.00	0.00	0.00
9	Dairy Development	2197.00	14853.00	6465.00	2612.00	2319.00	28448.00
10	Fisheries	21.00	14.00	7.60	5.00	0.00	47.60
11	Fisheries Research (TNFU)	64.76	63.16	13.16	0.26	0.26	141.60
12	Water Resource Organization (PWD)	520.00	500.00	250.00	350.00	200.00	1820.00
13	Civil Supplies & Co-Operation	129.80	187.00	111.85	115.25	124.50	668.40
	Total	**9711.86**	**22274.31**	**13143.23**	**8714.60**	**8185.13**	**62031.09**

The total budget requirement for the implementation of various interventions by different departments is **₹. 62031.09 lakhs**. The major departments like Agriculture, Horticulture, Agricultural Engineering, Animal Husbandry and Dairy development shared more than 80 per cent of the total budget.

CHAPTER I

INTRODUCTION

Rashtriya Krishi Vikas Yojana (RKVY) vis-à-vis National Agricultural Development Program (NADP) was initiated in 2007 as an umbrella scheme for ensuring holistic development of agriculture and allied sectors by allowing states to choose their own agriculture and allied sector development activities. The scheme has come a long way since its inception and has been implemented across two plan periods i.e. during 11th and 12th plan periods. Based on feedback received from States, experiences garnered and inputs provided by various stakeholders, schemes eligible for funding under RKVY have undergone modifications to enhance efficiency, efficacy and inclusiveness of the program.

The overall objectives of RKVY (NADP) are as follows:

Objectives of RKVY

a. To strengthen the farmers' efforts through creation of required pre and post-harvest agri-infrastructure that increases access to quality inputs, storage, market facilities etc. and enables farmers to make informed choices.
b. To provide autonomy, flexibility to States to plan and execute schemes as per local/ farmers' needs.
c. To promote value chain addition linked production models that will help farmers increase their income as well as encourage production/productivity
d. To mitigate risk of farmers with focus on additional income generation activities - like integrated farming, mushroom cultivation, bee keeping, aromatic plant cultivation, floriculture etc.
e. To attend national priorities through several sub-schemes.
f. To empower youth through skill development, innovation and agri-entrepreneurship based agribusiness models that attract them to agriculture.

District and State Agriculture Plans

As per the recent guidelines issued by the Government of India under Remunerative Approaches for Agriculture and Allied sector Rejuvenation (RAFTAAR), the new projects proposed and are to be implemented under NADP/RKVY must be in consonant with District Agricultural Plans (DAP), State Agriculture Plans (SAP) and State Agriculture Infrastructure Development Program (SAIDP) prepared by the

individual States. Thus, such action-oriented plan documents will remain as a cornerstone of planning and implementation of the NADP/RKVY and other schemes.

The overall guidelines suggested by the Government of India to be followed for preparation of District Agriculture Plans (DAP) and State Agricultural under NADP/RKVY are as follows:

- The several states have already prepared Comprehensive District and State Agriculture plans for 12th Plan period. These plans have to be revised and updated appropriately for implementing RKVY-RAFTAAR during 14th Finance Commission keeping in view modification proposed for the plan period and emerging needs of the State.
- The District Agriculture Plan (DAP) shall not be however the usual aggregation of existing schemes but would aim at moving towards projecting the requirements for development of Agriculture and allied sectors of the district and for the State a whole.
- These plans would also present the vision for Agriculture and allied sectors within the overall development perspective of the district and further State as a whole.
- The District Agriculture Plans and the State level plan would also present their financial requirements in addition to sources of financing the agriculture development plans in a comprehensive way.
- The District Agriculture Plan will include animal husbandry and fishery development, minor irrigation projects, rural development works, agricultural marketing schemes and etc. keeping in view the natural resources and technological possibilities in each district.
- District level potential linked credit plans (PLP) already prepared by the National Bank for Agriculture and Rural Development (NABARD) and Strategic Research and Extension Plans (SREP) developed under the Agricultural Technology Management Agency (ATMA) etc. may be referred for revision of DAPs.
- It should also be ensured that the strategies for convergences with other programs as well as the role assigned to the Panchayati Raj Institutions (PRIs) are appropriately incorporated in DAPs.

Therefore, each State will also have a comprehensive State Agricultural Plan (SAP) for the remaining period of the Fourteenth Finance Commission by

integrating the District Plans. SAPs will invariably have to indicate resources that can flow from the State to the districts.

The Process

Revision and updating of SAPs could be a two-way process. Firstly, State Nodal Department (or Agriculture Department) could get DAPs revised in the first instance to ensure that priorities of the State are properly covered in the district plans. States should, at this stage of scrutiny, ensure that requirements of districts and priorities of the State are appropriately captured and aligned in DAPs. Alternately, State Nodal Agency could communicate to the districts in the first instance, the State's priorities that ought to be reflected in the respective district plans and the districts may incorporate these in their updated district plans. Preparation/revision of the DAPs need to be an elaborate, exhaustive and iterative process and care has to be taken by the State Nodal department and District Agriculture Department in ensuring that these plans cover the entire gamut of agriculture and allied sectors.

Revision and Updation of DAP and SAP in Tamil Nadu

Tamil Nadu State continued to receive Central Assistance under NADP/RKVY. The Government of Tamil Nadu also prepared District and State Agriculture Plans covering 11th and 12th Plan periods. Tamil Nadu State has 32 districts including Chennai. The District Agriculture Plan were prepared for 31 districts excluding Chennai during 12th plan period. Thus, the current exercise is the continuation of the 12th plan period: which also covered two years of the 14th Finance Commission period (2015-16 and 2016-17) and also keeping in view of the changing scenario in the development and emerging needs of the State and to be eligible for fresh grants from Government of India. These plans were further revised and updated appropriately for implementing RKVY during the periods from 2017-18 to 2021-22.

Methodology followed

The revision of the District Agricultural Plan of Perambalur district, was done by gathering the secondary data about district and block with respect to rainfall, land use pattern, demography, livestock, machinery, infrastructure so far created etc. In addition, the constraints in production and marketing of agricultural and livestock produce, crop/animal production and gaps between expected and actual yield and the reasons for such gaps were also discussed among the various stakeholders and incorporated in this plan document. Besides, in consultation with the line department officials and based on the data received from respective districts, a detailed year-wise action plan i.e. from 2017-18 to 2021-22 with physical and financial implications were presented.

CHAPTER II

PROFILE OF THE DISTRICT

2.1. District at a glance

2.2 Area, Location and Geographical Location

2.3 Administrative Structure of District

2.4 Demographic Profile

2.4.1 Literacy Rate

2.5 Topography and Soil

2.6 Rainfall

2.7 Land Utilization Pattern

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2.10 Production and Protection facilities

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2.13 Animal Husbandry and Dairy Development

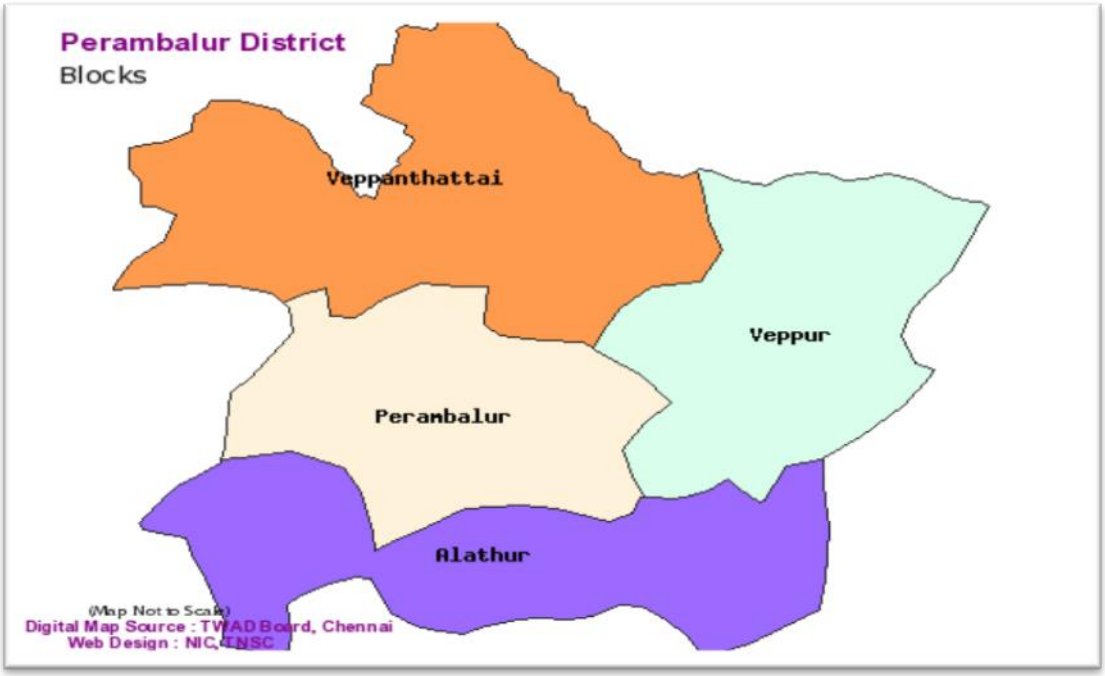
2.14 Financial Institutions

2.15 Source Cooperative societies

2.1. District at a glance

Perambalur district came into existence after trifurcation of Tiruchirappalli district with effect from 30.09.1995. The total geographical area of the district is 1, 75,739 ha, and net sown area and gross cropped area were 93581 ha and 96333 ha, respectively. The net area under irrigation was 27,349 ha. The major soil type of this district is deep black soil which covers 38.9 percentage of the total area. The major irrigation sources are open wells and tube wells. The Government passed orders that Perambalur district to be reorganized and bifurcated again into two districts Perambalur and Ariyalur, out of which Perambalur district with headquarter at Perambalur which consists of one Revenue Division of Perambalur and formed with four Taluks (Fig.1) and Table 2.1.

Fig 1. Map showing Perambalur district location



2.2 Area, Location and Geography

The population density of the district is 323 people per Sq. Km. Perambalur District is centrally located in Tamil Nadu and is 267 K.M away, in southern direction, from Chennai. The district spreads between 10.54' and 11.30' degree Northern latitude and 78.40' and 79.30' degree of the Eastern longitude. It is an inland district without coastal line. The district has Vellar River in the North and it has well marked natural divisions. The Pachamalai hill situated on the Northern boundary of Perambalur is the most important hill in the district.

2.3 Administrative Structure of District

Table 2.1. Profile of Perambalur District

Sl.No.	Contents	Numbers	Villages
1	Total No. of Taluks	4	Perambalur, Veppanthattai, Kunnam and Alathur
2	Total No. of Panchayat Blocks	4	Perambalur, Veppanthattai, Alathur and Veppur
3	Total No. of Revenue Villages	152	Perambalur (27), Veppanthattai (39),Kunnam (47) and Alathur (39)
4	Total No. of Village Panchayats	121	Perambalur (20), Veppanthattai (29), Alathur (39) and Veppur (33)
5	Total No. of Town Panchayats	4	Poolambady, Arumbavoor, Kurumbalur, Lebbaikudykadu

Source: Statistical Hand Book, Department of Economics and Statistics, Perambalur district.

The district, for administrative purpose, has been divided into four taluks (Perambalur, Veppanthattai, Kunnam and Alathur).The District comprising 152 revenue villages, 121 Village Panchayats and four Town Panchayats. The agricultural institutions are very limited in number, since it is a newly formed district. There is one office of Joint Director of Agriculture, four offices of the Assistant Director of Agriculture, 18 agricultural depots, four regulated markets and five agro- service centers catering to the needs of the farming community in the district besides, Department of Agricultural Engineering, Horticulture, Co-operative and Water Resources Organization.

The District boundaries of Perambalur are

- East Ariyalur District
- West Tiruchirappalli& Salem Districts
- North Cuddalore & Salem District
- South Tiruchirappali &Thanjavur Districts

2.4 Demographic Profile

Out of the total Perambalur population as per 2011 census, 17.19 per cent lived in urban regions of the district. In total 97,163 people lived in urban areas, of which males were 48,231 and females were 48,932. Sex ratio in urban region of Perambalur district was 1015 as per 2011 census data. Similarly child sex ratio in Perambalur district was 941 in 2011 census. Child population (0-6) in urban region was 10,199 of which males and females were 5,255 and 4,944 respectively. The child population of Perambalur district constitutes 10.50 percent of total urban population. Average literacy rate in Perambalur district as per census 2011 was 85.22 per cent of which males and females were 90.53

per cent and 80.03 per cent literates respectively. In actual number 74,107 people were literate in urban region of which males and females were 38,905 and 35,202 respectively.

As per 2011 census, 82.81 percent population of Perambalur district lived in rural areas of villages. The total Perambalur district population living in rural areas was 468,060 of which males and females were 233,926 and 234,134 respectively. In rural areas of Perambalur district, sex ratio was 1001 females per 1000 males. The child sex ratio of Perambalur district was 908 girls per 1000 boys. Child population in the age 0-6 was 49,368 in rural areas of which males were 25,880 and females were 23,488. The child population comprised 10.55 percent of total rural population of Perambalur district. Literacy rate in rural areas of Perambalur district was 72.06 percent as per 2011 census data. Gender wise, male and female literacy stood at 81.28 and 62.95 percent respectively. In total, 301,716 people were literate of which males and females were 169,106 and 132,610 respectively.

In census enumeration, data regarding child under 0-6 age were also collected for all districts including Perambalur. There were 59,567 children under age of 0-6 against 60,478 of 2001 census. Of 59,567 children, male and female were 31,135 and 28,432 respectively. Child Sex Ratio as per census 2011 was 913 compared to 937 of census 2001. In 2011, Children under 0-6 formed 10.54 percent of Perambalur District compared to 12.25 percent of 2001. There was net change of -1.71 percent in this compared to previous census of India. All details regarding Perambalur District have been processed by us after receiving from Govt. of India. We are not responsible for errors to population census details of Perambalur District.

Table 2.2 District Population Details

Particulars	Rural	Urban
Population (%)	82.81	17.19
Total Population	468,060	97,163
Male Population	233,926	48,231
Female Population	234,134	48,932
Sex Ratio	1001	1015
Child Sex Ratio (0-6)	908	941
Child Population (0-6)	49,368	10,199
Male Child,(0-6)	25,880	5,255
Female Child,(0-6)	23,488	4,944
Child Percentage (0-6), (%)	10.55	10.50

Particulars	Rural	Urban
Male Child Percentage (%)	11.06	10.90
Female Child Percentage (%)	10.03	10.10
Literates	301,716	74,107
Male Literates	169,106	38,905
Female Literates	132,610	35,202
Average Literacy (%)	72.06	85.22
Male Literacy (%)	81.28	90.53
Female Literacy (%)	62.95	80.03

Source: Statistical Hand Book, Department of Economics and Statistics, Perambalur district (2014-15).

2.4.1 Literacy Rate

Average literacy rate of Perambalur in 2011 was 72.06 compared to 85.22 of 2001. If things are looked out at gender wise, male and female literacy were 81.28 per cent and 62.95 per cent respectively. For 2001 census, same figures stood at 90.53 and 80.03 in Perambalur District.

Sex Ratio

With regards to Sex Ratio in Perambalur, it stood at 1001 per 1000 male compared to 2001 census figure of 1015. The average national sex ratio in India was 940 as per latest reports of, Census 2011, Directorate. In 2011 census, child sex ratio was 913 girls per 1000 boys compared to figure of 937 girls per 1000 boys of 2001 census data.

2.5 Topography and Soil

The soil is predominantly black and red soil. Among the four blocks of Perambalur district, part of Alathur block is covered by red loam soil and the remaining three blocks *viz.,*Perambalur, Veppanthattai and Veppur and another part of Alathur is covered by black soil. Both black and red loam soils are categorized into fine textured soils, fine loamy soils, coarse loamy open textured soils, and sandy soils with open texture. The soil in the district is best suited for raising dry crops. The district has a high means of temperature and low degree of humidity. The details of soil types of Perambalur district are given in Table 2.3.

Table 2.3 Details of Soil types of Perambalur District

Sl.No	Major Soils	Area (in ha)	Percentage
1	Deep Black Soil	637.40	38.90
2	Deep Red Soil	49.40	3.02
3	Moderately deep Black Soil	75.50	4.30
4	Moderately deep Red Soil	64.71	3.70
5	Moderately Shallow Red Soil	149.70	8.60
6	Shallow Red Soil	215.31	12.31
7	Very Deep Black Soil	357.80	20.40
8	Very Shallow Black Soil	37.10	2.11
9	Very Shallow Red Soil	48.80	2.81

Source: Department of Agriculture Government of Tamil Nadu-Perambalur.

2.6 Rainfall

Perambalur district comprises of three major agro climatic sub zones. The major part (Perambalur and Alathur blocks) comes under Cauvery delta zone and the other two zones are Northeastern zone (Veppur block) and Northwestern zone (Veppanthattai block). It is a dry, sub humid coastal plain of Tamil Nadu. The annual normal rainfall in the district is about 857.6 mm. Out of the total rainfall, 40.33 per cent is received during North east monsoon (October to December) and 32.99 per cent during South west monsoon (June to September) and the remaining 26.68 per cent during winter and summer months. Month wise normal rainfall in Perambalur district during the year 2014-15 is given in Table 2.4 and Fig. 2.

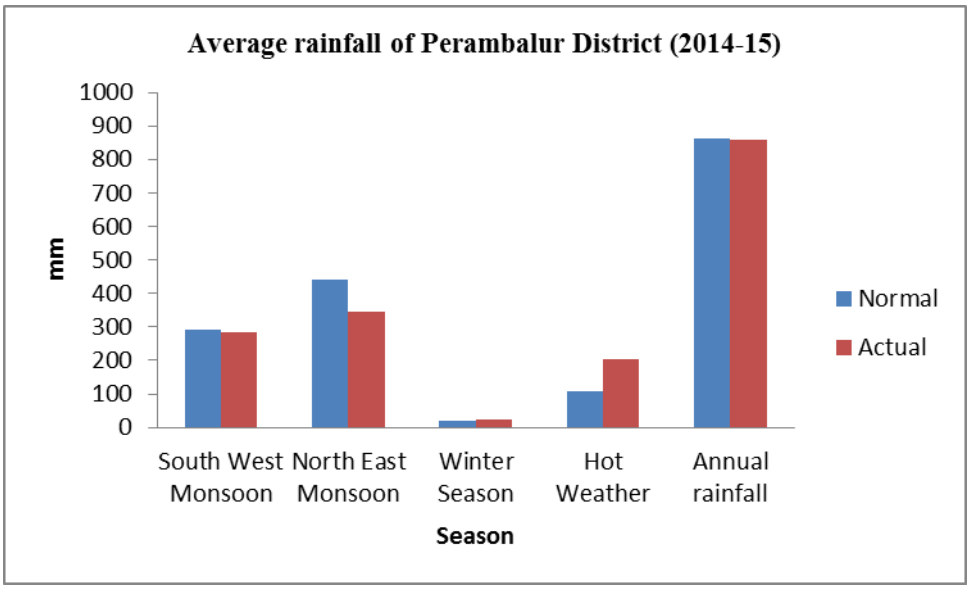
Table 2.4 Month wise normal rainfall in Perambalur District (2014-15)

(in mm)

	Season / Month	2014-2015	
		Actual	Normal
I.	**South West Monsoon**		
	June	23.6	32.6
	July	47.5	50.3
	August	167	81.9
	September	44.8	125.9
	Total	**282.9 (32.99)**	**290.7**
II.	**North East Monsoon**		
	October	241.7	191
	November	58.9	155
	December	45.3	94.9
	Total	**345.9 (40.33)**	**440.9**
III.	**Winter Season**		
	January	22.3	13.1
	February	1	8.3
	Total	**23.3 (2.72)**	**21.4**

	Season / Month	2014-2015	
		Actual	Normal
IV.	**Hot Weather**		
	March	0	12.7
	April	123.3	30.8
	May	82.2	65.4
	Total	**205.5 (23.96)**	**108.9**
	Annual rainfall	**857.6**	**861.9**

Source: *Season and Crop Report (2014-15), Department of Economics and Statistics, Government of Tamil Nadu. Figures in parentheses denote percentage to total annual rainfall.*



2.7 Land Utilization Pattern

The land utilization pattern gives a picture on the total area put into different categories of uses like area under forest, agricultural uses and nonagricultural uses and the area under different classification of waste land. Through which we can assess the potential on land utilization in the study area.

Table 2.5 Land Use Pattern of Perambalur District (2014-15)

(in Hectares)

Sl.No	Particulars	2014-15	per cent
1	Geographical Area	175739	100.00
2	Forest	16281	9.26
3	Barren & Unculturable Area	2786	1.59
4	Land Put to Non-agricultural Uses	28538	16.24
5	Permanent Pastures & Other grazing lands	152	0.09

Sl.No	Particulars	2014-15	per cent
6	Misc.tree crops & groves not incl. in the net area sown	1251	0.71
7	Current Fallow	6126	3.49
8	Other Fallow	10521	5.99
9	Net area sown	105541	60.06
10	Area sown more than once	7176	4.08
11	Gross area sown	112717	64.14

Source: Statistical Hand Book, Department of Economics and Statistics, 2014-15.

It is observed from the above table, among the land classification the net sown area occupied major portion (60.06 per cent) followed by land put to non-agricultural uses (16.24 per cent), current fallow (3.49 per cent), forest area (9.26 per cent), other fallows (5.99 per cent) respectively.

2.8 Irrigation

Vellar is the important river flowing in Perambalur district and substantially benefiting agricultural activities. Vellar River originates from Salem district and flows through Perambalur and Cuddalore districts. Apart from river irrigation, rainfed tanks are scattered all over Perambalur district benefiting considerable extent of cultivated lands. Besides rivers and tanks, the other main source of irrigation is wells.

Table 2.6 Net Area of Irrigation in Perambalur District

(in Hectare)

Sl.No.	Sources of irrigation	Net Area Irrigated
1	Surface water	5055 (19.38)
2	Ground water	21029 (80.62)
	Total	**26185** **(100.00)**

Source: Statistical Hand Book, Department of Economics and Statistics, Perambalur district (2014-15).

From the Table 2.6, we came to know that the net area irrigated from the ground water resources for cultivation of crops of the Perambalur was 80.62 per cent whereas the area irrigated by surface water accounts 19.38 per cent. Source of Irrigation, gross area irrigated, net area irrigated and average area irrigated in Perambalur district are presented in Table 2.7. Open wells were the major source of irrigation, average gross and net irrigated area by open wells in the district were 25148.33 ha and 21114.67 ha respectively

followed by tube wells and tanks. Average gross area irrigated by tube wells and canals were 2882.67 ha and 2186.33 ha respectively.

Table 2.7 Irrigation by different sources and three years average

(in ha)

Sl.No.	Particulars		2012-13	2013-14	2014-15	Average
1	Tanks	Gross	2415	2000	2144	2186.33
		Net	2258	1988	2141	2129.00
2	Tube wells / Bore wells	Gross	2763	2647	3238	2882.67
		Net	2649	2378	3015	2680.67
3	Open wells	Gross	23566	24617	27262	25148.33
		Net	21684	20631	21029	21114.67

Source: Season and Crop Report 2014-15, Department of Economics and Statistics, Perambalur District.

2.9 Cropping Pattern

The cropping pattern of Perambalur district is furnished in the Table 2.8.

Table 2.8 Area under major crops in Perambalur District (2014-15)

(in hectare)

Sl.No	Particulars	Area (in ha)	Production (in tonnes)	Productivity (in kg/ha)
1	Paddy	8994	43432.03	4829
2	Maize	36809	406224.1	11036
3	Cholam	2165	3645.86	1684
4	Cumbu	100	307.6	3076
5	Ragi	7	23.415	3345
6	Total Cereals	48098	157184.3	3268
7	Bengal Gram	3	2.718	906
8	Red Gram	1463	1932.623	1321
9	Black Gram	459	412.641	899
10	Green Gram	7	5.131	733
11	Horse Gram	1	0.742	742
12	Groundnut	1451	3652.167	2517
13	Sunflower	306	455.022	1487
14	Gingelly	430	309.17	719
15	Castor	271	81.029	299

Sl.No	Particulars	Area (in ha)	Production (in tonnes)	Productivity (in kg/ha)
16	Cotton	40048	26071.25	651
17	Coconut	675	6799.95	10074
18	Sugarcane	6039	555.588	92
19	Onion	6425	48656.53	7573
20	Brinjal	80	711.68	8896
21	Bhendi	33	242.55	7350
22	Tomato	101	1461.47	14470
23	Banana	169	6879.145	40705
24	Mango	165	1062.6	6440
25	Jack Fruit	6	70.146	11691
26	Guava	24	135.648	5652
27	Chillies	189	210.924	1116
28	Coriander	86	75.766	881
29	Turmeric	761	2847.662	3742
30	Tamarind	115	284.28	2472
31	Tapioca	2067	124123.4	60050
	Total	**157547**		

Source: Statistical Hand Book, Department of Economics and Statistics, Perambalur district (2014-15).

Paddy, onion and sugarcane and mainly cultivated as irrigated crop. Other major in the district were crops were sorghum, groundnut and turmeric. Sugarcane is grown as a major commercial crop. The Perambalur Sugar Mills at Eraiyur is functioning in the district with a crushing capacity of 3000 tonnes/day.

The major crops grown in the district are Maize and Cotton, which accounts for approximately 36.5 per cent and 33.6 per cent of total cultivated area respectively. In Perambalur district, this year major sowing happened in September, due to lack of adequate rainfall in August with a negative deviation of 62 per cent, and even in September had a negative deviation of 37 per cent. Cyclone ‘Nilam’ provided some relief in October with the district receiving adequate rainfall for the month with a positive deviation of 37 per cent. The two crucial months for crop survival in the district are November and December and both have had a negative deviation of 66 per cent and 90 per cent respectively. The normal expected rainfall from June-December is 789 mm but

the district received only 500.8 mm with a negative deviation of 37 per cent. Except for October all the months shows huge negative deviations in rainfall.

Perambalur is the poorest district in the state and is the lowest ranked in per capita GDP and HDI as per State Planning Commission report. The capacity of the district to absorb this drought condition is very limited or nonexistent. The maize crop is completely lost and cotton will have productivity decline of 70-90 per cent. This will make the poor farmers debt ridden unless their input costs are compensated and their agricultural loans are restructured as and when it is due for repayment.

During flood, when there is a productivity loss of more than 50 per cent, the farmers were compensated. The situation is far worse now with the district staring at a total crop loss in maize and 80-90% decline in cotton productivity. The near total lack of rainfall in November and December has made this rain fed district to struggle. With its 82% rural population and majority of small and marginal farmers, the impact is a severe blow to the district economy. Out of the total cultivable land of 1, 28,667 ha, in the district, only 4.44 % is classified as wet land. The Taluk wise details of cultivable land are given in Table 2.9.

Table 2.9 Taluk wise details of cultivable land

(ha)

Sl.No.	Name of Taluk	Dry	Wet	Total	%of wet land
1.	Perambalur	22145.40	1029.31	23174.71	4.44
2.	Veppanthattai	40298.87	1832.19	42131.06	4.35
3.	Kunnam	32641.69	1815.67	34457.36	5.26
4.	Alathur	27862.73	1031.33	28894.06	3.57
5.	**Total**	**122948.69**	**5718.50**	**128667.19**	**4.44**

Source: JDA office, Department of Agriculture Government of Tamil Nadu- Perambalur

2.10 Production and Protection facilities

The details about facilities available for production and protection for crops were furnished in the Table 2.10. The facilities were implemented under NADP project in Perambalur district.

Table 2.10 Details of the Agricultural Institutions of Perambalur District

Sl.No.	Particulars	Numbers	Place
1	Soil testing lab	1	Perambalur
2	Mobile testing lab	1	Perambalur
3	Agri clinic centers	4	i) Kurumbalur ii) Irur iii) Puduvettakudi iv) Poolambadi
4	Automatic weather stations	4	i) Kalarampatti ii) Padalur iii) Kunnam iv) Krishnapuram
5	Seed processing unit	3	i) Poolambadi ii) Vengalam iii) Vrppanthattai
6	Bio inputs production centers	4	i) Perambalur ii) Veppanthattai iii) Veppur iv) Alathur
7	Vermi-compost production unit	152	i) Perambalur - 33 ii) Veppanthattai- 51 iii) Veppur – 35 iv) Alathur - 33
8	Sugar factories	2	i) Eraiyur ii) Udumbiam

Source: www.perambalur.tn.nic.in

2.11 Storage facilities

The details of the storage facilities are given in the Table 2.11, it shows the various types of storage structure and their places for storage of the agricultural commodities.

Table 2.11 Details of the Storage Structure in Perambalur District

S.No.	Storage Structures	Units	Places
1	Agricultural main godowns	4	Perambalur, Veppanthattai, Veppur, Alathur
2	Agricultural sub godowns	3	Ammapalayam, Valikandapuram. Kolakkanatham
3	Panchayat Union Godowns	4	Perambalur, Veppanthattai, Veppur, Alathur
4	Civil Supply Godown	3	Perambalur, Kunnam, Veppanthattai
5	Marketing committee	1	Perambalur
6	Cold Storage Unit		Perambalur, Chettikulam
7	Regulated Market	1	Perambaliur

Source:www.perambalur.tn.nic.in

For onion growers, the cold storage facility has come up in 0.80 hectare area and will benefit the farmers of about 33 villages around Chettikulam panchayat in Alathur block of Perambalur district. The regulated market in Perambalur is used for storage of commodity cotton and groundnut.

2.12 Public Distribution System

The detail of Public Distribution System of Perambalur district is given in Table 2.12. The important function of the Cooperative Department and the Cooperative institutions are running Fair Price Shops. In the Perambalur district the total of 273 Public Distribution System outlets are run by the cooperative societies. Distribution of essential commodities such as rice, sugar, and kerosene for cardholders, old age pensioners, Anthoydia Anna Yojana Scheme beneficiaries is the main function of this shops. The Public Distribution System Shops run by the cooperatives are distributing every month 3929 M.T. of rice, 375 M.T. of sugar and 819 K.L. of Kerosene in Perambalur District.

Table 2.12 Block wise details of Public Distribution System of Perambalur District

(in Numbers)

S. No.	Blocks	Part Time	Full Time	Total
1	**Perambalur**	**45**	**16**	**61**
2	**Veppanthattai**	**55**	**19**	**74**
3	**Veppur**	**50**	**31**	**81**
4	**Alathur**	**42**	**15**	**57**
	Total	**192**	**81**	**273**

Source:www.perambalur.tn.nic.in

2.13 Animal Husbandry and Dairy Development

Livestock development plays on important role in Perambalur next to Agriculture. One Regional Joint Director of Animal Husbandry Monitors the entire Animal Husbandry activities in Perambalur and Ariyalur Districts. The joint Director of AH is assisted in the field with one Asst. Director of AH who is having jurisdiction over both the districts. There are 26 Veterinary Dispensaries, one mobile Veterinary Unit and one PHC.Perambalur District each manned by one Veterinary Asst. Surgeon, One Livestock Inspector and two Animal Husbandry Assistants. In addition tothat there are 36 Veterinary Sub Centers to give first aid and Artificial Insemination. Work manned by one Livestock Inspector. The details of total livestock population are presented in Table 2.13.

Table 2.13 Livestock Population in Perambalur District

Numbers

Sl. No.	Particulars	Population
1	Cattle	137427
2	Buffaloes	1203
3	Sheep	37006
4	Goats	136020
5	Horses and ponies	34
6	Donkeys	12
7	Pigs	5145
	Total Livestock	**316847**
8	Dogs	7645
9	Rabbits	272
	Poultry	
10	Bank yard Poultry	56579
11	Farm Poultry	391984
	Total Poultry	**448563**

Source: 19th Livestock Census, 2012.

Table 2.14 Animal Husbandry Department- Block wise Fodder requirement

Sl.No.	Name of the Block	Census		For 90 Days Green Fodder Requirement (Tons)	For 90 Days Dry Fodder for Cattle (Tons)
		Cattle	Sheep / Goat		
1	Alathur	31525	63608	45222	6300
2	Perambalur	27997	29081	33475	5500
3	Veppanthattai	32742	39249	40185	6500
4	Veppur	32934	54757	49695	6500
	Total	**125198**	**186695**	**168577**	**24800**

Source: 19th Livestock Census, 2012.

It is observed from the Table 2.14, Veppur block has more cattle population hence the possibility of increasing the production of green fodder is necessary to meet the requirement for cattle.

Table 2.15 Fodder requirement for livestock in Perambalur district

Cattle	Sheep / Goat	For 90 Days Green Fodder Requirement (Tons)	For 90 Days Dry Fodder Requirement (Tons)	For 90 Days Green Fodder Availability (Tons)	For 90 Days Dry Fodder Availability(Tons)	Short fall	
						Green Fodder(Tons)	Dry Fodder (Tons)
1251	210661	170000	25000	135000	18000	35000	7000

Source: 19th Livestock Census, 2012.

2.14 Financial Institutions

Cooperative sector has taken deep roots especially in the rural banking, dairying, handlooms, housing, etc, in the district. There are 225 cooperative societies of different types functioning in this district. There are 115 Primary Agricultural Cooperative Credit Societies, 55 nationalized banks functioning in the district. The details of financial institutions of Perambalur district are furnished in Table 2.16.

Table 2.16 Financial Institutions Functioning in Perambalur District

Sl.No.	Name of Banks	Units
1.	Indian Overseas Bank Branches	14
2.	Canara Bank Branches	13
3.	State Bank of India Branches	13
4.	Bank of India Branches	5
5.	Indian Bank Branches	5
6.	Union Bank of India Branches	4
7.	Punjab National Bank Branches	1
8.	Primary Agricultural Cooperative Credit Societies	115
	Total	**170**

Source: www.perambalur.tn.nic.in

There are 80 Nationalized Banking Branches in the district viz. SBI, IOB, BOI, IB, CB, VBI, PNB and 115 Co-operative Banks are also functioning throughout the District.

Table 2.17 Distribution of Scheduled Commercial Bank Office, Aggregate Deposits and Gross Bank Credit in Perambalur District (2014-15)

Number of Banks / Offices	**64**
Credit (Rs. Crores)	**1360.70**
Debit (Rs. Crores)	**2386.40**
Critical Difference Range (%)	**175.40**

Source:www.perambalur.tn.nic.in

Table 2.18 Allocation and Achievement under Annual Credit Plan of Perambalur District (2014-15)

(Rs.in lakhs/crores)

	Farm Sector	**Non – Farm Sector (NFS)**	**Other Priority Sector (OPS)**	**Total**
Allocation	450.62	38.30	95.61	584.53
Achievement	377.65	19.40	38.19	435.24
Percentage of Achievement	84	51	40	74

Source: Season and Crop Report, Tamil Nadu (2014-15).

2.14 Financial Institutions

2.15 Source Cooperative societies

Cooperative Sector in the Perambalur District has taken deep root especially in the rural banking, Public Distribution System, dairying handlooms, housing, etc. there are 225 Cooperative Societies of different types functioning under the control of Regional Joint Registrar of Cooperative Societies in the district. The details of the societies are given the Table 2.19.

Table 2.19 Details of the Cooperative Societies in Perambalur District

Sl. No	**Types of Societies**	**Units**
1	Primary Agricultural Cooperative Bank	53
2	Primary Agricultural and Rural Development Bank	1
3	Cooperatives Marketing Society	1
4	Cooperative Stores	2
5	Cooperative Union	1
6	Cooperative Wholesale Store	1
	Total	**59**

Source: www.perambalur.tn.nic.in

Chapter III

DEVELOPMENT OF AGRICULTURAL AND ALLIED SECTOR

Before suggesting an action plan for development of agriculture and allied sectors, a brief analysis (at district level) was done in the following components:

- Assessing the trends in area, production and productivity of major crops and projection till the 12th Plan period (2015-16)
- Yield gap analysis for the major crops
- Constraints and Suggestions for the Agricultural Development

3.1 Trends in Area, Production, Productivity of Major Crops

Compound Growth Rate (CGR) is used to measure the annual rate of growth in Area, Production, and Productivity and it is expressed in percentage. The year 2014-15 was used as base year for the trend analysis.

$Y_t = ab^t e$

Logarithmic form of the above equation is

Ln Y=In a +t In b

The per cent CGR is derived using the formula

CGR (r) = [Antilog b-1]*100

Where,

Y_t = Area or Production or Yield

a = Intercept

b = Regression coefficient of t.

t = Time variable

r = Compound Growth Rate.

Table 3.1 Compound Growth Rate of Area, Production and Productivity of Major Crops Grown in Perambalur District

Crop	CGR (%)		
	Area	Production	Productivity
Paddy	-0.11338	-0.0632	0.05658
Cholam	-0.1479	-0.1392	0.01019
Cumbu	-0.2224	-0.1436	0.10135
Maize	0.54791	0.61045	0.0404
Ragi	-0.2142	-0.179	0.0448
Total Cereals	-0.0161	-0.0094	0.00679
Red gram	-0.1759	-0.1623	0.0062
Green gram	-0.1968	-0.1918	0.01641
Black gram	-0.1059	-0.1138	-0.0089
Total pulses	-0.1502	-0.1408	0.01108
Total food grains	-0.0187	-0.0058	0.01317
Chilly	-0.1647	-0.1111	0.06414
Turmeric	0.16109	0.16498	0.00335
Sugarcane	-0.0508	-0.0267	0.02545
Onion	0.06484	0.05088	-0.0131
Groundnut	-0.1891	-0.1504	0.04771
Gingelly	-0.2319	-0.1934	0.05012
Cotton	-0.0316	-0.0072	0.02518

Maize was the predominant crop grown in 18.15 per cent of the gross cropped area in Perambalur district followed by cotton (11.66 per cent), Paddy (6.39 per cent), Onion (3.88 per cent) and sugarcane (2.24 per cent) so on. These five crops accounted for more than 80.00 per cent of the gross cropped area, and need to be given focused attention for further development in the future. However, the estimated compound growth rate of various crops grown in Perambalur district would reveal that crops like Turmeric, Onion and Maize had a positive CGR. Therefore, the commercial / horticultural crops like fruits and vegetables are also to be concentrated in Perambalur district

The major crops like Maize had a positive CGR in their production and therefore, planned efforts are required to maximize the production. As far as the productivity of major

crops grown in Perambalur district had a positive CGR in their productivity and therefore, technological interventions are needed to maximize the productivity.

Table 3.2 Triennium average of Area, Production and Productivity of Major Crops Grown in Perambalur District

Sl.No.	Crop	Triennium Average ending 2014- 15		
		Area (ha)	Production (in tonnes)	Productivity (in tonnes)
1.	Paddy	8994	33495.33	4244.00
2.	Cholam	2165	3651.33	1395.33
3	Cumbu	100	406.00	2257.00
4	Maize	36809	286686.33	6874.67
5.	Ragi	7	11.00	2641.33
6.	Red gram	1463	951.33	735.00
7.	Green gram	7	4.67	534.00
8	Black gram	459	481.67	759.00
9.	Chillies	189	124.33	590.00
10.	Turmeric	761	3384.67	3370.33
11.	Sugarcane	6039	536541.67	61.33
12.	Onion	6425	48850.33	7963.33
13.	Groundnut	1451	4223.67	1717.67
14.	Gingelly	430	201.33	440.00
15.	Cotton	40048	90754.00	383.33

4. Area, Production and Productivity for Major Agricultural and Horticultural Crops

For the identified potential crops in Perambalur district, area, production and yield were projected using CGR for the years 2016-17 and 2022-23 and the results are presented below.

Table 3.3 Area, Production and Yield of Paddy in Perambalur district

Sl.No	Year	Paddy		
		Area (in ha)	Production (in tonnes)	Yield (in tonnes)
1	2008-09	12399.00	113794.00	9.17
2	2009-10	12089.00	42372.00	3.50
3	2010-11	14245.00	54714.00	3.84
4	Triennium	12911.00	70293.31	5.50
5	**CGR**	**-0.11**	**-0.06**	**0.05**

Table 3.4 Projected Area, Production and Yield of Paddy in Perambalur district (without intervention)

Sl.No	Year	Paddy		
		Area (in ha)	Production (in tonnes)	Yield (in tonnes)
1	2011-12	12629.90	51255.20	4.05
2	2012-13	11198.00	48015.00	4.28
3	2013-14	9928.37	44979.70	4.53
4	2014-15	8802.71	42136.20	4.78
5	2015-16	7804.68	39472.50	5.05
6	2016-17	6919.80	36977.21	5.34
7	2017-18	6135.25	34639.60	5.64
8	2018-19	5439.65	32449.81	5.96
9	2019-20	4822.91	30398.50	6.30
10	2020-21	4276.10	28476.80	6.65
11	2021-22	3791.28	26676.60	7.03
12	2022-23	3361.44	24990.20	7.43

The rice variety grown in Perambalur district are ADT 45and White ponni with the area of 12399 ha (2008-09), 12089 ha (2009-10) and 14245 ha (2010-11). The production of rice in Perambalur district varied from 113794 tonnes to 54714 tonnes in 2009-10 and 2010-11 respectively. Doubling the rice production in the district may require an increase in the productivity from the existing average yield of 5.50tonnes/ ha in the Triennium ending 2010-11 to 7.43 tonnes/ha in 2022-23.

Thus, it is inferred that doubling the production in rice in Perambalur district could not be fully achieved even after bridging the existing yield gap in paddy crop with the existing allocation of area under rice.

Table 3.5 Area, Production and Productivity of Maize in Perambalur District

Sl.No	Year	Maize		
		Area (in ha)	Production (in tonnes)	Yield (in tonnes)
1	2008-09	38864	71441	1.83
2	2009-10	39046	83422	2.13
3	2010-11	32108	89070	2.77
4	Triennium	36672	81311	2.24
5	**CGR**	**0.06**	**0.17**	**0.10**

Table 3.6 Projected Area, Yield and Production of Maize in Perambalur district

Sl.No	Year	Maize		
		Area (in ha)	Production (in tonnes)	Yield (in tonnes)
1	2011-12	34329.2	104791.0	3.05
2	2012-13	34310.1	106361.0	3.10
3	2013-14	35412.7	120403.1	3.4
4	2014-15	36287.4	134263.3	3.7
5	2015-16	39415.8	149780.3	3.8
6	2016-17	39200.2	152880.7	3.9
7	2017-18	40126.8	160507.2	4.0
8	2018-19	40340.7	181533.1	4.5
9	2019-20	40392.5	192523.8	4.7
10	2020-21	41110.2	192528.9	4.8
11	2021-22	41302.6	206513.0	5.0
12	2022-23	41486.7	228176.6	5.5

The maize variety grown in Perambalur district are NK -6240 and CP-818 with an average area of 36672 ha in the triennium ending 2010-11. The production of maize in Perambalur district varied from 71441 tonnes to 89070 tonnes in 2008-09 and 2010-11 respectively. Doubling the maize production in the district may require an increase in the productivity from the existing average yield of 1.83 tonnes/ ha in 2008-09 to5.5tonnes/ha in 2022-23.

Table 3.7 Area, Production and Productivity of Onion in Perambalur district

Sl.No	Year	Onion		
		Area (in ha)	Production (in tonnes)	Yield (in tonnes)
1	2008-09	8319.0	63762.1	7.66
2	2009-10	7403.0	66985.2	9.04
3	2010-11	7795.0	43521.1	5.58
4	Trienium	7839.0	58089.3	7.43
5	**CGR**	**0.06**	**0.05**	**-0.01**

Table 3.8 Projected Area, Yield and Production of Onion in Perambalur district

Sl.No	Year	Onion		
		Area (in ha)	Production (in tonnes)	Yield (in tonnes)
1	2011-12	8300.44	45735.50	5.51
2	2012-13	8838.65	48062.80	5.43
3	2013-14	9411.76	50508.40	5.36
4	2014-15	10022.00	53078.51	5.29
5	2015-16	10671.90	55779.40	5.22
6	2016-17	11363.90	58617.71	5.15
7	2017-18	12100.70	61600.40	5.09
8	2018-19	12885.30	64734.91	5.02
9	2019-20	13720.80	68028.90	4.95
10	2020-21	14610.50	71490.50	4.89
11	2021-22	15557.90	75128.20	4.82
12	2022-23	16566.70	78951.10	4.76

Onion is an important crop cultivated in the Perambalur district. The average area under onion cultivation was 7838 ha in the recent part. The Onion variety grown in Perambalur district is a local cultivar. The production of onion in Perambalur district varied from 7403 tonnes in 2009-10 and 2010-11 respectively. Doubling the onion production in the district may require an increase in the productivity from the existing average yield.

Thus, it is inferred that doubling the Onion production in Perambalur district could be achieved by bridging the existing yield gap in Onion crop and with the projected area under onion.

Table 3.9 Area, Production and Productivity of Cotton in Perambalur district

Sl.No	Year	Cotton		
		Area (in ha)	Production (in tonnes)	Yield (in tonnes)
1	2008-09	24243.0	35178.0	1.45
2	2009-10	19231.1	43903.0	2.28
3	2010-11	27263.0	42145.0	1.54
4	Trienium	23579.1	40408.7	1.75
5	**CGR**	**-0.031**	**-0.007**	**0.025**

Table 3.10 Projected Area, Yield and Production of Cotton in Perambalur district

Sl.No	Year	Cotton		
		Area (in ha)	Production (in tonnes)	Yield (in tonnes)
1	2011-12	26402.0	41841.8	1.58
2	2012-13	25568.3	41540.7	1.62
3	2013-14	24760.9	41241.8	1.66
4	2014-15	23978.9	40945.1	1.70
5	2015-16	23221.7	40650.5	1.75
6	2016-17	22488.4	40358.1	1.79
7	2017-18	21778.2	40067.7	1.83
8	2018-19	21090.4	39779.4	1.88
9	2019-20	20424.4	39493.2	1.93
10	2020-21	19779.4	39209.0	1.98
11	2021-22	19154.8	38926.9	2.03
12	2022-23	18549.9	38646.9	2.08

Cotton crop is one of the predominant crop in Perambalur district. The Cotton variety grown in Perambalur district are RCH -2 and RCH-20with the average area of 23579 ha in the triennium ending 2010-11 The production of Cotton in Perambalur district varied from 43903 tonnes to 42145 tonnes in 2009-10 and 2010-11 respectively. Increasing the Cotton production in the district may require an increase in the productivity from the existing average yield of 1.45 tonnes/ ha in 2008-09 to 2.08 tonnes/ha in 2022-23.

Thus, it is inferred that increasing the cotton production in Perambalur district could be achieved by concentrating both on area and yield.

Table 3.11 Area, Production and Productivity of Sugarcane in Perambalur district

Sl.No	Year	Sugarcane		
		Area (in ha)	Production (in tonnes)	Yield (in tonnes)
1	2008-09	3688.00	452805.00	122.07
2	2009-10	4594.00	435266.00	94.74
3	2010-11	5316.00	567404.00	106.73
4	Trienium	4532.67	485158.00	108.05
5	**CGR**	**-0.05**	**-0.02**	**0.02**

Table 3.12 Projected Area, Yield and Production of Sugarcane in Perambalur district

Sugarcane				
Sl.No	**Year**	**Area (in ha)**	**Production (in tonnes)**	**Yield (in tonnes)**
1	2011-12	5045.69	552259.00	109.45
2	2012-13	4789.13	537517.10	112.23
3	2013-14	4545.62	523170.00	115.09
4	2014-15	4314.48	509205.00	118.02
5	2015-16	4095.10	495613.01	121.02
6	2016-17	3886.88	482384.02	124.10
7	2017-18	3689.24	469508.00	127.26
8	2018-19	3501.65	456975.00	130.50
9	2019-20	3323.60	444778.00	133.82
10	2020-21	3154.60	432905.01	137.23
11	2021-22	2994.20	421350.00	140.72
12	2022-23	2841.95	410103.01	144.30

The Sugarcane variety grown in Perambalur district is CO 86032**.** The average area under Sugarcane in Perambalur district was 4532 ha.The production of Sugarcane in Perambalur district varied from 435266 tonnes to 567404 tonnes in 2009-10 and 2010-11 respectively. The sugarcane area is likely to decline in the near future.it is thus inferred that increasing the production in Sugarcane in Perambalur district could be achieved by increasing the yield in Sugarcane crop with the expected decline in the area under sugarcane.

As could be seen from above Tables, that area and production and productivity of the selected crops like cotton, paddy and sugarcane have been projected to decline in 2022-23 owing to their negative annual compound growth rates. The crops like Maize and Onion have been projected to increase due to its positive growth rate. The crops like paddy and maize are important staple food crops; sugarcane provides raw material to sugar mill and it is important - high revenue yielding commercial crop to the farmers. In view of all these reasons, planned efforts are essential to sustain their current area in maize, cotton and sugarcane. Also, their productions need to be increased by way of enhancing their productivities.

3.2 Variety wise Yield Gap Analysis

In order to raise the productivities of the selected crops, information regarding ruling varieties, their average yield, potential yield, progressive farmer’s yield etc., were

collected from the office of the Joint Director of Agriculture and Horticulture, Perambalur. From this information, yield gaps were analyzed and it is given in Table 3.13. Yield Gap is the difference between the progressive farmer's yield and average farm yield which explains the gap due to soil and climatic factors, crop management factors, technologies available, cultivation practices etc.

Table 3.13 Yield Gap of the identified potential crops in Perambalur District

(kgs/ha)

Crop	Variety	ART / Potential yield (A)	Crop cutting yield / progressive farmer's yield (B)	Average farm yield (C)	Yield gap (I)	Yield gap (II)	Yield gap (III)
					(A-B)	(B-C)	(A-C)
Paddy	ADT-45	6100	9880	4080	3780	5800	2020
	ADT-39	6000	9125	4650	3125	4475	1350
	CO-43	6400	7720	4100	1320	3620	2300
	White Ponni	8200	14640	4090	6440	10550	4110
Sugar-cane	CO-86032	175000	130000	115800	45000	14200	59200
Onion	Local variety	11600	8300	8100	3300	200	3500
Maize	NK6240	7100	7500	6980	400	520	120
	CP -818	6800	7700	6300	900	1400	500
Cotton	RCH2	1920	2700	1300	-780	1400	620
	RCH20	1080	1900	1750	-820	150	-670

Source: JDA office, Perambalur

3.3 Constraints and Suggestions for the Agricultural Development in Perambalur District

CROP: MAIZE

- For rain fed crops - moisture sequence in 110 days
  a. NK 6240 Variety
     i. Good color
     ii. Good Grains weight
     iii. Size & shapes are very good
     iv. Shoots will be greenish at the time of maturation of cob (Harvest).
     v. Plants are used as green fodder for cattle
     vi. It is single crossing hybrid

- TNAU- recommended spacing - 45 x 30 cm in maize -1 plant/hill
- Farmers adoption - 60 x 30 spacing- - 2 plants/hill
- Increasing - no of plants and crop yield

CROP: COTTON

- Perambalur district- 100% cotton area covered under Bt cotton only
- Bt cotton are pest and disease resistance
- 90% of Bt cotton (Bt gene expression) - 110 days
- Bt cotton resistance to boll worms only
- Bt cotton resistance to all Lepidoptera pests and some diseases
- Bt cotton – harvest- 2-4 picking
- Non Bt cotton more than 8 pickings are required
- Drought tolerant & Borer resistance variety may be developed
- Vertical growth is giving good yield than horizontal growth of plants, eg. Kanak and Malika variety
- Normal spacing - 120 x 120cm
- Paired row system - (60 x 60)*120*(60 x 60)
  - No of plants are increased
  - Bolls are uniform size in paired row system
  - Increased Flowers set & same time
- Two plants per hill – leading to dense canopy and more pests, flower and boll drops.
- Problems in Bt cotton shifting to 2Bt cotton
- Flower shedding (flowers dropping is high during heavy rain fall or sudden climatic changes)
- Para wilt disease (physiological disorder) -major problem
- Boll shedding also occurring at the time of rain fall
- Needed drought tolerant varieties
- Reddening of leaf (physiological disorder) due to magnesium deficiency
- Foliar Spraying of water soluble magnesium sulphate control reddening of leaf
- Harvesting
- Labour problem for picking of Cotton. So, farmers need machine harvester
- Weeding implements exclusively for Cotton.

CROP: PADDY

- Knowledge on SRI techniques are not popular at farmers level
- Farmers did not use transplanter-due to heavy clay soil- over depth of planting
- Line planting is laborious
- Cost of the paddy transplanter is high
- Farmers are ready to use green manures before paddy cultivation
- Green manure seeds are not available in the market
- CO-43 variety susceptible to fall smut/Lakshmi disease

- Farmers required CO-43 based resistance variety
- BPT (white ponni) was susceptible to blast disease
- Farmer's need blast resistance in BPT based variety
- MSP may be fixed based on BCR ratio

CROP: ONION

- Seed onion variety- Nursery –raised bed technology may be introduced
- More varieties & hybrids are needed in onion crop
- Training may be given to farmers on onion seed production
- Seeds may be exchanged among the farmers
- Seed based onion cultivation is giving more yield equal in size, good colour
- Research may be undertaken for longevity storage duration
- Because of storage difficulties the farmers are preferring bulb as seed material in onion crop
- Basal application of super + Gypsum will give good yield and increase the longevity of storage
- Ridges and furrow systems will increase yield
- Nitrogen fertilizer may be given in the form of Ammonium Sulphate (ZnSO4)
- Pest and disease incidence
    - blight
    - thrips
    - cut worms
- Resistant variety may be developed for pest &diseases
- Irrigation –sprinkler ,drip, trickle irrigation is suitable for onion crop

CROP: SUGARCANE

- Harvesting is a major problem
- Machine harvester is heavy weight so the soil will be hardened
- Machine harvest not suitable for ratoon crop
- Canes are cut into small pieces in machine harvester-sent to factory immediately
- Sugarcane harvester may harvest the cane in full size (don't cut into small pieces)
- A full-fledged system/ implement may be developed to alternate the manual harvesting of cane
- Suitable technique / technology may be developed on sub surface drip irrigation in Sugarcane
- Research may be done on recycling techniques of Sugar cane trashes

3.4 AGRICULTURE -BLOCK WISE – PROBLEMS/ INTERVENTIONS

PERAMBALUR BLOCK

Sl. No.	Crop	Problems/Constraints	Technological interventions
1.	Cotton	Unsustainability in cotton yield and revenue loss- Erratic rainfall, Sucking Pest incidence	i. Integrated rainfed cotton productivity improvement programme. ii. Establishing Government ginning industry
2.	Maize	Low net income due to high labour cost, selling price and procurement by private trader.	i. Mechanized maize cultivation ii. Value addition – Maize based industries
3.	Paddy	Yield reduction and high cost of cultivation	i. Adoption of mechanized transplanting ii. Selection of pest and diseases tolerant high yielding varieties iii. Soil health management

ALATHUR BLOCK

Sl. No.	Crop	Problems/Constraints	Technological interventions
1.	Onion (*Aggregatum*)	Yield variation and revenue loss – Non adoption of improved technologies and fluctuation in market price	i. Improved management technologies. High yielding variety, Drip fertigation and IPM, IDM adoption ii. Infrastructure development for marketing and value addition
2.	Vegetable crops	Non availability of quality hybrid vegetable seeds and lack of facilities for pandal vegetable crops	i. Providing vegetable seed vending machines at block levels ii. Infrastructure for pandal vegetable crops iii. High quality seedling production and supply.

VEPPANTHATTAI BLOCK

Sl. No.	Crop	Problems/Constraints	Technological interventions
1.	Tapioca, Cotton and Sugarcane	Outbreak of mealy bug, Bollworms and Borer	i. Establishing predator and parasitoid production centre at district headquarters. ii. Awareness on Integrated Pest Management through training programme
2.	Turmeric	Yield gap in rhizome productivity	i. Cultivation of high yielding turmeric by planting portray seedlings

VEPPUR BLOCK

Sl. No.	Crop	Problems/Constraints	Technological interventions
1	Paddy	Yield reduction due to delayed planting (Labour scarcity), water stagnation and low soil fertility	i. Transplanter suitable for small land holding ii. Adoption of laser leveling before planting iii. Integrated nutrient management practices
2.	Employment	70% of land area is rainfed Unemployment during lean period	i. Adoption of Integrated Farming System – Garden land and dry land ii. Employment of unemployed youth in repairing and maintenance of equipment and machineries, post erection management of drip systems.
3.	Small Millets	Lack of awareness on millet production technologies and facilities for value addition	i. Awareness through training on small millet production ii. Demo plots in identified areas iii. Hub for Post-harvest and value added machineries for small millets

CHAPTER - IV

DISTRICT PLAN

The various development issues, constraints and activities (interventions) planned for the development of agriculture and allied sectors have been discussed in earlier chapters. Based on the discussions the district plan in full has been briefly outlined below in this chapter. The activities planned and the associated targets and costs are presented for the development of both agricultural and allied sectors.

4.1 Agricultural Sector

The interventions proposed, the associated outlays, the physical targets, budgetary requirements, time frame for achievements in the agricultural (field crops) sector, horticultural sector, agricultural engineering sector, agricultural marketing and animal husbandry sector and fisheries sector have been discussed in this chapter. This would comprehend the activities and the achievements to be made in the five years period of twelfth plan, under NADP.

4.1.1 Enhanced rice productivity

In Perambalur district rice grown in an area of 8084 ha and the yield is around 5 tonnes/ha. Due to drought condition not much of rice varieties are cultivated in Perambalur district. The rice cultivation faces challenges across the world and India is no exception, with a reduction in area in most of the regions, fluctuation in production and productivity, stagnating yields and ever increasing input costs. The cost of cultivation of rice has consistently been increasing owing to the increased costs of seeds, fertilizers and labour. With increasing labour scarcity due to urbanization, sustaining the interest of farmers in rice cultivation has become a challenge. Thus, there is an urgent need to produce more output with a drop of water owing to water scarcity. The System of Rice Intensification (SRI) is an innovative method comprising uncomplicated management practices that allow rice growers to attain higher productivity. SRI on the water economy, improved crop husbandry practices like use of young seedlings (14 days old), less seed rate, square planting and use of conoweeder will be helpful in improving the yield of rice. The supply of quality inputs to farmers may be ensured by the availability of quality seeds in time to farmers for increasing productivity improvement, training to farmers on seed production to ensure availability of required quantity of quality seeds of rice under Seed Village Programme, increasing Seed Replacement Rate and ensuring availability of quality fertilizers and pesticides to farmers,

promoting the usage of bio fertilizers and micro nutrients to pave way for soil health improvement and productivity enhancement and sufficient credit in time.

Project Components

1. Distribution of certified paddy seeds in all blocks
2. Promotion of SRI cultivation in rice by the major components of SRI in all blocks
3. Distribution of bio-fertilizers, zinc sulphate, herbicides, micro nutrients, gypsum and green manure seeds in all blocks
4. Distribution of Tarpaulin in Alathur, Perambalur and Veppur blocks

Budget

The budget requirement for fulfilling the various interventions is **₹. 1261.97 lakhs**. The details of budget requirement for each intervention across the blocks are shown in Table 4.1.

Expected outcome

To enhance the production and productivity of rice through adoption of improved methods in cultivation, farm machineries and the supply of inputs.

Implementing agency

The projects will be implemented by the Department of Agriculture.

Table 4.1 Budget Requirement for Rice in Perambalur District

(₹. in lakhs)

Sl. No.	Interventions	Unit	Unit Cost (in Rs.)	Blocks Covered	2017-18		2018-19		2019-20		2020-21		2021-22		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
1	Promotion of SRI	Ha	0.15	All Blocks	525	78.75	630	94.50	710	106.50	715	107.25	770	115.50	3350	502.50
2	Distribution of High Yielding Varieties	MT	0.35	All Blocks	140	49.00	157	54.95	163	57.05	165	57.75	170	59.50	795	278.25
3	Distribution of Foundation	MT	0.4	All Blocks	35	14.00	42	16.80	52	20.80	53	21.20	69	27.60	251	100.40
4	seed production - Certified class	MT	0.26	All Blocks	160	41.60	170	44.20	180	46.80	180	46.80	190	49.40	880	228.80
5	Distribution of MN mixture/ Copper Sulphate	Ha	0.01	All Blocks	130	1.30	150	1.50	160	1.60	170	1.70	180	1.80	790	7.90
6	Distribution of biofertilizer / PPFM / bioinputs / plant nutrient mobilizing bacteria	Ha	0.003	All Blocks	130	0.39	150	0.45	160	0.48	170	0.51	180	0.54	790	2.37
7	Distribution of Zinc sulphate (Soil application & foliar)	Ha	0.01	All Blocks	525	5.25	605	6.05	660	6.60	665	6.65	820	8.20	3275	32.75
8	Polyvinyl coated Tarpaulin (6m x 5m)	No	0.02	B14,B2,B4	60	1.20	75	1.50	90	1.80	105	2.10	120	2.40	450	9.00
9	Demonstration of drip irrigation	ha	1	All Blocks	20	20.00	20	20.00	20	20.00	20	20.00	20	20.00	100	100.00
	Total					**211.49**		**239.95**		**261.63**		**263.96**		**284.94**		**1261.97**

Alathur-B1, Perambalur-B2, Veppanthattai-B3, Veppur-B4

4.1.2 Enhanced millets productivity

Millets being culturally stigmatized as 'poor man's crop is grown mainly under rain fed conditions in India. In the recent years, concern for millets has been on the rise within India, however a steep fall in consumption can be presumed. The overall fall in demand is often attributed to factors like changing food habits, growing urbanization, increased incomes, and competition from other crops. This is mainly due to the strong industrial demand and the consequent stable attractive prices but this phenomenon has eroded out consumption in the area of production. In Perambalur district millets grown in an area of 45323 ha and the yield is around 1.7 tonnes for cholam, 2.2 tonnes/ ha for cumbu, 2.7 tonnes/ ha for ragi, 7.6 tonnes/ ha for maize and 1.6 tonnes/ ha for varagu. In millets maize is cultivated in most parts of Perambalur district of Tamil Nadu. To ensure production support in terms of input supply and subsidy (seed and nutrients), irrigation support, and marketing support for the millets when compared to the support enjoyed by other crops. Reach of improved methods of production technologies like high yielding varieties to millet growing farmers will increase the yield of millets by 5-10 percent.

Project components

1. Expansion of area under minor millets in all blocks
2. Seed production in all blocks
3. Demonstration of seed treatment in all blocks
4. Distribution of millet micro nutrient mixture, bio fertilizer in all blocks
5. Drip irrigation of maize in all blocks

Budget

The budget requirement for fulfilling the various interventions is **₹.1118.68 lakhs**. The details of budget requirement for each intervention across the blocks are shown in Table 4.2.

Expected outcome

There is a scope to increase the area under millets in Perambalur district. By distributing improved varieties/ hybrids of millets will certainly improve the living standard of the farmers of this tract. These measures increase the yield of millets in the district and increase the per capita availability of millets. The requirement of millets with affordable price can be met by initiating these measures.

Implementing agency

The projects will be implemented by the Department of Agriculture.

Table 4.2 Budget Requirement for Millets in Perambalur District

(₹. in lakhs)

Sl. No.	Components	Unit	Unit cost	Blocks covered	2017-18		2018-19		2019-20		2020-21		2021-22		Total Amount	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
	Millets															
1	Distribution of LPG operated Bird Scarrer	Nos.	0.1	All Blocks	4	0.40	4	0.40	4	0.40	4	0.40	4	0.40	20	2.00
2	Expansion of area under Minor Millets (Demo - supply of seed, seed treatment & MN mixture)	Ha	0.05	All Blocks	115	5.75	130	6.50	140	7.00	160	8.00	180	9.00	725	36.25
3	Seed Production	MT	0.63	All Blocks	4	2.52	4	2.52	4	2.52	4	2.52	4	2.52	20	12.60
	Maize															
4	Demonstration (Supply of seed, seed treatment & MN mixture, organic package)	Ha	0.05	All Blocks	1150	57.50	1375	68.75	1500	75.00	1600	80.00	1800	90.00	7425	371.25
5	Distribution of biofertilizers Liquid / Carrier	Ha	0.003	All Blocks	225	0.68	260	0.78	270	0.81	280	0.84	290	0.87	1325	3.98
6	Drip irrigation for maize	Ha	1	All Blocks	65	65.00	80	80.00	90	90.00	100	100.00	120	120.00	455	455.00
7	Seed Distribution Hybrid seeds for maize	MT	1.8	All Blocks	16	28.80	24	43.20	26	46.80	32	57.60	34	61.20	132	237.60
	Total					**160.65**		**202.15**		**222.53**		**249.36**		**283.99**		**1118.68**

Alathur- B1, Perambalur-B2, Veppanthattai-B3, Veppur-B4

4.1.3 Enhancing pulses productivity

Pulse crops have been an important component of agriculture since ancient times. Red gram, black gram, green gram, Bengal gram, horse gram, lentil, peas and beans, soya beans and cowpea are some of the important pulse crops grown in many parts of the country. The increase in area and production is attributed to the development of high yielding and MYMV resistant varieties suitable for cultivation in rabi season in rice fallows. Pulses fit well under different cropping systems and thus have enormous potential for the future which needs to be capitalized. In Perambalur district pulses are grown in an area of 2085.5 ha. Strategy for yield improvement of pulses includes distribution of quality seeds and use of improved varieties of pulses suitable for different farming system and development of location specific agro techniques.

Project components

1. Production and distribution of certified seeds in all blocks
2. Supply of gypsum, bio-fertilizer, rhizobium and herbicides in all blocks
3. DAP spray or pulse wonder in all blocks

Budget

The total cost of the project for five years works to ₹**.523.51** lakhs. The details of budget requirement for each intervention across the blocks are shown in Table 4.3.

Expected outcome

The timely supply of seed material of ruling varieties and distribution of machineries through Department of Agriculture at block level will facilitate the farmers to adopt high yielding varieties in turn to get higher income.

Implementing agency

The projects will be implemented by the Department of Agriculture.

Table 4.3 Budget Requirement for Pulses in Perambalur District

(₹. in lakhs)

Sl. No.	Interventions	Unit	Unit cost	Block Covered	2017-18		2018-19		2019-20		2020-21		2021-22		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
1	Purchase of breeder seeds	MT	250000	All Blocks	2	5.00	2	5.00	2	5.00	2	5.00	2	5.00	10	25.00
2	Production of Foundation/ Certified pulses seeds	MT	86000	B4,B3,B2,B1	21	18.06	24	20.64	28	24.08	32	27.52	36	30.96	141	121.26
3	Distribution of Certified Seeds	MT	100000	All Blocks	12	12.00	14	14.00	16	16.00	20	20.00	24	24.00	86	86.00
4	Distribution of Biofertilizer/ Organic packages (Rhizobium + Phosphobacteria) - Liquid / Carrier	Ha	600	All Blocks	150	0.90	160	0.96	170	1.02	180	1.08	190	1.14	850	5.10
5	Distribution of Micro Nutrients(5 kgs/ Ha)	Ha	350	All Blocks	150	0.53	160	0.56	170	0.60	180	0.63	190	0.67	850	2.98
6	DAP Spray	Ha	700	All Blocks	150	1.05	160	1.12	170	1.19	180	1.26	190	1.33	850	5.95
7	Bund Cropping	Ha	300	All Blocks	150	0.45	150	0.45	150	0.45	150	0.45	150	0.45	750	2.25
8	Line sowing	Ha	2250	All Blocks	100	2.25	120	2.70	140	3.15	160	3.60	180	4.05	700	15.75
9	Cropping system based demonstration	Ha	12500	All Blocks	300	37.50	0	0.00	0	0.00	0	0.00	0	0.00	300	37.50
10	Pure crop demonstration - Black gram and green gram	Ha	6300	All Blocks	105	6.62	120	7.56	140	8.82	160	10.08	180	11.34	705	44.42
11	Demonstration on intercropping of pulses with other crops	Ha	8300	All Blocks	375	31.13	420	34.86	440	36.52	450	37.35	450	37.35	2135	177.21
	Total					**115.58**		**87.85**		**96.83**		**106.97**		**116.29**		**523.51**

Alathur- B1, Perambalur-B2, Veppanthattai-B3, Veppur-B4

4.1.4 Enhancing oilseeds productivity

Oil seeds are the major crop in Perambalur district. Groundnut is traditionally cultivated in the district under irrigated and rainfed condition. In the district oilseeds are grown in an area of 2507.5 ha and the yield is 1.8 tonnes/ ha for groundnut, 263 kg/ ha for gingelly and 134 kg/ha for sunflower. Hence, the introduction of recently developed high yielding varieties and hybrids with improved package of practices would add profit. There is scope to improve the yield levels by the adoption of improved package of practices and irrigation support.

Project components

1. Production and distribution of certified seeds in all blocks
2. Distribution of micronutrient mixture, bio-fertilizers, liquid fertilizers, gypsum and rhizobium in all blocks
3. Combined nutrient spray in all blocks
4. Compact Block Demo (CBD) in Groundnut in all blocks

Budget

The total cost of the project for five years works to **₹.236.06 lakhs**. The details of budget requirement for each intervention across the blocks are shown in Table 4.4.

Expected outcome

The supply of good quality seeds and planting materials like micronutrients, gypsum and bio-fertilizers will enhance the production and productivity of oilseeds.

Implementing agency

The projects will be implemented by the Department of Agriculture.

Table 4.4 Budget Requirement for Oilseeds in Perambalur District

(₹. in lakhs)

Sl. No	Components	Unit	Unit Cost	Blocks Covered	2017-18		2018-19		2019-20		2020-21		2021-22		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
1	Purchase of Breeder seed	Mt	1.5	All Blocks	2	3.00	2	3.00	2	3.00	2	3.00	2	3.00	10	15.00
2	Compact Block Demonstration - Groundnut	Ha	0.2	All Blocks	43	8.60	48	9.60	50	10.00	58	11.60	61	12.20	260	52.00
3	Seed Production-Foundation seeds	Mt	0.76	All Blocks	7	5.32	7	5.32	7	5.32	10	7.60	10	7.60	41	31.16
4	Seed Production - certified seeds	Mt	0.73	All Blocks	16	11.68	16	11.68	20	14.60	22	16.06	24	17.52	98	71.54
5	Distribution of Certified seeds	Mt	0.84	All Blocks	10	8.40	10	8.40	10	8.40	13	10.92	13	10.92	56	47.04
6	Application of Gypsum to Groundnut Crop	Ha	0.02	All Blocks	90	1.44	105	1.68	125	2.00	145	2.32	165	2.64	630	10.08
7	Distribution of Biofertilizer	Ha	0.01	All Blocks	100	0.60	80	0.48	80	0.48	80	0.48	80	0.48	420	2.52
8	Distribution of Liquid Biofertilizer	Ha	0.01	All Blocks	100	0.60	80	0.48	80	0.48	80	0.48	80	0.48	420	2.52
9	Castor as Bund crop	Ha	0.01	All Blocks	40	0.24	40	0.24	40	0.24	40	0.24	40	0.24	200	1.20
10	Combined Nutrient Spray	Ha	0.02	All Blocks	40	0.60	40	0.60	40	0.60	40	0.60	40	0.60	200	3.00
	Total					**40.48**		**41.48**		**45.12**		**53.30**		**55.68**		**236.06**

Alathur- B1, Perambalur-B2, Veppanthattai-B3, Veppur-B4

4.5. Oil palm

Enhancing the productivity of Oil palm

India is the largest consumer of palm oil in the world, consuming around 17 per cent of total world consumption. India is also the largest importer of palm oil amounting to 44 per cent of world imports. Palm Oil is extracted from the pulpy portion (monocarp) of the fruit of Oil Palm. The Crude Palm Oil is deep orange red in colour and is semi solid at a temperature of 20 degree centigrade. Palm Oil contains an equal proportion of saturated and unsaturated fatty acid containing about 40 per cent oleic acid, 10 per cent linoleic acid. 44 per cent palmitic acid and 5 per cent stearic acid. The unprocessed palm oil is used for cooking in various countries. Palm Oil is a very rich source of Beta Carotene, an important source of Vitamin A and it contains Tecopherols and Tocotrienols, a natural source of Vitamin E. Vitamin A and Vitamin E contents are the highest in palm oil in comparison with any other types of oil and hence consumption of the same boosts health. By virtue of the high vitamin contents the Red Palm Oil is a nature's gift for the human beings. In view of the rich content of vitamins, palm oil can be utilized for the preparation of cosmetics as well there is a need to promote oil palm by the way of area expansion and better cultivation practices, it is equally important to focus on innovative growth strategies through National Mission on Oilseeds and Oil Palm (NMOOP) has been launched in which Mini Mission-II (MM-II) is dedicated to oil palm area expansion and productivity increases. MM-II of NMOOP and MM-III of NMOOP is being implemented in 13 States viz; Tamil Nadu, Andhra Pradesh, Assam, Arunachal Pradesh, Chhattisgarh, Gujarat, Karnataka, Kerala, Mizoram, Nagaland, Odisha, Telangana, and West Bengal.

Project components

- Oil palm area expansion programme in Veppanthattai block
- NMOOP- Mini Mission II in Veppanthattai block
- Supply of diesel pumps, construction of bore wells in Veppanthattai block
- Supply of aluminium ladder, wire mesh and oil palm cutter in Veppanthattai block

Budget

It is proposed to incur ₹.**15.89** lakhs over a period of five years with the finance facilities under the NADP and other sources.

Expected outcome

The expected outcome of the project will result in an increase in the production of oil palm for producing oil and major supply of quality raw material to the oilseed industry which will improve the income of the farmers and requirement of oilseeds.

Implementing Agency

Department of Agriculture will implement the project and report the progress to the District-level officials.

Table 4.5 Budget Requirement for Oilpalm in Perambalur District

(₹. in lakhs)

Sl. No	Components	Unit	Unit Cost	Blcoks Covered	2017-18		2018-19		2019-20		2020-21		2021-22		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
1	NMOOP -Mini Mission -II (Oilpalm)															
2	Oilpalm Area Expansion Programme	Ha	0.14	B3	15	2.10	5	0.70	5	0.70	5	0.70	5	0.70	35	4.90
3	Cultivation maintenance	Ha	0.1	B3	15	1.50	10	1.00	5	0.50	5	0.50	5	0.50	40	4.00
4	Inputs for Intercropping	Ha	0.1	B3	15	1.50	10	1.00	5	0.50	5	0.50	5	0.50	40	4.00
5	Supply of Diesel pumps	No	0.3	B3	1	0.30	1	0.30	0	0.00	0	0.00	0	0.00	2	0.60
6	Construction of Borewells	No	1	B3	1	1.00	1	1.00	0	0.00	0	0.00	0	0.00	2	2.00
7	Motorised Chisel	No	0.2	B3	1	0.20	0	0.00	0	0.00	0	0.00	0	0.00	1	0.20
8	Alumium portable ladder	No	0.06	B3	1	0.06	0	0.00	0	0.00	0	0.00	0	0.00	1	0.06
9	Wire mesh	No	0.1	B3	1	0.10	0	0.00	0	0.00	0	0.00	0	0.00	1	0.10
10	Oilpalm Cutter	No	0.03	B3	1	0.03	0	0.00	0	0.00	0	0.00	0	0.00	1	0.03
	Total					**6.79**		**4.00**		**1.70**		**1.70**		**1.70**		**15.89**

Alathur- B1, Perambalur-B2, Veppanthattai-B3, Veppur-B4

4.1.6 Enhancing cotton productivity

Cotton is one of the principal crops of India and plays a vital role in the country's economic growth by providing substantial employment and making significant contributions to export earnings. The growth and modernization of the spinning industry has led to a substantial growth in cotton consumption. Cotton is another predominant crop cultivated by the farmers of Perambalur district and grown in an area of 35,567 ha. The reduction in the area under cotton is mainly due to the increased cost of cultivation because of the high cost of labor and plant protection in the cultivation of cotton. However, adoption of improved package of practices by the farmers with the use of quality seeds, bio-fertilizers and micronutrient mixture, is the important concern for improvement of cotton yield.

Project components

1. Intercropping with pulses in all blocks
2. Distribution of micro nutrient mixture, bio-fertilzer, plant protection chemicals in all blocks
3. Trails on HDP system in cotton (all blocks)

Budget

The budget requirement for fulfilling the various interventions is ₹**.988.70** lakhs. The details of budget requirement for each intervention across the blocks are shown in Table 4.6.

Expected Outcome

The implementation of the project will result in an increase of 10 per cent in the yield and production of cotton. This will help the textile units and to supply more of raw material for their products.

Implementing agency

The projects will be implemented by the Department of Agriculture.

Table 4.6 Budget Requirement for Cotton in Perambalur District

(₹. in lakhs)

Sl. No	Components	Unit	Unit Cost	Block Covered	2017-18		2018-19		2019-20		2020-21		2021-22		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
1	Demonstration of IPT	Ha	15000	All Blocks	1325	198.75	540	81.00	555	83.25	565	84.75	575	86.25	3560	534.00
2	Distribution of biofertilizer	Ha	300	All Blocks	250	0.75	60	0.18	70	0.21	80	0.24	90	0.27	550	1.65
3	Distribution of biopesticides / Bio agents	Ha	1000	All Blocks	1600	16.00	360	3.60	360	3.60	360	3.60	360	3.60	3040	30.40
4	Distribution of MN Mixture	Ha	1000	All Blocks	500	5.00	320	3.20	340	3.40	360	3.60	380	3.80	1900	19.00
5	Distribution of PP chemicals	Ha	1000	All Blocks	1600	16.00	360	3.60	360	3.60	360	3.60	360	3.60	3040	30.40
6	Intercropping with pulses	Ha	10000	All Blocks	625	62.50	640	64.00	655	65.50	665	66.50	675	67.50	3260	326.00
7	Trials on High Density Planting system in cotton	Ha	9000	All Blocks	105	9.45	105	9.45	105	9.45	105	9.45	105	9.45	525	47.25
	Grand total					**308.45**		**165.03**		**169.01**		**171.74**		**174.47**		**988.70**

Alathur- B1, Perambalur-B2, Veppanthattai-B3, Veppur-B4

4.1.7 Enhancing sugarcane productivity

Sugarcane is one of the important cash crop and a perfect gift to mankind. The demand for sugarcane in the country is mainly for the purpose for which they are utilized in the various form for consumption. Increasing the productivity, reducing the cost of production, integrated farming, farm level processing, proper value addition, product diversification and byproduct utilization coupled with effective marketing strategies and market promotional activities can definitely make the sugarcane industry more competitive and sustainable in the state of Tamil Nadu. Sugarcane provides raw material to sugar mill and it is important - high revenue yielding commercial crop to the farmers. In Perambalur district sugarcane was grown in an area of 5640 ha. There exist wide variations in the productivity of sugarcane in Perambalur district. In this district, the yield levels are considerably lower. The low yield per hectare in most of the areas in the district needs the application of science - based production technologies. In view of all these reasons, planned efforts are essential to sustain their current area sugarcane. Also, their productions need to be increased by way of enhancing their productivities.

Project components

1. Distribution of micro nutrient mixture and gypsum in all blocks
2. Drip irrigation and micro irrigation through sprinklers or rain gun in all blocks
3. Sustainable sugarcane initiative (establishment of shade net, distribution of single bud seedling, trash mulching)

Budget

The budget requirement for fulfilling the various interventions is ₹**.540.84** lakhs. The details of budget requirement for each intervention across the blocks are shown in Table 4.7.

Expected outcome

The implementation of the project will increase the yield of crop by the adoption of advanced crop management strategies. The timely supply of inputs will increase the production and productivity of sugarcane.

Implementing agency

The projects will be implemented by the Department of Agriculture.

Table 4.7 Budget Requirement for Sugarcane in Perambalur District

(₹. in lakhs)

Sl. No	Components	Unit	Unit cost	Blocks covered	2017-18		2018-19		2019-20		2020-21		2021-22		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
1	Disribution of Gypsum (500 Kg/Ha)	Ha	0.02	All blocks	250	5.00	250	5.00	260	5.20	260	5.20	270	5.40	1290	25.80
2	Microirrigation - Drip (1.2x0.6)	ha	1.24	All blocks	40	49.60	48	59.52	48	59.52	60	74.40	60	74.40	256	317.44
	Sustainable Sugarcane Initiative (SSI)					0.00		0.00		0.00		0.00		0.00		
3	A. Establishment of Shadenet	Nos	1.5	All blocks	29	43.50	3	4.50	3	4.50	0	0.00	0	0.00	35	52.50
4	B.Distribution of Single Bud Seedling	Ha	0.225	All blocks	340	76.50	50	11.25	30	6.75	0	0.00	0	0.00	420	94.50
5	Trash Mulching	Ha	0.04	All blocks	225	9.00	250	10.00	260	10.40	260	10.40	270	10.80	1265	50.60
	Grand Total					**183.60**		**90.27**		**86.37**		**90.00**		**90.60**		**540.84**

Alathur- B1, Perambalur-B2, Veppanthattai-B3, Veppur-B4

4.1.8 Enhancing coconut productivity

Coconut is produced in almost all the districts of Tamil Nadu. In Perambalur district coconut grown in an area of 695 ha. Though there was significant improvement in area expansion and coconut production, but the improvement in productivity was not satisfactory. To focus on the developmental activities viz. production and distribution of seedlings (Tall or TXD), laying out demonstration plots in growers' gardens, plant protection measures, efficient irrigation system like Drip (mono-cropping), Sprinkler irrigation system (mixed cropping) and water conservation for adequate soil moisture for the coconut palms. To improve water retention in soil and reduce soil erosion, growing green manure within the coconut garden land and mulching with coconut husk, coir dust, green leaves and dried coconut leaves practices are to be followed. Adoption of timely prophylactic and curative measures to prevent crop losses and to increase production and productivity. Utilization of simple coconut palm climbing device in alternative to the conventional harvesting method facilitates the coconut farmers in harvesting of nuts

Project components

1. Production and distribution of TXD hybrids, tall seedlings in all blocks
2. Distribution of power operated rocker sprayer in all blocks
3. Distribution of tree climbers
4. Training on neera production in all blocks

Budget

The total cost of the project for five years is ₹**.118.90** lakhs. The details of budget requirement for each intervention across the blocks are shown in Table 4.8.

Expected outcome

The implementation of the project will result in a minimum increase of coconut planting. This will help the coconut growing farmers to increase the area and productivity. This will help the employment opportunity and income of the farming community.

Implementing agency

The projects will be implemented by the Department of Agriculture.

Table 4.8 Budget Requirement for Coconut in Perambalur District

(₹. in lakhs)

Sl. No	Components	Unit	Unit cost	Blocks covered	2017-18		2018-19		2019-20		2020-21		2021-22		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
1	Distribution of T x D hybrid seedlings	No	0.0006	All blocks	2200	1.32	2300	1.38	2400	1.44	2400	1.44	2600	1.56	11900	7.14
2	Distribution of Tall Seedlings	No	0.0004	All blocks	2200	0.88	2300	0.92	2400	0.96	2400	0.96	2600	1.04	11900	4.76
3	Distribution of power operated rocker sprayer	No	0.1	All blocks	4	0.40	4	0.40	4	0.40	4	0.40	4	0.40	20	2.00
4	Training on neera production	Batches	0.25	All blocks	4	1.00	4	1.00	4	1.00	4	1.00	4	1.00	20	5.00
5	corpus fund release for FPG (2000 nos.)	No	5	All blocks	20	100.00	0	0.00	0	0.00	0	0.00	0	0.00	20	100.00
	Grand Total					**103.60**		**3.70**		**3.80**		**3.80**		**4.00**		**118.90**

Alathur- B1, Perambalur-B2, Veppanthattai-B3, Veppur-B4

4.1.9 Training to farmers

Enhancing the livelihood of farmers through training

Agricultural extension is being provided at the Block level and below, under the Extension Reforms scheme being implemented. Contact them or any other functionary of the State Government in Agriculture and allied departments to get answers for the queries, information about any Programme / Scheme and appropriate technologies for the area or individual farmer. The new information that farmers gain through these training sessions makes their daily farming activities much easier. It also leads to an increase in productivity and bigger profits in the long run.

Project components

- District level trainings to farmers (all blocks)
- Training programmes to farmers with in the district (all blocks)
- Exposure visits (all blocks)

Budget

It is proposed to incur **₹.100.00** lakhs over a period of five years with the finance facilities under the NADP and other sources.

Expected outcome

The project will result in better income to farmers. They may learn many things to improve their knowledge of cultivation if they listen this programme which will improve the income of the farmers.

Implementing Agency

Department of Agriculture will implement the project and report the progress to the District-level officials.

Table 4.9 Budget requirement for Training in Perambalur District

(₹. in lakhs)

Sl. No	Components	Unit	Unit Cost	Block Covered	2017-18		2018-19		2019-20		2020-21		2021-22		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
	Training of Farmers															
1	Inter State Training of Farmers	Nos.	1.25	B3,B4,B2	3	3.75	3	3.75	3	3.75	3	3.75	3	3.75	15	18.75
2	Inter State Training of Farmers	Nos.	1.75	B4,B3,B2	3	5.25	3	5.25	3	5.25	3	5.25	3	5.25	15	26.25
3	Training of 536 Groups of Seed Village Farmers in quality Seed Production technology.	Nos.	0.1	All Blocks	4	0.40	4	0.40	4	0.40	4	0.40	4	0.40	20	2.00
4	Training of Farmers under Mission Soil Health Card	Nos.	0.15	All Blocks	4	0.60	4	0.60	4	0.60	4	0.60	4	0.60	20	3.00
5	With in the district training of Farmers	Nos.	0.1	All Blocks	4	0.40	4	0.40	4	0.40	4	0.40	4	0.40	20	2.00
6	With in the State training of Farmers	Nos.	1.2	All Blocks	4	4.80	4	4.80	4	4.80	4	4.80	4	4.80	20	24.00
	Training of Farmers With in the district															
7	Cotton	Nos.	0.1	All Blocks	4	0.40	4	0.40	4	0.40	4	0.40	4	0.40	20	2.00
8	Major & Minor Millets	Nos.	0.1	All Blocks	4	0.40	4	0.40	4	0.40	4	0.40	4	0.40	20	2.00
9	Paddy	Nos.	0.1	All Blocks	4	0.40	4	0.40	4	0.40	4	0.40	4	0.40	20	2.00
10	Pulses	Nos.	0.1	All Blocks	4	0.40	4	0.40	4	0.40	4	0.40	4	0.40	20	2.00
11	Sugarcane	Nos.	0.1	All Blocks	4	0.40	4	0.40	4	0.40	4	0.40	4	0.40	20	2.00
12	Value addition training	Nos.	0.1	All Blocks	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	Exposure visit of Farmers															
13	With in State Exposure visit	Nos.	0.4	All Blocks	4	1.60	4	1.60	4	1.60	4	1.60	4	1.60	20	8.00
14	Organisation of Kisan gosthies on Soil test based nutrient application (Campaign)	Nos.	0.15	All Blocks	4	0.60	4	0.60	4	0.60	4	0.60	4	0.60	20	3.00
15	With in the district exposure visit	Nos.	0.15	All Blocks	4	0.60	4	0.60	4	0.60	4	0.60	4	0.60	20	3.00
	TOTAL					**20.00**		**20.00**		**20.00**		**20.00**		**20.00**		**100.00**

Alathur- B1, Perambalur-B2, Veppanthattai-B3, Veppur-B4

4.1.10 Infrastructure

Facilities for Seed production

Seed is the most basic input in agriculture. Therefore, the sustained supply of the quality seeds will continue to be a key factor for augmenting agricultural growth. The seed processing is a vital part of the seed production activities and the State Government has accorded high priority. In view of above, efforts have to be taken with the objective of production of quality seeds of agricultural crops through scientific methods andadopting appropriate processing techniques through establishment and modernization of State seed processing plants.

After harvesting, cleaning, drying, processing, and packaging, the representative samples of seed lot are required to be taken and sent to the laboratory for quality testing. From the test results, genetic, physical, physiological, and health qualities of seeds are determined. Different countries have set their own standards to find out these qualities in the seed lot. The National Seed Board, for instance, has approved maximum amount of moisture content, minimum germination potential, and minimum physical purity in foundation, certified and truthfully labeled seeds of different crops as basic seed standards. The test results must conform the approved seed standards to send the seeds in the market for commercial transaction.

Establishment of Laboratories

Quality control is the process of checking the quality of the material against the standard set by the organizations and if the material does not match with the standards, then suchmaterial is said to be substandard. Quality control laboratories are being established by the Government with an intention to supply quality inputs viz., seed, fertilizers andpesticide and services like soil testing to the farmers. To have effective quality control of inputs, quality inspectors are to be appointed.

The Agricultural Research - NABL Accreditation lab, Organic Fertilizer Testing laboratory, Bio-Fertilizer Quality Control Laboratory, Pesticide Residual Laboratory and laboratory for leaf analysis for selective nutrient application, Soil Testing Laboratory and Fertilizer Control Laboratory, Strengthening of Mobile Soil Testing Laboratory for Ensuring Soil Health were proposed.

The major interventions are

1. Construction of sub-AEC in all blocks
2. Construction of dunnage in all blocks
3. Electronic platform balance and Moisture meter in all blocks
4. Construction of seed rack, tarpaulin in all blocks

Budget

It is proposed to incur **₹.647.25 lakhs** over a period of five years with the finance facilities under the NADP and other sources.

Expected outcome

The project will result in better income to farmers. They may learn many things to improve their knowledge of cultivation if they listen this programme which will improve the income of the farmers.

Implementing Agency

Department of Agriculture will implement the project and report the progress to the District-level officials.

Table. 4.10 Budget requirement for Infrastructure

(₹. in Lakhs)

Sl. No.	Components	Unit	Unit Cost (in Rs.)	Block Covered	2017-18		2018-19		2019-20		2020-21		2021-22		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
1	Construction of Sub-Agricultural Extension Centre (498 Nos.)	Nos.	3000000	All Blocks	2	60.00	0	0.00	0	0.00	0	0.00	0	0.00	2	60.00
2	Strengthening of Soil Testing Laboratory	Nos.	6000000	All Blocks	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
3	Dunnage	Nos.	7500	All Blocks	47	3.53	0	0.00	0	0.00	55	4.13	40	3.00	142	10.65
4	Moisture meter	Nos.	25000	All Blocks	4	1.00	0	0.00	0	0.00	0	0.00	0	0.00	4	1.00
5	Bag closure	Nos.	10000	All Blocks	4	0.40	0	0.00	0	0.00	0	0.00	0	0.00	4	0.40
6	Electronic platform balance	Nos.	150000	All Blocks	4	6.00	0	0.00	0	0.00	0	0.00	0	0.00	4	6.00
7	Seed rack	Nos.	30000	All Blocks	4	1.20	0	0.00	0	0.00	0	0.00	0	0.00	4	1.20
8	Tarpaulin	Nos.	25000		4	1.00	0	0.00	0	0.00	0	0.00	4	1.00	8	2.00
9	Office Furnishings and other amenities	Nos.	200000	All Blocks	4	8.00	0	0.00	0	0.00	0	0.00	4	8.00	8	16.00
10	Strengthening of training institute / nursery / FTC / KVK	Nos.	50000000	All Blocks	1	500.00	0	0.00	0	0.00	0	0.00	0	0.00	1	500.00
11	Infrastructure for empowerment of coconut nurseries	Nos.	5000000	All Blocks	0	0.00	0	0.00	1	50.00	0	0.00	0	0.00	1	50.00
	Grand total					**581.13**		**0.00**		**50.00**		**4.13**		**12.00**		**647.25**

Alathur- B1, Perambalur-B2, Veppanthattai-B3, Veppur-B4

4.1.11 Soil Health Management

It has been observed that the average productivity of major crops in Tamil Nadu is only about 60 percent of the potential yield. The reason may be due to decline in organic matter content of the soil of the State leading to low soil fertility. The availability of organic manures to farmers has become scanty and costly. The importance of FYM/Green manuring in maintaining the organic matter status of the soil has to be educated to the farmers. The total production of bio-fertilizers has to be stepped up to meet the growing demand. Similarly, crop based micronutrient mixtures need to be promoted. Soil amendments *viz.,* gypsum and lime have to be provided at a subsidized rate as a reclamation measure for the cultivable acid and alkali soils. Besides, efficient earthworm cultures should be provided for vermicompost unit by providing subsidy for establishment of vermicompost units with training in vermicompost.

1. Project Component:

- Establishment of permanent and HDPE vermicompost units in all blocks
- Strengthening of soil survey and land use organization units
- Distribution of green manuring, composting and farm waste in all blocks
- Composting of farm waste through pluerotus (production and distribution of kits) in all blocks except Alathur block

2. Budget:

Enhancing soil health by distributing enriched farm yard manure, micro-nutrient mixture, gypsum, bio-fertilizers, *etc.* is essential to maximize profitability. The overall budget to undertake the various interventions in Perambalur district is **₹.202.24** lakhs.

3. Expected Outcome:

Healthy soils are the foundation for profitable, productive and environmentally sound agricultural systems. In an agricultural context, it refers to the ability of the soil to sustain agricultural productivity and protect environmental resources. The proposed soil health management practices will improve soil health by increasing productivity and profitability immediately and in the future.

4. Implementing Agency:

The projects will be implemented by the Department of Agriculture

Table 4.11 Budget requirement for Soil health management

(₹. in Lakhs)

Sl. No	Components	Unit	Unit Cost	Block Covered	2017-18		2018-19		2019-20		2020-21		2021-22		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
	Soil Health Management															
1	Permanent Vermi compost units	Cluster Nos.	50000	All Blocks	40	20.00	48	24.00	48	24.00	56	28.00	60	30.00	252	126.00
2	HDPE Vermi compost units	Kit Nos	12000	All Blocks	40	4.80	48	5.76	48	5.76	56	6.72	60	7.20	252	30.24
3	Green Manuring	Nos	4000	All Blocks	200	8.00	220	8.80	240	9.60	240	9.60	240	9.60	1140	45.60
4	Composting of Farm Waste Through Pluerotus (Production and Distribution of Kits)	MT	200	B2,B3,B4	40	0.08	40	0.08	40	0.08	40	0.08	40	0.08	200	0.40
	Total					**32.88**		**38.64**		**39.44**		**44.40**		**46.88**		**202.24**

Alathur- B1, Perambalur-B2, Veppanthattai-B3, Veppur-B4

4.1.12 Rainfed Area Development

Rainfed areas account for nearly 57 per cent of the agricultural land in India. Rainfed areas if managed properly have the potential to contribute a larger share in the food grain production. These high potential rainfed areas provide us with opportunities for faster agricultural growth compared to irrigated areas that have reached a plateau In-fact the potential is such that there is more opportunity for faster agricultural growth here than in irrigated areas. With proper management, rainfed areas have the potential of contributing a larger share to food grain production. Increasing agricultural productivity of rainfed areas in a sustainable manner by adopting appropriate farming system based approaches through Restoration of confidence in rainfed agriculture by creating sustained employment opportunities through improved on-farm technologies and cultivation practices Enhancement of farmer's income and livelihood support for reduction of poverty in rainfed areas.

Project components

- Milch Animal (1 no) + 1 ha cropping system with inter crop & border plantation like castor/sesbania etc. in all blocks
- Promotion of farmers club for sustainable dryland agriculture in all blocks

Budget

It is proposed to incur **₹.4302.75** lakhs over a period of five years with the finance facilities under the NADP and other sources.

Expected outcome

The expected outcome of the project will result in an increase in the production of the rainfed crops which will improve the income of the farmers

Implementing Agency

Department of Agriculture will implement the project and report the progress to the District-level officials.

Table 4.12 Budget requirement for Rainfed area development (RAD)

(₹. in Lakhs)

Sl. No	Components	Unit	Unit cost	Blocks covered	2017-18		2018-19		2019-20		2020-21		2021-22		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
1	Milch Animal (1 no) + 1 ha cropping farming system (Cropping system with inter crop & border plantation like castor/sesbania etc.) @ Rs.27500/ as subsidy per Unit	Ha	0.55	All Blocks	525	288.75	625	343.75	660	363.00	680	374.00	700	385.00	3190	1754.50
2	Promotion of Farmers club for Sustainable Dryland Agriculture	Cluster	84.9415	All Blocks	10	849.42	10	849.42	10	849.42	0	0.00	0	0.00	30	2548.25
	Grand Total					**1138.17**		**1193.17**		**1212.42**		**374.00**		**385.00**		**4302.75**

Alathur- B1, Perambalur-B2, Veppanthattai-B3, Veppur-B4

4.1.13 Integrated Pest Management (IPM)

Integrated Pest Management also known as integrated pest control is a broad based approach that integrates practices for economic control of pests. IPM aims to suppress pest populations below the economic injury level. IPM used in agriculture, horticulture, forestry, human habitations, preventive conservation and general pest control, including structural pest management. The principle is on control not eradication. IPM holds that wiping out an entire pest population is often impossible, and the attempt can be expensive and unsafe. IPM programmes first work to establish acceptable pest levels, called action thresholds, and apply controls if those thresholds are crossed.

The IPM process starts with monitoring, which includes inspection and identification, followed by the establishment of economic injury levels. Integrated pest management employ a variety of actions including cultural controls, including physical barriers, biological controls, including adding and conserving natural predators and enemies to the pest and finally chemical controls or pesticides.

Farmers Field Schools (FFS) is group based learning process that has been used by a governments to promote Integrated Pest Management (IPM). The FFS is a form of adult education, which evolved from the concept that farmers learn optimally from field observation and experimentation. It was developed to help farmers tailor their IPM practices to diverse and dynamic ecological conditions.

Interventions

1. Farmers Field Schools (FFS) and Field days in all blocks
2. Integrated Pest Management Villages in all blocks
3. IPM School in all blocks

Budget

It is proposed to incur **₹.36.00** lakhs over a period of five years with the finance facilities under the NADP and other sources.

Expected outcome

The expected outcome of the project will result in an increase in the production of the rainfed crops which will improve the income of the farmers

Implementing Agency

Department of Agriculture will implement the project and report the progress to the District-level officials.

Table 4.13 Budget requirement for Integrated Pest Management (IPM)

(₹. in Lakhs)

Sl. No	Components	Unit	Unit Cost	Block Covered	2017-18		2018-19		2019-20		2020-21		2021-22		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
1	Farmers Field Schools (FFS)	Nos.	20000	All Blocks	4	0.80	4	0.80	4	0.80	4	0.80	4	0.80	20	4.00
2	Field days	No.	20000	All Blocks	4	0.80	4	0.80	4	0.80	4	0.80	4	0.80	20	4.00
3	Integrated Pest Management Villages	Nos.	100000	All Blocks	4	4.00	4	4.00	4	4.00	4	4.00	4	4.00	20	20.00
4	IPM School	Nos.	40000	All Blocks	4	1.60	4	1.60	4	1.60	4	1.60	4	1.60	20	8.00
	Total					**7.20**		**7.20**		**7.20**		**7.20**		**7.20**		**36.00**

Alathur- B1, Perambalur-B2, Veppanthattai-B3, Veppur-B4

4.1.14 Farm Mechanization

Agricultural mechanization is the need of the hour to meet out the growing shortage of labour workforce in Agriculture. It has been identified as one of the critical inputs for increasing production in time. The labour intensive crops need high man power requirement, which is fast depleting and posing a big challenge to crop productivity. Agricultural labour wages are increasing at an alarming rate in Tamil Nadu resulting in shifting from labour intensive to mechanization intensive techniques. The farm machinery for land preparations, land development, seeding, planting, transplanting, weeding and intercultural operations, harvesting and threshing which are predominantly used in other parts of the country / other countries are proposed for introduction in the farmers field of Perambalur district.

1. Project Component:

- Distribution of tractor, mini tractor and power tiller in all blocks
- Distribution of rotovator in all blocks
- Distribution of pump set, mobile sprinklers, rain guns and PVC Pipes to carry irrigation water from source to field in all blocks
- Solar power pump system and Solar light trap in all blocks
- Distribution of sprayers (power, hand and battery operated sprayer) in all blocks
- Distribution of tarpaulins in all blocks

2. Budget:

Agricultural mechanization programs are proposed to implement in a big way to increase the agricultural production and to popularize the agricultural machinery among the farmers of this district with a budget of **₹.4380.84** lakhs.

3. Expected Outcome:

Distribution of farm machinery / implements to farmers will increase the farm power. All the proposed agricultural machinery / implements will be put into use by the farmers. The acute agricultural labour scarcity will be reduced. The benefit of agricultural mechanization is to be extended to all categories of farmers with due consideration to small, marginal, scheduled caste, scheduled tribes and women farmers.

4. Implementing Agency:

The projects will be implemented by the Department of Agriculture

Table 4.14 Budget requirement for Farm Machineries

(₹. in Lakhs)

Sl. No	Components	Unit	Unit Cost	Blocks Covered	2017-18		2018-19		2019-20		2020-21		2021-22		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
	Farm Mechanization															
1	Solar light trap	No.	4000	All Blocks	205	8.20	40	1.60	40	1.60	40	1.60	40	1.60	365	14.60
2	Battery operated sprayer	Nos.	4000	All Blocks	185	7.40	210	8.40	220	8.80	230	9.20	240	9.60	1085	43.40
3	Power operated sprayer	Nos.	8000	All Blocks	180	14.40	190	15.20	190	15.20	200	16.00	220	17.60	980	78.40
4	Hand operated sprayer	Nos.	1500	All Blocks	40	0.60	48	0.72	52	0.78	56	0.84	60	0.90	256	3.84
5	Distribution of chaff cutter	Nos	25000	All Blocks	20	5.00	20	5.00	20	5.00	20	5.00	20	5.00	100	25.00
6	Distribution of Mini Tractor	Nos	300000	All Blocks	40	120.00	48	144.00	52	156.00	56	168.00	60	180.00	256	768.00
7	Distribution of Mobile Sprinklers	Ha	30000	All Blocks	54	16.20	64	19.20	84	25.20	104	31.20	124	37.20	430	129.00
8	Distribution of Powertiller	Nos	150000	All Blocks	40	60.00	48	72.00	52	78.00	56	84.00	60	90.00	256	384.00
9	Distribution of Pumpset	Nos	30000	All Blocks	8	2.40	8	2.40	8	2.40	8	2.40	8	2.40	40	12.00
10	Distribution of Rotavator	Nos	80000	All Blocks	90	72.00	120	96.00	120	96.00	140	112.00	160	128.00	630	504.00
11	Distribution of Tarpaulins	Nos	8000	All Blocks	150	12.00	160	12.80	160	12.80	170	13.60	180	14.40	820	65.60
12	Distribution of Tractor	Nos	600000	All Blocks	40	240.00	48	288.00	52	312.00	56	336.00	60	360.00	256	1536.00
13	PVC Pipes to carry Irrigation water from source to field	Unit	40000	All Blocks	235	94.00	260	104.00	280	112.00	320	128.00	360	144.00	1455	582.00
14	Solar power pump system	Nos	600000	All Blocks	8	47.00	8	47.00	8	47.00	8	47.00	8	47.00	40	235.00
	Total					**699.20**		**816.32**		**872.78**		**954.84**		**1037.70**		**4380.84**

Alathur- B1, Perambalur-B2, Veppanthattai-B3, Veppur-B4

4.15 Information Technology in Agriculture

Agriculture is a major sector which is vital for the survival of modern man. The produce from agriculture drives trade from one country to another, brings income for farmers, makes productive use of otherwise idle land, and brings food on the table. It is such an important part of everyone's daily life, although it may not be seen as a direct factor since the produce goes a long way before reaching the hands of everyone who benefits from it. Because of its importance to society, it's must to evolve with the times and adjust to meet the needs of modern people. By adapting and making use of IT to help improve agricultural progress, everyone benefits from the union of these sectors.

Role of IT in Agriculture

In the context of agriculture, the potential of information technology (IT) can be assessed broadly under two heads: (a) as a tool for direct contribution to agricultural productivity and (b) as an indirect tool for empowering farmers to take informed and quality decisions which will have positive impact on the way agriculture and allied activities are conducted. The indirect benefits of IT in empowering farmer are significant and remain to be exploited. The farmer urgently requires timely and reliable sources of information inputs for taking decisions. At present, the farmer depends on trickling down of decision inputs from conventional sources which are slow and unreliable. The changing environment faced by farmers makes information not merely useful, but necessary to remain competitive.

Components include input devices, output devices, processors, storage devices, software, networking devices, transmission media and other accessories in all blocks.

Budget

It is proposed to incur **₹.43.95** lakhs over a period of five years with the finance facilities under the NADP and other sources.

Expected outcome

The expected outcome of the project will result in an increase in the adoption of technologies for production of the crops which will improve the income of the farmers

Implementing Agency

Department of Agriculture will implement the project and report the progress to the District-level officials.

Table. 4.15 Budget requirement for Information Technologies (IT)

(₹. in Lakhs)

Sl. No	Components	Unit	Unit Cost	Block Covered	2017-18		2018-19		2019-20		2020-21		2021-22		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
1	Procurement of Hardware for replacement of old hardware	Nos	50000	All Blocks	4	2.00	0	0.00	0	0.00	0	0.00	4	2.00	8	4.00
2	Connectivity Charges	Nos	11000	All Blocks	4	0.44	4	0.44	4	0.44	4	0.44	4	0.44	20	2.20
3	Printer cum Scanner	Nos	20000	All Blocks	4	0.80	0	0.00	4	0.80	0	0.00	4	0.80	12	2.40
4	UPS and Electrical Accessories	Nos	35000	All Blocks	4	1.40	0	0.00	0	0.00	0	0.00	0	0.00	4	1.40
5	Xerox machine	Nos	75000	All Blocks	4	3.00	0	0.00	0	0.00	0	0.00	0	0.00	4	3.00
6	Laptop/Desktop	Nos	50000	All Blocks	10	5.00	0	0.00	0	0.00	6	3.00	0	0.00	16	8.00
7	Anti -virus software	Nos	2500	All Blocks	12	0.30	12	0.30	12	0.30	12	0.30	12	0.30	60	1.50
8	Television	Nos	100000	All Blocks	4	4.00	0	0.00	0	0.00	0	0.00	0	0.00	4	4.00
9	Colour printer	Nos	15000	All Blocks	0	0.00	0	0.00	4	0.60	0	0.00	0	0.00	4	0.60
10	**Equipments for Documentation**															
a	Handycam	Nos	30000	All Blocks	4	1.20	0	0.00	0	0.00	0	0.00	0	0.00	4	1.20
b	Camera	Nos	25000	All Blocks	20	5.00	0	0.00	0	0.00	0	0.00	0	0.00	20	5.00
c	GPS instrument	Nos	20000	All Blocks	4	0.80	4	0.80	4	0.80	4	0.80	4	0.80	20	4.00
d	Android mobile	Nos	15000	All Blocks	11	1.65	0	0.00	0	0.00	0	0.00	0	0.00	11	1.65
e	External Hard disk	Nos	5000	All Blocks	4	0.20	0	0.00	0	0.00	0	0.00	4	0.20	8	0.40
11	LCD projector	Nos	75000	All Blocks	4	3.00	0	0.00	0	0.00	0	0.00	0	0.00	4	3.00
12	Air conditioner for computer room	Nos	40000	All Blocks	4	1.60	0	0.00	0	0.00	0	0.00	0	0.00	4	1.60
	Total					**30.39**		**1.54**		**2.94**		**4.54**		**4.54**		**43.95**

Alathur- B1, Perambalur-B2, Veppanthattai-B3, Veppur-B4

Table 4.16 Budget requirement for Agriculture Sector

(₹. in Lakhs)

Sl. No	Components	2017-18	2018-19	2019-20	2020-21	2021-22	Total
1	Paddy	211.49	239.95	261.63	263.96	284.94	1261.97
2	Millets	160.65	202.15	222.53	249.36	283.99	1118.68
3	Pulses	115.58	87.85	96.83	106.97	116.29	523.51
4	Oilseeds	40.48	41.48	45.12	53.30	55.68	236.06
5	Oilpalm	6.79	4.00	1.70	1.70	1.70	15.89
6	Cotton	308.45	165.03	169.01	171.74	174.47	988.70
7	Sugarcane	183.60	90.27	86.37	90.00	90.60	540.84
8	Coconut	103.60	3.70	3.80	3.80	4.00	118.90
9	Training	20.00	20.00	20.00	20.00	20.00	100.00
10	Infrastructure	581.13	0.00	50.00	4.13	12.00	647.25
11	Soil Health Management	32.88	38.64	39.44	44.40	46.88	202.24
12	Rainfed Area Development	1138.17	1193.17	1212.42	374.00	385.00	4302.75
13	Integrated Pest Management	7.20	7.20	7.20	7.20	7.20	36.00
14	Farm Mechanization	699.20	816.32	872.78	954.84	1037.70	4380.84
15	Strengthening of State Seed Farm	0.00	0.00	0.00	0.00	0.00	0.00
16	Agriculture Information Technology	30.39	1.54	2.94	4.54	4.54	43.95
	Total	**3639.61**	**2911.30**	**3091.77**	**2349.94**	**2524.99**	**14517.58**

4.2 Horticulture Sector

4.2.1 Production Growth

I. Area expansion programme of fruit crops

By implementing the area expansion programme in Perambalur district, the area under fruits crops will be increased. Through the introduction of micro Irrigation efficient utilization of water can be achieved and also vast increase in production and productivity of Horticultural crops will be noticed. Recent introduction of protected cultivation (Poly green house, Shade net) in certain blocks of Perambalur district is getting good reception from the farmers certain farmers earn more profit in a short spell of time (3 months) by cultivating hybrid vegetables crops for export purpose under poly green house and shade net in micro irrigation system. The intervention now recommended for increasing the area and enhancing the productivity of TC banana, mango, guava, pomegranate in all blocks in Perambalur district in horticulture sector.

II. Area expansion programme of vegetable crops

In Perambalur district the major vegetable crops cultivated are small onion (Aggregatum), tomato, brinjal, bhendi, yam, snake gourd, bitter gourd, ash gourd and chillies. The productivity of the vegetable crops low due to non-availability of quality hybrid vegetable seeds and seedlings, low fertility, lack of facility for pandal vegetables. The intervention now recommended for increasing the area and enhancing the productivity of brinjal, bhendi, tomato, gourds, small onion and cucumber in all blocks in Perambalur district in horticulture sector.

III. Area expansion programme of spice crops

Among the horticultural crops cultivated in Perambalur district, spices and condiments occupies a predominant position. Coriander, Turmeric, ginger, clove, cumin, cardamom and chillies are the major spice crops cultivated in this district. Area expansion and distribution of seeds and rhizomes in spices in all blocks will increase the standard of living among spice growing farmers.

IV. Area expansion programme of flower crops

In Perambalur district there is a scope of increasing the area under flower crops like Jasminum sp, Crossandra, Marigold, Rose, Chrysanthemum, Nerium, Torenia, Tube rose, Gladioli, Dahlia, Bird of paradise, Heliconia and Tulip by introducing new hybrid verities and

also by introducing new technologies such as raising of good quality hybrid seedlings in portrays, growing flowers in poly green Houses under soil less culture and also raising flower crops. There is a potential for growing flower crops in Perambalur district by area expansion of jasmine, crossandra, marigold, rose, nerium, torenia, bulbous flowers in all blocks by increasing the income of farmers.

V. Rejuvenation/INM-IPM/Mulching/Anti bird net

To increase the production and productivity of orchards of more than 25 years old by removal of old unproductive / senile trees and replanting with fresh planting material / rejuvenating the old and senile orchards with appropriate and integrated combination of inputs, pruning / grafting techniques. It regulates the shape and growth of tree and also maximizes the productivity with quality production. Rejuvenation in all blocks reduces the pest and disease incidence which will reduce the cost of cultivation of crops and reduction in usage of chemical pesticides and fungicides.

VI. Pollination support through bee hives

Bee hives setting is an additional income giving venture and also useful in pollination. This can be included in potential blocks where there is pollen availability year round. It is achieved by setting up of bee hives and colony and honey extractor in all blocks.

VII. Organic farming in all blocks

Organic farming system primarily aims at cultivating the land and raising crops in such a way, as to keep the soil alive and in good health by use of organic wastes (crop, animal and farm wastes, aquatic wastes) and other biological materials along with beneficial microbes (biofertilizers) to release nutrients to crops for increased sustainable production in an eco friendly pollution free environment. Because of advancement in the availability of various agrochemicals and lack of awareness about the utility of these chemicals, farmers have to depend highly on agro-chemicals which cause a wide range of problems including that of environmental pollution.

VIII. Rainfed Area development in all blocks

Rainfed Area Development Programme is structured in Perambalur district with an broad objectives of; a) Increasing agricultural productivity of rainfed areas in a sustainable manner by adopting appropriate farming system based approaches; b) To minimize the adverse impact of possible crop failure due to drought, flood or un-even rainfall distribution

through diversified and composite farming system; c) Restoration of confidence in rainfed agriculture by creating sustained employment opportunities through improved on-farm technologies and cultivation practices; d) Enhancement of farmer's income and livelihood support for reduction of poverty in rainfed areas e) Convergence of relevant developmental programmes in project area for optimal utilization of resources by establishing an integrated and coordinated system involving different sectors and institutions.

4.2.2 Infrastructure and asset creation

I. Protected Cultivation

Infrastructure like protected cultivation (poly green house and shade net) and protected nursery raising, proper spacing, Fertigation and timely plant protection give higher yield than the conventional system of crop husbandry. So also with the production of flowers and hybrid vegetables especially tomato under net house structures are useful for the control of humidity, temperature pest and disease management. Based on the new introduction and high cost involved and more of small and marginal farmers we suggest to make the protected structure into small units.

II. Mushroom Production

In Perambalur, there is a huge scope for enhancing mushroom production by establishing new production units. To increase the production of mushroom there is need of good quality of compost and training on mushroom production. Therefore it is proposed to establish additional mushroom units and a compost unit in all blocks of Perambalur district for encouraging mushroom production.

III. Vermi compost Units in all blocks

It is also imperative to establish vermin compost production laboratories. Organic input like vermi compost is, now a days, in high demand by most of the farmers and house owners especially by the city dwellers.

IV. Supporting structures for horticultural crops

The allocation of area under vegetables is highly influenced by the prevailing market prices and hence the area is fluctuating year after year. The productivity of vegetables is also comparatively lower than the attainable average yield. As the area under vegetable crops is influenced by market price, the possibility of increasing the production can be increased by improving the productivity of vegetables. The major goal or objective of the project is to

increase the area and productivity of vegetables by 15 to 20 per cent in the next five years. The major intervention in this project is; permanent pandal installation to increase the vegetable production, supply of quality seedlings, fertilizer and plant protection management in vegetable crops to increase the productivity as well as the standard of living of the farming communities in all blocks.

C. Special Interventions

The special interventions involved in The Perambalur district includes, Farm deficiency correction (all blocks), Promotion of Roof top Garden/Potage garden Kit and AESA based IPM in fruits and vegetables - Pheromone trap in Perambalur block, Yellow sticky trap and Light trap. AESA is an approach, which can be gainfully employed by extension functionaries and farmers to analyze field situations with regard to pests, defenders, soil conditions, plant health, the influence of climatic factors and their inter-relationship for growing healthy crop. Such a critical analysis of the field situations will help in taking appropriate decision on management practices.

D. Post- Harvest Management in all blocks

Improper harvesting, handling, transportation and distribution of fruits and vegetables result in the significant losses which cause ultimately economic loss. The reduction of post-harvest losses reduces the dependence on imports of commodity fertilizers pesticides and other chemicals save a substantial amount of foreign exchange. It is estimated that total loss of vegetable and fruits in India due to inadequate post-harvest handling transportation of storage at less 20-25%.

E. Development of Farms, Nurseries and Parks in Veppanthattai

Nursery is a place where plants are propagated and grown to a usable size. The production of quality materials depends on the use of planting materials. If the crop originated from quality root stock or good materials, the plant yield will be increased. This can be achieved by supply of quality planting materials to the growers, since the establishment of nursery involves huge cost. The demand for the quality planting materials paved the way for establishment of small nurseries at the blocks or taluk or even village level based on the demand for the materials. The rural youths has to be self-employed to sustain their livelihood by distribution of hybrid vegetable seeds and community nursery and up grading of existing nursery.

F. Mechanization - Machineries, Equipments and Tools in all blocks

Horticultural mechanization helps in increasing production, productivity and profitability in horticulture by achieving timeliness in farm operations, bringing precision in metering and placement of inputs, reducing available input losses, increasing utilization efficiency of costly inputs (seed, chemical, fertilizer, irrigation, water etc.), reducing unit cost of produce, enhancing profitability and competitiveness in the cost of operation. It also helps in the conservation of the produce and byproducts from qualitative and quantitative damages; enables value addition and establishment of agro processing enterprises for additional income and employment generation from farm produce. It is one of the important inputs to usher in all round development of the district.

G. Water / Irrigation Management in all blocks

Irrigation Management is important since it helps to determine future irrigation expectations. Irrigation is the artificial exploitation and distribution of water at project level aiming at application of water at field level to agricultural crops in dry areas or in periods of scarce rainfall to assure or improve crop production. The goal of irrigation management is to use water in the most profitable way at sustainable production levels. For production agriculture this generally means supplementing precipitation with irrigation by means of Sprinkler and Water harvesting system for individuals.

H. Capacity building in all blocks

Building the indigenous human capacity required to support smallholders investing in horticultural enterprises is very essential. This can be done with the a) Promoting training and capacity building, b) Organizing in situ training sessions with the skilled and experienced faculties, c) Organizing e-learning programs with specific partners, d) Organizing workshops and seminars to better implicate these farmers in the horticultural sector. This is achieved by bringing the farmers to the nearby district and also outside the district through training programmes thereby creating awareness among farmers for the cultivation of horticulture crops and also in adoption of new technologies.

I. Crop Insurance and Risk Mitigating schemes in all blocks

Risk is exacerbated by a variety of factors, ranging from climate variability and change, frequent natural disasters, uncertainties in yields and prices, weak rural infrastructure, imperfect markets and lack of financial services including limited span and

design of risk mitigation instruments such as credit and insurance. Farmers face not only yield loss but also economic loss.

Budget

The total cost of the project for 5 years is estimated as ₹**.11151.00** lakhs

Implementing Agency

The projects will be implemented by the Department of Horticulture.

Table 4.17 Budget for Strengthening of Horticulture in Perambalur District

(₹. in lakhs)

Sl. No	Interventions	Unit	Unit cost	Blocks covered	2017-2018		2018-2019		2019-2020		2020-2021		2021-2022		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
A	**Production Growth**															
I	**Area expansion of fruit crops**															
1	TC Banana & TC Pineapple	Ha	1.25	All blocks	20	25.00	20	25.00	20	25.00	20	25.00	30	37.50	110	137.50
2	Banana / Hill Banana sucker & Pine apple sucker	Ha	0.875	B2,B3	15	13.13	15	13.13	15	13.13	15	13.13	20	17.50	80	70.00
3	HDP in Mango, Guava, Litchi, Pomegranate	Ha	1	All blocks	11	11.00	11	11.00	11	11.00	11	11.00	16	16.00	60	60.00
4	Area expansion fruits with traditional varieties	Ha	0.6	B1	0	0.00	0	0.00	5	3.00	5	3.00	0	0.00	10	6.00
5	Normal Planting in lime / lemons	Ha	0.6	B1,B3,B4	25	15.00	25	15.00	25	15.00	35	21.00	35	21.00	145	87.00
6	Normal Planting in Mango	Ha	0.6	B1,B2,B3	7	4.20	7	4.20	8	4.80	10	6.00	17	10.20	49	29.40
7	Normal planting in Papaya	Ha	0.6	All blocks	10	6.00	10	6.00	10	6.00	11	6.60	12	7.20	53	31.80
II	**Area expansion of vegetable crops**															
8	Brinjal	Ha	0.5	All blocks	20	10.00	20	10.00	20	10.00	20	10.00	20	10.00	100	50.00
9	Bhendi	Ha	0.5	All blocks	25	12.50	30	15.00	35	17.50	40	20.00	45	22.50	175	87.50
10	Tomato	Ha	0.5	All blocks	40	20.00	40	20.00	40	20.00	40	20.00	40	20.00	200	100.00
11	Gourds including pumpkin and tinda	Ha	0.5	All blocks	60	30.00	60	30.00	60	30.00	60	30.00	60	30.00	300	150.00
12	Small Onion	Ha	0.5	All blocks	1000	500.00	1000	500.00	1000	500.00	1100	550.00	1200	600.00	5300	2650.00
13	Annual Moringa	Ha	0.5	All blocks	5	2.50	5	2.50	5	2.50	5	2.50	5	2.50	25	12.50
14	Cucumber/gherkin	Ha	0.5	All blocks	5	2.50	5	2.50	5	2.50	5	2.50	5	2.50	25	12.50
15	Radish	Ha	0.5		2	1.00	2	1.00	2	1.00	2	1.00	2	1.00	10	5.00
16	Cultivation of hybrid Vegetables under protected structures	1000 Sq.m	1.4	B3	2	2.80	2	2.80	2	2.80	2	2.80	2	2.80	10	14.00

Sl. No	Interventions	Unit	Unit cost	Blocks covered	2017-2018		2018-2019		2019-2020		2020-2021		2021-2022		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
III	**Area expansion of Spices crops**															
17	Seed and Rhizomatic spices (Coriander, Turmeric, Ginger, Dry Chilly, Cumin, Fennel, Fenu greek, Dil, Cardamom etc.,)	Ha	0.3	All blocks	95	28.50	95	28.50	95	28.50	95	28.50	95	28.50	475	142.50
IV	**Area expansion of Flower crops**															
18	Loose flowers - Jasminum sp, Crossandra, Marigold, Rose, Chrysanthemum, Nerium, Torenia	Ha	0.4	All blocks	12	4.80	12	4.80	12	4.80	12	4.80	12	4.80	60	24.00
19	Bulbous flowers - Tube rose, Gladioli, Dahlia, Bird of paradise, Heliconia, Tulip	Ha	1.5	All blocks	17	25.50	18	27.00	18	27.00	18	27.00	19	28.50	90	135.00
V	**Rejuvenation/INM-IPM/Mulching/Anti bird net**															
20	INM/IPM for Horticultural crops	Ha	0.04	All blocks	100	4.00	100	4.00	100	4.00	100	4.00	100	4.00	500	20.00
21	Mulching	Ha	0.32	All blocks	50	16.00	50	16.00	50	16.00	60	19.20	60	19.20	270	86.40
VI	**Pollination Support through Bee Keeping**															
22	Bee hive & Colony	No	0.04	All blocks	400	16.00	400	16.00	400	16.00	500	20.00	500	20.00	2200	88.00
23	Honey Extractor	No	0.2	All blocks	40	8.00	40	8.00	40	8.00	50	10.00	50	10.00	220	44.00
VII	**Organic Farming**															
24	Organic farming and PGS certification in 50 acre cluster	1 cluster	14.95	B2	0	0.00	1	14.95	1	14.95	1	14.95	1	14.95	4	59.80
25	HDPE Vermibed	No	0.16	All blocks	16	2.56	16	2.56	20	3.20	20	3.20	20	3.20	92	14.72
VIII	**Rainfed Area development**															
26	Integrated farming system - Horticulture Based farming	Ha	0.5	All blocks	155	77.50	155	77.50	200	100.00	200	100.00	200	100.00	910	455.00
27	Green manuring	Ha	0.04	All blocks	50	2.00	50	2.00	50	2.00	50	2.00	50	2.00	250	10.00
28	Moisture stress management - Minimum irrigation gurantee by PUSA hydrogel	Ha	0.1	All blocks	500	50.00	500	50.00	500	50.00	500	50.00	500	50.00	2500	250.00

Sl. No	Interventions	Unit	Unit cost	Blocks covered	2017-2018		2018-2019		2019-2020		2020-2021		2021-2022		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
B	Infra structures and Assets creation															
I	Protected cultivation															
1	Poly Green House	1000 Sq.m	9.35	All blocks	4	37.40	4	37.40	6	56.10	6	56.10	6	56.10	26	243.10
2	Shadenet	1000 Sq.m	7.1	All blocks	6	42.60	6	42.60	7	49.70	7	49.70	7	49.70	33	234.30
II	**Mushroom production**															
3	Cottage mushroom unit	1 No.	1	All blocks	10	10.00	10	10.00	10	10.00	10	10.00	10	10.00	50	50.00
III	**Vermicompost unit**															
4	Permanent Vermicompost Unit	600 cu.ft	1	All blocks	10	10.00	10	10.00	10	10.00	15	15.00	15	15.00	60	60.00
IV	**Supporting structures for Horticulture crop production**															
5	Staking/ Trellies/ Propping	Ha	1	All blocks	10	10.00	11	11.00	15	15.00	16	16.00	20	20.00	72	72.00
6	Permanent Pandhal structure	Ha	4	All blocks	20	80.00	20	80.00	20	80.00	20	80.00	25	100.00	105	420.00
C	**Special interventions**															
1	Farm deficiency correction	Ha	0.04	All blocks	2500	100.00	3000	120.00	3000	120.00	3000	120.00	3000	120.00	14500	580.00
2	Promotion of Roof top Garden/ Potager garden Kit	No	0.005	B2	300	1.50	500	2.50	500	2.50	500	2.50	500	2.50	2300	11.50
3	Banana Bunch Sleeve	Ha	0.25	B3	10	2.50	25	6.25	0	0.00	0	0.00	0	0.00	35	8.75
4	AESA based IPM in fruits and vegetables Pheramone trap	Ha	0.04	B2	500	20.00	500	20.00	0	0.00	0	0.00	0	0.00	1000	40.00
5	AESA Based IPM in fruits and vegetables Yellow sticky trap	Ha	0.04	B2	500	20.00	500	20.00	0	0.00	0	0.00	0	0.00	1000	40.00
6	AESA Based IPM in fruits and vegetables Light trap	Ha	0.08	B2	500	40.00	500	40.00	0	0.00	0	0.00	0	0.00	1000	80.00
D	**Post Harvest Management**															
1	Pack house (9m X 6m)	1 No	4	All blocks	5	20.00	5	20.00	5	20.00	5	20.00	5	20.00	25	100.00
2	Low cost onion structure 25 mt	1 No	1.75	All blocks	192	336.00	192	336.00	237	414.75	237	414.75	237	414.75	1095	1916.25

Sl. No	Interventions	Unit	Unit cost	Blocks covered	2017-2018		2018-2019		2019-2020		2020-2021		2021-2022		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
E	**Development of Farms, Nurseries and Parks**															
1	Developmental activities in new/ exsisting state Horticultural farm, Keelapalur	No	25	B3	1	25.00	1	25.00	1	25.00	1	25.00	0	0.00	4	100.00
F	**Mechanization - Machineries, Equipments & Tools**															
1	Power tiller/Tractor/Minitractor	Nos	1	All blocks	30	30.00	30	30.00	40	40.00	40	40.00	40	40.00	180	180.00
2	Manual Sprayer-Knapsack/Foot operated Sprayer	Nos	0.12	All blocks	50	6.00	50	6.00	60	7.20	100	12.00	100	12.00	360	43.20
3	Power operated sprayer	Nos	0.05	All blocks	50	2.50	50	2.50	60	3.00	60	3.00	60	3.00	280	14.00
4	Plastic crates for vegetable & fruits handling	No of sets containing 10crates	0.075	B1,B2,B3	50	3.75	50	3.75	55	4.13	55	4.13	55	4.13	265	19.88
G	**Water / Irrigation Management**															
1	Micro Irrigation - Drip	Ha	1.12	All blocks	220	246.40	220	246.40	260	291.20	270	302.40	275	308.00	1245	1394.40
2	Rain gun	Ha	0.34	All blocks	50	17.00	50	17.00	100	34.00	100	34.00	100	34.00	400	136.00
3	Sprinkler	No	0.195	All blocks	200	39.00	200	39.00	200	39.00	200	39.00	200	39.00	1000	195.00
H	**Capacity Building**															
1	Training to farmers within the State. 2 days Rs.1000/farmer/day	No	0.02	All blocks	200	4.00	200	4.00	200	4.00	200	4.00	200	4.00	1000	20.00
2	Training to farmers outside the state. 30 farmers/Batch	No	0.105	All blocks	60	6.30	60	6.30	60	6.30	60	6.30	60	6.30	300	31.50
3	Exposure visit to farmers for 5 days. Rs.1000/farmer/day	No	0.05	All blocks	10	0.50	10	0.50	10	0.50	10	0.50	10	0.50	50	2.50
4	Exposure visit of farmers outside India	No	4	B1,B2,B3	5	20.00	5	20.00	5	20.00	5	20.00	5	20.00	25	100.00
5	Training to staff outside the state / Batch of 5 members	No	0.04	B3,B4	5	0.20	5	0.20	5	0.20	5	0.20	5	0.20	25	1.00
6	Training to staff outside India	No	6		2	12.00	2	12.00	2	12.00	2	12.00	2	12.00	10	60.00

Sl. No	Interventions	Unit	Unit cost	Blocks covered	2017-2018		2018-2019		2019-2020		2020-2021		2021-2022		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
7	District level seminar	No	2	B1,B2	2	4.00	2	4.00	2	4.00	2	4.00	2	4.00	10	20.00
8	Computerization & governance	No	1	All blocks	4	4.00	4	4.00	4	4.00	4	4.00	4	4.00	20	20.00
I	**Crop Insurance and Risk Mitigating schemes**															
1	Crop Insurance	Ha	0.025	All blocks	1000	25.00	1000	25.00	1000	25.00	1000	25.00	1000	25.00	5000	125.00
	Grand Total					**2066.14**		**2110.84**		**2236.25**		**2327.75**		**2410.03**		**11151.00**

Alathur- B1, Perambalur-B2, Veppanthattai-B3, Veppur-B4

4.3 Agricultural Engineering

Agricultural mechanization is the process whereby equipments, machineries and implements are utilized to boost agricultural and food production. It is the application of machineries, equipments and implements in the day to day farm activities to increase marginal output in food production and poverty eradication. It increases productivity of land and labour by meeting timeliness of farm operations and increase work out-put per unit time. Besides its paramount contribution to the multiple cropping and diversification of agriculture, mechanization also enables efficient utilisation of inputs such as seeds, fertilisers and irrigation water. The agricultural mechanization is the only way out to face the challenge of farm worker's shortage. Thus the ultimate objective of Agricultural Mechanization Strategies in developing countries is to help increase the welfare of farm households and create positive dynamics and opportunities for economic growth in rural areas.

Strategies:

- Promotion and strengthening of Agricultural Mechanization through training, Testing and Demonstration in order to ensure performance testing of agricultural machinery and equipment, capacity building of farmers and end users and promoting farm mechanization through demonstrations in all blocks.
- Demonstration, Training and Distribution of post-harvest Technology and Management (PHTM) to popularize the technology for primary processing, value addition, low cost scientific storage/transport and the crop by-product management through demonstrations, capacity building of farmers and end users. Provides financial assistance for establishing PHT units.
- Promotion of ownership to small and marginal farmers for various agricultural machinery and equipments such as Tractors, Tractor drawn implements, multicrop thrasher for AED, Power tillers, Power Weeder, Disc plough, Cultivator, Rotavator, Balers, Rice transplanter, in all blocks.
- Provision of suitable financial assistance to establish farm machinery banks for custom hiring at appropriate locations and crops in all blocks.
- Promotion of appropriate technologies and to set up farm machinery banks in identified villages in all blocks.
- Provision of financial assistance on per hectare basis to the beneficiaries hiring machinery/equipments from custom hiring centres in all blocks.

- Increases the tractor hire services in the farms of small and marginal farmers in all blocks.
- Strengthening of Minor irrigation for the rainfed and hard rock areas. It would establish through construction of open well, tube wells and Bore wells. Revitalisation of wells by side boring and blasting in hard rock areas.
- Promotion of agro-processing and management machinery in all blocks at community level through supply of post-harvest machinery such as self-propelled/other driven horticultural machinery (Chain saw/ wheel barrow/ Mango grader/ planter and other suitable self-propelled machineries and equipments), Manual horticultural equipments (Aluminium ladder/ Ladder, Aluminium pole, Plucker), Post-harvest equipments for grains, oil seeds and Horticultural crops (Mini Rice mill, Mini Dhall mill, Millet Mill, Oil mill with filters, Extractor, pomegranate air extractor, Custard apple pulper, Dehydration unit, Pricking Machine, Humidifier, Packing machine, power driven dehusker, thresher, Harvester, De-spiking, Deconing, Peeler, Splitter, Stripper, Boiler, Steamer, Dryer solar, Washing Machine, Grinder, Pulveriser, Polisher, Cleaner cum grader, gradient separator, Specific gravity separator) this would make sure that more value is added to farm outputs locally
- Provision of computer and is accessories, tablets, xerox machine in order to disseminate the information in rural areas of all blocks in Perambalur district
- Establishment of Agricultural Engineering Extension centres in all blocks in order to collect information related to Government subsidy on agricultural / machineries / equipment / irrigation systems etc., compilation of latest technologies related to Agricultural Engineering and Development of video cassettes library related to Processing of agricultural products, Working of important agricultural machines and equipment and Repair, maintenance and proper setting of the different agricultural Machines / and equipment

Expected outcome

Implementation of the above strategies such as supply of farm implements to carry out mechanised cultivation operations and demonstration to farmers the advantage of using Agricultural implements and machinery would increase the production and productivity. Post- Harvest Technologies to farmers would prevent loss of food grains during harvest and storage and Preserve the quality of produce in respect of perishable commodities. Disseminated technologies on renewable energies, in particular, solar energy for agricultural activities in respect of pumping with solar powered pumps, drying farm produce for enhancement of quality to fetch reasonable market price.

Budget

Agriculture continues to be the most predominant sector of this district economy, as 70 percent of the population is engaged in Agriculture and allied activities for their livelihood. Agricultural Mechanization could provide the stability in agricultural production in a sustainable manner to meet the food requirement of growing population and also to meet the raw material needs of agro based industries, thereby providing employment opportunities to the rural population**.** The overall budget requirement for implementation of above interventions is ₹**.1907.15** lakhs . The details of budget requirement for each intervention across the blocks are shown in Table 4.18.

Implementing agency

The projects will be implemented by the Department of Agricultural Engineering

Table. 4.18. Budget requirement for Agricultural Engineering

(₹. in lakhs)

Sl. No	Interventions	Unit	Unit cost	Blocks Covered	2017-18		2018-19		2019-20		2020-21		2021-22		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
1	Demonstration of Agricultural Machinery	No's/Ha	0.04	All Blocks	10	0.40	10	0.40	10	0.40	10	0.40	10	0.40	50	2.00
2	Training of farmers	No's/Ha	0.04	All Blocks	5	0.20	5	0.20	5	0.20	5	0.20	5	0.20	25	1.00
3	Demonstration of Post Harvest Technologies	No's/Ha	0.04	All Blocks	10	0.40	10	0.40	10	0.40	10	0.40	10	0.40	50	2.00
4	Financial assistance for Post Harvest Equipment	No's/Ha	4	All Blocks	1	4.00	1	4.00	1	4.00	1	4.00	1	4.00	5	20.00
5	Tractor (15-20 PTO HP)	No's/Ha	4	All Blocks	20	80.00	20	80.00	20	80.00	20	80.00	20	80.00	100	400.00
6	Tractor (40-70 PTO HP)	No's/Ha	8.5	All Blocks	10	85.00	5	42.50	5	42.50	5	42.50	5	42.50	30	255.00
7	Power Tiller (8 BHP & above)	No's/Ha	1.75	All Blocks	40	70.00	30	52.50	20	35.00	20	35.00	20	35.00	130	227.50
8	Power Weeder (engine operated below 2 BHP)	No's/Ha	0.25	All Blocks	5	1.25	5	1.25	5	1.25	5	1.25	5	1.25	25	6.25
9	Power Weeder (engine operated above 2 BHP)	No's/Ha	0.7	All Blocks	4	2.80	4	2.80	4	2.80	4	2.80	4	2.80	20	14.00
10	Disc Plow	No's/Ha	0.6	All Blocks	5	3.00	5	3.00	2	1.20	2	1.20	2	1.20	16	9.60
11	Cultivator	No's/Ha	0.3	All Blocks	4	1.20	2	0.60	2	0.60	2	0.60	2	0.60	12	3.60
12	Rotavator	No's/Ha	0.95	All Blocks	60	57.00	50	47.50	40	38.00	40	38.00	40	38.00	230	218.50
13	Zero till seed cum fertilizer drill	No's/Ha	0.7	All Blocks	10	7.00	10	7.00	5	3.50	5	3.50	5	3.50	35	24.50
14	Thresher/Multi Crop threshers	No's/Ha	4	All Blocks	2	8.00	2	8.00	2	8.00	2	8.00	2	8.00	10	40.00
15	Balers (Round)	No's/Ha	3.5	All Blocks	1	3.50	1	3.50	2	7.00	2	7.00	2	7.00	8	28.00
16	Baler (Rectangular)	No's/Ha	8	All Blocks	0	0.00	1	8.00	1	8.00	1	8.00	1	8.00	4	32.00
17	Manual sprayer: Knapsack/foot operated sprayer	No's/Ha	0.015	All Blocks	40	0.60	40	0.60	30	0.45	30	0.45	30	0.45	170	2.55
18	Powered Knapsack Sprayer/Power operated Taiwan sprayer (capacity 8-12 lts)	No's/Ha	0.06	All Blocks	40	2.40	40	2.40	30	1.80	30	1.80	30	1.80	170	10.20
19	Powered Knapsack Sprayer/Power operated Taiwan sprayer (capacity above 12-16 lts)	No's/Ha	0.08	All Blocks	5	0.40	5	0.40	5	0.40	5	0.40	5	0.40	25	2.00

Sl. No	Interventions	Unit	Unit cost	Blocks Covered	2017-18		2018-19		2019-20		2020-21		2021-22		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
20	Establishment of Farm Machinery Banks for Custom Hiring	No's/Ha	28	All Blocks	1	28.00	1	28.00	1	28.00	1	28.00	1	28.00	5	140.00
21	Promotion of Farm Mechanization in Selected Villages	No's/Ha	11.5	All Blocks	1	11.50	1	11.50	1	11.50	1	11.50	1	11.50	5	57.50
22	Purchase of Tractors for AED	No's/Ha	8	All Blocks	1	8.00	0	0.00	0	0.00	0	0.00	0	0.00	1	8.00
23	Purchase of Tractor drawn implemnets for AED	No's/Ha	0.5	All Blocks	2	1.00	2	1.00	1	0.50	1	0.50	1	0.50	7	3.50
24	Purchase of Balers for AED	No's/Ha	4.5	All Blocks	1	4.50	0	0.00	0	0.00	0	0.00	0	0.00	1	4.50
25	Purchase of Multi Crop Thresher for AED	No's/Ha	3.5	All Blocks	2	7.00	0	0.00	0	0.00	0	0.00	0	0.00	2	7.00
26	5 hp	No's/Ha	3.75	All Blocks	5	18.75	5	18.75	5	18.75	5	18.75	5	18.75	25	93.75
27	7.5 hp	No's/Ha	5.3	All Blocks	5	26.50	5	26.50	5	26.50	5	26.50	5	26.50	25	132.50
28	Computer & its accessories	No's/Ha	0.8	All Blocks	0	0.00	2	1.60	0	0.00	0	0.00	0	0.00	2	1.60
29	Tablet (Tab)	No's/Ha	0.25	All Blocks	0	0.00	0	0.00	10	2.50	0	0.00	0	0.00	10	2.50
30	Xerox machine	No's/Ha	1.5	All Blocks	0	0.00	2	3.00	0	0.00	0	0.00	0	0.00	2	3.00
31	Aluminium Ladder/ Ladder	No's/Ha	0.2	All Blocks	0	0.00	20	4.00	40	8.00	40	8.00	50	10.00	150	30.00
32	Oil mill with filter press (for all type of Horticulture / Food grain / Oil seeds crop)	No's/Ha	1.2	All Blocks	0	0.00	2	2.40	2	2.40	2	2.40	2	2.40	8	9.60
33	All types of Power driven Dehusker/ sheller/ Threshers/ Harvesters/ De-spiking/ Deconing Machine/ Peeler/ Splitter/ Stripper (for all type of Horticulture / Food grain / Oil seeds crop)	No's/Ha	1.2	All Blocks	0	0.00	5	6.00	5	6.00	5	6.00	5	6.00	20	24.00
34	All types of Boiler/ Steamer/ Dryer solar (for all type of Horticulture / Food grain / Oil seeds crop)	No's/Ha	2	All Blocks	0	0.00	2	4.00	2	4.00	2	4.00	2	4.00	8	16.00
35	Construction of Agricultural Engineering Extension centres (AEECs)	No's/Ha	75	All Blocks	0	0.00	1	75.00	0	0.00	0	0.00	0	0.00	1	75.00
	Total					**432.40**		**446.80**		**343.65**		**341.15**		**343.15**		**1907.15**

Alathur- B1, Perambalur-B2, Veppanthattai-B3, Veppur-B4

4.4 Agricultural Marketing

The Government is taking every effort to attain sustainable agricultural development by transforming agriculture into a commercial venture, by switching over to new scientific methods of cultivation so as to increase the productivity manifold. Besides, through value addition, processing and utilization of the marketing opportunities, the incremental output can be ensured. To further improve the marketing opportunities and to reduce the loss of agricultural produces, several measures have to be taken up by way of interventions like promotion of commodity groups and market information, strengthening of Uzhavar shandies and regulated markets, construction of storage godown, provision of market access and market activities, supply chain and post-harvest management, infrastructure and assets, and capacity building of farmers.

The core problem however in Agribusiness development is the general failure in coordinating the decisions of the private stakeholders *viz.,* farmers, traders and agricultural processors and service providers by the government and non-governmental sectors. In fact farmers fail to link themselves through effective producer-organizations to undertake joint decisions in production and marketing as well. Such weak linkages also due to limited access to relevant market intelligence and inadequate market infrastructure. Farmers are also poorly linked to research and extension service providers to address their specific technology and knowledge needs that would enable them into high-value production systems.

Entrepreneurs also have weak linkages with the farmers through contracts and vertical integration arrangements and are away from consumers because of absence of organized retail chains. Linkage with service providers are characterized by lack of confidence. The inadequacy in certification, quality assurance systems and inadequate infrastructure continues to limit the integration of production and international markets.

Agricultural produce are seasonal and perishable in nature. In a good season there may be a local glut, but because of insufficient transport facilities, lack of good roads and poor availability of packaging materials, the surplus cannot be taken quickly enough to the natural markets in urban areas. Moreover, the surplus often cannot be stored for sale in the off-season because of inadequate local storage facility; the farmers are often forced to market their produce at low price. Thus, the cultivars do not get a good price for their produce because of the glut, and some of it is spoiled resulting in complete loss. Currently pulses are processed manually using thirugu, ural, chakki, etc., which is laborious and time consuming. Due to

existing problems in processing of pulses and millets, their market is not profitable for the farmers growing pulses. To reduce the loss of agricultural produce which are up to 30 per cent, necessary provisions are needed to ensure remunerative price to the produce, encourage processing from the present level of 10 per cent of the total.

So, to accelerate the growth substantially, a new way of linking of Agricultural produce and marketing and promoting Agribusiness are focused. Promotion of commodity groups, farmer producer agencies, marketing organization and market linkage, encouraging of private players in marketing, value addition, crop specific supply chain management, more infrastructural facilities for processing and sensitizing the farmers for market-led agriculture by rendering crop advisory and market information are focused. Agri-business also contributes to the production of higher-value products and diversification away from the 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.

Components

- Construction of Storage godown for commodity groups in all blocks
- Construction of drying yards, Tarpaulins in all blocks
- Upgradation of rural shandies and uzhavar shandies
- Small scale animal feed industry in all blocks
- Onion shed for individual Farmers and onion peeling Machine in Alathur and Perambalur blocks
- Imparting value addition trainings to commodity group farmers in all blocks
- Exposure visit (within state & outside state) for commodity group farmers to acquire value addition technologies in all blocks.

Budget

The district plan proposes an outlay of ₹**. 1225.40 lakhs** over a period of five years for Perambalur district.

Expected Outcome

The expected impact of the intervention will be increasingly competitive agribusiness sector leading to diversification, higher-value added products and higher incomes for farmers, farm workers and entrepreneurs and reduced rural poverty. The interventions will facilitate the

development of a competitive agriculture sector, promoting diversification and contributing to the transformation of agriculture into a system producing higher value produces. The interventions will also provide higher-value for consumers, value that will be shared as distributed benefits to value chain stakeholders including farmers, entrepreneurs and workers.

Implementing Agency

The Block-level officials of the Department of Agricultural Marketing and Agri-Business will implement the programs.

Table 4.19 Budget for strengthening of Agricultural Marketing and Agri-Business in Perambalur District

(₹. in lakhs)

Sl. No	Intervention	Unit	Unit cost	Block covered	2017-18		2018-19		2019-20		2020-21		2021-22		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
	Strengthening of Uzhavar Sandhai and Regulated Market															
1	Additional Shops	Nos	0.3	B2	16	4.80	0	0.00	0	0.00	0	0.00	0	0.00	16	4.80
2	Drying Yard	Nos	5	All Blocks	16	80.00	14	70.00	14	70.00	16	80.00	12	60.00	72	360.00
3	Storage godown	Nos	15	B1	2	30.00	2	30.00	0	0.00	0	0.00	0	0.00	4	60.00
4	Administrative Office Room (Vevichle shed ,waiting hall,washing Room,Borewell with Motor, water Tank)	Nos	1	B2	1	1.00	0	0.00	0	0.00	0	0.00	0	0.00	1	1.00
	Formation of FPO / Strengthening of Existing Commodity Groups															
5	FPO	Nos	100	B4	0	0.00	0	0.00	1	100.00	0	0.00	0	0.00	1	100.00
	Provision of Market Access and Market Activities															
6	Wheing balance(300Kg)	Nos	0.5	B2	1	0.50	0	0.00	0	0.00	0	0.00	0	0.00	1	0.50
7	Plastic crates	Nos	0.03	B2	50	1.50	0	0.00	0	0.00	0	0.00	0	0.00	50	1.50
8	Tarpaulin	Nos	0.1	All Blocks	135	13.50	130	13.00	135	13.50	130	13.00	140	14.00	670	67.00
	Post Harvest Infrastructure and Machinaries															
9	Animal Feed Production Unit	Nos	50	B1	0	0.00	1	50.00	0	0.00	0	0.00	0	0.00	1	50.00
10	Maize - Combind harvester	Nos	25	B1, B4	0	0.00	4	100.00	0	0.00	4	100.00	0	0.00	8	200.00
11	Onion peeling Machine	Nos	25	B1,B2	0	0.00	8	200.00	0	0.00	0	0.00	0	0.00	8	200.00
12	onion shed for individual Farmers	Nos	1.5	B1, B2	20	30.00	20	30.00	0	0.00	20	30.00	0	0.00	60	90.00
	Capacity building Programme															
13	Exposure Visits - within state	Nos	0.75	All Blocks	12	9.00	12	9.00	12	9.00	12	9.00	12	9.00	60	45.00
14	Exposure Visits - outside state - 3 days	Nos	2	All Blocks	4	8.00	5	10.00	4	8.00	4	8.00	4	8.00	21	42.00
15	Training on Market led Extension, Agmark grading&Food safety, post harvest technology, Supply Chain Management, Grading-sorting-packing, Market linkages & Exports, Food processing and value addition at district level	Nos	0.2	All Blocks	5	1.00	5	1.00	3	0.60	2	0.40	3	0.60	18	3.60
	Total					**179.30**		**513.00**		**201.10**		**240.40**		**91.60**		**1225.40**

B1 – Alathur, B2 – Perambalur, B3 – Veppanthattai, B4 – Veppur

4.5 Seed and Organic Certification

Seed certification is a legally sanctioned system for quality control of seed multiplication and production. The immediate objective of seed certification is to supply high quality seed to farmers and other growers, which is true to identity, high in purity and germination capacity and free from certain pests and diseases. Seed quality is most important in crop production, as high quality seed is essential for good crop yields and good returns, and minimize the likelihood of crop failure. Moreover, growing consciousness of health hazards due to possible contamination of farm products from use of chemicals have immensely contributed to the revival of organic agriculture. Organic certification is a certification body for organic production which was established as a government department on 17 of May 2007. Thus the major focus of the department will be creation of new facilities for better certification by strengthening the lab facilities, infrastructure, create more awareness on quality seed and organic agriculture through capacity building, expanding communication and networking facilities in order to enhance the activities on seed and organic certification.

Project components

1. Strengthening/creation of infrastructure in laboratories and communication and networking facilities in all blocks

Expected outcome

Enhancement of communication and networking would promote the quality of seed and organic certification.

Budget

The budget requirement for fulfilling those interventions is ₹**.18.36** lakhs. The details of budget requirement for each intervention are shown in Table 4.20.

Implementing agency

The projects will be implemented by the Directorate of seed and organic certification.

Table 4.20 Budget Requirement for Seed Certification in Perambalur District

(₹. in lakhs)

Sl. No.	Interventions	Blocks Covered	Unit	Unit cost	2017-18		2018-19		2019-20		2020-21		2021-22		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
I	**Strengthening of Seed Certification lab**															
1	Blower, Conductivity meter, Dehuller/Scarifier, Dehumidifier Air Conditioner, Digital moisture meter, Dunnage, Fabricated display Racks ,Geaser, Generator, Heater,Hot air oven,Humidifier,Incubator,Induction stove,Microscope,Moisture meter,Packing machine,R. O system,Sample racks,Seed Grinder,Sieve,Thermohydro meter,Dunnage,Trolley for carriages,Working chair,Working table, Miscellaneous,	All Blocks	Nos	13.36	0	0.00	1	13.36	0	0.00	0	0.00	0	0.00	1	13.36
II	**Strengthening of communication and networking facilities**															
2	Computer accessories	All Blocks	No's	0.50	10	5.00	0	0.00	0	0.00	0	0.00	0	0.00	10	5.00
	Total					**5.00**		**13.36**		**0.00**		**0.00**		**0.00**		**18.36**

Alathur- B1, Perambalur-B2, Veppanthattai-B3, Veppur-B4

4.6 Animal Husbandry Sector

Animal Husbandry sector plays a crucial role in ensuring the welfare of rural population. A majority of farmers depend on Animal Husbandry for their livelihood. Moreover, livestock sector provides supplementary employment and sustainable source of income to many small and marginal farmers. Thus, this sector is emerging as an important sector, leveraging the rural economy. In addition, this sector provides a continuous flow of essential food products like milk, meat, eggs besides draught power, raw materials like wool and hides for industries, and manure. With increase in production of livestock products, livestock rearing is also considered as an avocation with high export potential. Distribution of livestock wealth is more egalitarian, compared to land and hence, from the equity and livelihood perspective, it is considered as an important component in poverty alleviation programmes.

I. Infrastructure and assets

Limitation on increasing the fodder area is the main reason for the shortfall of fodder supply. The fodder production has to be increased by promoting high yielding fodder varieties. Adequately providing proper infrastructure and equipment to the veterinary health care institution is necessary for the timely diagnosis and treatment of animal diseases. Further, emphasis has to be laid on optimum utilization of waste land to grow fodder. Improved infrastructure facilities will provide improved veterinary services contributing to reduction in the incidences of animal diseases thereby increasing the overall productivity of animals. The Rural Veterinary Dispensaries are either functioning from rented premises or in dilapidated buildings. Further, functioning of Veterinary Institutions in the rental buildings do not satisfy the requirement of a typical Veterinary Institution and with a restricted scope for further expansion, these are not ideal infrastructure. This necessitates strengthening the infrastructure of the veterinary institutions to offer better delivery of services and to reshape it into knowledge resource centers where best practices can be disseminated to the farmers.

The major interventions suggested are,

1. Establishment of Infrastructure facilities for Veterinary Institutions in Veppanthattai block
2. Establishment of Mobile Veterinary Units in all blocks
3. Establishment of Ambulance facility for animals in Perambalur block
4. Establishment of Mobile Disease Diagnostic Labs in all blocks
5. Establishment of surgical theatres at veterinary institution in all blocks
6. Provision of solar panels for harnessing solar energy in all blocks
7. Establishment of disposal pits for poultry unit in all blocks

8. Provision of Modern Veterinary Diagnostic Aids to Veterinary Institutions such as Computerised X rays, Ultrasound, Diathermy etc. in all blocks
9. Establishment of Controlled Environment facilities for Semen Handling at CBFD in all blocks
10. Establishment of Farmers' Training Centre in all blocks
11. Meikal land development (incl infrastructure development) in all blocks
12. CIDR (Controlled Internal Drug Release) for livestock breeding in all blocks

II. Capacity Building

Capacity building programme is to strengthen the capacities of farmers, indigenous and local communities, and their organizations and other stakeholders, to manage sustainable biodiversity so as to increase their benefits, and to promote awareness and responsible action, in the form of trainings, demonstrations, exposure visits, etc. Promotion of innovation in application of information communication technology in animal husbandry and dissemination of knowledge plays a critical role in knowledge-based growth. Therefore, it is imperative to update the professional skills of farmers and extension specialists in the latest knowledge and techniques in the field of their specialization to bring about the desired qualitative improvement and necessary orientation to contemporary problems to make research and education more relevant.

The major interventions suggested are,

1. Demonstrations, Camps and Campaigns in all blocks
2. Training Programmes in all blocks

III.Beneficiary Oriented Programmes

Animal Husbandry Department plays a major role in providing veterinary health care and improving the genetic production potentialities of livestock and poultry reared in the district. Apart from this, various beneficiary oriented schemes are also being implemented for the economic upliftment and welfare of the poor, downtrodden and weaker sections of the society. Various veterinary institutions spread throughout the district provide the above services. With the dedicated and sustained efforts of the department in implementation of various beneficiary oriented programmes and judicious utilization of animals and the natural resources in an eco-balanced way, the livestock sector of the district has been elevated to a prominent position.

The major interventions suggested to further strengthen the activities are,

1. Vermicomposting unit to increase yield of fodder in all blocks
2. Azolla trays for farmer in all blocks
3. Fodder plots for farmer (25 cents) in all blocks
4. Seed Production plots for seed production in all blocks
5. Hydrophonic units in all blocks

6. Buffalo units(5 Buffaloes) in all blocks
7. Sheep/Goat units(10+1)-semi intensive system in all blocks
8. Piggery units (fattening-5 Nos) in all blocks
9. Provision of Chaff cutter for fodder production in all blocks
10. Provision of Grass cutter for fodder production in all blocks
11. Provision of milking machine for milk production in all blocks
12. Development of Native chicken farm in all blocks

Budget

The budget requirement for implementing the various interventions is **₹. 2086.00** lakhs. The details of budget requirement for each intervention across the blocks are shown in Table 4.21.

Implementing agency

The projects will be implemented by the Department of Animal Husbandry.

Table 4.21 Budget Requirement for Animal Husbandry in Perambalur District

(₹ in lakhs)

Sl. No	Interventions	Unit	Unit cost	Blocks covered	2017-18		2018-19		2019-20		2020-21		2021-22		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
	Increasing the Availability of Fodder through Field level Interventions															
1	Establishment of Vermicomposting unit (single bed)	Nos	0.05	All Blocks	40	2.00	40	2.00	40	2.00	40	2.00	40	2.00	200	10.00
2	Fodder production to the farmers by Hydrophonic methods	Nos	0.1	All Blocks	4	0.40	4	0.40	4	0.40	4	0.40	4	0.40	20	2.00
3	Distrbution of Azolla trays	Nos	0.03	All Blocks	180	5.40	180	5.40	180	5.40	180	5.40	180	5.40	900	27.00
4	Distribution of Silage bags for conservation of fodder crops	Nos	0.005	All Blocks	200	1.00	200	1.00	200	1.00	200	1.00	200	1.00	1000	5.00
5	Fodder plot development	acre	0.05	All blocks	400	20.00	400	20.00	400	20.00	200	10.00	200	10.00	1600	80.00
6	Meikal land development (incl infrastructure development)	acre	6	All Blocks	10	60.00	10	60.00	10	60.00	10	60.00	0	0.00	40	240.00
7	Distribution of Chaff Cutter to farmers	Nos	0.25	All Blocks	40	10.00	40	10.00	40	10.00	40	10.00	40	10.00	200	50.00
8	Distribution of Grass Cutter to farmers	Nos	0.2	All Blocks	20	4.00	20	4.00	20	4.00	20	4.00	20	4.00	100	20.00
9	Developemnt of Seed Production plots	acre	0.25	All Blocks	4	1.00	4	1.00	4	1.00	4	1.00	4	1.00	20	5.00
	Livestock Breeding Management															
10	CIDR (Controlled Internal Drug Release) for increasing Fertility in Cattle	Nos	0.01	All Blocks	360	3.60	360	3.60	360	3.60	360	3.60	360	3.60	1800	18.00
	Improving the Livestock Productivity															
11	Distibution of Sheep/Goat units - semi intensive system	Nos	0.6	All Blocks	4	2.40	4	2.40	4	2.40	4	2.40	4	2.40	20	12.00
12	Distribution of Buffalo units(5 Buffaloes)	Nos	4.5	All Blocks	4	18.00	4	18.00	4	18.00	4	18.00	4	18.00	20	90.00
13	Integrated farming (Goat+Cattle+Fish+Agriculture /Horticulture)	Unit	2	All Blocks	5	10.00	5	10.00	5	10.00	5	10.00	5	10.00	25	50.00

Sl. No	Interventions	Unit	Unit cost	Blocks covered	2017-18		2018-19		2019-20		2020-21		2021-22		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
14	Development of Native chicken farms	Farm	1	All Blocks	25	25.00	25	25.00	25	25.00	25	25.00	25	25.00	125	125.00
15	Establishment of disposal pits for poultry unit	Nos	1	All Blocks	100	100.00	100	100.00	100	100.00	100	100.00	0	0.00	400	400.00
16	Milking Mechine	Nos	0.25	All Blocks	20	5.00	20	5.00	20	5.00	20	5.00	20	5.00	100	25.00
17	Distribution of Piggery units (fattening-5 Nos)	Nos	1.25	All Blocks	1	1.25	1	1.25	1	1.25	1	1.25	0	0.00	4	5.00
	Improving the Service Delivery at Veterinary Institutions															
18	Deep freezer facility for Storage of vaccines and Medicines	Nos	10	All Blocks	0	0.00	0	0.00	4	40.00	0	0.00	0	0.00	4	40.00
19	Establishment of Infrastructure facilities for Veterinary Institutions	Nos	30	B3	1	30.00	0	0.00	0	0.00	0	0.00	0	0.00	1	30.00
20	Establishment of Mobile Disease Diagnostic Labs	Nos	20	All Blocks	1	20.00	1	20.00	1	20.00	1	20.00	0	0.00	4	80.00
21	Establishment of Mobile Veterinary Units	Nos	10	All Blocks	1	10.00	1	10.00	1	10.00	1	10.00	0	0.00	4	40.00
22	Establishment of surgical theatres at veterinary institution	Nos	30	All Blocks	0	0.00	1	30.00	1	30.00	1	30.00	1	30.00	4	120.00
23	Providing solar lighting panels at veterinary institution	Nos	1	All Blocks	7	7.00	9	9.00	10	10.00	10	10.00	0	0.00	36	36.00
24	Package of Modern Veterinary Diagnostic Aids to Veterinary Institutions such as Computerised X rays, Ultrasound, Diathermy etc.	Nos	30	All Blocks	0	0.00	1	30.00	1	30.00	1	30.00	1	30.00	4	120.00
25	Establishment of Ambulance facility for animals	Nos	80	B2	1	80.00	1	80.00	0	0.00	0	0.00	0	0.00	2	160.00
	Livestock Management															
26	Animal Identification and Traceability	Unit of 1000 animals	0.1	All Blocks	300	30.00	30	3.00	30	3.00	30	3.00	30	3.00	420	42.00
27	Conservation of Indigenous breeds	Pack	10	All Blocks	1	10.00	1	10.00	1	10.00	1	10.00	1	10.00	5	50.00
	Capacity Building															
28	Establishment of Farmers training Centre	Nos	200	B2	0	0.00	1	200.00	0	0.00	0	0.00	0	0.00	1	200.00
29	Conducting Demonstrations,	Nos	0.1	All Blocks	4	0.40	4	0.40	4	0.40	4	0.40	4	0.40	20	2.00

Sl. No	Interventions	Unit	Unit cost	Blocks covered	2017-18		2018-19		2019-20		2020-21		2021-22		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
	Camps and Campaigns															
30	Creating awarness of livestock management to the farmers through Training Programmes	Nos	0.1	All Blocks	4	0.40	4	0.40	4	0.40	4	0.40	4	0.40	20	2.00
	Grand Total					**456.85**		**661.85**		**422.85**		**372.85**		**171.60**		**2086.00**

Alathur- B1, Perambalur-B2, Veppanthattai-B3, Veppur-B4

4.7 Dairy development

Dairy sector is important not only as the producer of highly nutritious food products, but also for the sustenance of poor farmers and over all prosperity of the farming community. Dairying activities play a vital role in promoting the socio –economic development of rural folk. These value adding activities have sufficiently contributed to the food basket, nutritional security and household income of the rural people and generated gainful employment particularly among the landless, small and marginal farmers besides women. Dairying, an important source of income of rural families, plays an important role in providing gainful employment and income generating opportunities in the district. To keep pace with the growing population and challenging consumption pattern caused by increasing per capita income, there is a need to improve milk production and availability in the district. Concerted efforts of breeding policy and various healthcare measures have resulted in an increase in the number of cross breed breedable bovine population and helped to improve milk production in the district.

A. Development of dairy sector

Though the milk production has reached an all-time high in the district, the producers are not able to market the milk produced. This is mainly due to inadequate infrastructure available for procurement, processing of milk and marketing network. The milk producers, mostly small and marginal farmers and landless agricultural labourers are forced to sell their product at a low price as the commodity is perishable in nature. It is proposed to increase the handling capacity of fluid milk by the dairies under the co-operative sector at the rate of 10% per annum, augment/strengthen the marketing network to promote sale of products and bring under the cooperative fold an additional 50% of the farmers. Moreover, providing proper infrastructure to the veterinary health care institutions is necessary for the timely diagnosis and treatment of animal diseases. Further, a strong program for the supply of sufficient veterinary vaccine is imperative. Each veterinary health care institution is to be provided with cold storage facilities to store vaccine. Sensitization of the general public and livestock farmers on various livestock diseases through information, education and communication campaign would help in education the people about animal diseases.

The specific interventions is

- Construction of dairy, skim milk powder plant in all blocks
- Warehouse for dairy products and consumables in all blocks
- Ice cream, cattle feed plant and dairy product buildings in all blocks

B. Strengthening of milk storage and processing unit

Dairying provides the main source of income next to agriculture. In a tropical country like India, agriculture may fail sometimes, due to monsoon failure but dairying never fails and gives them regular, steady income. The machinery and equipment required depends on the level of mechanization desired and the scale of operation. However, some machinery and equipment are essentially required such as the chaff cutter machine, milking pails, milk cans and minor implements. On farms maintaining more than 20 milch animals, machine milking may be economical and more convenient as compared to hand milking. Installation of fans and mistess cooling devices in animal sheds for protection against heat stress is also a must if one wishes to keep high yielding crossbred cows. Dairy farms with 50 or more milch animals may also require a milk cooler, electricity generator set and a utility vehicle for the procurement of farm supplies and marketing of produce besides a tractor with implements for the cultivation of fodder crops and their harvesting, transportation chaffing, processing etc.

The major interventions are

1. Milk tankers and milk pumps of various capacities in all blocks
2. Electrical installation like transformer, UPS, Stabilisers, control panel etc in all blocks

C. Enhancing Milk Production and Milk Processing Unit

Most of the rural people especially women make their livelihood by rearing milch animals and by supplying milk to the Co-operatives. There were wide disparities in the prices paid for milk in flush season and in the summer months no scientific system of payment related to quality existed. Adulteration of milk was rampant. The collection machinery was erratic and farmers were at the mercy of the agents or middlemen who often forced the milk producers to sell at distress prices. Even Co-operative Milk Supply Union Ltd. could not get regular supplies and it was able to handle just about 1,000 litres of milk per day which met around 5% of the demand of the town. Enhancing the production of livestock is absolutely essential. The production cost of cattle feed coupled with erratic supply of green fodder due to frequent drought condition aggravate the situation. Hence, improving fodder production by promoting high yielding fodder varieties is needed.

The major interventions are

1. Electronic milk testing machine in all blocks
2. Society buildings in all blocks

3. Cow shed, Fodder seeds, Milk cans, Bulk milk coolers of various capacities in all blocks

D. Capacity building

Capacity building programme is to strengthen the capacities of farmers, indigenous and local communities, and their organizations and other stakeholders, to manage sustainable biodiversity so as to increase their benefits, and to promote awareness and responsible action, in the form of trainings, demonstrations, exposure visits, etc. Promotion of innovation in application of information communication technology in animal husbandry and dissemination of knowledge plays a critical role in knowledge-based growth. Therefore, it is imperative to update the professional skills of farmers and extension specialists in the latest knowledge and techniques in the field of their specialization to bring about the desired qualitative improvement and necessary orientation to contemporary problems to make research and education more relevant.

1. Training of personal of MPCS, Union federation in all blocks
2. Infertility camps (all blocks)

Budget

The budget requirement for fulfilling the various above interventions is **₹.28448** lakhs. The details of budget requirement for each intervention across the blocks are shown in Table 4.22.

Implementing agency

The projects will be implemented by the Department of Dairy Development.

Table 4.22 Budget Requirement for Dairy Development in Perambalur District

(₹. in lakhs)

Sl. No	interventions	Blocks covered		Unit	Unit cost	2017-18		2018-19		2019-20		2020-21		2021-22		Total Amount	
						Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
Strengthening of milk storage and processing units																	
1	Electrical installation like Tranformemr, UPS, Stabilisers, Control Panel MCC etc.,	All blocks	1	25.00	1	25	1	25	1	25	1	25	1	25	5	125	
2	Milk Storage Tanks of various capacities	All blocks	1	15.00	3	45	3	45	3	45	3	45	3	45	15	225	
3	Tub washer, Canwashers, Crate conveyor systems.	All blocks	1	10.00	1	10	1	10	1	10	1	10	1	10	5	50	
4	Point of Sale Machines and billing systems	All blocks	1	0.25	25	6	25	6	25	6	25	6	25	6	125	31	
5	SS pipes and fittings	All blocks	1	5.00	2	10	2	10	2	10	2	10	2	10	10	50	
6	Solar system for water heating	All blocks	1	2.00	3	6	3	6	3	6	3	6	3	6	15	30	
7	Packing Machineries for milk, Butter, Ghee, SMP and Other Milk products	All blocks	1	18.00	0	0	2	36	1	18	1	18	1	18	5	90	
8	Plate Heat type Chillers and pasteurizers	All blocks	1	10.00	2	20	2	20	2	20	2	20	2	20	10	100	
9	Milk Tankers of various capacities	All blocks	1	25.00	1	25	1	25	1	25	1	25	1	25	5	125	
10	Milk Pumps of Vaious capacities	All blocks	1	0.50	9	5	9	5	9	5	9	5	9	5	45	23	
11	Generator of various capacities	All blocks	1	20.00	0	0	1	20	0	0	1	20	0	0	2	40	
12	Curd processing equipments	All blocks	1	50.00	0	0	0	0	1	50	0	0	0	0	1	50	
13	Cleaning In Place equipments with accessories	All blocks	1	75.00	0	0	0	0	0	0	1	75	0	0	1	75	
Enhancing milk productions and milk processing units																	
14	Veterinary Medicine	All blocks	1	2.00	7	14	7	14	7	14	8	16	9	18	38	76	
15	Two wheeler for AI technician	All blocks	1	0.50	21	11	21	11	21	11	21	11	21	11	105	53	
16	Computer system with accessories	All blocks	1	0.50	21	11	21	11	21	11	21	11	21	11	105	53	
17	Fodder seed materials	All blocks	1	0.25	21	5	21	5	21	5	21	5	21	5	105	26	
18	Fodder development equipments like chaff cutter, Mower etc.,	All blocks	1	0.20	21	4	21	4	21	4	21	4	21	4	105	21	
19	Bulk Milk coolers of Various capacities	All blocks	1	15.00	10	150	10	150	10	150	10	150	10	150	50	750	
20	Milk cans	All blocks	1	0.04	1000	35	1000	35	1000	35	1000	35	1000	35	5000	175	

21	Electronic weighing scales of various capacities.	All blocks	1	0.30	55	17	55	17	55	17	55	17	55	17	275	83
22	Electronic milk testing equipments	All blocks	1	1.25	45	56	45	56	45	56	45	56	45	56	225	281
23	Milking machine	All blocks	1	0.80	100	80	100	80	100	80	100	80	100	80	500	400
24	Cow shed	All blocks	1	5.00	25	125	25	125	25	125	25	125	25	125	125	625
25	Society Buildings	All blocks	1	20.00	25	500	25	500	25	500	25	500	25	500	125	2500
26	Cryogenic containers	All blocks	1	0.35	30	11	30	11	30	11	30	11	30	11	150	53
27	Equipments for Artificial Insemination	All blocks	1	0.50	10	5	10	5	10	5	10	5	10	5	50	25
Capacity building																
28	Training of personnel of MPCS, Union and Federation.	All blocks	1	0.05	500	25	500	25	500	25	500	25	500	25	2500	125
29	Infertility Camps	All blocks	1	0.20	100	20	100	20	100	20	100	20	100	20	500	100
Marketing																
30	Parlour structures	All blocks	1	5.00	50	250	50	250	50	250	50	250	50	250	250	1250
31	Milk product storage cabinets	All blocks	1	0.30	100	30	100	30	100	30	100	30	100	30	500	150
32	Product Billing systems	All blocks	1	0.30	100	30	100	30	100	30	100	30	100	30	500	150
Quality control																
33	Adulteration detection equipments	All blocks	1	4.00	2	8	2	8	2	8	2	8	2	8	10	40
34	Milk testing equipment and Laboratory.	All blocks	1	5.00	2	10	2	10	2	10	2	10	2	10	10	50
Processing of value addition																
35	Skim Milk powder Plants	All blocks	1	6000.00	0	0	1	6000	0	0	0	0	0	0	1	6000
36	Water Treatment Plants. Reverse Osmosis plant	All blocks	1	100.00	0	0	1	100	1	100	1	100	1	100	4	400
37	Effluement treatment plant	All blocks	1	100.00	0	0	0	0	0	0	2	200	0	0	2	200
38	Steam raisning plant with accessories	All blocks	1	100.00	0	0	0	0	1	100	0	0	0	0	1	100
39	Fat handling equipments	All blocks	1	200.00	1	200	1	200	0	0	0	0	0	0	2	400
40	Dairy equipments	All blocks	1	50.00	2	100	2	100	2	100	2	100	2	100	10	500
Development of dairy sector																
41	Construction of Dairy	All blocks	1	1500.00	0	0	0	0	1	1500	0	0	0	0	1	1500

42	Construction of Skim milk powder Plant	All blocks	1	1500.00	0	0	1	1500	0	0	0	0	0	0	1	1500
43	BMC buildings	All blocks	1	15.00	10	150	10	150	10	150	10	150	10	150	50	750
44	Cattle feed Plants	All blocks	1	5000.00	0	0	1	5000	0	0	0	0	0	0	1	5000
45	Ice cream and dairy product buildings	All blocks	1	2500.00	0	0	0	0	1	2500	0	0	0	0	1	2500
46	Ware house for Dairy products	All blocks	1	200.00	1	200	1	200	1	200	1	200	1	200	5	1000
47	Ware house for Dairy consumables	All blocks	1	200.00	0	0	0	0	1	200	1	200	1	200	3	600
	Grand Total					**2197**		**14853**		**6465**		**2612**		**2319**		**28448**

Perambalur - B1, Alathur- B2, Veppanthattai-B3, Veppur-B4

4.8 Fisheries

Indian fisheries and aquaculture is an important sector of food production, providing nutritional security to the food basket, contributing to the agricultural exports and engaging about fourteen million people in different activities. With diverse resources ranging from deep seas to lakes in the mountains and more than 10% of the global biodiversity in terms of fish and shellfish species, the country has shown continuous and sustained increments in fish production since independence. Constituting about 6.3% of the global fish production, the sector contributes to 1.1% of the GDP and 5.15% of the agricultural GDP. The total fish production of 10.07 million metric tonnes presently has nearly 65% contribution from the inland sector and nearly the same from culture fisheries. Hence its necessary to improve the fisheries development throughout the country.

Fisheries, the Economic backbone of this coastal District. Having a long coastal area, this District plays a major role in marine commodities. The marine ecosystem provides mankind with food, medicines, industrial products and pleasure. This ecosystem has to be maintained in a healthy state, if it is to provide people the benefits in a sustained manner.

I. Enhancement of fisheries production

Aquatic plants growing in ponds and lakes are beneficial for fish and wildlife. They provide food, dissolved oxygen, and spawning and nesting habitat for fish and waterfowl. Aquatic plants can trap excessive nutrients and detoxify chemicals. However, dense growths (over 25% of the surface area) of algae and other water plants can seriously interfere with pond recreation and threaten aquatic life. Water plants can restrict swimming, boating, fishing, and other water sports. Biological controls for aquatic vegetation have received considerable publicity. Several species of fish are herbivorous in that their principal diet is aquatic vegetation. One such species, the grass carp (also known as the white amur or Chinese carp), is being tested in various parts of the country. Hence in this district it is suggested to implement the biological control of aquatic weeds by stocking of Grass Carps in Aquatic Weed Infested water bodies.

Tremendous potential exists in India to augment fish production from freshwater aquaculture resources, which are spread across the length and breadth of the country. With concerted efforts to mobilize farmers to adopt fish farming, application of appropriate technologies for sustainable fish farming and fish seed production and availability of institutional finance, it would be possible to bring in substantial hikes in the annual fish production from the aquaculture sector within a span of 5 years. Hence in this district it

suggested to implement the following intervention to enhance the production and growth of fisheries through increasing Fishing Efficiency of Inland Fishermen and Fish Farmers, Enhancement of Fish production in irrigation tanks and panchayat tanks by stocking fish seeds, Promotion of quality fish marketing by traditional fishers by providing moped with ice box, Increasing safety at sea by providing life safety appliances, Improvement of hygienic fish handling by providing ice boxes, Propagation of Fish Culture in Multi-purpose farm ponds, Up gradation of Fishing Efficiency of Inland Fishermen and Introduction of short seasonal fish species in existing farm ponds in Veppanthattai and Veppur blocks.

II. Infrastructure and assets

Fish Farming is an age old activity and in practice from ancient times. The successful fish culture requires ploughing of pond, addition of manure, stocking of fish seed; eradication of unwanted aquatic plants and animals, watering the pond; harvesting the crop and marketing of the produce. The fish culture technologies and economics are simple and understandable to the fish farmers. Hence the construction of fish ponds in this district is recommended for its commercial production

The handling, processing, and marketing of fish products are essential complementary functions of all food production systems. Marketing of fish products usually provides rural women with their source of income. In rural areas the customers become aware of a pond harvesting by informal contacts and buy their fish at the pond site. Most of the customers are women, who use the fish for home consumption or local marketing. The closer the market is to the farm, the fewer intermediaries and the greater the chance that women become actively involved in marketing aquatic products.

The establishment of domestic markets plays a very crucial role in the development of fisheries sector in the country. Apart from ensuring nutritional and food security, it also helps in minimizing post-harvest losses, increase revenue, enhance employment opportunities and offers high standards of hygiene and sanitation leading to food safety. The importance of domestic marketing can be understood from the fact that only about 15% of the total fish landing is utilized for export of fishery products and the remaining about 85% is distributed through domestic markets. As more and more trade restrictions are being imposed on the fishery product exports, a well-developed domestic marketing system only can ensure the viability of the fisheries sector. Hence it is necessary to improve the hygienic fish marketing by establishing modern fish kiosk TNFDC, construction of shrimp farms for DFFDA farmers

and increasing fish production in existing fish/shrimp farms by providing aerators and infrastructure in Veppanthattai block

III. Capacity Building

Effective extension support is essential for the promotion of Aquaculture in freshwater and brackish water areas. It is necessary to establish the information centres/data dissemination centres in Fishermen villages, animation camps in fisheries villages, seminars, exhibitions and workshop, and awareness centres for linking the fishing villages, marketing centres and the district offices. Hence in this district it is necessary to give training to fish farmers (Veppanthattai and Veppur blocks), and Exposure visit to farmers (Veppur block) to other states.

Budget

The budget requirement for fulfilling the above interventions is ₹. **47.60** lakhs

Implementing agency

Department of Fisheries will be implementing the project

Table 4.23 Budget Requirement for Fisheries in Perambalur District

(₹. in lakhs)

Sl. No	Interventions	Unit	Unit cost	Blocks covered	2017-18		2018-19		2019-20		2020-21		2021-22		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
	Enhancement of fisheries															
1	Up gradation of Fishing Efficiency of Inland Fishermen of Tamil Nadu.	Nos	0.075	Veppanthattai, Veppur	100	7.50	0	0.00	0	0.00	0	0.00	0	0.00	100	7.50
2	Promotion of quality fish marketing by traditional fishers by providing mobbed with icebox	Nos	0.5	Veppanthattai, Veppur	0	0.00	10	5.00	10	5.00	10	5.00	0	0.00	30	15.00
3	Introduction of short seasonal fish species in existing farm ponds	ha	0.79	Veppanthattai	0	0.00	1	0.79	0	0.00	0	0.00	0	0.00	1	0.79
4	Increasing fishing efficiency of inland fishermen and fish farmers	Nos	0.15	Veppanthattai,Veppur	25	3.75	25	3.75	0	0.00	0	0.00	0	0.00	50	7.50
5	Expansion of fish culture in Multipurpose farm ponds by encouraging farmers of Tamil Nadu	ha	2	Veppanthattai, Veppur	2	4.00	0	0.00	0	0.00	0	0.00	0	0.00	2	4.00
6	Direct stocking of advancd fingerlings in irrigation tanks and panchayat tanks	ha	0.04	Veppanthattai, Veppur	0	0.00	50	2.00	50	2.00	0	0.00	0	0.00	100	4.00
7	Biological Control of Aquatic Weeds by Stocking of Grass Carps in Aquatic Weed Infested water bodies	ha	0.02	Veppanthattai, Veppur	50	1.00	0	0.00	0	0.00	0	0.00	0	0.00	50	1.00
	Section Total					**16.00**		**12.00**		**7.00**		**5.00**		**0.00**		**40.00**
	Creation of infrastructure facilities					0.00		0.00		0.00		0.00		0.00	0	0.00
8	Encouraging fish culture by establishment of fish culture ponds and provision inputs	ha	4.5	Veppanthattai	1	4.50	0	0.00	0	0.00	0	0.00	0	0.00	1	4.50
	Section Total					**5.00**		**0.00**		**0.00**		**0.00**		**0.00**		**5.00**
	Capacity building programme															
9	Exposure visit to farmers to other states	Nos	0.06	Veppur	0	0.00	20	1.20	0	0.00	0	0.00	0	0.00	20	1.20
10	Providing trainers training and exposure visit to Departmental staff	Nos	0.1	Veppur	0	0.00	2	0.20	0	0.00	0	0.00	0	0.00	2	0.20

Sl. No	Interventions	Unit	Unit cost	Blocks covered	2017-18		2018-19		2019-20		2020-21		2021-22		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
11	Training to fish farmers	Nos	0.03	Veppanthattai, Veppur	0	0.00	20	0.60	20	0.60	0	0.00	0	0.00	40	1.20
	Section Total					**0.00**		**2.00**		**0.60**		**0.00**		**0.00**		**2.60**
	Grand Total					**21.00**		**14.00**		**7.60**		**5.00**		**0.00**		**47.60**

4.9 Fisheries Research

Tamil Nadu Fisheries University (TNFU) is the State funded, unitary professional Fisheries University in India imparting education, research and training to enhance fish production and utilization by following the State Agricultural University (SAU) pattern and syllabi. The prominent area of research in the area of aquaculture are: improving the quality of progeny by developing sperm bank, development of techniques for the culture of fin fishes in cages, enhancing the water use efficiency and productivity by bio-floc technology, developing the improved methods of ornamental fish culture and breeding techniques and inventing techniques to prevent and cure fish diseases. Stock assessment of important fishery resources, mapping the fauna and understanding the biology of commercially important and rare species, coastal area and inland waters monitoring for the major pollutants and waste water management are the focus areas of research. Value addition to fish has been a major focus area and technologies for fish pickle, fish noodles and ready to eat products like fish curry, fish puff, fish cutlet and fish burger have been evolved. Quality control wing of fish processing has evolved several rapid techniques for detection of human pathogens. A separate laboratory for quality monitoring will be built to help the industry.

Project components

- Enhancement of per capita consumption of fish in Perambalur block
- Ensuring nutritional security through fish and fishery products in Perambalur block

Budget

The budget requirement for fulfilling the above interventions is **₹. 141.60 Lakhs**

Expected outcome

The creation of infrastructure will enhance the quality of the research and it paves way for the state-of-art for the young researchers. The research and developmental activities is a continuous process, the innovative ideas that emerges from the young minds will help in identifying solutions to the field problem.

Implementing agency

The projects will be implemented by Tamil Nadu Fisheries University in the various colleges and research stations.

Table 4.24 Budget Requirement for Fisheries Research in Perambalur District

(₹. in lakhs)

Sl. No	Interventions	Unit cost	Block Covered	2017-18		2018-19		2019-20		2020-21		2021-22		Total	
				Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
1	**Aquaculture**														
a	**Enhancement of per capita consumption of fish**														
	Awareness campaign on health beneficial attributes of fish	0.005	Perambalur	52	0.26	52	0.26	52	0.26	52	0.26	52	0.26	260	1.30
	Production of short films on nutritive value of fish and screening in theatres and television channels	50	Perambalur	0	0.00	1	50.00	0	0.00	0	0.00	0	0.00	1	50.00
b	**Ensuring nutritional security through fish and fishery products**														
	supply of preserved ready to eat and ready to cook fish products through public distribution systems	12.9	Perambalur	0	0.00	0	0.00	1	12.90	0	0.00	0	0.00	1	12.90
	Supply of fish and fish products in mid day meal programme	12.9	Perambalur	0	0.00	1	12.90	0	0.00	0	0.00	0	0.00	1	12.90
	Supply chain management to promote consumption of farmed freshwater fishes	64.5	Perambalur	1	64.50	0	0.00	0	0.00	0	0.00	0	0.00	1	64.50
	Grand total				**64.76**		**63.16**		**13.16**		**0.26**		**0.26**		**141.60**

4.10 Public Works Department – Water Resources Organisation

Public works department is a premier agency of the state government operating throughout the state for construction of works in Roads, Bridges, Buildings, maintenance and repairs of works and construction of works of other departments of the state government and centrally sponsored schemes. The main function of public works department is designing, construction and maintenance of roads and bridges, residential and non-residential building of state government, construction of national highway, construction of roads financed from NABARD, RIDF, CRF and construction of various works on Airport and Air landing ground.

With the declining and erratic rainfall, it has become necessary to go in for *in situ* water conservation. Further the loss of top soil through erosion needs to be controlled to maintain the soil fertility. The reduction of water storage facilities and the conversion of water bodies for non-agricultural purposes result in the rainwater run-off. The *in situ* water conservation will help in reducing the water and soil erosion and also improve the ground water recharge which is the need of the day. Hence, to raise the water table level, construction of check dams, need to be taken up in canals to increase the storage capacity of the tanks and there by crop cultivation area in tank anycut area may be increased. Thus the main objective of Public works department in this district is to construct check dam and anycut across the river in order to increase the ground water level.

Project components

1. Construction of check dam across Kallar at Pimballur of Veppanthattai Taluk in Perambalur District
2. Construction of a check dam across Kallarriver in SF.No.44 near Chinnamutlu H/O Malayalapatti village in Veppanthattai taluk of Perambalur District.
3. Construction of a check dam across Kallarriver in SF.No.141 near V.Kalathur village in Veppanthattai taluk of Perambalur District.
4. Construction of a check dam across Uppu Odai near Kuttur village in Alathur taluk of Perambalur District.
5. Construction of Anicut across Odai in Paravai Village to feed Nannai and Veppur Tanks Kunnam Taluk of Perambalur District.
6. Construction of a check dam across Odai in SF.No.100 near Pandagappadi village in Veppanthattai taluk of Perambalur District.

Budget

The budget requirement for fulfilling the above interventions is ₹**.1820.00** lakhs.

Expected outcome

The project will increase the Ground water table level and carrying capacity of canals during the heavy rain period and thereby increasing the crop cultivation area. This will result in the ensuring of food security for the people.

Implementing agency

Department of Public Works will be implementing the project.

Table 4.25 Budget Requirement for PWD in Perambalur District

(₹. in lakhs)

Sl. No	Intervention	Unit	Unit cost	Blocks covered	2017-18		2018-19		2019-20		2020-21		2021-22		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
1	Construction of checkdam across Kallar at Pimballur of Veppanthattai Taluk in Perambalur District	No	320.00	Veppanthattai	1.00	320.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	320.00
2	Construction of a checkdam across Kallar river in SF.No.44 near Chinnamutlu H/O Malayalapatti village in Veppanthattai taluk of Perambalur District.	Ha	1.81	Veppanthattai	110.21	200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	110.21	200.00
3	Construction of a checkdam across Kallar river in SF.No.141 near V.Kalathur village in Veppanthattai taluk of Perambalur District.	No	500.00	Veppanthattai	0.00	0.00	1.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	500.00
4	Construction of a checkdam across Uppu Odai near Kuttur village in Alathur taluk of Perambalur District.	No	250.00	Alathur	0.00	0.00	0.00	0.00	1.00	250.00	0.00	0.00	0.00	0.00	1.00	250.00
5	Construction of Anicut across Odai in Paravai Village to feed Nannai and Veppur Tanks Kunnam Taluk of Perambalur District.	Ha	7.52	Kunnam	0.00	0.00	0.00	0.00	0.00	0.00	46.55	350.00	0.00	0.00	46.55	350.00
6	Construction of a checkdam across Odai in SF.No.100 near Pandagappadi village in Veppanthattai taluk of Perambalur District.	No	200.00	Veppanthattai	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	200.00	1.00	200.00
	Total					**520.00**		**500.00**		**250.00**		**350.00**		**200.00**		**1820.00**

4.9 Cooperation

In Tamil Nadu, Cooperatives play a prominent role in the day to day affairs of the common man. They help the farmer to improve agricultural production by providing crop loans and by supplying agricultural inputs such as fertilizers and insecticides. They also enable the farmer to store and market his produce. In most districts, cooperatives run the fair price shops which provide the rural and urban poor essential commodities at highly subsidized prices. The policy of the State Government is to ensure adequate availability of essential commodities of acceptable quality at an affordable price to the general public particularly the poor. Public Distribution System has been one of the most crucial elements in food policy and food security system in the country.

Cooperatives all over the world have become an effective and potential instrument of economic development. The Cooperative Movement in Tamil Nadu has witnessed over the decades substantial growth in diverse areas of economy. There is not a single major sphere of economic activity which has not been touched by Cooperatives. Cooperatives are also envisaged as an instrument for implementing many important policies like agricultural credit, urban credit, market intervention, price support for agricultural commodities through Cooperative Wholesale stores, Public Distribution system etc. The office infrastructure has to be improved. The intervention is proposed for creating of infrastructure facilities.

Project components

- Office Building Renovation in all blocks except Perambalur block
- Godown Renovation and processing unit in all blocks

Budget

It is proposed to incur ₹**. 668.40** lakh over a period of five years.

Implementing agency

Department of Cooperation will be implementing the project.

Table 4.26 Budget Requirement for Cooperation in Perambalur District

(₹. in lakhs)

Sl. No.	Co-operation	Blocks covered	2017-18		2018-19		2019-20		2020-21		2021-22		Total	
			Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
1	Construction of Compound wall	All Blocks	7	90.00	9	95.00	10	90.20	10	80.75	8	88.00	44	443.95
2	Establishment of Processing unit	B1	1	2.50	0	0.00	0	0.00	0	0.00	0	0.00	1	2.50
3	Renovation of Godown	All Blocks	4	12.00	4	83.50	2	5.00	5	12.00	1	5.00	16	117.50
4	Renovation of Office Building	B1, B3 and B4	4	16.00	1	2.00	1	11.15	9	11.00	11	16.50	26	56.65
5	Strengthening of Cooperation Centres (Furniture's, Solar panel, Modern counter, Xerox machine, Air Conditioner, CCTV Camera, Bore well, Generator, UPS Battery, Cash Counting Machine, Invertor, Jewel Weighing Machine, Packing Machine, Purchase of computer and peripherals, Hand Billing machine, LED Display for tender process, Purchase of Jewel Carat Meter, Smart Card Printing Machine, Burglary Alarm, Agricultural Equipments, Safety Locker, Purchase of Display racks, Defender Door, Purchase of Paddy drying machine, Automatic Printer machine, Conveyer, E-Tender process, Fork Lifter, Gunny Bag Stitching machine, Jewel tester, Pallets, Tarpaulin, Trolley and Printing Press machineries)	All Blocks	7	9.30	5	6.50	4	5.50	11	11.50	10	15.00	37	47.80
	Total			**129.80**		**187.00**		**111.85**		**115.25**		**124.50**		**668.40**

Alathur- B1,Perambalur-B2,Veppanthattai-B3,Veppur-B4

Table 4.27 Budget Abstract for Perambalur District

(₹. In lakhs)

Sl. No	Sectors	2017-18	2018-19	2019-20	2020-21	2021-22	Total
1	Agriculture	3639.61	2911.30	3091.77	2349.94	2524.99	14517.58
2	Agricultural Research (TNAU)	0.00	0.00	0.00	0.00	0.00	0.00
3	Horticulture	2066.14	2110.84	2236.25	2327.75	2410.03	11151.00
4	Agricultural Engineering	432.40	446.80	343.65	341.15	343.15	1907.15
5	Agricultural Marketing	179.30	513.00	201.10	240.40	91.60	1225.40
6	Seed Certification & Organic Certification	5.00	13.36	0.00	0.00	0.00	18.36
7	Animal Husbandry	456.85	661.85	422.85	372.85	171.60	2086.00
8	Animal Science Research (TANVASU)	0.00	0.00	0.00	0.00	0.00	0.00
9	Dairy Development	2197.00	14853.00	6465.00	2612.00	2319.00	28448.00
10	Fisheries	21.00	14.00	7.60	5.00	0.00	47.60
11	Fisheries Research (TNFU)	64.76	63.16	13.16	0.26	0.26	141.60
12	Water Resource Organization	520.00	500.00	250.00	350.00	200.00	1820.00
13	Civil Supplies & Co-Operation	129.80	187.00	111.85	115.25	124.50	668.40
	Total	**9711.86**	**22274.31**	**13143.23**	**8714.60**	**8185.13**	**62031.09**

The total budget requirement for the implementation of various interventions by different departments for Perambalur district is **₹.62031.09 lakhs**


KARNATAKA
ANDHRA PRADESH
KERALA
SRI LANKA