# NATIONAL AGRICULTURE DEVELOPMENT PROGRAMME (NADP)

# DISTRICT AGRICULTURE PLAN

## VIRUDHUNAGAR

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

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2017

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## EXECUTIVE SUMMARY

National Development Council (NDC) resolved that a special additional Central Assistance Scheme named National Agricultural Development Programme (NADP /RKVY) may be launched with a view to attain enhanced growth in agriculture and allied sectors. To implement the scheme, formulation of action plan by means of developing District Agricultural Plan (DAP) is attempted, as a first step. The DAP covers both agriculture sector and allied sectors like horticulture, animal husbandry, fisheries, agricultural engineering, agricultural marketing etc. The DAP aims at integrating the programmes / schemes, that are already in operation and the additional resources with the existing resource potential of the district, so as to push-up the production frontiers that culminate in the desired growth rate in agriculture.

The complete resource mapping of the district has been attempted by perusing through the details of the various agro-economic features of the district like demography, soil and topography, land-use pattern and land holdings distribution, livestock population, fisheries wealth, agricultural markets, irrigation systems and the like in chapter II. Based on the socio-economic perspectives and the resource-base, the vision development has been precisely defined and the strategies have been clearly spelt out.

The strengths, weaknesses, opportunities and challenges have been identified through the SWOC analysis of the district. Similar exercise for the various sectors has also been attempted and the results are highlighted in chapter III. The growth indices were worked out to understand the relative position of the district in the growth path of the state. The results of the SWOC analysis were also tuned to identify and highlight the emerging issues in Chapter III.

Based on the resource- potentials assessed and the results of SWOC analysis, the development issues were listed, the on-going programmes / schemes have been described, the yield and the technological gaps were also assessed. Finally, the needed interventions have been spell out with reference to Agriculture sector in Chapter IV. Similarly, the development issues were highlighted, the constraints were indicated, and the possible interventions have been recommended for the allied sectors like horticulture, agricultural engineering, animal husbandry, fisheries and agricultural marketing as well in Chapter V.

The District plan project has been presented and the individual projects formulated under each sector have also been listed with the associated financial requirements. In agricultural sector, the productivity increase in major crops like paddy, millets, pulses, oilseeds etc., through the application of latest technologies, was aimed at in the plans / projects. Crop diversification can be done through the introduction of new and more profitable crops.

The horticulture department with high – tech application and huge investment has been planned to boost up the fruits and vegetables production in the district. The water harvesting and conservation and farm mechanization were the thrust areas of development in agricultural engineering. Milk productivity increase, hygienic milk production, scientific rearing of calves and heifers, infrastructure support for the development of milk marketing were the thrust areas of development of animal husbandry activities. As regards fisheries sector, the production boost through infrastructure support and development was attempted in the action plans.

The district plan in overall approach consisted of five projects in crop development. In, addition, seven projects have been planned in horticulture sector. Four projects for the development of animal husbandry activities, four projects in the fisheries development, five projects in agricultural marketing and agri. business development and two projects in agricultural engineering have also been formulated and presented along with the financial implications. Introduction of newly developed farm machineries and their popularization, creation of water harvesting structures, soil conservation measures were given full thrust in agricultural engineering development in the district of Virudhunagar. The budget estimates sector-wise are summarized.

**Consolidated Budget Abstract for Virudhunagar District**

**(₹. in lakhs)**

| Sl. No. | Sectors | 2017-18 | 2018-19 | 2019-20 | 2020-21 | 2021-22 | Total |
|---|---|---|---|---|---|---|---|
| 1 | Agriculture | 3449.96 | 4401.20 | 3234.94 | 3519.92 | 3087.72 | 17693.74 |
| 2 | Horticulture | 1999.87 | 2146.98 | 3950.74 | 4273.11 | 3100.34 | 15471.04 |
| 3 | Agricultural Engineering | 2713.81 | 1881.31 | 1698.94 | 1316.52 | 1349.72 | 8960.30 |
| 4 | Agricultural Marketing | 279.70 | 275.45 | 224.80 | 215.30 | 214.15 | 1209.40 |
| 5 | Seed certification and Organic Certification | 7.50 | 295.77 | 0.10 | 0.10 | 0.10 | 303.57 |
| 6 | Animal Husbandry | 1719.16 | 1765.59 | 1156.21 | 1033.88 | 877.49 | 6552.25 |
| 7 | Dairy Development | 5272.55 | 325.55 | 812.55 | 585.55 | 292.55 | 7288.75 |
| 8 | Fisheries | 256.79 | 55.09 | 23.85 | 27.55 | 35.75 | 399.03 |
| 9 | Fisheries Research (TNFU) | 64.76 | 63.16 | 13.16 | 0.26 | 0.26 | 141.60 |
| 10 | Public Works Department | 1226.00 | 2004.00 | 355.00 | 800.00 | 930.00 | 5315.00 |
| 11 | Civil Supplies and Co-Operation | 1029.12 | 617.26 | 471.71 | 283.75 | 317.47 | 2719.31 |
| | **Grand Total** | **18019.22** | **13831.36** | **11942.00** | **12055.94** | **10205.55** | **66054.07** |

The plan outlay for five years (2017-22) for Virudhunagar district showed that among the different activities, agriculture sector requires huge financial outlay (Rs. 17693.74 lakhs) of the total plan outlay of **₹. 66054.07 lakhs**. Greater emphasis has been given to farm mechanization and soil and water conservation measures as they have become pre-requisites to the implementation of modern technologies in Virudhunagar district.

## 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 11$^{th}$ and 12$^{th}$ 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 11$^{th}$ and 12$^{th}$ Plan periods. Tamil Nadu State has 32 districts including Chennai. The District Agriculture Plan were prepared for 31 districts excluding Chennai during 12$^{th}$ plan period. Thus, the current exercise is the continuation of the 12$^{th}$ plan period: which also covered two years of the 14$^{th}$ 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 Virudhunagar 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

In this chapter, the following details were discussed elaborately at block and district levels

**2.1 District at glance**

**2.2 Area, Location and Geographical features**

**2.3 Administrative Structure of Virudhunagar district**

**2.4 Demographic profile**

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**2.17 Fisheries**

**2.18 Banking and Insurance**

**2.19 Industries**

**2.1 Virudhunagar district at a glance**

The District of Virudhunagar was carved out as a separate district in the year 1985 as a result of trifurcating Ramanathapuram district of Tamil Nadu state (vide State Government Notification, G.O. Ms. 347 dated 8.3.85). According to the said notification, eight taluks viz., Rajapalayam, Srivilliputtur, Virudhunagar, Tiruchuli, Kariapatti, Aruppukkottai, Sattur and Sivakasi were separated from Ramanathapuram district and formed as a new district. At present, the district consists of eight taluks and eleven Community Development Blocks.

**2.2 Area, Location and Geographical Features**

The geographical area of the district is 4.24 lakh hectares and net sown area occupied 29.18 per cent of total geographical area.

**Table 2.1 Location and Geographical Position of Virudhunagar District**

| **Location and Geographical Position** | |
|---|---|
| North Latitude | Between $11^0$ 14` and $12^0$ 53` |
| East Longitude | Between $77^0$ 44` and $78^0$ 50` |

**Table 2.2 Taluks, Blocks and Agricultural Divisions in the Virudhunagar District**

| **Name of the Taluks (8)** | **Name of the Blocks (11)** | **Name of the Agricultural Divisions(11)** |
|---|---|---|
| Aruppukottai | Aruppukottai | Aruppukottai |
| Kariapatti | Kariapatti | Kariapatti |
| Rajapalayam | Narikudi | Narikudi |
| Sathur | Rajapalayam | Rajapalayam |
| Sivakasi | Sattur | Sattur |
| Srivilliputhur | Sivakasi | Sivakasi |
| Tiruchuli | Srivilliputhur | Srivilliputhur |
| Virudhunagar | Tiruchuli | Tiruchuli |
| | Vembakottai | Vembakottai |
| | Virudhunagar | Virudhunagar |
| | Watrap | Watrap |

## 2.3 Administrative Structure of Virudhunagar district

There are eight taluks in Virudhunagar District Viz., Aruppukottai, Kariapatti, Rajapalayam, Sattur, Sivakasi, Srivilliputhur, Tiruchuli and Virudhunagar, which are depicted in Fig.1. Virudhunagar district comprises of eleven blocks viz., Aruppukottai, Kariapatti, Narikudi, Rajapalayam, Sattur, Sivakasi, Srivilliputhur, Tiruchuli, Vembakottai, Virudhunagar and Watrap and they are shown in Fig.2.

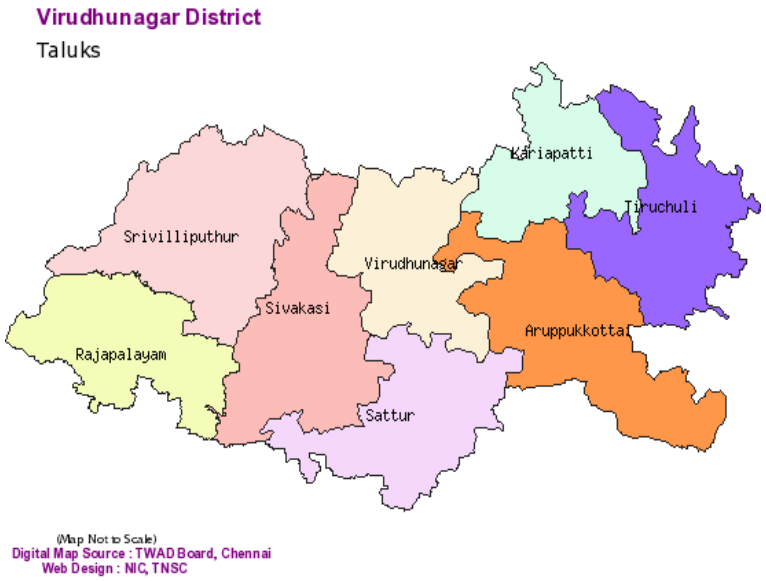


**Fig. 1 Taluks Location Map of Virudhunagar District**

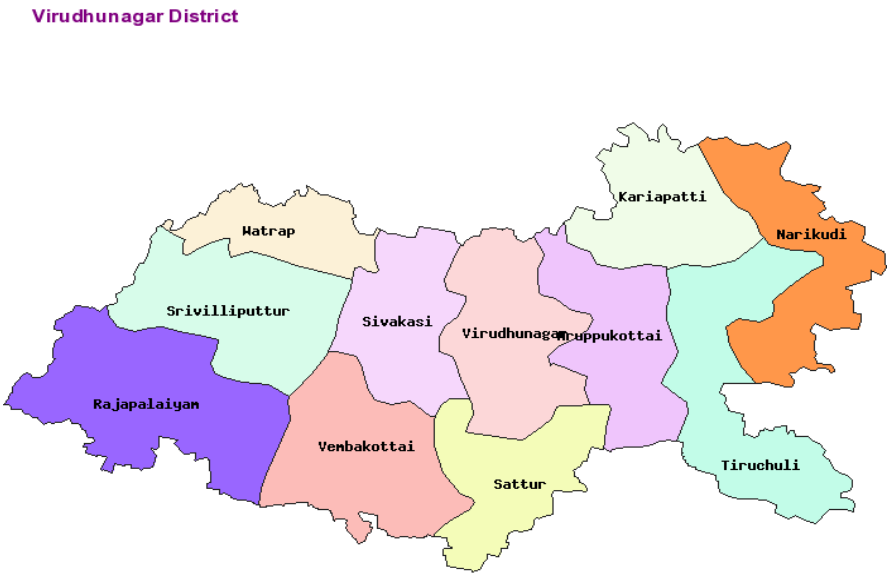


**Fig. 2 Blocks in Virudhunagar District**

## 2.4 Demographic profile

The Demography of the district is summarized in Tables through 2.3, 2.4 & 2.5. There are 19, 42,288 persons in 11 blocks of the district. Sivakasi block hold the highest population (2, 30,505 persons) including 1, 14,321 males and 1, 16,184 females. This is followed by Virudhunagar block which holds 1, 63,177 persons with 81,770 males and 81,407 females. The least populous block in the district is Narikudi with 73,022 persons (36,865 male and 36,157 female).

The total population of the district has increased from 1751301 to 1942288 during 2001 to 2011 census. The population of female is higher than the male population, i.e. 974,579 female and 9,67,709 male respectively, with sex ratio of 1007.

**Table 2.3 Population of Virudhunagar district (2011)**

| Sl. No. | Details | Numbers | Percentage |
|---|---|---|---|
| 1 | Actual Population | 1942288 | 100.00 |
| 2 | Male | 967709 | 49.78 |
| 3 | Female | 974,579 | 50.22 |
| 4 | Sex ratio (Per 1000) | 1007 | |
| 5 | Literates | 1398788 | 80.15 |
| 6 | Male literates | 760375 | 87.71 |
| 7 | Female literates | 638413 | 72.69 |

*Source:Census of India 2011, District Census Handbook, Virudhunagar.*

**Table 2.4 Block wise area and Population details of Virudhunagar District**

| Sl. No | Name of the Block | Area (sq.km) | Persons | Male | Female |
|---|---|---|---|---|---|
| 1 | Aruppukottai | 323.77 | 1,02,421 | 50,876 | 51,545 |
| 2 | Kariapatti | 360.22 | 75,178 | 37,768 | 37,410 |
| 3 | Narikudi | 424.59 | 73,022 | 36,865 | 36,157 |
| 4 | Rajapalayam | 291.58 | 1,56,460 | 78,448 | 78,012 |
| 5 | Sattur | 355.77 | 99,793 | 49,418 | 50,375 |
| 6 | Sivakasi | 399.08 | 2,30,505 | 1,14,321 | 1,16,184 |
| 7 | Srivilliputhur | 377.69 | 1,02,393 | 51,248 | 51,145 |
| 8 | Tiruchuli | 425.85 | 85,434 | 42,870 | 42,564 |
| 9 | Vembakottai | 381.13 | 1,24,886 | 61,752 | 63,134 |
| 10 | Virudhunagar | 400.84 | 1,63,177 | 81,770 | 81,407 |
| 11 | Watrap | 215.46 | 73,274 | 36,604 | 36,670 |
| | **Total** | **4241.00** | **19,42,288** | **9,67,709** | **9,74,579** |

*Source: Census of India 2011, District census handbook Virudhunagar*

**Table 2.5 Rural and urban population of Virudhunagar district**

| Sl. No | Description | Rural | Urban |
|---|---|---|---|
| 1 | Total population | 962062 | 980226 |
| 2 | Male population | 480360 | 487349 |
| 3 | Female population | 481702 | 492877 |
| 4 | Sex ratio | 1003 | 1011 |

*Source: Census of India 2011, District census handbook Virudhunagar*

Among the total population, the urban population ( i.e. 980226 persons) is higher than rural population (i.e. 962062 persons).

### 2.4.1 Literacy level

The data on literacy level of the district and block level are given in table 2.6 and 2.7. In all, there were total 1398788 literates according to 2011 census. The literacy rate of the district is 80.15 per cent. Among the blocks Sivakasi recorded higher literacy population of 161126, with 87591 male literates and 73535 female literates. Next to Sivakasi, Virudhunagar block has the highest literates 117231 of which 64341 were male and 52890 were female. Watrap block has lower literacy rate in the district with total literates of 46497 among which 26028 were male and 20469 were female. According to the 2001 census the percentage of literate population was only 62.91 which increased to 80.15 during 2011 census. Similar positive trend was seen with male literacy *i.e.* 75.67 to 87.71 per cent and female literacy from 50.17 to 72.69 per cent. Promotion of awareness programme on education has to be planned in the next five year plan.

**Table 2.6 Literacy Level in Virudhunagar District**

| Description | No. of persons | Literacy rate % |
|---|---|---|
| **Total** | 1398788 | 80.15 |
| **Male** | 760375 | 87.71 |
| **Female** | 638413 | 72.69 |

*Source: Census of India 2011, District census handbook Virudhunagar*

**Table 2.7 Block wise literacy details of Virudhunagar District**

| Sl. No | Name of the Block | Persons | Male | Female |
|---|---|---|---|---|
| 1 | Aruppukottai | 75037 | 40474 | 34563 |
| 2 | Kariapatti | 48727 | 27959 | 20768 |
| 3 | Narikudi | 48261 | 27628 | 20633 |
| 4 | Rajapalayam | 111355 | 61375 | 49980 |
| 5 | Sattur | 68859 | 37836 | 31023 |
| 6 | Sivakasi | 161126 | 87591 | 73535 |
| 7 | Srivilliputhur | 71086 | 39311 | 31775 |
| 8 | Tiruchuli | 59933 | 33236 | 26697 |
| 9 | Vembakottai | 84316 | 46420 | 37896 |
| 10 | Virudhunagar | 117231 | 64341 | 52890 |
| 11 | Watrap | 46497 | 26028 | 20469 |
| | **Total** | **13,98,788** | **7,60,375** | **6,38,413** |

*Source: Census of India 2011, District census handbook Virudhunagar*

### 2.4.2 House holds

The total households in the district were 5, 37,748 numbers. The block wise house hold details of the Virudhunagar district is presented in the Table 2.8. Sivakasi block consists of more number of households i.e. 63,832 Nos. followed by Rajapalayam with 45,400 households and Virudhunagar block with 44,752 households. The scheduled caste households are more in Rajapalayam and Sivakasi block with 12,941 and 12,004 nos, respectively. With regards to scheduled tribes households, Watrap and Rajapalayam blocks are having more nos. i.e. above sixty.

**Table 2.8 Distribution of households (block wise)**

| Sl. No | Name of the Block | Number of households (Total) | Number of Scheduled Caste households | Number of Scheduled Tribe households |
|---|---|---|---|---|
| 1 | Aruppukottai | 28,369 | 3,386 | 21 |
| 2 | Kariapatti | 20,068 | 4,804 | - |
| 3 | Narikudi | 18,208 | 4,227 | - |
| 4 | Rajapalayam | 45,400 | 12,941 | 67 |
| 5 | Sattur | 28,513 | 7,996 | 13 |
| 6 | Sivakasi | 63,832 | 12,004 | 29 |
| 7 | Srivilliputhur | 29,266 | 9,928 | 48 |
| 8 | Tiruchuli | 21,999 | 3,543 | 3 |
| 9 | Vembakottai | 34,484 | 7,484 | 33 |
| 10 | Virudhunagar | 44,752 | 10,830 | 25 |
| 11 | Watrap | 19,992 | 7,479 | 68 |
| | **Total** | **5,37,748** | **1,06,932** | **607** |

*Source: Census of India 2011, District Census Handbook Virudhunagar.*

### 2.4.3 Working population

The working population details are presented in Table 2.9. The total workers population in 11 blocks of Virudhunagar district is about 9, 50,158 numbers. The workers from other sectors constitute about 68.30 per cent and were followed by agriculture and allied activities which are about 21.96 per cent. The share of cultivators in the total number of workers in Virudhunagar district constituted 6.02 per cent. The lowest population group (3.71 per cent) was under the household industries category..

**Table 2.9 DistrictPopulation by Categories of Workers (2011 census)**

| Sl. No. | Categories of workers | District | |
|---|---|---|---|
| | | **Persons** | **% to total workers** |
| 1 | Cultivators | 57153 | 6.02 |
| 2 | Agricultural Labourers | 208702 | 21.96 |
| 3 | Household Industry | 35298 | 3.71 |
| 4 | Other Workers | 649005 | 68.30 |
| 5 | Marginal Workers | 96092 | 4.95 |
| | **Total Workers** | **950158** | **48.92** |

*Source: District Census Handbook, Virudhunagar (2011)*

**Table 2.10 Block wise Workforce in the Virudhunagar district during 2011-12 (Numbers)**

| Sl. No. | Block | Cultivators | Agricultural labours | Household industry workers | Other workers | Marginal workers | Total workers |
|---|---|---|---|---|---|---|---|
| 1 | Aruppukottai | 3359 | 10990 | 1269 | 25267 | 8920 | 49805 |
| 2 | Kariapatti | 6428 | 13146 | 542 | 13771 | 6654 | 40541 |
| 3 | Narikudi | 8099 | 15660 | 347 | 8384 | 7571 | 40061 |
| 4 | Rajapalayam | 3726 | 19736 | 2840 | 45965 | 7159 | 79426 |
| 5 | Sattur | 2863 | 10620 | 958 | 35093 | 3862 | 53396 |
| 6 | Sivakasi | 3023 | 8739 | 2462 | 96071 | 5814 | 116109 |
| 7 | Srivilliputhur | 2988 | 13793 | 796 | 28684 | 6303 | 52564 |
| 8 | Tiruchuli | 7952 | 16403 | 493 | 14013 | 7618 | 46479 |
| 9 | Vembakottai | 3825 | 9182 | 1114 | 49037 | 5619 | 68777 |
| 10 | Virudhunagar | 4067 | 10618 | 1389 | 52280 | 10607 | 78961 |
| 11 | Watrap | 3198 | 16792 | 1110 | 11919 | 5890 | 38909 |
| | **Total** | **52361** | **168174** | **30292** | **603239** | **96092** | **950158** |

Source:*Census of India 2011, District Census Handbook Virudhunagar.*

## 2.5 Topography

The climate is generally hot and dry with a low degree of humidity. The District receives scanty rainfall. The average annual rainfall is only 820 mm. Frequent drought caused by failure of monsoon adversely affects the dry crops depending upon rain fed tanks for irrigation. Soil is predominately black soil.

The district has two naturally distinct regions viz. (i) Eastern slopes of the Western Ghats in the Srivilliputtur taluk and (ii) the plains of the Sattur, and Aruppukkottai. The eastern slopes of the Western Ghats starts from the northern-most points along the boundary between Virudhunagar & Madurai districts and proceed southwards in an unbroken line as far as the Deviar, with an average elevation of 1500 metres approximately. The highest peak of this mountain range is Pemalai Mottai with a height of 1700 metres above mean sea level. Tea and coffee estates have sprung up on the slopes of the Ghats, where spices are also grown. Teak is also grown in some parts. The plain of Sattur and Aruppukkottai taluks mostly has black cotton soil, locally known as `Karisal'. This soil is mostly used for growing cotton and cultivation of dry crops.

## 2.6 Soil type

The soil type and nutritional status for the entire blocks of the Virudhunagar district is presented in Tables 2.11 and 2.12. Soils in the area have been classified into i) Deep red Loam ii) Black soil iii) Red sandy soil. Majority of the study area is covered by Black soil. Ferruginous red soils are also seen at places. Black soils are deep to very deep and generally occur in the depressions adjacent to hilly areas, in the western and central part of district. Alluvial soils occur along the river courses. Red sandy soil is seen all around the Sattur, Kariyapatti, Aruppukottai and Thiruchuli blocks.

**Table 2.11 Block wise Soil Classification in Virudhunagar District**

| Sl. No. | Block | Types of soil |
|---|---|---|
| 1 | Aruppukottai | Black Soil |
| 2 | Kariapatti | Lateritic Soil, Sandy Coastal Alluviam |
| 3 | Narikudi | Sandy Coastal Alluviam |
| 4 | Rajapalayam | Red loam |
| 5 | Sattur | Black Soil |
| 6 | Srivilliputhur | Red loam, Black Soil |
| 7 | Sivakasi | Black soil |
| 8 | Thiruchuli | Lateritic Soil |
| 9 | Vemmbakottai | Black soil |
| 10 | Virudhunagar | Black Soil |
| 11 | Watrap | Red loam |

Red loam and Black soils are more predominant in most of the blocks

**Table 2.12 Soil Type / Block Wise Fertility Index**

| Sl. No | Block | pH | EC | Texture | Nutrient status (kg/ac) | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | N | P | | K |
| | | | | | | (Olsen) | (Bray) | |
| 1 | Rajapalayam | 0.2- 7.2 | 6.8- 9.3 | CL, SL, SCL | 65.80 | 7.10 | 19.20 | 291.90 |
| 2 | Srivilliputtur | 0.2- 8.6 | 5.9- 9.7 | CL, SCL, SL | 65.00 | 6.50 | 19.71 | 254.50 |
| 3 | Watrap | 0.2- 8.6 | 5.0-10.2 | CL, SCL | 69.80 | 7.00 | 22.12 | 319.50 |
| 4 | Sattur | 0.2-4.8 | 7.2-9.1 | CL, SCL | 68.40 | 8.10 | 23.22 | 292.20 |
| 5 | Sivakasi | 0.2-2.6 | 7.5-9.3 | CL, SCL, SL | 76.00 | 6.50 | 22.23 | 291.00 |
| 6 | Vembakottai | 0.2-6.4 | 7.2-9.3 | CL, SCL | 75.78 | 7.50 | 20.90 | 316.44 |
| 7 | Virudhunagar | 0.2-3.2 | 6.7-9.4 | CL, SCL | 67.67 | 5.70 | 19.00 | 266.11 |
| 8 | Aruppukottai | 0.1-3.0 | 6.1-9.7 | CL, SCL, SL | 68.37 | 6.00 | 19.74 | 283.82 |
| 9 | Kariyapatti | 0.1-3.0 | 6.9-10.8 | CL, SCL, SL | 68.34 | 6.10 | 21.32 | 251.00 |
| 10 | M. Rediyapatti | 0.1-2.7 | 5.8-9.7 | CL, SCL, SL | 66.37 | 5.60 | 25.43 | 312.00 |
| 11 | Narikudi | 0.2-4.8 | 5.0-10.1 | CL, SCL, SL | 69.90 | 6.20 | 22.20 | 249.00 |
| | **District Total** | **0.2-8.6** | **5.0-10.2** | **CL, SCL, SL** | **68.00** | **6.30** | **21.40** | **272.00** |

CL- Clay loam, SCL- Sandy clay loam, SL- Sandy loam

### 2.7 Climate Condition and Rainfall

The normal rainfall of Virudhunagar district is 820 mm mainly contributed by north east monsoon. The monthly average rainfall in the district worked out to 74.58 mm. The months of October, November and December receive major rainfall in a year. Nearly 79.94 percent of the total rainfall is received during the NEM season. The remaining 20 percent of the rainfall is received during south west monsoon, summer and winter season. The year wise (2014-15) and annual distribution of rainfall for 2014-15 is given in Table 2.13. The season wise average rainfall during the years 2000-2012 is depicted in the Fig. 3.

**Table 2.13 Month wise / season wise rainfall distribution in Virudhunagar District**

| Season / Month | 2014-15 | |
|---|---|---|
| | Actual (mm) | Normal (mm) |
| **South West Monsoon** | | |
| June | 22.6 | 22.1 |
| July | 10.7 | 35.8 |
| August | 66.3 | 51.4 |
| September | 44.7 | 87.5 |
| **Total** | **144.3(21.75)** | **196.8** |
| **North East Monsoon** | | |
| October | 160.0 | 180.7 |
| November | 116.7 | 172.7 |
| December | 31.4 | 65.6 |
| **Total** | **308.1(46.44)** | **419.0** |
| **Winter Season** | | |
| January | 2.5 | 18.8 |
| February | 7.4 | 24.0 |
| **Total** | **9.9(1.49)** | **42.8** |
| **Hot Weather** | | |
| March | 23.6 | 28.8 |
| April | 69.0 | 67.5 |
| May | 108.6 | 65.2 |
| **Total** | **201.2(30.24)** | **161.5** |
| **Annual rainfall** | **663.5(100)** | **820** |

Source: Season and Crop Report (2011-12), Department of Economics and Statistics, Government of Tamil Nadu

(Figures in parenthesis denote percentage to total annual rainfall)

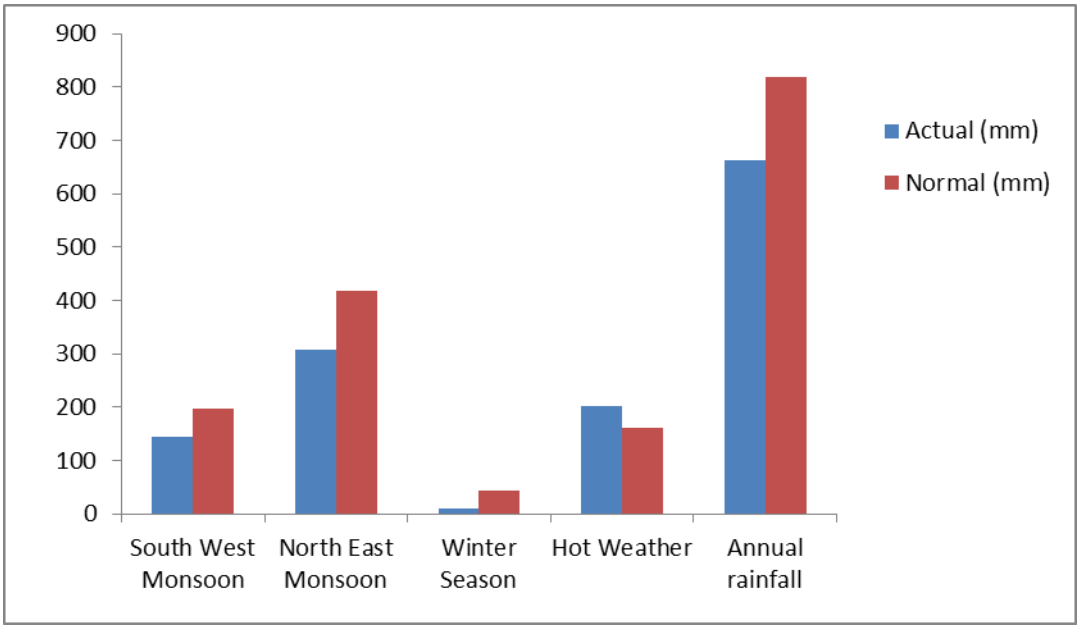


**Fig.3. Average Rainfall of Virudhunagar District (2014-15)**

## 2.8 Land

### 2.8.1 Land use pattern

**Table 2.14 Land Use Pattern of Virudhunagar District (2014-15) & Compound Growth Rate (2000-01 to 2011-12) Per annum**

| Sl. No | Classification | Area (ha) | per cent | CGR (%) |
|---|---|---|---|---|
| 1 | Geographical Area | 424323 | 100.00 | 0 |
| 2 | Forest | 26466 | 6.24 | -0.05 |
| 3 | Barren & Unculturable Area | 4525 | 1.07 | 0.47 |
| 4 | Land Put to Non-agricultural Uses | 70510 | 16.62 | 0.36 |
| 5 | Permanent Pastures & Other grazing lands | 804 | 0.19 | 0 |
| 6 | Misc.tree crops & groves not incl. in the net area sown | 5470 | 1.29 | 2.75 |
| 7 | Current Fallow | 7663 | 1.81 | -12.69 |
| 8 | Other Fallow | 175519 | 41.36 | 4.39 |
| 9 | Net area sown | 123831 | 29.18 | -1.33 |
| 10 | Area sown more than once | 3790 | | -.82 |
| 11 | Gross area sown | 127621 | | -1.32 |
| | **Total** | **970522** | | |

**Source: Seasonal crop report 2014-15*

Classification of land use for the district is given in Table 2.14. Around 41.36 percent of land use is under other fallow lands. The district has least chance of increasing area under cultivation in the short-run. Hence the major challenge lies in intensifying agriculture in the existing area sown. The area under land use varies from 4,525 ha

(1.07 percent) in barren and uncultivable uses to other fallow lands with 1, 75,519 ha (41.36 percent) from the total geographical area of 424323 ha.

The block wise land use pattern of the district is given in the Table 2.15. The net sown area is registered more under Tiruchuli and Aruppukottai blocks. The blocks Rajapalayam and Srivilliputhur are having more area under forest coverage i.e. 13961 and 12010 ha, respectively.

### 2.8.2 Land Holdings Pattern

The extent of operational land holding pattern is given in Table 2.16. Out of 206518 ha land, the major land holding share i.e. up to 165414 ha is below 1.0 to 4.0 ha. Only up to 41104 ha is coming under the land holding above 4.0 to 10.0 and above 10.0 ha.

**Table 2.15 Block wise details for land use pattern of Virudhunagar district**

| Sl. No. | Details | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Total geographical area | 32781 | 39895 | 42455 | 48780 | 35738 | 34375 | 40036 | 43070 | 38248 | 42245 | 26216 |
| 2 | Area under forest | - | 676 | 2 | 13961 | - | - | 12010 | 0 | - | - | 495 |
| 3 | Area under cultivable waste | 48 | 3698 | 222 | 22 | 1414 | 265 | 594 | 891 | 1865 | 125 | 404 |
| 4 | Land put to non-agrl. Uses | 3361 | 6534 | 10630 | 7377 | 5593 | 5377 | 6543 | 7468 | 6702 | 6066 | 4694 |
| 5 | Area under current fallows | 12655 | 1280 | 1838 | 1624 | 4416 | 1725 | 1050 | 1640 | 1336 | 1784 | 1689 |
| 6 | Area under other fallows | 12226 | 16364 | 17755 | 8967 | 13462 | 22224 | 10638 | 15722 | 19475 | 25812 | 7417 |
| 7 | Area under miscellaneous tree crops and groves not included in net area sown | 186 | 97 | 46 | 3211 | 705 | 258 | 254 | 147 | 981 | 196 | 97 |
| 8 | Area under permanent pastures | - | 29 | 48 | 5 | 7 | 123 | 139 | 31 | 320 | - | 103 |
| 9 | Net are sown | 15510 | 11216 | 11783 | 13189 | 8295 | 4334 | 8660 | 16806 | 7275 | 8254 | 10931 |
| 10 | Area sown more than once | - | 219 | 25 | 1302 | - | 165 | 376 | - | 3 | - | 1852 |
| 11 | Gross cropped area | 15510 | 11435 | 11808 | 14490 | 8295 | 4499 | 9036 | 16806 | 7278 | - | 12783 |

B1- Aruppukottai, B2- Kariapatti, B3- Narikudi, B4- Rajapalayam, B5- Sattur, B6- Sivakasi, B7- Srivilliputhur, B8- Tiruchuli, B9- Vembakottai, B10- Virudhunagar, B11- Watrap

**Table 2.16 Details of block wise land holding pattern of Virudhunagar district**

| Land holding pattern | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Less than one hectare | 4383 | 5400 | 7182 | 6338 | 2335 | 2161 | 3022 | 7464 | 2021 | 5236 | 6595 | 49974 |
| Between 1 - 2 hectare | 6423 | 3200 | 6255 | 4004 | 2874 | 1150 | 4157 | 5676 | 2738 | 3147 | 4614 | 43088 |
| Between 2.1 - 4 hectare | 1410 | 17680 | 4537 | 4546 | 6902 | 957 | 3506 | 5177 | 22436 | 2884 | 3273 | 72352 |
| Between 4.1 - 10 hectare | 2673 | 7600 | 2501 | 2619 | - | 912 | 2238 | 3691 | 2185 | 1754 | 1784 | 27044 |
| More than 10.1 hectares and above | 621 | 5800 | 927 | 1320 | - | 120 | 651 | 2759 | - | 890 | 1094 | 14061 |
| **Total** | **15510** | **39680** | **21401** | **18827** | **12111** | **5300** | **13573** | **24766** | **29379** | **13911** | **17360** | **206518** |

**Note:**B1- Aruppukottai, B2- Kariapatti, B3- Narikudi, B4- Rajapalayam, B5- Sattur, B6- Sivakasi, B7- Srivilliputhur, B8- Tiruchuli, B9- Vembakottai, B10- Virudhunagar, B11- Watrap

## 2.9 Sources of Irrigation

The main sources of irrigation in Virudhunagar district are Tanks and open Wells. Canal system is not used for irrigation in the district. The total area irrigated by tanks, wells and other sources is 60361hectares. The gross area irrigated by tanks and wells are 65687 hectares. On an average about 43.05 percent of the total cropped area is irrigated. The details of Area irrigated by different sources of water supply and growth rates and block wise sources of irrigation is furnished in the table 2.17 and 2.18.

**Table.2.17 Area irrigated by different sources of water supply and growth rates**

| Sl. No. | Particulars | | 2012-13 | 2013-14 | 2014-15 | Average |
|---|---|---|---|---|---|---|
| 1 | Canals | Gross | 0 | 0 | 0 | 0.00 |
| | | Net | 0 | 0 | 0 | 0.00 |
| 2 | Tanks | Gross | 18973 | 15261 | 19802 | 18012.00 |
| | | Net | 18266 | 14923 | 19401 | 17530.00 |
| 3 | Tube wells / Bore wells | Gross | 196 | 157 | 313 | 222.00 |
| | | Net | 196 | 157 | 313 | 222.00 |
| 4 | Open wells | Gross | 31276 | 29443 | 31370 | 30696.33 |
| | | Net | 28543 | 28019 | 28571 | 28377.67 |
| 5 | Supplementary wells | Gross | 256 | 188 | 215 | 219.67 |
| | | Net | 256 | 188 | 215 | 219.67 |
| 6 | Other Sources | Gross | 0 | 0 | 0 | 0.00 |
| | | Net | 0 | 0 | 0 | 0.00 |

*(Source: Season and Crop Report, 2014-15)*

**Table 2.18 Irrigation Sources (Block wise for each source)**

| Sl. No | Sources & Blocks | Numbers | Gross Area Irrigated (Ha) | Net area Irrigated (Ha) | Irrigation Intensity (%) |
|---|---|---|---|---|---|
| 2 | **Tanks** | | | | |
| | Rajapalayam | 105 | 5975 | 5496 | 108 |
| | Srivilliputtur | 100 | 2552 | 2169 | 118 |
| | Watrap | 64 | 4326 | 3257 | 132 |
| | Sattur | 34 | 777 | 777 | 100 |
| | Sivakasi | 50 | 1410 | 1410 | 100 |
| | Vembakottai | 25 | 632 | 632 | 100 |
| | Virudhunagar | 36 | 166 | 166 | 100 |
| | Aruppukottai | 26 | 302 | 302 | 100 |
| | Kariapatti | 151 | 5130 | 4988 | 102 |
| | M.Reddiapatti | 132 | 1989 | 1989 | 100 |
| | Narikudi | 274 | 6018 | 6015 | 100 |
| | **Sub-Total** | **997** | **29277** | **27201** | **108** |

| Sl. No | Sources & Blocks | Numbers | Gross Area Irrigated (Ha) | Net area Irrigated (Ha) | Irrigation Intensity (%) |
|---|---|---|---|---|---|
| 3 | **Wells** | | | | |
| | Rajapalayam | 7934 | 9915 | 7645 | 130 |
| | Srivilliputtur | 5137 | 4174 | 3874 | 108 |
| | Watrap | 6085 | 5309 | 4809 | 110 |
| | Sattur | 1770 | 1164 | 1164 | 100 |
| | Sivakasi | 1657 | 2178 | 2178 | 100 |
| | Vembakottai | 3333 | 2471 | 2291 | 108 |
| | Virudhunagar | 2882 | 962 | 962 | 100 |
| | Aruppukottai | 1252 | 1832 | 1832 | 100 |
| | Kariapatti | 2297 | 1867 | 1867 | 100 |
| | M.Reddiapatti | 2104 | 1333 | 1333 | 100 |
| | Narikudi | 956 | 5205 | 5205 | 100 |
| | **Sub-Total** | **35407** | **36410** | **33160** | **116** |
| | **Grand Total** | **36,404** | **65,687** | **60,361** | **109** |

**Source: JDA office- Virudhunagar*

### 2.10 Cropping pattern

Details of area under different major agricultural and horticultural crops for the district are shown in table 2.19. The major crops under cultivation are paddy, maize, coconut, cholam, cotton, mango and chilli.

**Table.2.19 Area under major crops (2014-15 and Triennium ending 2011-12)**

| Sl. No. | Crops | (Ha) | % | Triennium Ending 2011-12 | % |
|---|---|---|---|---|---|
| 1 | Paddy | 19684 | 20.14 | 28948 | 29.84 |
| 2 | Cholam | 13993 | 14.31 | 9862 | 10.16 |
| 3 | Maize | 22393 | 22.91 | 13950 | 14.38 |
| 4 | Cumbu | 3525 | 3.61 | 2645 | 2.73 |
| 5 | Green gram | 5225 | 5.35 | 8982 | 9.26 |
| 6 | Ground nut | 5189 | 5.31 | 6016 | 6.2 |
| 7 | Coconut | 9968 | 10.20 | 9608 | 9.9 |
| 8 | Sugar cane | 2862 | 2.93 | 3255 | 3.36 |
| 9 | Cotton | 10396 | 10.63 | 8473 | 8.73 |
| 10 | Mango | 3025.67 | 3.10 | 2733 | 2.82 |
| 11 | Chilli | 1493 | 1.53 | 2548 | 2.63 |
| | **Total** | 97754.67 | 100.00 | 97018 | 100 |

The cropping pattern details of the district is furnished in the table 2.20. The area under cultivation is about 108956, in which non-food crops occupies an area of 36997.2 ha.

Other than major crops, the following crops viz., pulses, groundnut, sugarcane, gingelly, banana, guava, Sapota, citrus, and cashewnut are also cultivated in the district

**Table.2.20 Area under major crops in 2014-15**

| Sl. No | Particulars | Area (in ha) | Production (in tonnes) | Productivity (in kg/ha) |
|---|---|---|---|---|
| 1 | Paddy | 19684.33 | 63339.67 | 3350.00 |
| 2 | Maize | 22393.00 | 105690.00 | 4989.00 |
| 3 | Cholam | 13993.00 | 36798.00 | 2431.33 |
| 4 | Cumbu | 3525.00 | 10095.00 | 2701.67 |
| 5 | Ragi | 132.67 | 466.67 | 3508.67 |
| 6 | Bengal Gram | 23.33 | 13.33 | 570.33 |
| 7 | Red Gram | 769.00 | 640.67 | 854.33 |
| 8 | Black Gram | 2940.33 | 1831.67 | 616.00 |
| 9 | Green Gram | 5225.67 | 2745.33 | 506.33 |
| 10 | Horse Gram | 56.33 | 29.33 | 594.67 |
| 11 | Groundnut | 5189.00 | 7438.67 | 1043.00 |
| 12 | Sunflower | 779.00 | 763.67 | 935.67 |
| 13 | Gingelly | 1328.33 | 838.33 | 513.00 |
| 14 | Castor | 27.67 | 6.67 | 149.33 |
| 15 | Cotton | 10396.00 | 21906.67 | 266.67 |
| 16 | Coconut | 9968.00 | 1253.00 | 9200.33 |
| 17 | Sugarcane | 2862.00 | 274356.00 | 66.33 |
| 18 | Onion | 1078.33 | 6637.00 | 6394.67 |
| 19 | Brinjal | 185.33 | 1673.33 | 9034.00 |
| 20 | Bhendi | 127.00 | 936.00 | 7361.33 |
| 21 | Cabbage | 0.67 | 40.67 | 20365.00 |
| 22 | Tomato | 165.67 | 2272.33 | 13678.67 |
| 23 | Banana | 872.33 | 34482.67 | 39607.67 |
| 24 | Mango | 3025.67 | 11789.00 | 3882.33 |
| 25 | Jack Fruit | 16.67 | 213.67 | 12870.67 |
| 26 | Pine Apple | 0.33 | 10.00 | 10059.33 |
| 27 | Guava | 683.33 | 4600.33 | 6675.33 |
| 28 | Grapes | 1.00 | 14.33 | 14560.33 |
| 29 | Orange | 1.67 | 4.00 | 2601.67 |
| 30 | Chillies | 1493.00 | 1308.67 | 879.33 |
| 31 | Cloves & Cinnamon | 4.00 | 4.00 | 976.00 |

| Sl. No | Particulars | Area (in ha) | Production (in tonnes) | Productivity (in kg/ha) |
|---|---|---|---|---|
| 32 | Coriander | 1564.67 | 461.67 | 453.00 |
| 33 | Turmeric | 1.33 | 5.00 | 1224.33 |
| 34 | Tamarind | 425.00 | 1334.67 | 3141.00 |
| 35 | Tapioca | 9.00 | 297.67 | 32180.00 |
| 36 | Sweet Potato | 8.33 | 161.67 | 19541.00 |
| | **Total** | **108956.00** | **594459.33** | **237782.33** |

*(Source: Season and Crop Report, 2014-15)*

The projected area, production and productivity of the major potential crops identified for the district is furnished in the Table 2.21. The block wise area, production and productivity of the district is given in the Table 2.22.

**Table 2.21 Projected Area (ha.), Production and Yield of the Major Potential Crops Identified**

| Paddy | | | | Cholam | | | Maize | | | Cumbu | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | Area | Production | Yield | Area | Production | Yield | Area | Production | Yield | Area | Production | Yield |
| | 0.697 | 3.017 | 2.303 | 2.494 | 8.476 | 5.835 | 8.452 | 22.122 | 12.606 | -10.416 | -3.390 | 7.847 |
| 2012-13 | 28948 | 92567 | 3173 | 9862 | 11810 | 1194 | 13950 | 73012 | 5120 | 2645 | 5596 | 2194 |
| 2013-14 | 30562 | 107918 | 3531 | 10524 | 13800 | 1311 | 18110 | 119982 | 6626 | 2161 | 5853 | 2709 |
| 2014-15 | 30775 | 111174 | 3612 | 10786 | 14969 | 1388 | 19641 | 146525 | 7461 | 1936 | 5655 | 2922 |
| 2015-16 | 30990 | 114528 | 3696 | 11055 | 16238 | 1469 | 21301 | 178939 | 8401 | 1734 | 5463 | 3151 |

**Contd.,**

| Greengram | | | | Groundnut | | | Coconut | | | Sugar | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | Area | Production | Yield | Area | Production | Yield | Area | Production | Yield | Area | Production | Yield |
| | 1.596 | 3.021 | 1.420 | -1.570 | 3.452 | 5.101 | 1.733 | 10.022* | 7.665* | 0.138 | -0.842 | -0.999 |
| 2012-13 | 8982 | 3667 | 431 | 6016 | 6692 | 1151 | 9608 | 1118 | 11621 | 3255 | 331374 | 102 |
| 2013-14 | 10011 | 4951 | 495 | 6524 | 9047 | 1387 | 9803 | 1244 | 12498 | 3454 | 342801 | 99 |
| 2014-15 | 10171 | 5101 | 502 | 6422 | 9360 | 1457 | 9973 | 1369 | 13456 | 3458 | 339916 | 98 |
| 2015-16 | 10333 | 5255 | 509 | 6321 | 9683 | 1532 | 10146 | 1506 | 14487 | 3463 | 337055 | 97 |
| | 10498 | 5414 | 516 | 6222 | 10017 | 1610 | 10321 | 1657 | 15598 | 3468 | 334219 | 96 |

| | Cotton | | | Mango | | | Chilli | | |
|---|---|---|---|---|---|---|---|---|---|
| | Area | Production | Yield | Area | Production | Yield | Area | Production | Yield |
| | -9.321 | -4.072 | 5.804 | 7.559 | -4.686 | -11.385 | -7.381 | -3.332 | 4.365 |
| 2012-13 | 8473 | 16090 | 316 | 2733 | 7433 | 2718 | 2548 | 2593 | 1039 |
| 2013-14 | 6686 | 13160 | 335 | 3283 | 7376 | 2246 | 2112 | 2233 | 1057 |
| 2014-15 | 6063 | 12624 | 354 | 3532 | 7031 | 1991 | 1956 | 2158 | 1103 |
| 2015-16 | 5497 | 12110 | 375 | 3799 | 6701 | 1764 | 1811 | 2086 | 1151 |
| | 4985 | 11617 | 397 | 4086 | 6387 | 1563 | 1678 | 2017 | 1202 |

*Source: O/o Joint Director of Agriculture, Virudhunagar*

**Table 2.22 Block wise Area, Production and Productivity of major crops of Virudhunagar district (2013-14)**

| Sl. No. | Block | Paddy | | | Maize | | |
|---|---|---|---|---|---|---|---|
| | | Area (Ha) | Productivity (kg/ha) | Production (MT) | Area (Ha) | Productivity ( kg/ha) | Production (MT) |
| 1 | Rajapalayamm | 2966 | 7888 | 23398 | 1584 | 5329 | 8441 |
| 2 | Srivilliputtur | 811 | 6757 | 5480 | 1867 | 6868 | 12823 |
| 3 | Watrap | 2133 | 8124 | 17328 | 460 | 5329 | 2451 |
| 4 | Sattur | 32 | 6858 | 219 | 4370 | 5422 | 23694 |
| 5 | Sivakasi | 669 | 7457 | 4989 | 2308 | 5329 | 12299 |
| 6 | Vembakottai | 112 | 6858 | 768 | 3403 | 7415 | 25233 |
| 7 | Virudhunagar | 232 | 6858 | 1591 | 2547 | 4626 | 11782 |
| 8 | Aruppukkottai | 99 | 6858 | 682 | 4380 | 4328 | 18957 |
| 9 | Kariyapatti | 2540 | 4912 | 12476 | 280 | 5329 | 1492 |
| 10 | M. Rediyapatti | 2205 | 6460 | 14244 | 2869 | 5329 | 15289 |
| 11 | Narikudi | 4720 | 6411 | 30260 | 123 | 5329 | 655 |
| | **Total** | **16519** | | **111435** | **24191** | | **133116** |

| Sl. No | Block | Cholam | | | Cumbu | | |
|---|---|---|---|---|---|---|---|
| | | Area (Ha) | Productivity ( kg/ha) | Production (MT) | Area (Ha) | Productivity ( kg/ha) | Production (MT) |
| 1 | Rajapalayam | 62 | 3301 | 205 | 116 | 5329 | 615 |
| 2 | Srivilliputtur | 5 | 2357 | 12 | 26 | 6868 | 179 |
| 3 | Watrap | 47 | 2357 | 111 | 8 | 5329 | 43 |
| 4 | Sattur | 642 | 1941 | 1246 | 521 | 5422 | 2825 |
| 5 | Sivakasi | 476 | 2014 | 959 | 25 | 5329 | 133 |
| 6 | Vembakottai | 37 | 2357 | 87 | 257 | 7415 | 1906 |
| 7 | Virudhunagar | 1957 | 1484 | 2904 | 153 | 4626 | 708 |
| 8 | Aruppukkottai | 4415 | 3301 | 14574 | 874 | 4328 | 3783 |
| 9 | Kariyapatti | 1354 | 1037 | 1404 | 7 | 5329 | 37 |
| 10 | M.Rediyapatti | 4473 | 3130 | 14000 | 1852 | 5329 | 9869 |
| 11 | Narikudi | 343 | 2357 | 808 | 3 | 5329 | 16 |
| | **Total** | **13811** | | **36310** | **3842** | | **20114** |

**Contd.,**

| Sl. No. | Block | Redgram | | | Greengram | | |
|---|---|---|---|---|---|---|---|
| | | Area (Ha) | Productivity (kg/ha) | Production (MT) | Area (Ha) | Productivity (kg/ha) | Production (MT) |
| 1 | Rajapalayam | 16 | 1155 | 18 | 101 | 571 | 58 |
| 2 | Srivilliputtur | 3 | 1155 | 3 | 58 | 571 | 33 |
| 3 | Watrap | 12 | 1155 | 14 | 180 | 571 | 103 |
| 4 | Sattur | 8 | 1155 | 9 | 1174 | 571 | 670 |
| 5 | Sivakasi | 13 | 1155 | 15 | 91 | 571 | 52 |
| 6 | Vembakottai | 27 | 1155 | 31 | 358 | 571 | 204 |
| 7 | Virudhunagar | 43 | 1155 | 50 | 598 | 571 | 341 |
| 8 | Aruppukkottai | 153 | 1155 | 177 | 1240 | 759 | 941 |
| 9 | Kariyapatti | 224 | 1155 | 259 | 427 | 571 | 244 |
| 10 | M.Rediyapatti | 128 | 1155 | 148 | 514 | 622 | 320 |
| 11 | Narikudi | 77 | 1155 | 89 | 36 | 571 | 21 |
| | **Total** | **704** | | **813** | **4777** | | **2987** |

| Sl. No. | Block | Blackgram | | | Groundnut | | |
|---|---|---|---|---|---|---|---|
| | | Area (Ha) | Productivity (kg/ha) | Production (MT) | Area (Ha) | Productivity (kg/ha) | Production (MT) |
| 1 | Rajapalayam | 130 | 635 | 83 | 7 | 2156 | 16 |
| 2 | Srivilliputtur | 28 | 635 | 18 | 11 | 2156 | 24 |
| 3 | Watrap | 23 | 635 | 15 | 14 | 2156 | 30 |
| 4 | Sattur | 124 | 635 | 79 | 24 | 2156 | 52 |
| 5 | Sivakasi | 56 | 635 | 36 | 11 | 2156 | 24 |
| 6 | Vembakottai | 132 | 635 | 84 | 19 | 2156 | 41 |
| 7 | Virudhunagar | 243 | 635 | 154 | 71 | 2156 | 153 |
| 8 | Aruppukkottai | 663 | 635 | 421 | 479 | 2156 | 1033 |
| 9 | Kariyapatti | 141 | 635 | 90 | 1009 | 1780 | 1796 |
| 10 | M.Rediyapatti | 898 | 635 | 570 | 816 | 2867 | 2339 |
| 11 | Narikudi | 67 | 635 | 43 | 3540 | 1221 | 4322 |
| | **Total** | **2505** | | **1593** | **6001** | | **9830** |

**Contd.,**

| Sl. No | Block | Gingelly | | | Sunflower | | |
|---|---|---|---|---|---|---|---|
| | | Area (Ha) | Productivity (Kg/ha) | Production (MT) | Area (Ha) | Productivity (Kg/ha) | Production (MT) |
| 1 | Rajapalayam | 177 | 315 | 56 | 14 | 1382 | 19 |
| 2 | Srivilliputtur | 27 | 315 | 9 | 36 | 1382 | 50 |
| 3 | Watrap | 157 | 315 | 49 | 0 | 0 | 0 |
| 4 | Sattur | 13 | 315 | 4 | 7 | 1382 | 10 |
| 5 | Sivakasi | 8 | 315 | 3 | 12 | 1382 | 17 |
| 6 | Vembakottai | 20 | 315 | 6 | 237 | 1676 | 397 |
| 7 | Virudhunagar | 13 | 315 | 4 | 0 | 0 | 0 |
| 8 | Aruppukkottai | 9 | 315 | 3 | 185 | 1106 | 205 |
| 9 | Kariyapatti | 118 | 298 | 35 | 0 | 0 | 0 |
| 10 | M.Rediyapatti | 33 | 409 | 13 | 284 | 1366 | 388 |
| 11 | Narikudi | 785 | 168 | 132 | 0 | 0 | 0 |
| | **Total** | **1360** | | **314** | **775** | | **1086** |

| Sl. No | Block | Cotton | | | Sugarcane | | |
|---|---|---|---|---|---|---|---|
| | | Area (Ha) | Productivity (Kg/ha) | Production (MT) | Area (Ha) | Productivity (Kg/ha) | Production (MT) |
| 1 | Rajapalayam | 505 | 1695 | 856 | 1164 | 101 | 118 |
| 2 | Srivilliputtur | 405 | 1663 | 674 | 1081 | 101 | 109181 |
| 3 | Watrap | 381 | 962 | 367 | 16 | 101 | 2 |
| 4 | Sattur | 275 | 907 | 249 | 1 | 101 | 0 |
| 5 | Sivakasi | 784 | 1421 | 1114 | 65 | 101 | 7 |
| 6 | Vembakottai | 938 | 2365 | 2218 | 10 | 101 | 1 |
| 7 | Virudhunagar | 807 | 1022 | 825 | 6 | 101 | 1 |
| 8 | Aruppukkottai | 1899 | 1945 | 3694 | 11 | 101 | 1 |
| 9 | Kariyapatti | 938 | 547 | 513 | 60 | 101 | 6 |
| 10 | M.Rediyapatti | 1554 | 1260 | 1958 | 305 | 101 | 31 |
| 11 | Narikudi | 728 | 1263 | 919 | 12 | 101 | 1 |
| | **Total** | **9214** | | **13387** | **2731** | | **109349** |

## 2.11 Consumption of Chemical Fertilizers and Pesticides

The Department of Agriculture closely monitor the demand and supply of the fertilizers to ensure timely availability to the farmers. To monitor the fertilizer supply, facilitation centres were opened in all the districts from 8.00 A.M to 8.00 P.M. and the Department ensured timely availability of fertilizer at correct price. The consumption of fertilizers and pesticides during 2010-2011 is given in Table 2.23. It could be observed that the nitrogenous fertilizer was highly consumed (8481 MT) followed by phosphatic fertilizer (4703 MT) in Virudhunagar district. Pesticide used in the form of dust was 7968 kg and liquid was 7410 litres.

**Table 2.23 Consumption of chemical fertilizers and pesticides (2009-10)**

| Fertilizers (in '000' Tonne) | | | | Pesticides | | Urea (000' tonnes) |
|---|---|---|---|---|---|---|
| Nitrogenous (N) | Phosphatic ($P_2 0_5$) | Potassic ($K_2O$) | Total (NPK) | Dust (kg) | Liquid (Lit) | |
| 8481 | 4703 | 3379 | 16563 | 7968 | 7410 | 12770.60 |

*Source: Joint Director of Agriculture, Virudhunagar.*

## 2.12 Agricultural Engineering - Machineries and Implements

There is an ample scope for selective mechanization in the district by large scale use of power tiller, thrasher, cultivators and harvesters. The use of agricultural implements and machineries has been practiced by farmers for efficiency and at time of labour shortage during peak seasons. The ploughs, tractors, water pumps for irrigation purpose, sugarcane crushers and oil engines available were 8005, 1837, 13658, 211 and 17 Nos. respectively (Table 2.24).

**Table 2.24 Agricultural machineries and implements in Virudhunagar district**

| Sl. No. | Item | Numbers |
|---|---|---|
| 1 | Ploughs | |
| | a. Wooden | 6003 |
| | b. Iron | 2002 |
| | **Total** | **8005** |
| 2 | Water Pumps for Irrigation Purpose | |
| | a. Worked by Oil Engine | 2115 |
| | b. Worked by electric Power | 11543 |
| | **Total** | **13658** |
| 3 | Tractors | |
| | a. Government | 30 |
| | b. Private | 1807 |
| | **Total** | **1837** |
| 4 | Sugarcane Crushers | |
| | a. Worked by Power | 211 |
| | b. Worked by Bullocks | |
| 5 | Oil engines (Less than 5 kg.) | 17 |

*Source: Agriculture Census 2005-2006*

## 2.13 Agricultural Marketing and Regulated Markets

Regulated Markets provide facilities such as correct measurement by using electronic weigh bridges and weighing balances, godown facilities, bank facility, immediate payment, daily price information, rest sheds, drinking water facility, cattle sheds, free medical aid to farmers, input shops, phone and fax facilities etc. The details of regulated markets are presented in the table 2.25. Totally there are seven regulated markets in the district. The commodities transacted in the regulated markets are chillies, cotton, cumbu, ragi, maize, paddy, onion and cholam with a value of Rs. 105.47 lakhs.

**Table 2.25 Details of Regulated Markets in Virudhunagar (2009-10)**

| Name of Regulated Markets | Main Commodities transacted | Quantities arrived (in mt.) product wise | Receipts (₹. In lakhs) (Product wise) |
|---|---|---|---|
| Virudhunagar | Cotton<br>Chillies<br>Paddy<br>Cumbu<br>Cholam<br>Ragi<br>Onion<br>Maize | 5131 | 10.45 |
| Rajapalayam | | 8021 | 33.46 |
| Sattur | | 1942 | 5.66 |
| Aruppukottai | | 3050 | 32.09 |
| Vembakottai | | 42 | 0.0 |
| Watrap | | 2485 | 8.19 |
| Srivilliputhur | | 2360 | 15.62 |
| **Total** | | **23031** | **105.47** |

*Source: Secretary, Ramanathapuram Regulated Market Committee, Virudhunagar.*

## 2.14 Storage Facilities

There are twenty four godowns and two cold storage units present in Virudhunagar district. Two warehouses at Virudhunagar and Rajapalayam offer facilities for storage of food grains, spices, pulses, chillies, jaggery and cotton

## 2.15 Sericulture

The area under mulberry and production of cocoons in different blocks are given in the Table 2.26. The total area under mulberry in the district is 313.50 acres. The major area under mulberry production is Sriviiliputhur block with an area of 98.80 acres which is followed by Rajapalayam (58.20 acres) and Vembakottai block (34.00 acres). The district produced 74.80 tonnes of Cocoon for a value of rupees 134.60 lakhs.

**Table 2.26 Details of mulberry cultivation and cocoon production**

| Name of the Sub - Range | Area under Mulberry (Acres) | Production of Cocoons (Tons) | Value in Rupees (lakhs) |
|---|---|---|---|
| Sriviiliputhur | 98.80 | 27.30 | 49.17 |
| Rajapalayam | 58.20 | 11.10 | 20.00 |
| Watrap | 19.00 | 4.00 | 7.10 |
| Sivakasi | 4.50 | 0.80 | 1.37 |
| Satur | 24.50 | 5.10 | 9.20 |
| Virudhunagar | 12.50 | 2.10 | 3.82 |
| Kariapatti | 30.50 | 10.20 | 18.35 |
| Vembakottai | 34.00 | 13.90 | 24.95 |
| Aruppukottai | 31.50 | 0.30 | 0.64 |
| **Total** | **313.50** | **74.80** | **134.60** |

## 2.16 Animal Husbandry and Dairy Development

### 2.16.1 Livestock population

During 2014-15, the total livestock population in the district was 925289 No's. The detail on total livestock population in the district and block wise population details are given in the Table 2.27 and 2.28.

**Table 2.27 Livestock population in Virudhunagar district (2014-15)**

| Sl.No. | Particulars | Population |
|---|---|---|
| 1 | Cattle | 223363 |
| 2 | Buffaloes | 9436 |
| 3 | Sheep | 321443 |
| 4 | Goats | 363246 |
| 5 | Horses and ponies | 11 |
| 6 | Donkeys | 38 |
| 7 | Camels | 2 |
| 8 | Pigs | 7750 |
| | **Total Livestock** | **925289** |
| 9 | Elephants | 0 |
| 10 | Dogs | 30140 |
| 11 | Rabbits | 957 |
| | **Poultry** | |
| 12 | Back yard Poultry | 480243 |
| 13 | Farm Poultry | 302230 |
| | **Total Poultry** | **782473** |

*Source: Source: 19th livestock census, 2012*

### 2.16.2 Veterinary infrastructure facilities

The infrastructure facilities available in the Virudhunagar district are presented in Table 2.30. Totally there are 352 dairy cooperative societies, 141 veterinary clinics and 50 milk collection centres in the district. Virudhunagar block is having the majority of

infrastructure facilities i.e. 328 dairy cooperative societies and 72 veterinary clinics; however no milk collection centre is available in this block.

**Table 2.28 Block wise Livestock population of Virudhunagar district**

| Sl. No | Livestock | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Cattle | 215679 | 14363 | 20213 | 13776 | 43484 | 17930 | 29327 | 15879 | 18246 | 13651 | 12665 | 24894 | 440107 |
| 2 | Buffalo | 8281 | 326 | 74 | 89 | 1753 | 2366 | 677 | 378 | 467 | 402 | 281 | 1414 | 16508 |
| 3 | Sheep | 321200 | 28713 | 31744 | 14323 | 52058 | 24581 | 41747 | 13385 | 75511 | 22098 | 23149 | 25957 | 674466 |
| 4 | Goat | 331290 | 35151 | 26425 | 28403 | 30388 | 38044 | 43399 | 10922 | 71994 | 21508 | 25917 | 30704 | 694145 |
| 5 | Pigs | 9422 | 0 | 0 | 0 | 2508 | 0 | 0 | 0 | 0 | 0 | 310 | 623 | 12863 |
| 6 | Poultry | 575507 | 32232 | 30881 | 31581 | 176127 | 38293 | 54894 | 18545 | 108104 | 84945 | 19206 | 30699 | 1201014 |
| 7 | Others | 32353 | 0 | 0 | 0 | 5552 | 0 | 0 | 0 | 0 | 0 | 1800 | 0 | 39705 |

*Source: Department of Animal Husbandry, Virudhunagar*

B-1 Virudhunagar, B-2 Aruppukottai, B-3 Kariyapatti, B-4 Narikudi, B-5 Rajapalayam, B-6 Sattur, B-7 Sivakasi, B-8 Srivilliputhur, B-9 Thiruchuli, B-10 Vembakkottai, B-11 Virudhunagar, B-12 Watrap

**Table 2.29 Block wise details of Vertinary Infrastructures available in Virudhunagar district**

| Sl. No. | Details | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 | District |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Dairy co-operative Society | 328 | - | 12 | Y | 1 | - | - | 1 | 5 | 1 | 1 | 3 | 352 |
| 2 | Veterinary clinics | 72 | 6 | 6 | 7 | 11 | 6 | 6 | 6 | 6 | 6 | 3 | 6 | 141 |
| | a. Veterinary Hospital | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | b. Veterinary Dispensary | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | c. Sub Centre | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | d. Mobile unit | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | e. RVD | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 3 | Milk Collection Centre | - | - | - | 9 | 10 | - | - | 20 | 5 | - | 2 | 4 | 50 |
| | a. Bulk Milk Cool | - | - | - | - | - | - | - | - | - | - | - | - | - |

*Source: Department of Animal Husbandry, Virudhunagar*

B-1 Virudhunagar, B-2 Aruppukottai, B-3 Kariyapatti, B-4 Narikudi, B-5 Rajapalayam, B-6 Sattur, B-7 Sivakasi, B-8 Srivilliputhur, B-9 Thiruchuli, B-10 Vembakkottai, B-11 Virudhunagar, B-12 Watrap

## 2.17 Fisheries

As Virudhunagar is land-locked with no coastline, fishing is restricted to inland water sources. Fish farms have been established at Periyar and Vembakottai dams. Fish ponds have been developed at the Pilavakkal dam under the drought area development programme. The details of fisheries in Virudhunagar district are presented in Table 2.30, 2.31 and 2.32.

**Table 2.30 Virudhunagar coastal line**

| Details | Area (Ha) |
|---|---|
| a. Total coastal line of the district | 31069 |
| i. Total inland fresh waterspread area | |
| b. Marine fishing village | |

*Source: A.D. Fisheries, Virudhunagar*

**Table 2.31 Estimated marine fish production / inland fish production during 2009-10**

| Sl. No. | Block / Municipalities | Quantity (Tonnes) | Value (₹. in lakhs) |
|---|---|---|---|
| | **Government** | | |
| 1 | Watrap | 4.084 | 1.51 |
| 2 | Vembakottiai | 8.947 | 2.77 |
| 3 | Aruppukottai | 52.650 | 12.80 |
| | **Private (District full)** | - | - |
| | **Total** | **65.681** | **17.08** |

*Source:Asst. Director of fishery (Regl. office), Virudhunagar.*

**Table 2.32 Details on number of fisherman engaged in fishing**

| Sl. No. | Name of the block | No. of fisherman engaged |
|---|---|---|
| 1 | **Department** | |
| | Watrap | 40 |
| | Vembakottai | 22 |
| | Aruppukottai | 54 |
| | **Grand total** | **116** |

*Source:Asst. Director of fishery (Regl. office), Virudhunagar.*

## 2.18 Banking and Insurance

Banking sector should cater to the short and long term credit needs of farmers, especially marginal and small farmers, so as to facilitate them in procuring the required farm inputs at appropriate time. The regulated markets and co-operative marketing societies are required to create adequate infrastructural facilities like, grading, packing and storing the produces at different production centres of the district. It is also suggested that the farmers are to make use of the several benefits such as subsidized seeds, fertilizers, plant protection

chemicals, machineries and tools, extended through various agricultural development programmes. They should also come forward to adopt the newer modern agricultural practices and technologies developed by the agricultural research institutes. The details of banks and insurance scheme of Virudhunagar district are presented in Table 2.33 and 2.34.

In Virudhunagar district, there are 176 banks with a aggregate deposit of ₹.5023 crores and gross bank deposit of ₹. 7766 crores.

**Table 2.33 Distribution of Scheduled Commercial Banks Offices, Aggregate Deposits and Gross Bank Credit in Tamil Nadu**

| District | Number of banks / offices | Aggregate deposits (₹. crores) | Gross bank credit (₹. crores) |
|---|---|---|---|
| Virudhunagar | 176 | 5023 | 7766 |

*Source: Tamil Nadu - An Economic Appraisal 2011-12 to 2013-14 Report, Govt. of Tamil Nadu, Chennai – 108*

**Table 2.34 Major Sector wise allocation and achievement under annual credit plan (ACP)**

| Allocation | | | | Achievement | | | | Achievement % | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Farm sector | NFS | OPS | Total | Farm sector | NFS | OPS | Total | Farm sector | NFS | OPS | Total |
| 653.55 | 814.55 | 407.59 | 1875.69 | 1420.93 | 481.61 | 612.20 | 2514.74 | 217 | 59 | 150 | 134 |

*Source: Tamil Nadu - An Economic Appraisal 2011-12 to 2013-14 Report, Govt. of Tamil Nadu, Chennai – 108*

## 2.19 Industries

Establishment of textile mills, cement factories and a number of industries in the small and medium sectors coupled with the encouragement given by the state Government in the form of incentives and setting up of industrial centres has accelerated the rate of industrialization in the District.

Cotton is the major commercial crop of the District and cotton industry therefore occupies an important place in the economy. Rajapalayam is the important centre for spinning mills and ginning factories. Surgical cotton and bandage cloth are manufactured here. Textile mills in the district produce a variety of cotton yarn. As the District has deposits of limestone and gypsum, the cement industry has gained a strong foothold. Tamil Nadu Cements – a Public Sector undertaking at Alangulam and Madras Cements – a Private Sector undertaking at Thulukkapatti are two large cement producing units. Tamil Nadu Cements has an annual production capacity of 4 lakh tonnes of Portland cement, while

Madras Cements has an annual capacity of 4.15 lakh tonnes. Tamil Nadu Asbestos is another Public Sector unit in the District producing asbestos cement sheets.

Sivakasi and Sattur are famous for the match industry. There are over 4500 match units. Crackers and fireworks is another important industry with about 400 units in the District. Explosives for blasting are also manufactured here. Over 70 percent of the total production of matches and fireworks in India is manufactured in Virudhunagar District. A large quantum of crackers are exported. The printing industry was originally established to supply labels for the match and firework industries. Soon the industry developed and diversified into other areas of printing like books, posters, greeting cards and diaries. Sivakasi now offers state of the art, world class printing facilities.

Sundaram Fasteners and Brakes India Ltd. private sector enterprises of the TVS group are located at Aviyur and Kanjanaiyakampatti in Kariapatti taluk. The former manufactures high density bolts and nuts while, the latter manufactures automobile brakes. Cottage and village industries are dispread throughout the rural areas. Some common cottage industries are: making of boxes and other articles from Palmyra leaves, metal artifacts fashioned from copper and brass, and aluminium vessel manufacture for domestic use. Gem cutting has been introduced to provide employment for women. The industrial details present in Virudhunagar district is furnished in Table 2.35.

**Table 2.35 Details of existing micro and small enterprises (Product Wise) in Virudhunagar District (2010)**

| Sl. No | Classification | Details of Classification | Units |
|---|---|---|---|
| 1 | Food Product | Flour Mills, Dhal Mills, Oil Mills | 883 |
| 2 | Beverages, Tobacco and Tobacco Product | Soft drinks, Tobacco products | 31 |
| 3 | Cotton Textiles | Cotton Textiles | 1054 |
| 4 | Wool, Silk, Synthetic fibres | Wool, Silk, Synthetic fibres | 137 |
| 5 | Jute, Hemp Mest Textiles | Jute, Hemp Mest Textiles | 21 |
| 6 | Hosiery Garments | Textile Products | 2451 |
| 7 | Wood Products | Wood Products | 1558 |
| 8 | Paper and Paper Products | Paper and Paper Products | 3648 |
| 9 | Leather Products | Leather based Products | 73 |
| 10 | Rubber Products | Rubber and Plastic Products | 700 |
| 11 | Chemical and Chemical Products | Chemical based Products | 3743 |
| 12 | Metallic Mineral Products | Metallic Mineral Products | 333 |
| 13 | Basic Metal Products | Basic Metal Products | 101 |
| 14 | Metal Products | Metal Products | 642 |
| 15 | Machinery and Parts | Machinery and Parts expert electrical | 222 |
| 16 | Electrical Products | Electrical Machinery and Apparatus | 141 |
| 17 | Transport and Equipments | Transports and Equipments | 394 |
| 18 | Miscellaneous Manufacturing | Miscellaneous Manufacturing Industries | 707 |
| | **Total** | | **16839** |

*Source: Brief industrial profile of Virudhunagar district (2012-13)*

## 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:

i. Assessing the trends in area, production and productivity of major crops and projection till the 12th plan period (2015-16)

ii. Yield gap analysis for the major crops

### 3.1 Trends in Area, Production and Productivity of Major Crops in the District

The efficacious in identifying Agricultural Commodity potential for a region chiefly lies from its past performances. To understand the historic development of crops in the district a trend analysis was done by incorporating the date base on Area, production and productivity of selected crops from 2005 to 2015. Compound Growth Rate (CGR) Analysis were done for the data set. Unlike annual growth rate the CGR takes into account the cumulative effect of trend. It was estimated through the following tools of analysis.

$$Y_t = ab^te$$

Logarithmic form of the above equation is : In Y =In a+ t In b

The Compound growth rate (CGR) in percentage is derived using the formula:

CGR (r) = (Antilog b-1) x 100

Where $Y_t$ = Area / Production / Productivity

a = Intercept

b = Regression coefficient of t

t = Time Variable

r = CGR

**Table 3.1 Area under major crops in Virudhunagar District (Triennium average) 2014-15**

| Sl. No. | Crops | Area | % | Production | Yield (kg/ha) |
|---|---|---|---|---|---|
| 1 | Paddy | 19684 | 19.49 | 63340 | 3350 |
| 2 | Cholam | 13993 | 13.86 | 36798 | 2431 |
| 3 | Cumbu | 3525 | 3.49 | 10095 | 2702 |
| 4 | Ragi | 136 | 0.14 | 467 | 3509 |
| 5 | Maize | 22393 | 22.18 | 105690 | 4989 |
| 6 | Blackgram | 2940 | 2.91 | 1832 | 616 |
| 7 | Greengram | 5226 | 5.17 | 2746 | 506 |
| 8 | Redgram | 769 | 0.76 | 641 | 854 |
| 9 | Chillies | 1493 | 1.48 | 1309 | 879 |
| 10 | Sugarcane | 2862 | 2.83 | 274356 | 96 |
| 11 | Onion | 1078 | 1.07 | 6637 | 6395 |
| 12 | Cotton | 10396 | 10.30 | 21907 | 349 |
| 13 | Groundnut | 5189 | 5.14 | 7439 | 1413 |
| 14 | Gingelly | 1328 | 1.32 | 838 | 582 |
| 15 | Coconut | 9968 | 9.87 | N.A | N.A |
| 16 | Sunflower | N.A | 0.00 | 764 | 1010 |
| | **Total** | **100981** | **100.00** | | |

*N.A. denotes Not Available*

### 3.2 CGR for Major Agricultural Crops

The trends in Area, production and productivity for the major Agricultural crops in the district for the years (2005-06 to 2014- 15) were worked out and the results are furnished in Table 3.2.

A close observation of the table shows that negative growth rate in area was more predominant in the district in all crops except for cholam, maize, redgram and Coconut due to the constraints mentioned earlier. The results of the analysis conveys while there is scope for the crops with positive growth rate, however it indicates that a huge consortium of productive drive is the need of the hour for the district.

### 3.3 CGR for Horticultural Crops

The analysis of CGR for the major horticultural crop of the district implied that coriander productivity need to be concentrated, as though it has negative CGR there is wide expansion in area (CGR 14.73) because of its market potential. The production of coriander found to be positive because of the area effect. In chillies though the productivity has increased (CGR 2.92), there is negative CGR in area and production. This may be due to severe market competition especially the entry of Guntur Chillies from Andhra, resulting in

priced out for the local farmers. Hence facilities of storage for chillies has to be expanded to facilitate to store during peak arrival and release for sale when there is less arrival from Andhra. This will enhance farmers *per se* to realise higher price and attract more area. In mango although production and productivity showed negative CGR, the area expanded (CGR 8.5) is positive, which is mainly due to increase in export demand attracted more farmers come into the niche. Hence R&D is to be strengthened to increase the productivity of mango in the district. Onion needs to be fully focused as all the three fetches negative CGR. Banana and Guava have got good scope for expansion in the district.

**Trend in APY of major crops**

**Table 3.2 Growth rates of Area, Production and Productivity of Major Crops in Virudhunagar District**

| Sl. No. | Crops | CGR during 2005-2006 to 2014-2015 (%) | | |
|---|---|---|---|---|
| | | Area | Production | Productivity |
| 1 | Paddy | -5.90 | -6.46 | -0.60 |
| 2 | Cholam | 6.37 | 21.78 | 14.49 |
| 3 | Cumbu | -7.51 | -1.26 | 3.78 |
| 4 | Ragi | -10.85 | -3.07 | 8.74 |
| 5 | Maize | 7.33 | 16.12 | 8.19 |
| 6 | Blackgram | -10.14 | -6.69 | 3.83 |
| 7 | Greengram | -6.46 | -7.90 | 0.26 |
| 8 | Redgram | 4.05 | 12.67 | 6.32 |
| 9 | Chillies | -8.13 | -6.64 | 1.62 |
| 10 | Sugarcane | -4.84 | -5.74 | -1.44 |
| 11 | Onion | -1.34 | 0.94 | 4.54 |
| 12 | Cotton | -0.96 | 4.91 | 5.94 |
| 13 | Groundnut | -4.63 | -4.86 | 1.59 |
| 14 | Gingelly | -5.47 | -1.75 | 5.37 |
| 15 | Coconut | 5.19 | N.A | N.A |
| 16 | Sunflower | N.A | 1.08 | 1.32 |

*N.A. denotes Not Available*

**Table 3.3 CGR for Horticulture Crops**

| Crop Name | Particulars | CGR |
|---|---|---|
| **Coriander** | **Area** | 14.729 |
| | Production | 9.096 |
| | Productivity | -4.909 |
| **Chillies** | **Area** | -5.239 |
| | Production | -2.475 |
| | Productivity | 2.917 |
| **Mango** | **Area** | 8.490 |
| | Production | -3.572 |
| | Productivity | -12.040 |
| **Onion** | **Area** | -1.239 |
| | Production | -4.232 |
| | Productivity | -3.031 |
| **Banana** | **Area** | 0.775 |
| | Production | 2.624 |
| | Productivity | 1.835 |
| **Guava** | **Area** | -6.449 |
| | Production | 3.087 |
| | Productivity | 10.193 |

Note: CGR- Compound Growth Rate

### 3.4. Projected Area, Production and yield of Major Agricultural and Horticultural Crops

### (Based on Current Trends)

The major Agricultural and Horticultural crops were identified based on 80 percent area coverage under crops. Around eleven Agricultural crops and six Horticultural crops are found to be within the purview of coverage for the district (Tables 3.4 and 3.5). The Projections on Area, Production and Productivity were carried out for these crops and the results are furnished in Tables 3.6 and 3.7.

The projection for the year 2023 implied that the productivity of almost all the major Agricultural and Horticultural crops of the district will be reaching a stand still based on current trend and hence this has reflected on poor production of the district. The production for the year 2023 ranged from 37.26 tonne in ragi to 1082330 tonnes in Maize. The same for Horticultural crop is worked to 1783.32 tonne in chillies to 57574.06 tonne in Banana. The crops like maize and the fruit crops Guava and Banana showed better projections.

**Table 3.4 Potential Agricultural crops**

**(Area in ha)**

| Crops | 2008-09 | 2009-10 | 2010-11 | AVG | % | 80% |
|---|---|---|---|---|---|---|
| Paddy | 32497 | 26617 | 30568 | 29894 | 23.084 | |
| Maize | 16466 | 13868 | 10775 | 13703 | 10.581 | 33.666 |
| Cholam | 11078 | 9428 | 10465 | 10323.666 | 7.972 | 41.638 |
| Coconut | 8818 | 9468 | 9512 | 9266 | 7.155 | 48.793 |
| Green gram | 8027 | 7147 | 11533 | 8902.333 | 6.874 | 55.668 |
| Cotton | 8705 | 7876 | 7904 | 8161.666 | 6.302 | 61.970 |
| Groundnut | 8795 | 6832 | 5837 | 7154.666 | 5.524 | 67.495 |
| Fodder cholam | 8965 | 5585 | 6643 | 7064.333 | 5.455 | 72.950 |
| Blackgram | 4238 | 3543 | 5156 | 4312.333 | 3.330 | 76.280 |
| S.cane | 3903 | 3193 | 3314 | 3470 | 2.679 | 78.960 |
| Coriander | 3289 | 4432 | 2514 | 3411.666 | 2.634 | 81.594 |

**Table 3.5 Potential Horticultural Crops**

| Sl. No | CROPS | 2008-09 | 2009-10 | 2010-11 | AVG(ha) | % | 80% |
|---|---|---|---|---|---|---|---|
| 1 | Coriander | 3289 | 4432 | 2514 | 3411.667 | 25.48492 | |
| 2 | Chillies | 3104 | 2963 | 2020 | 2695.667 | 20.13645 | 45.62137 |
| 3 | Mango | 2644 | 2678 | 2729 | 2683.667 | 20.04681 | 65.66819 |
| 4 | Onion | 1295 | 1183 | 1343 | 1273.667 | 9.514205 | 75.18239 |
| 5 | Banana | 863 | 837 | 888 | 862.6667 | 6.444063 | 81.62645 |
| 6 | Guava | 527 | 545 | 580 | 550.6667 | 4.113443 | 85.7399 |

**Table 3.6 Projected Area, Production and Productivity of Agricultural Crops based oncurrent Trend**

| Projection for Principle Crops - 2023 | | | | |
|---|---|---|---|---|
| Sl. No | Crop | Area(ha) | Production(tonne) | Productivity (tonne/ha) |
| 1 | Paddy | 26309.62 | 74772.60 | 2.84 |
| 2 | Cholam | 14326.95 | 15176.50 | 1.05 |
| 3 | Cumbu | 753.64 | 2436.87 | 3.23 |
| 4 | Maize | 99753.88 | 1082329.70 | 10.84 |
| 5 | Ragi | 19.40 | 37.26 | 1.92 |
| 6 | Bengalgram | 167.60 | 82.78 | 0.49 |
| 7 | Greengram | 18613.30 | 6528.21 | 0.35 |
| 8 | Redgram | 96.06 | 38.78 | 0.40 |
| 9 | Blackgram | 4058.08 | 764.54 | 0.18 |
| 10 | Horsegram | 23.89 | 10.29 | 0.43 |
| 11 | Chillies | 1307.09 | 1783.32 | 1.36 |
| 12 | Turmeric | 1.50 | 0.38 | 0.25 |
| 13 | S.cane | 3855.34 | 342401.61 | 88.81 |
| 14 | Onion | 1042.78 | 3547.64 | 3.40 |
| 15 | Gingelly | 1110.88 | 121.47 | 0.10 |
| 16 | G.nut | 4951.36 | 4618.87 | 0.93 |
| 17 | Castor | 32.47 | 17.21 | 0.53 |
| 18 | Coconut | 12069.87 | 3749.21 | 0.31 |
| 19 | Sunflower | 503.10 | 708.65 | 1.40 |
| 20 | Cotton | 1917.12 | 3928.46 | 2.04 |

**Table 3.7 Projected Area, Production and Productivity of Horticultural Crops based on Current Trend**

| Projection for 2023 | | | | |
|---|---|---|---|---|
| **Sl. No** | **Crop** | **Area(ha)** | **Production(tonnes)** | **Productivity (tonnes/ha)** |
| 1 | Coriander | 28836.15 | 7207.85 | 0.24 |
| 2 | Chillies | 1307.09 | 1783.38 | 1.36 |
| 3 | Mango | 8553.44 | 4175.78 | 0.48 |
| 4 | Onion | 1042.78 | 3547.64 | 3.40 |
| 5 | Banana | 955.87 | 57574.06 | 60.23 |
| 6 | Guava | 213.20 | 10124.93 | 47.48 |

### 3.5. Yield Gap Analysis

The trends and projections for the crops can reveal the features in general. To have a further close analysis in the crop production, the gap in the yield from potential to various stages were estimated variety wise and the results are furnished in Tables 3.8 and 3.9. Potential yield is the ultimate yield the district can achieve, maximum yield obtained is the progressive farmers yield and the average yield is the actual yield of the district. Yield Gap-I is the difference in the yield level of potential and progressive farmer, Gap-II is the difference of progressive farmers and the district average and Gap-III is the difference of yield between potential and district average yield. A close scan over the Table 3.8 reveals that there is huge variation between potential and average yield of the district for all the crops. The difference in progressive Vs average yield is found to be more in paddy (CO49, ADT45), Greengram (CO6, KM2), blackgram (T9, CO5) and Sugarcane Varieties. These crops have aneasy access to increase production. In other crops it can be achievable in long run through R&D.

In Horticultural crops, estimation of Gap-III is only attempted due to paucity of data. The yield gap ranged from 1.52 tonnes in chillies to seven tonnes in Banana.

**Table 3.8 Yield Gaps in Agricultural Crops**

| Sl. No | Crop | Variety | Potential yield (Kg/ha) (A) | Progressive farmer yield (Kg/ha) (B) | Average yield (Kg/ha) (C) | Yield Gap I (Kg/ha) (A-B) | Yield Gap II (Kg/ha) (B-C) | Yield Gap III (Kg/ha) (A-C) |
|---|---|---|---|---|---|---|---|---|
| 1 | Paddy (kg/ha) | CO 49 | 9750 | 8038 | 6172 | 1712 | 1866 | 3578 |
| | | ADT 45 | 9230 | 6254 | 4728 | 2976 | 1526 | 4502 |
| | | BPT 5204 | 8658 | 7457 | 7169 | 1201 | 288 | 1489 |
| 2 | Maize (kg/ha) | MH12(K) | 5256 | 2617 | 2087 | 2639 | 530 | 3169 |
| 3 | Cholam (kg/ha) | CO26 | 6000 | 5849 | 5826 | 151 | 23 | 174 |
| | | CO(S) 28 | 4568 | 4362 | 4231 | 206 | 131 | 337 |
| | | K Tall | 4250 | 4190 | 4116 | 60 | 74 | 134 |
| 4 | Coconut (nuts/palm/yr) | ALR 2 | 140 | 84 | 75 | 56 | 9 | 65 |
| 5 | Greengram (kg/ha) | CO 6 | 1050 | 876 | 583 | 174 | 293 | 467 |
| | | KM 2 | 762 | 226 | 172 | 536 | 54 | 590 |
| 6 | Cotton | SVPR 2 | 3281 | 1795 | 1730 | 1486 | 65 | 1551 |
| | | BUNNY | 2300 | 2049 | 2010 | 251 | 39 | 290 |
| 7 | G.Nut (kg/ha) | VRI 3 | 3458 | 1276 | 1250 | 2182 | 26 | 2208 |
| | | TMV 2 | 3530 | 1059 | 1038 | 2471 | 21 | 2492 |
| 8 | Fodder cholam (t/ha) | CO27 | 44 | 40 | 37 | 4 | 3 | 7 |
| | | K10 | 15 | 13 | 9 | 2 | 4 | 6 |
| | | COFS29 (Multicut) | 165 | 162 | 158 | 3 | 4 | 7 |
| 9 | Blackgram (kg/ha) | T9 | 1000 | 278 | 209 | 722 | 69 | 791 |
| | | CO 5 | 1270 | 482 | 340 | 788 | 142 | 930 |
| 10 | S.cane (t/ha) | COC 86032 | 208 | 110 | 85 | 98 | 25 | 123 |
| | | COC 671 | 125 | 114 | 98 | 9 | 16 | 27 |
| 11 | Coriander (kg/ha) | CO(CR) 4 | 580 | 565 | 557 | 15 | 8 | 23 |

**Table 3.9 Yield Gaps in Horticultural Crops**

| Sl. No | Crops | Variety | Potential yield (t/ha) (A) | Average yield (t/ha) (C) | Yield Gap III (t/ha) (A-C) |
|---|---|---|---|---|---|
| 1 | Mango | Bangalora | 16.00 | 12.50 | 3.50 |
| 2 | Banana | Poovan | 45.00 | 38.00 | 7.00 |
| 3 | Guava | Lucknow 1 | 28.00 | 22.00 | 5.00 |
| 4 | Chillies | PKM 1 | 2.00 | 0.48 | 1.52 |
| 5 | Onion | MDU 1 | 20.00 | 15.00 | 5.00 |

### 3.6. Production of Crops on Projected Yield

In earlier analysis the projections on Area, Production and Productivity of crops were done based on current scenario. In the present analysis, the production projections for the crops during 2012-13 and till 2022-23 were worked out for the required growth rates for the district. It was worked out for nine major crops with ruling varieties in the district and the results are furnished in Tables 3.10 to 3.26.

#### 3.6.1 Paddy

The ruling varieties of paddy for the district are ADT 36 (R), ADT 36 (1), ADT 39, ADT 43, ADT 45, ASD16, BPT 5204 and ADT 1798. These varieties varies from potential yield with a gap of 630 kg in ASD 16 to 1750 kg in ADT 1798 and hence there is a requirement of annual growth rate which ranged from 0.95 in ASD 16 to 3.74 in ADT 1798 to reach full potential yield during 2022-23 which is estimated at a maximum of 7141 kg /ha in ADT 36(1) to a minimum of 5072 kg/ ha in ADT 36 (R). These varieties in cumulative contribute for a production of 741149 tonne during 2022-23 in the district.

**Table 3.10 Projected Yield for Required Growth Rate- Paddy (2012-13 to 2022-23)**

| Ruling Varieties | ADT 36(R) | ADT 36(I) | ADT 39 | ADT 43 | ADT 45 | ASD 16 | BPT 5204 | ADT 1798 |
|---|---|---|---|---|---|---|---|---|
| Potential Yield | 5000 | 7000 | 5600 | 6000 | 5500 | 6630 | 5500 | 6000 |
| Progressive farmer yield | | | | | | | | |
| Average Yield | 4200 | 5700 | 4300 | 4500 | 4650 | 6000 | 4000 | 4250 |
| Overall Yield Gap | 800 | 1300 | 1300 | 1500 | 850 | 630 | 1500 | 1750 |
| Required Growth Rates | 19.05 | 22.81 | 30.23 | 33.33 | 18.28 | 10.50 | 37.50 | 41.18 |
| Annual Growth Rate | 1.73 | 2.07 | 2.75 | 3.03 | 1.66 | 0.95 | 3.41 | 3.74 |
| 2011-12 | 4200 | 5700 | 4300 | 4500 | 4650 | 6000 | 4000 | 4250 |
| 2012-13 | 4273 | 5818 | 4418 | 4636 | 4727 | 6057 | 4136 | 4409 |
| 2013-14 | 4347 | 5938 | 4540 | 4777 | 4806 | 6115 | 4277 | 4574 |
| 2014-15 | 4422 | 6061 | 4665 | 4922 | 4885 | 6173 | 4423 | 4745 |
| 2015-16 | 4498 | 6187 | 4793 | 5071 | 4967 | 6231 | 4574 | 4922 |
| 2016-17 | 4576 | 6315 | 4925 | 5224 | 5049 | 6290 | 4730 | 5106 |
| 2017-18 | 4655 | 6446 | 5060 | 5383 | 5133 | 6350 | 4891 | 5297 |
| 2018-19 | 4736 | 6579 | 5199 | 5546 | 5218 | 6411 | 5058 | 5496 |
| 2019-20 | 4818 | 6715 | 5342 | 5714 | 5305 | 6471 | 5231 | 5701 |
| 2020-21 | 4901 | 6854 | 5489 | 5887 | 5393 | 6533 | 5409 | 5914 |
| 2021-22 | 4986 | 6996 | 5640 | 6065 | 5482 | 6595 | 5594 | 6136 |
| 2022-23 | 5072 | 7141 | 5795 | 6249 | 5573 | 6658 | 5784 | 6365 |

**Table 3.11.Production for projected yield - Paddy (2012-13 to 2022-23)**

| | ADT 36(R) | ADT 36(I) | ADT 39 | ASD 43 | ADT 45 | ASD 16 | BPT 5204 | ADT 1798 | Total |
|---|---|---|---|---|---|---|---|---|---|
| Area | 3740.58 | 1246.86 | 3740.58 | 6234.3 | 29924.64 | 11221.74 | 43640.1 | 24937.2 | 124686 |
| 2012-13 | 15982 | 7254 | 16527 | 28904 | 141459 | 67970 | 180513 | 109947 | 568557 |
| 2013-14 | 16259 | 7404 | 16981 | 29780 | 143808 | 68616 | 186668 | 114059 | 583575.4 |
| 2014-15 | 16540 | 7558 | 17448 | 30683 | 146195 | 69268 | 193034 | 118325 | 599049.5 |
| 2015-16 | 16826 | 7714 | 17928 | 31612 | 148622 | 69926 | 199616 | 122750 | 614994.3 |
| 2016-17 | 17117 | 7874 | 18421 | 32570 | 151089 | 70590 | 206423 | 127341 | 631425.1 |
| 2017-18 | 17413 | 8037 | 18928 | 33557 | 153597 | 71261 | 213462 | 132103 | 648357.9 |
| 2018-19 | 17715 | 8203 | 19448 | 34574 | 156147 | 71938 | 220741 | 137044 | 665809.2 |
| 2019-20 | 18021 | 8373 | 19983 | 35621 | 158739 | 72621 | 228269 | 142170 | 683796.1 |
| 2020-21 | 18333 | 8546 | 20533 | 36701 | 161374 | 73311 | 236052 | 147487 | 702336.1 |
| 2021-22 | 18650 | 8723 | 21097 | 37813 | 164053 | 74007 | 244102 | 153003 | 721447.5 |
| 2022-23 | 18973 | 8904 | 21677 | 38958 | 166776 | 74710 | 252426 | 158725 | 741149 |

### 3.6.2 Maize

It is one of the major identified crops for the district. CO MH5 and Krishna hybrid are the ruling varieties. These varieties had an yield gap of 700 kg /ha in CO MH5 and 570 kg/ ha in Krishna hybrid. The required annual growth rate for these varieties are 1.33 in CO MH5 and 1.17 in Krishna hybrid to reach full potential yield in 2022-23 and the projected yields contribute for a production of 98253 tonnes in the district.

**Table 3.12.Projected yield for Required Growth Rate- Maize (2012-13 to 2022-23)**

| Ruling Varieties | CO MH 5 | Krishna hybrid |
|---|---|---|
| Potential Yield | 5500 | 5000 |
| Average Yield | 4800 | 4430 |
| Overall Yield Gap | 700 | 570 |
| Required Growth Rates | 14.58 | 12.87 |
| Annual Growth Rate | 1.33 | 1.17 |
| 2011-12 | 4800 | 4430 |
| 2012-13 | 4864 | 4482 |
| 2013-14 | 4929 | 4534 |
| 2014-15 | 4994 | 4587 |
| 2015-16 | 5060 | 4641 |
| 2016-17 | 5128 | 4695 |
| 2017-18 | 5196 | 4750 |
| 2018-19 | 5265 | 4806 |
| 2019-20 | 5335 | 4862 |
| 2020-21 | 5406 | 4919 |
| 2021-22 | 5478 | 4976 |
| 2022-23 | 5551 | 5035 |

**Table 3.13 Production for projected yield - Maize (2012-13 to 2022-23)**

| | CO MH 5 | Krishna hybrid | Total |
|---|---|---|---|
| Area | 14428.8 | 3607.2 | 18036 |
| 2012-13 | 70179 | 16167 | 86346 |
| 2013-14 | 71113 | 16356 | 87469 |
| 2014-15 | 72059 | 16547 | 88606 |
| 2015-16 | 73017 | 16741 | 89758 |
| 2016-17 | 73988 | 16937 | 90925 |
| 2017-18 | 74972 | 17135 | 92107 |
| 2018-19 | 75969 | 17335 | 93305 |
| 2019-20 | 76980 | 17538 | 94518 |
| 2020-21 | 78003 | 17744 | 95747 |
| 2021-22 | 79041 | 17951 | 96992 |
| 2022-23 | 80092 | 18161 | 98253 |

### 3.6.3 Sapota

The required growth rate for PKM1 is 26.32 and its works out to 2.39 annually. For other varieties pools together, the required annual growth rate is estimated at 1.01 with a cumulative rate of 11.11 for 2022-23. The estimated yield for these varieties are 24637 kg / ha and 20104 kg / ha respectively for PKM 1 and other varieties. The projected production from these yields is 265823.60 tonnes for the district.

**Table 3.14 Projected Yield for Required Growth Rate- Sapota (2012-13 to 2022-23)**

| Ruling Varieties | PKM 1 | Other varieties |
|---|---|---|
| Potential Yield | 24000 | 20000 |
| Average Yield | 19000 | 18000 |
| Overall Yield Gap | 5000 | 2000 |
| Required Growth Rates | 26.32 | 11.11 |
| Annual Growth Rate | 2.39 | 1.01 |
| 2011-12 | 19000 | 18000 |
| 2012-13 | 19454 | 18182 |
| 2013-14 | 19919 | 18365 |
| 2014-15 | 20395 | 18551 |
| 2015-16 | 20883 | 18738 |
| 2016-17 | 21382 | 18928 |
| 2017-18 | 21893 | 19119 |
| 2018-19 | 22416 | 19312 |
| 2019-20 | 22952 | 19507 |
| 2020-21 | 23500 | 19704 |
| 2021-22 | 24062 | 19903 |
| 2022-23 | 24637 | 20104 |
| Ruling Varieties | PKM 1 | Other varieties |
| Potential Yield | 24000 | 20000 |
| Average Yield | 19000 | 18000 |
| Overall Yield Gap | 5000 | 2000 |
| Required Growth Rates | 26.32 | 11.11 |
| Annual Growth Rate | 2.39 | 1.01 |
| 2011-12 | 19000 | 18000 |
| 2012-13 | 19454 | 18182 |
| 2013-14 | 19919 | 18365 |
| 2014-15 | 20395 | 18551 |
| 2015-16 | 20883 | 18738 |
| 2016-17 | 21382 | 18928 |
| 2017-18 | 21893 | 19119 |
| 2018-19 | 22416 | 19312 |
| 2019-20 | 22952 | 19507 |
| 2020-21 | 23500 | 19704 |
| 2021-22 | 24062 | 19903 |
| 2022-23 | 24637 | 20104 |

**Table 3.15 Production for projected yield - Sapota (2012-13 to 2022-23)**

| | PKM 1 | Other varieties | Total |
|---|---|---|---|
| Area | 7994 | 3426 | 11420.00 |
| 2012-13 | 155516 | 62291 | 217807.00 |
| 2013-14 | 159233 | 62920 | 222153.00 |
| 2014-15 | 163039 | 63555 | 226594.10 |
| 2015-16 | 166935 | 64197 | 231132.60 |
| 2016-17 | 170925 | 64846 | 235770.70 |
| 2017-18 | 175010 | 65501 | 240510.80 |
| 2018-19 | 179193 | 66162 | 245355.10 |
| 2019-20 | 183476 | 66831 | 250306.00 |
| 2020-21 | 187861 | 67506 | 255366.10 |
| 2021-22 | 192350 | 68187 | 260537.70 |
| 2022-23 | 196948 | 68876 | 265823.60 |

### **3.6**.4 **Sugarcane**

In Sugarcane, CO85036 is the predominant variety for the district. The cumulative growth rate for 2022-23 is 11.11 with an annual growth rate of 1.01. The estimated yield and production for 2022-23 is 101037 kg/ ha and 372219 tonnes respectively.

**Table 3.16 .Projected Yield for Required Growth Rate- Sugarcane (2012-13 to 2022-23)**

| Ruling Varieties | Co 85036 |
|---|---|
| Potential Yield /Kg | 100000 |
| Average Yield /Kg | 90000 |
| Overall Yield Gap/Kg | 10000 |
| Required Growth Rates | 11.11 |
| Annual Growth Rate | 1.01 |
| 2011-12 | 90463 |
| 2012-13 | 91377 |
| 2013-14 | 92300 |
| 2014-15 | 93232 |
| 2015-16 | 94173 |
| 2016-17 | 95125 |
| 2017-18 | 96085 |
| 2018-19 | 97056 |
| 2019-20 | 98036 |
| 2020-21 | 99026 |
| 2021-22 | 100026 |
| 2022-23 | 101037 |

**Table 3.17 Production for Projected yield - Sugarcane (2012-13 to 2022-23)**

| | **Co 85036** |
|---|---|
| Area | 3684 |
| 2012-13 | 336632 |
| 2013-14 | 340032 |
| 2014-15 | 343466 |
| 2015-16 | 346935 |
| 2016-17 | 350439 |
| 2017-18 | 353978 |
| 2018-19 | 357554 |
| 2019-20 | 361165 |
| 2020-21 | 364813 |
| 2021-22 | 368497 |
| 2022-23 | 372219 |

**3.6**.5 **Guava**

The yield of L49 variety is taken as proxy, which accounts for an annual growth rate of 1.14 with a cumulative rate of 12.50 for 2022-23. The estimated yield for this growth rate is 9176 kg/ha and the estimated production is 6368 tonnes.

**Table 3.18 Projected Yield for Required Growth Rate- Guava (2012-13 to 2022-23)**

| Ruling Varieties | **L 49** |
|---|---|
| Potential Yield | 9000 |
| Average Yield | 8000 |
| Overall Yield Gap | 1000 |
| Required Growth Rates | 12.50 |
| Annual Growth Rate | 1.14 |
| 2011-12 | 8100 |
| 2012-13 | 8192 |
| 2013-14 | 8286 |
| 2014-15 | 8380 |
| 2015-16 | 8476 |
| 2016-17 | 8572 |
| 2017-18 | 8670 |
| 2018-19 | 8769 |
| 2019-20 | 8869 |
| 2020-21 | 8970 |
| 2021-22 | 9072 |
| 2022-23 | 9176 |

**Table 3.19 Production for Projected Yield – Guava (2012-13 to 2022-23)**

| | L 49 |
|---|---|
| Area | 694 |
| 2012-13 | 5685 |
| 2013-14 | 5750 |
| 2014-15 | 5816 |
| 2015-16 | 5882 |
| 2016-17 | 5949 |
| 2017-18 | 6017 |
| 2018-19 | 6086 |
| 2019-20 | 6155 |
| 2020-21 | 6225 |
| 2021-22 | 6296 |
| 2022-23 | 6368 |

### 3.6.6 Banana

In Banana, the poovan variety is chosen for projections, since it is more prevalent in the district. The required growth rate for this variety is 0.99 and at the year ending 2022-23, the yield expected from the required growth rate is 52379 kg/ha. The estimated production for 2022-23 is 48084 tonnes for the district.

**Table 3.20 Projected Yield for Required Growth Rate- Banana (2012-13 to 2022-23)**

| Ruling Varieties | Poovan |
|---|---|
| Potential Yield /Kg | 51000 |
| Average Yield /Kg | 46000 |
| Overall Yield Gap/Kg | 5000 |
| Required Growth Rates | 10.87 |
| Annual Growth Rate | 0.99 |
| 2011-12 | 47000 |
| 2012-13 | 47465 |
| 2013-14 | 47935 |
| 2014-15 | 48410 |
| 2015-16 | 48889 |
| 2016-17 | 49373 |
| 2017-18 | 49862 |
| 2018-19 | 50355 |
| 2019-20 | 50854 |
| 2020-21 | 51357 |
| 2021-22 | 51866 |
| 2022-23 | 52379 |

**Table 3.21 Production for Projected yield – Banana (2012-13 to 2022-23)**

| Ruling Varieties | Poovan |
|---|---|
| Area | 918 |
| 2012-13 | 43572 |
| 2013-14 | 44004 |
| 2014-15 | 44440 |
| 2015-16 | 44880 |
| 2016-17 | 45324 |
| 2017-18 | 45773 |
| 2018-19 | 46225 |
| 2019-20 | 46683 |
| 2020-21 | 47145 |
| 2021-22 | 47613 |
| 2022-23 | 48084 |

### **3.6**.7 **Cotton**

In cotton, the yield gap is found to be 250 kg/ ha in SVPR 2 and 600 kg in BUNNY. Hence the required growth rates to reach the full potential level in 2022-23 is 26.32 in the former and 66.67 in the latter. At this level of growth rate it is estimated 1300 kg /ha in SVPR2 and 1735 kg/ha in BUNNY. The projected production to this yield level is 15311 tonnes.

**Table 3.22.Projected Yield for Required Growth Rate- Cotton (2012-13 to 2022-23)**

| Ruling Varieties | SVPR 2 | BUNNY |
|---|---|---|
| Potential Yield | 1200 | 1500 |
| Average Yield | 950 | 900 |
| Overall Yield Gap | 250 | 600 |
| Required Growth Rates | 26.32 | 66.67 |
| Annual Growth Rate | 2.39 | 6.06 |
| 2011-12 | 950 | 900 |
| 2012-13 | 1209 | 1520 |
| 2013-14 | 1218 | 1540 |
| 2014-15 | 1226 | 1561 |
| 2015-16 | 1235 | 1581 |
| 2016-17 | 1244 | 1602 |
| 2017-18 | 1254 | 1624 |
| 2018-19 | 1263 | 1645 |
| 2019-20 | 1272 | 1667 |
| 2020-21 | 1281 | 1689 |
| 2021-22 | 1291 | 1712 |
| 2022-23 | 1300 | 1735 |

**Table 3.23 Production for Projected yield – Cotton (2012-13 to 2022-23)**

| | SVPR 2 | BUNNY | |
|---|---|---|---|
| Area | 7462.8 | 3233.88 | 12438 |
| 2012-13 | 9021 | 4915 | 13936 |
| 2013-14 | 9087 | 4981 | 14067 |
| 2014-15 | 9153 | 5047 | 14199.87 |
| 2015-16 | 9220 | 5114 | 14334 |
| 2016-17 | 9287 | 5182 | 14469.13 |
| 2017-18 | 9355 | 5251 | 14606 |
| 2018-19 | 9423 | 5321 | 14744 |
| 2019-20 | 9492 | 5392 | 14884 |
| 2020-21 | 9561 | 5463 | 15024.53 |
| 2021-22 | 9631 | 5536 | 15167 |
| 2022-23 | 9701 | 5610 | **15311** |

### 3.6.8 Mango

In Mango the base level yield (2011-12) varies from 2600 kg/ ha in panchavarnam to 4250 kg/ha in Banglora. The yield gap for the selected six varieties varied from 450 in Alponsa to 2500 in Himampasand. The estimated production for the required growth rates of 2022-23 is 48,575 tonnes for the district.

**Table 3.24 Projected Yieldfor Required Growth Rate- Mango (2012-13 to 2022-23)**

| Ruling Varieties | Banganapalli | Panchavarnam | Banglora | Neelam | Hima | Alphonso |
|---|---|---|---|---|---|---|
| Potential Yield | 4500 | 3200 | 6000 | 3500 | 6500 | 3450 |
| Average Yield | 4000 | 2600 | 4250 | 3000 | 4000 | 3000 |
| Overall Yield Gap | 500 | 600 | 1750 | 500 | 2500 | 450 |
| Required Growth Rates | 12.50 | 23.08 | 41.18 | 16.67 | 62.50 | 15.00 |
| Annual Growth Rate | 1.14 | 2.10 | 3.74 | 1.52 | 5.68 | 1.36 |
| 2011-12 | 4200 | 2600 | 4300 | 3000 | 4650 | 3000 |
| 2012-13 | 4248 | 1004.60 | 4461 | 3045.60 | 4914 | 3040.80 |
| 2013-14 | 4296 | 1025.69 | 4628 | 3091.89 | 5193 | 3082.15 |
| 2014-15 | 4345 | 1047.23 | 4801 | 3138.88 | 5488 | 3124.07 |
| 2015-16 | 4395 | 1069.22 | 4980 | 3186.60 | 5800 | 3166.56 |
| 2016-17 | 4445 | 1091.68 | 5167 | 3235.03 | 6129 | 3209.62 |
| 2017-18 | 4496 | 1114.60 | 5360 | 3284.20 | 6478 | 3253.27 |
| 2018-19 | 4547 | 1138.01 | 5560 | 3334.12 | 6845 | 3297.52 |
| 2019-20 | 4599 | 1161.91 | 5768 | 3384.80 | 7234 | 3342.36 |
| 2020-21 | 4651 | 1186.31 | 5984 | 3436.25 | 7645 | 3387.82 |
| 2021-22 | 4704 | 1211.22 | 6208 | 3488.48 | 8079 | 3433.89 |
| 2022-23 | 4758 | 1236.66 | 6440 | 3541.51 | 8538 | 3480.59 |

**Table 3.25 Production for Projected yield – Mango (2012-13 to 2022-23)**

| | Banganapalli | Panchavarnam | Banglora | Neelam | Hima | Alphonso | Total |
|---|---|---|---|---|---|---|---|
| Area | 2096.6 | 1886.94 | 3144.9 | 1572.45 | 838.64 | 943.47 | 10483 |
| 2012-13 | 8906 | 1895 | 14029 | 4789 | 4121 | 2868 | 36608 |
| 2013-14 | 9008 | 1935 | 14554 | 4861 | 4355 | 2907 | 37620 |
| 2014-15 | 9110 | 197 | 15098 | 4935 | 4603 | 2947 | 36890 |
| 2015-16 | 9214 | 2017 | 15662 | 5010 | 4864 | 2987 | 39754 |
| 2016-17 | 9319 | 2059 | 16248 | 5086 | 5140 | 3028 | 40880 |
| 2017-18 | 9425 | 2103 | 16856 | 5164 | 5432 | 3069 | 42049 |
| 2018-19 | 9533 | 2147 | 17486 | 5242 | 5741 | 3111 | 43260 |
| 2019-20 | 9642 | 2192 | 18140 | 5322 | 6067 | 3153 | 44516 |
| 2020-21 | 9751 | 2238 | 18819 | 5403 | 6412 | 3196 | 45819 |
| 2021-22 | 9863 | 2285 | 19523 | 5485 | 6776 | 3239 | 47171 |
| 2022-23 | 9975 | 2333 | 20253 | 5568 | 7161 | 3283 | 48573 |

### 3.6.9 Groundnut

The lead varieties for the district are TMV 7, VRI 2, VRI 3 and CO 4. The estimated yield gap for these varieties are in the order of 500 kg/ha, 1000 kg/ha, 600 kg/ha and 200 kg/ha/. The required growth rate for 2022-23 ranged from 1.21 in CO4 to 5.68 in VRI 3. The total production of Groundnut from the required growth rate is 32784 tonnes for the district.

**Table 3.26 Projected Yield for Required Growth Rate- Groundnut (2012-13 to 2022-23)**

| Ruling Varieties | TMV 7 | VRI 2 | VRI 3 | Co4 |
|---|---|---|---|---|
| Potential Yield | 1900 | 2600 | 1800 | 1700 |
| Average Yield | 1400 | 1600 | 1200 | 1500 |
| Overall Yield Gap | 500 | 1000 | 600 | 200 |
| Required Growth Rates | 35.71 | 62.50 | 50.00 | 13.33 |
| Annual Growth Rate | 3.25 | 5.68 | 4.55 | 1.21 |
| 2011-12 | 1400 | 1600 | 1200 | 1500 |
| 2012-13 | 1445.50 | 1690.88 | 1254.60 | 1518.15 |
| 2013-14 | 1492.47 | 1786.92 | 1311.68 | 1536.51 |
| 2014-15 | 1540.98 | 1888.41 | 1371.36 | 1555.11 |
| 2015-16 | 1591.06 | 1995.68 | 1433.76 | 1573.92 |
| 2016-17 | 1642.77 | 2109.03 | 1498.99 | 1592.97 |
| 2017-18 | 1696.16 | 2228.82 | 1567.20 | 1612.24 |
| 2018-19 | 1751.29 | 2355.42 | 1638.51 | 1631.75 |
| 2019-20 | 1808.20 | 2489.21 | 1713.06 | 1651.50 |
| 2020-21 | 1866.97 | 2630.60 | 1791.00 | 1671.48 |
| 2021-22 | 1927.65 | 2780.02 | 1872.49 | 1691.70 |
| 2022-23 | 1990.30 | 2822.43 | 1957.69 | 1712.17 |

**Table 3.27 Production for projected yield – Groundnut (2012-13 to 2022-23)**

| | TMV 7 | VRI 2 | VRI 3 | Co4 | Total |
|---|---|---|---|---|---|
| Area | 5834.04 | 1434.6 | 382.56 | 9564 | 17215.2 |
| 2012-13 | 8433 | 2425 | 479 | 14519 | 25858 |
| 2013-14 | 8707 | 2563 | 501 | 14695 | 26467 |
| 2014-15 | 8990 | 2709 | 524 | 14873 | 27097 |
| 2015-16 | 9282 | 2863 | 548 | 15053 | 27746 |
| 2016-17 | 9584 | 3025 | 573 | 15235 | 28418 |
| 2017-18 | 9895 | 3197 | 599 | 15419 | 29112 |
| 2018-19 | 1021 | 3379 | 626 | 15606 | 29829 |
| 2019-20 | 1054 | 3571 | 655 | 15794 | 30570 |
| 2020-21 | 1089 | 3773 | 685 | 15986 | 31337 |
| 2021-22 | 1124 | 3988 | 716 | 16179 | 32130 |
| 2022-23 | 1161 | 4049 | 748 | 16375 | 32784 |

**Table 3.28 Schemes implemented by Department of Agriculture- Major Schemes implemented by Department of Agriculture (2012-13 & 2013-14)**

**(Rs. in lakhs)**

| Sl. No | Scheme/ Project Title | Unit | 2012-13 | | 2013-14 | |
|---|---|---|---|---|---|---|
| | | | Physical Target | Finance Allocation | Physical Target | Finance Allocation |
| **I** | **Centrally Sponsored** | | | | | |
| **1** | **Seed Village** | | | | | |
| | Seed Distribution | Ha | 4450 | 39 | 0 | 0 |
| | Farmers Training | Nos | 8000 | 12 | 0 | 0 |
| **2** | **Coconut Development Board** | | | | | |
| | Laying out of new plots | Ha | 10 | 1.75 | 0 | 0 |
| | Maintenance of old plots | Ha | 30 | 5.25 | 0 | 0 |
| **3** | **NFSM** | | | | | |
| 1 | Distribution of Certified Seeds | | | | | |
| a | For varieties less than 10 years | Qtl. | 79 | 1.738 | 100 | 2.2 |
| b | For Varieties more than 10 years old | Qtl. | 238 | 2.856 | 251 | 3.012 |
| 2 | Demonstrations on improved technologies | | | | | |
| a | Cluster Demonstrations (100 ha each) on inter cropping / improved varieties / farm implements like Ridge furrow makers./ seed drills | Ha. | 200 | 10 | 200 | 10 |
| 3 | Integrated Nutrient Management: | | | | | |
| | (a) Lime/Gypsum | Ha. | 70 | 0.525 | 215 | 1.613 |
| | (b) Micro-nutrients | Ha. | 106 | 0.53 | 168 | 0.84 |
| | Assistance for Rhizobium Culture | Ha. | 529 | 0.529 | 847 | 0.847 |
| 4 | Integrated Pest Management (IPM) | | | | | |
| a | Integrated Pest Management (IPM) package | Ha. | 176 | 1.32 | 118 | 0.885 |
| b | Distribution of NPV | Ha. | 18 | 0.045 | 73 | 0.183 |
| c | Distribution of PP Chemicals | Ha. | 176 | 0.88 | 84 | 0.42 |
| d | Distribution of weedicides | Ha. | 35 | 0.175 | 168 | 0.84 |
| 5 | Resource conservation techniques/tools | | | | | |
| a | Knapsack / Power operated Sprayers | Nos | 9 | 0.27 | 16 | 0.48 |
| b | Rotavators | Nos. | 5 | 1.5 | 8 | 2.4 |
| 6 | Efficient Water Application Tools | | | | | |
| a | Distribution of sprinkler sets | Nos. | 2 | 0.15 | 3 | 0.225 |

| Sl. No | Scheme/ Project Title | Unit | 2012-13 | | 2013-14 | |
|---|---|---|---|---|---|---|
| | | | Physical Target | Finance Allocation | Physical Target | Finance Allocation |
| b | Distribution of Mobile sprinklers/ Rainguns | Nos. | 12 | 1.8 | 10 | 1.5 |
| c | Incentive for pumpsets | Nos | 5 | 0.5 | 7 | 0.7 |
| d | Pipes for carrying water from source to field | Nos. | 17 | 2.55 | 18 | 2.7 |
| 7 | Cropping system based trainings(Four sessions., One before Kharif, one each during Kharif & Rabi and one after Rabi harvest.) | Nos. | 6 | 0.84 | 8 | 1.12 |
| 8 | Miscellaneous Expenses relating to PMT | | | | | |
| a | District Level: | Nos. | | 4.47 | 0 | 0 |
| b | State Level: | Nos. | | 0 | 0 | 0 |
| c | Miscellaneous expenses to other districts | Nos. | | 0 | 0 | 0 |
| 9 | Local Initiatives | | | | | |
| a | Irigation with Sprinkler | ha | | 0.1 | | |
| b | Irigation with Mobile Sprinkler | Nos. | | 0.025 | | |
| c | Tarpaulin(Rs. 4000/No @ 50% subsidy) | Nos. | | | 77 | 3.08 |
| d | Pulse wonder(Rs. 300/No @ 50% subsidy) | Nos. | | | 420 | 1.26 |
| e | Pusa Hydrogel (Rs. 900/No @ 50% subsidy) | Nos. | | | 75 | 0.675 |
| | **TOTAL** | | **1683** | **30.803** | **2866** | **34.98** |
| | **Additional Area Coverage** | | | | | |
| 1 | Cluster Demonstrations (100 ha each) on inter cropping / improved varieties / farm implements like Ridge furrow makers./ seed drills | Ha. | | | 0 | 0 |
| 2 | Distribution of Certified seed | Ha. | | 4.8 | | |
| 3 | INM - Micro nutrient | Ha. | | 1 | | |
| 4 | INM - Gypsum | Ha. | | 1.5 | | |
| 5 | Integrated Pest Management (IPM) | | | | | |
| | (a) Integrated Pest Management (IPM)-package | Ha. | | 1.5 | 20 | 0.15 |
| | (b) Distribution of PP Chemicals | Ha. | | | 0 | 0 |
| | (c) Distribution of NPV | Ha. | | | 2 | 0.005 |
| 6 | Resource conservation Technologies | | | | 0 | 0 |
| | (a) Distribution of Rotovators | Nos. | | | 0 | 0 |
| | (b) Distribution of Knapsack sprayers | Nos. | | | 0 | 0 |

| Sl. No | Scheme/ Project Title | Unit | 2012-13 | | 2013-14 | |
|---|---|---|---|---|---|---|
| | | | Physical Target | Finance Allocation | Physical Target | Finance Allocation |
| | Micronutrients | Ha. | | | 30 | 0.15 |
| | Assistance for Rhizobium Culture | Ha. | | | 50 | 0.05 |
| 7 | Efficient water application tools | | | | | |
| | (a) Incentive for Pump sets | Nos. | | | 0 | 0 |
| | (b) Assistance for pipes carrying water | Nos. | | | 0 | 0 |
| | (c) Distribution of Mobile sprinkler/Raingun | Nos. | | | 0 | 0 |
| | (d) Distribution of sprinkler sets | Ha. | | | 0 | 0 |
| 8 | Accelerated Pulses Production | Ha. | | | 0 | 0 |
| | **TOTAL** | | | 8.8 | | |
| | **GRAND TOTAL** | | **1683** | **39.603** | | |
| II | **State Sponsored** | | | | | |
| 1 | **Crop Yield Competitions** | Nos | 6 | 30000 | 6 | 30000 |
| 2 | **SMS - Paddy** | | | | | |
| a | Seed farm | Ha | 160 | 13363700 | 140 | 10173400 |
| b | procurement | mt | 0.86 | | 388.822 | |
| c | distribution | mt | 65.81 | | 375.362 | |
| 3 | **SMS - Millet** | | | | | |
| a | Seed farm | Ha | 23 | | 25 | |
| b | procurement | mt | 5.5 | | 18.661 | |
| c | distribution | mt | 19.1 | | 9.774 | |
| 4 | **Pulses Development Scheme** | | | | | |
| a | Seed farm | Ha | 12 | 4954800 | 162 | 5656400 |
| b | procurement | mt | 77.619 | | 84.369 | |
| c | distribution | mt | 144.8 | | 131.5 | |
| 5 | **Cotton Development programme** | | | | | |
| a | Area coverage & coverage as per SRR | Ha | 10500 | 932576 | | |
| b | Certified seed distribution | Qtl | 130 | | | |
| c | Details of beneficiaries | Nos | 115 | | | |
| d. | Organizing certified seed farms | Ha | 40 | | | |
| | | | | | | |
| e. | Certified seed procurement | Qtl | 130 | | | |
| f. | seed farm | Ha | 42.8 | | | |

| Sl. No | Scheme/ Project Title | Unit | 2012-13 | | 2013-14 | |
|---|---|---|---|---|---|---|
| | | | Physical Target | Finance Allocation | Physical Target | Finance Allocation |
| 6 | **Sugarcane Development Scheme** | | | | | |
| a. | Area planted | Ha | 3600 | | 4000 | |
| b. | Area covered ratoon | Ha | 0 | | 0 | |
| c. | Area harvested (planted) | Ha | 0 | | 0 | |
| d. | Area harvested (ratoon) | Ha | 0 | | 0 | |
| e. | production | MT | 0 | | 0 | |
| f. | planting selected setts | Ha | 0 | | 0 | |
| g. | Area coverage under optimum population | Ha | 2000 | | 2000 | |
| H. | Nitrogen @ 275 kg/ha | MT | 550 | | 550 | |
| **i** | Phosphorus @60 kg/ha | MT | 225 | | 225 | |
| j. | Potash 112.5 kg/ac | MT | 225 | | 225 | |
| k. | Area covered under plant production | Ha | 2000 | | 2000 | |
| l. | Laying of demo plants | Nos | 0 | | 0 | |
| 7 | **Mobile Soil Testing Lab** | Nos | 23645 | 2831300 | 89797 | 3827800 |
| 8 | **Soil Testing Lab** | Nos | 28362 | 3699600 | | |
| 9 | **Crop and Plant protection** | | | | | |
| a. | Drawing of samples from manufacturing | Nos | 8 | 338860 | 8 | 338530 |
| b. | Drawing of samples from retail | Nos | 585 | | 585 | |
| c. | Bt k | kg | 2577 | | 475 | |
| d. | Bispyribac sodium | kg | | | 303 | |
| e. | Novaluran | kg | | | 90 | |
| f. | Mancozeb | kg | 264 | | | |
| g. | Profenophos | kg | 946 | | | |
| h. | Azadiractin | cc/lit | 1967 | | 3765 | |
| i | Imazethapyr | lit | 222 | | 210 | |
| j. | Pheromone trap | lit/Nos | 9674 | | 2668 | |
| k. | Spodoptera lures | lit | 9674 | | 5756 | |
| l. | Carbendazim | kg/lit | 100 | | 20 | |
| m. | Helicoverba lures | Nos | 9647 | | | |
| n. | Light trap | Nos | | | 3 | |
| 10 | **IAMWARM** | Nos | 10509 | 316.317 | | |
| 1 | Arjunanadhi | Ha | | | 110 | 9.6 |

| Sl. No | Scheme/ Project Title | Unit | 2012-13 | | 2013-14 | |
|---|---|---|---|---|---|---|
| | | | Physical Target | Finance Allocation | Physical Target | Finance Allocation |
| 2 | Sindapalli uppodai | Ha | | | 0 | 0 |
| 3 | Sengottaiyar | Ha | | | 4 | 0.24 |
| 4 | Deviar | Ha | | | 6 | 5.06 |
| 5 | Kanal odai | Ha | | | 1 | 1 |
| 6 | Lower gundar | Ha | | | 0 | 0 |
| 7 | Nagariar | Ha | | | 0 | 0 |
| 8 | Gridhumal | Ha | | | 1 | 1 |
| 9 | Sevalapriyar | Ha | | | 0 | 0 |
| 10 | Vallampatti | Ha | | | 0 | 0 |
| 11 | Paraliyar | Ha | | | 1 | 0.06 |
| 12 | Kayalkudiyar | Ha | | | 2 | 1.06 |
| | | | | | 125 | 18.02 |
| III | **Central and State Sponsored (Indicate the share)** | | | | | |
| 1 | **ICDP (Rice)** | | | | | |
| a | Distribution of 'C' Seeds | MT | 320 | 16 | | |
| b | Power weeder | Nos | 25 | 3.75 | | |
| c. | Seed drum | Nos | 8 | 0.16 | | |
| d. | Zerotill seed drill | Nos | 10 | 2 | | |
| e. | Distribution of sprayers | Nos | 30 | 0.6 | | |
| f. | Pumpset distribution | Nos | 2 | 0.2 | | |
| g. | Rotovator distribution | Nos | 4 | 0.81 | | |
| h. | Power tiller distribution | Nos | 3 | 1.35 | | |
| I | Pol & Contingencies | Nos | | 0.35 | | |
| | Distribution of certified paddy seed | MT | | | 10 | 0.5 |
| 2 | **ICDP (Cotton)** | | | | | |
| 1 | FLD on Production Technology | Ac | 50 | 1.00 | 20 | 0.565 |
| 2 | TNAU Cotton Plus | Ha | 100 | 0.375 | | |
| 3 | FFS | Nos | 15 | 2.55 | 10 | 1.7 |
| 4 | Pheromone Trap | Ha | 350 | 1.05 | 45 | 0.135 |
| 5 | Cotton Picking Machine | Ha | 5 | 0.15 | | |
| 6 | Certified Seed procurement | Qtl | | | 55 | 1.1 |
| 7 | Distribution of bio pesticide | Ha | | | 350 | 3.15 |

| Sl. No | Scheme/ Project Title | Unit | 2012-13 | | 2013-14 | |
|---|---|---|---|---|---|---|
| | | | Physical Target | Finance Allocation | Physical Target | Finance Allocation |
| 3 | **ISOPOM (MAIZE)** | | | | | |
| a | Production of "C" seed through Dept | Qtl. | 0 | 0 | 15 | 0.15 |
| b | Distribution of "C" seed through Dept | Qtl. | 15 | 0.18 | 15 | 0.18 |
| c. | Block Demonstration by Dept (5Ha) | Nos. | 29 | 1.16 | 29 | 1.16 |
| d. | IPM by department | Nos. | 3 | 0.6804 | 3 | 0.6804 |
| e. | Farmers training | Nos. | 3 | 0.45 | 3 | 0.45 |
| f. | Pipes Carrying water source to the field | Nos. | 15 | 2.25 | 15 | 2.25 |
| g. | contingency and pol | Rs | 0 | 0.3 | | 0.3 |
| h. | Advertisement | Rs | 0 | 0.025 | | 0.025 |
| i | IEC | Rs | 0 | 0.5 | | 2.5 |
| 4 | **ISOPOM (Oil seed)** | | | | | |
| 1 | Purchase of Breeder Seeds (Rs.4500 / Qtl.) | Qtl. | 4 | 0.18 | 13.5 | 0.6075 |
| 2 | Production of Foundation seeds (Rs.1000 / Qtl.) | Qtl. | 50 | 0.5 | 270.32 | 1.59 |
| 3 | Production of Certified Seeds (Rs.1000 / Qtl.) | Qtl. | 600 | 6 | 384.05 | 5.71 |
| 4 | Distribution of Certified Seeds (50% of cost of seed or Rs.1200/ Qtl.) | Qtl. | 600 | 7.2 | 370 | 4.44 |
| 5 | Pipe for carrying water from sources to field (50% subsidy or Rs.15,000/ Unit) | Nos | 30 | 4.5 | | |
| 6 | Block Demonstration in Groundnut | Nos. | 10 | 0.4 | 10 | 0.4 |
| 7 | Block Demonstration in Gingelly | Nos. | 4 | 0.06 | 1 | 0.015 |
| 8 | Block Demonstration in Sunflower (Cost of input 2500 or 50%subsidy) | Nos. | 52 | 0.05 | 2 | 0.05 |
| 9 | IPM demonstration (Rs.22680 / demonstration) | Nos | 15 | 3.402 | 3 | 0.68 |
| 10 | Supply of Sprinkler sets | Ha | 20 | 1.5 | 6 | 0.45 |
| 11 | Distribution of micronutrients (50%cost of input or Rs. 100 / Ha.) | Ha | 10 | 0.05 | 10 | 0.05 |
| 12 | Distribution of Bio-fertilizer (50%cost of input or Rs. 100 / Ha.) | Ha. | 2000 | 2 | 2000 | 2 |
| 13 | Distribution of Bio-Pesticides (50% cost of chemical or Rs.250/ Ha.) | Ha. | 130 | 0.325 | 50 | 0.125 |
| 14 | Distribution of P.P. Equipments | Nos. | 0 | 0 | | |

| Sl. No | Scheme/ Project Title | Unit | 2012-13 | | 2013-14 | |
|---|---|---|---|---|---|---|
| | | | Physical Target | Finance Allocation | Physical Target | Finance Allocation |
| a) | Hand operated sprayer (50% cost of equipment or Rs.800/No.) | Nos | 20 | 0.16 | 10 | 0.08 |
| b) | Power Operated sprayer (50% cost of equipment or Rs.2000/No). | Nos | 10 | 1.2 | 10 | 0.2 |
| 15 | Distribution of Weedicide (50%cost of input or Rs. 500 / Ha.) | Ha | 4 | 0.02 | 5 | 0.025 |
| 16 | Farmers Training (15000 / No.) | Batch/Nos. | 10 | 1.5 | 10 | 1.5 |
| 17 | Distribution of pipes | Nos | | | 16 | 2.4 |
| 20 | Innovative Components | | | | | |
| a) | Supply of NCIPM light traps | Ha | 4 | 0.02 | 3 | 0.0225 |
| b) | Supply of Pheromone traps | Ha | 4 | 0.012 | 5 | 0.015 |
| d) | Combined Nutrient Spray for Groundnut | Ha | 50 | 0.1 | 30 | 0.06 |
| **5** | **NADP** | | | | | |
| 1 | SRI demonstration | Ha | 700 | 21 | | |
| | **Paddy Mission** | | | | | |
| a | Paddy seed distribution | MT | | | 260 | 13 |
| b | SRI Demonstration | Ha | | | 100 | 3 |
| c. | Promotion of weedicide | Ha | | | 1515 | 11.363 |
| | **Food grain Mission** | | | | | |
| a | SRI Demonstration | Ha | | | 400 | 12 |
| b | DAP Foliar spray of pulses | Ac | | | 844 | 2.1944 |
| c. | Pipes Carrying water | Nos | | | 2 | 0.3 |
| d. | Distribution of Sprinkler | Nos | | | 1 | 0.075 |
| e. | Distribution of Raingun | Nos | | | 1 | 0.15 |
| f. | Farmers training | Nos | | | 2 | 0.2 |
| **g.** | Advertisement | ls | | | | 0.2 |
| | **Millet Mission** | | | | | |
| **a** | Popularizing sorghum cultivation | Ha | | | 1000 | 30 |
| | variety | MT | | | 5 | 0.75 |
| | hybrid | MT | | | 5 | 2.5 |
| b | Popularizing sorghum cultivation | Ha | | | 1000 | 30 |
| | variety | MT | | | 2.5 | 0.375 |

| Sl. No | Scheme/ Project Title | Unit | 2012-13 | | 2013-14 | |
|---|---|---|---|---|---|---|
| | | | Physical Target | Finance Allocation | Physical Target | Finance Allocation |
| | hybrid | MT | | | 0.25 | 1.25 |
| **c.** | Seed based farmers training | Nos | | | 4 | 0.56 |
| **d.** | Publicity 08.01 | ls | | | | 0.28 |
| **e.** | 45 pol | ls | | | | 0.25 |
| | 05.02 OEOC | ls | | | | 0.125 |
| | **Pulses Mission** | | | | | |
| 2 | DAP foliar spray for pulses | Ha | 1840 | 9.2 | | |
| 3 | Intensive redgram cultivation | Ha | 16 | 2.4 | | |
| 4 | Mini Dhal Mill | Nos. | 1 | 1.6 | | |
| 5 | Tarpaulin Distribution | Nos. | 35 | 1.4 | 88 | 3.52 |
| 6 | Rain Gun | Nos. | 4 | 0.5 | | |
| 7 | Mobile Sprinkler | Nos. | 4 | 0.34 | | |
| 8 | Pipe for Carrying Water | Ha | 35 | 5.25 | | |
| 9 | Pulses NADP Procurement Subsidy | Mt | 92.7 | 9.27 | | |
| 10 | Redgram Demo | Ha | | | 120 | 9 |
| 11 | Incentive to redgram transplantation | Nos | | | 330 | 24.75 |
| 12 | Farmers training | Nos | | | 14 | 1.4 |
| 13 | Promotion of varieties having synchronized maturity | kg | | | 50 | 0.025 |
| 14 | Enhancement of pulses production subsidy | MT | | | 67 | 12.68 |
| 15 | OE OC | | | | | 0.21 |
| 10 | **Coconut seedling distribution** | | | | | |
| | i) Hybrid | Nos. | 14698 | 2.2056 | | |
| | ii) Tall | Nos. | 14938 | 1.1339 | | |
| | **Increasing Cotton Production** | | | | | |
| 11 | Cotton C Seed Production | Qtl | 119 | 1.785 | | |
| 12 | C Seed Distribution | Qtl | 61.95 | 1.239 | | |
| 13 | Supply of Bio Agents | Ha | 1000 | 9 | | |
| 14 | Supply of M.N. Nutrients | Ha | 800 | 2.8 | | |
| 15 | Seminar | No. | 1 | 1 | | |
| 16 | IFS (Rainfed Model) | Nos. | 36 | 19.8 | | |
| 17 | **Precision Farming** | | | | | |
| | Demonstration | Ha | 20.00 | 5 | | |

| Sl. No | Scheme/ Project Title | Unit | 2012-13 | | 2013-14 | |
|---|---|---|---|---|---|---|
| | | | Physical Target | Finance Allocation | Physical Target | Finance Allocation |
| | Advertisement | | | 0.01 | | |
| | POL | | | 0.005 | | |
| 18 | **SSI** | | | | | |
| | Demonstration | Ha | 20 | 5 | | |
| | Advertisement | | | 0.02 | | |
| | OE OC | | | | | 0.025 |
| | Special services | | | | | 6.565 |
| | OE OC | | | | | 1.008 |
| 19 | Power Tiller SC/ST | Nos. | 11 | 16.33 | | |
| 20 | Training 2 Farmer/Block | Nos. | 1 | 0.22 | | |
| 21 | Modernization & SPU Godown | Nos. | 1 | 0 | | |
| 22 | Godown (1000 MT) | Nos. | 1 | 0 | | |
| 23 | Gypsum distribution for Groundnut | Ha | 600 | 4.5 | | |
| | **Improving Soil productivity** | | | | | |
| 24 | Enrichment of Soil Fertility | Ha | 35 | 8.75 | | |
| 25 | Hirting of Rotovator | Ha | 690 | 3.45 | | |
| 26 | Vermi Compost Unit | Nos. | 43 | 6.45 | | |
| 27 | Enriched FYM-Formation of pits | Nos. | 150 | 3.35 | | |
| | **RADP** | | | | | |
| 28 | Cropping System Based Demo | Ha | 950 | 71.25 | | |
| 29 | Establishment of Vermicompost Units | Nos. | 75 | 11.25 | | |
| 30 | Mobile Sprinkler | Nos. | 17 | 1.445 | | |
| 31 | Raingun | Nos. | 17 | 2.125 | | |
| | **INSIMP** | | | | | |
| 32 | Barnyard Millet Demo | Ha | 208.5 | 4.17 | 200 | 4 |
| 33 | Barnyard Millet mini kit | Nos. | 115 | 0.23 | 200 | 0.4 |
| 34 | Cumbu Seed Production | Qtls. | 120 | 1.2 | 70 | 0.7 |
| 35 | Training to Farmers | Nos. | 1 | 3 | 1 | 2.5 |
| 36 | Publicity | | | 0.525 | | |
| 37 | Technical Assistant | Nos. | 1 | 0.48 | 1 | 0.48 |
| 38 | Advertisement | | | | | 0.42 |
| | **OTHERS** | | | | | |

| Sl. No | Scheme/ Project Title | Unit | 2012-13 | | 2013-14 | |
|---|---|---|---|---|---|---|
| | | | Physical Target | Finance Allocation | Physical Target | Finance Allocation |
| 39 | Production of Advt. film | 1 | 1 | 4 | | |
| 40 | SSFM&E | | | 0.312 | | |
| 41 | Strengthening SSF | 1 | | 10.86 | | |
| | **NADP Unspent** | | | | | |
| 42 | **Paddy Mission** | | | | | |
| | SRI Demonstration old | Ha | | | 500 | 15 |
| | SRI Demonstration diversion from solar pumpset | Ha | | | 600 | 18 |
| 43 | **Pulses Mission** | | | | | |
| | pipes carrying water | Nos | | | 1 | 0.15 |
| | Distribution of Raingun | Nos | | | 1 | 0.15 |
| | Distribution of Sprinkler | Nos | | | 2 | 0.15 |
| | INM for pulses foliar spraying of DAP | Ha | | | 32 | 0.155 |
| 44 | **Increasing production of cotton** | | | | | |
| | Cotton F seed production | Qtl | | | 20 | 1 |
| | Cotton C seed production | Qtl | | | 75 | 1.5 |
| | MN Mixture distribution | Ha | | | 1670 | 5.846 |
| | RADP Raingun | Nos | | | 7 | 0.875 |
| | Gypsum application | Ha | | | 533 | 3.998 |
| 45 | **Coconut Seedling Distribution** | | | | | |
| | Hybrid | Nos | | | 8000 | 1.2 |
| | Tall | Nos | | | 8000 | 0.6 |
| | Precision farming | Ha | | | 20 | 5 |
| | Hiring Rotovator | Ha | | | 700 | 3.5 |

**Table 3.29 Schemes implemented by Department of Agricultural Engineering (2012-13 to 2014-15)**

**(Rs. in lakhs)**

| Sl. No. | Scheme/Project title | Unit | 2012-13 | | 2013-14 | | 2014-15 | |
|---|---|---|---|---|---|---|---|---|
| | | | Physical Target | Finance Allocation | Physical Target | Finance Allocation | Physical Target | Finance Allocation |
| **I** | **Centrally Sponsored** | | | | | | | |
| 1 | Demonstration of Agrl Machineries and Implements | No | 14 | 0.42 | 17 | 0.51 | 8 | 0.24 |
| 2 | Training Programme to Farmers on operation and maintenance of Agrl Machineries | No | | | 4 | 1.04 | | |
| **II** | **State Sponsored** | | | | | | | |
| 1 | Rain Water Harvesting and Run off Management | No | | | 8 | 25.39 | | |
| **2** | TNIAMWARM- Farm Pond | No | | | 15 | 9.00 | | |
| **3** | Training to the Farmers Group under NADP | No | | | 2Nos | 0.633 | | |
| **4** | Western Ghats Development Programme (sanctioned as per Go Ms No 175 Planning Development and Special Initiatives (TC-1) Department dated 11.12.2012, Receipt of budget & execution of the works during 2013-14) | No | | | 18 | 26.832 | 27 | 77.5 |
| 5 | Artificial Recharge to Ground Water | No | 17 | 70.63 | | | | |
| 6 | TNIAMWARM -MIS | Ha | 275.000 | 63.709 | 393.82 | 106.5847 | | |
| 7 | Distribution of Agrl. Machineries under National Agriculture Development Programme | No | 11761 | 264.74 | 3667 | 164.52 | | |
| 8 | Provision of Onion storage Structure under NADP | MT | | | 40 | 1.60 | | |

| Sl. No. | Scheme/Project title | Unit | 2012-13 | | 2013-14 | | 2014-15 | |
|---|---|---|---|---|---|---|---|---|
| | | | Physical Target | Finance Allocation | Physical Target | Finance Allocation | Physical Target | Finance Allocation |
| 9 | TNIAMWARM | Ha | | | | | 55.000 | 15.48 |
| **III** | **Central and State sponsored (Indicate the share)** | | | | | | | |
| 1 | Agricultural Mechanisation Programme (90:10) | No | 29 | 11.80 | 13 | 5.10 | | |
| 2 | Solar PV Pumpsets (fixed type) | No | | | | | 40 | 76.12 |
| 3 | Solar PV Pumpsets Linked with Micro Irrigation (Tracking type) | No | | | | | 62 | 185.37 |

### 3.12.1 Schemes implemented by Department of Horticulture (2012-13 to 2014-15)

Important principal horticulture crops are Mango, Banana and Guava, vegetables, herbals, aromatic plant in this district. The horticulture potential has not been exploited effectively in this district. Srivilliputtur and Rajapalayam areas have got enormous scope to promote horticulture.

**Table 3.30 Schemes implemented by Department of Horticulture**

**(₹ inlakhs)**

| Sl. No. | Scheme / project title | Unit | 2012-13 | | 2013-14 | | 2014-15 | |
|---|---|---|---|---|---|---|---|---|
| | | | Phy. | Fin. | Phy. | Fin. | Phy. | Fin. |
| **I.** | **Centrally sponsored** | | | | | | | |
| 1 | National Mission on Medicinal Plants | ha | 280 | 14 | 401 | 20.687 | 400 | 20 |
| 2 | National Bampoo Mission | ha | 30 | 1.2 | 0 | 0 | 0 | 0 |
| 3 | National Agriculture Development Programme | ha | 944 | 200.72 | 890 | 162.05 | 900 | 119.5 |
| | | nos | 25 | | 125 | | | |
| | | sqm | | | 5000 | | | |
| **II.** | **State sponsored** | | | | | | | |
| 1 | Intergrated Horticultural Development Scheme | ha | 913 | 25 | 800 | 16 | 900 | 19 |
| **III.** | **Central and State sponsored (Indicate the share)** | | | | | | | |
| 1 | Nationl Mission on Micro Irrigation | ha | 637 | 99.18 | 823 | 176.16 | 0 | 0 |
| | **Small Farmer 50% TN +50% (GOI)** | | | | | | | |
| | **Other Farmers 40%TN+35%(GOI)** | | | | | | | |

**Table 3.31 Block wise Milk yield gap of the Virudhunagar district (lit/day/animal)**

| Sl. No | Type of Animal | Virudhunagar | | | Aruppukottai | | |
|---|---|---|---|---|---|---|---|
| | | Potential | Actual | Reason | Potential | Actual | Reason |
| 1 | **Cows** | | | | | | |
| | a.Local | 5 | 3 | Fodder scarcity, Minimal usage of concentrate and Mineral | 15 | 8 | Green Fodder shortage |
| | b.Cross breed | 15-20 | 12 | | 0 | 0 | |
| 2 | **Buffalo** | | | | | | |
| | a.Local | 5 | 3 | Fodder scarcity, Minimal usage of concentrate and Mineral deficiency | 10 | 5 | |
| | b.Cross breed | 10 | 6 | | 0 | 0 | |
| **Sl. No** | | **Kariyapatti** | | | **Narikudi** | | |
| | **Type of Animal** | **Potential** | **Actual** | **Reason** | **Potential** | **Actual** | **Reason** |
| 1 | **Cows** | | | | | | |
| | a.Local | | | Increased concentrate feed cost, low green fodder | 4 | 2 | Green Fodder shortage |
| | b.Cross breed | 6 | 3 | | 12 | 7 | |
| 2 | **Buffalo** | 18-19 | 12 | | | | |
| | a.Local | 5 | 3 | Fodder scarcity | 5 | 3 | Green Fodder shortage |
| | b.Cross breed | 7 | 4 | | 0 | 0 | |

| Sl. No | Type of Animal | Rajapalayam | | | Sattur | | |
|---|---|---|---|---|---|---|---|
| | | Potential | Actual | Reason | Potential | Actual | Reason |
| 1 | **Cows** | | | | | | |
| | a.Local | 5 | 2 | Mineral deficiency grazing land and fodder scarcity | 6 | 4 | Water scarcity / lack of fodder |
| | b.Cross breed | 12 | 9 | | 12 | 8 | |
| 2 | **Buffalo** | | | | | | |
| | a.Local | 4 | 2 | | 5 | 4 | |
| | b.Cross breed | 6 | 4 | | 8 | 6 | |
| **Sl. No** | | **Sivakasi** | | | **Srivilliputhur** | | |
| | **Type of Animal** | **Potential** | **Actual** | **Reason** | **Potential** | **Actual** | **Reason** |
| 1 | **Cows** | | | | | | |
| | a.Local | 6 | 4 | | 6 | 4 | Less grazing area, less green and concentrated feed |
| | b.Cross breed | 12 | 8 | | 14 | 1 | |
| 2 | **Buffalo** | | | | | | |
| | a.Local | 6 | 4 | | 5 | 8 | Less grazing area, less |
| | b.Cross breed | 8 | 6 | | 7 | 12 | |

| Sl. No | Type of Animal | Thiruchuli | | | Vembakkottai | | |
|---|---|---|---|---|---|---|---|
| | | Potential | Actual | Reason | Potential | Actual | Reason |
| 1 | **Cows** | | | | | | |
| | a.Local | 4 | 3 | Lack of green fodder availability | 6 | 4 | |
| | b.Cross breed | 14-15 | 12 | | 12 | 8 | |
| 2 | **Buffalo** | | | | | | |
| | a.Local | 6 | 3 | | 7 | 3 | |
| | b.Cross breed | 8 | 4 | | 8 | 4 | |
| | | **Virudhunagar** | | | **Watrap** | | |
| **Sl. No** | **Type of Animal** | **Potential** | **Actual** | **Reason** | **Potential** | **Actual** | **Reason** |
| 1 | **Cows** | | | | | | |
| | a.Local | 0 | 0 | Water scar city | 5 | 2 | Scarcity of grass Concentrate mineral deficiency |
| | b.Cross breed | 10 | 8 | | 8 | 5 | |
| 2 | **Buffalo** | | | | | | |
| | a.Local | 0 | 0 | Water scar city | 0 | 0 | Scarcity of grass Concentrate mineral deficiency |
| | b.Cross breed | 8 | 6 | | 3 | 4 | |

**Table 3.32 Dairy Development Budget- NADP**

**(Rs. in lakhs)**

| Sl. No. | Specific intervention / Schemes identified | 2011-12 | | 2012-13 | | 2013-14 | | 2014-15 | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phy. | Fin. | Phy. | Fin. | Phy. | Fin. | Phy. | Fin. | Phy. | Fin. |
| 1 | Pasture development – common | | | | | | | | | | |
| 2 | silage pit construction and inputs | 10 | 1.5 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 1.5 |
| 3 | Fodder cultivation (acre) | 0 | 0 | 700 | 15.4 | 700 | 23.63 | 0 | 0 | 1400 | 39.03 |
| 4 | Chaff cutter and silage making unit | 86 | 11.93 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | AI centre – establishing | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | Annual health dispensary / clinic | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | Vaccinating animals | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | Mobile Veterinary Unit | 0 | 0 | 2 | 0.53 | 0 | 0 | 0 | 0 | 2 | 0.53 |
| 9 | Hygienic milk production | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | Health care of pregnant cross breed cows | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | Heifer rearing | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | Calf rearing | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | Establishment of mini-dairies | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | Organizing | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | Azolla cultivation | 0 | 0 | 290 | 3.75 | 0 | 0 | 0 | 0 | 290 | 3.75 |
| 16 | Insurance of cross breed cows | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17 | Uzhavar Peruvizha | | | 135 | 2.76 | 0 | 0 | 0 | 0 | 135 | 2.76 |
| 18 | Door step V and EHS | 2 | 10.76 | 2 | 9.96 | 0 | 0 | 0 | 0 | 0 | 0 |
| | a) Salary | 2 | 7.56 | | 7.56 | 0 | 0 | 0 | 0 | 0 | 0 |
| | b) Vet. medicines | 2 | 2.4 | | 2.4 | 0 | 0 | 0 | 0 | 0 | 0 |
| | c) Surgical instruments | 2 | 0.8 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 19 | Gross root milk structure | 12 | 17.06 | 12 | 24.66 | 0 | 0 | 0 | 0 | 0 | 0 |
| | a) Social worker salary | | 9.62 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| | b) Milk cans | | 3.24 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| | c) Transport | | 4.05 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| | d) Others | | 0.15 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 20 | Milk analyzer | | | 20 | 7.2 | 0 | 0 | 0 | 0 | 0 | 0 |
| | **Total** | | **69.07** | | **74.22** | | **23.63** | | | | **47.57** |

**Table 3.33 Dairy Development- Other Scheme**

| Sl. No. | Specific intervention / Schemes identified | Budget from other schemes | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2011-12 | | 2012-13 | | 2013-14 | | 2014-15 | | Total | |
| | | Phy. | Fin. | Phy. | Fin. | Phy. | Fin. | Phy. | Fin. | Phy. | Fin. |
| 1 | State Fodder Development scheme | 1020 | 53.87 | 1021 | 51.29 | 450 | 70.82 | | | 2491 | 175.98 |
| 2 | Western Ghat Development programme | | | | | | | | | | |
| | a) Distribution of Giriraja birds – Units | 150 | 4.5 | | | 150 | 0.45 | | | 300 | 4.95 |
| | b) Distribution of Sheep units | 14 | 44.8 | | | | | | | 14 | 44.8 |
| | c) Insurance cost | 14 | 0.44 | 20 | 0.04 | 50 | 0.23 | | | 84 | 0.71 |
| | d) issue of heifer calves units | | | 10 | 0.4 | 50 | 2.63 | | | 60 | 3.03 |
| | e) Concentrate feed | | | 20 | 1.01 | 50 | 2.59 | | | 70 | 3.6 |
| | f) Normal feed | | | 20 | 1.82 | 50 | 5.06 | | | 70 | 6.88 |
| | g) Medical camp | | | 1 | 0.07 | - | - | | | 1 | 0.07 |
| 3 | National Mission for Protein supplement | | | | | | | | | | |
| | a) Purchase and upkeep of animal – 18 members. | 180 | 3.69 | | | | | | | 180 | 3.69 |
| | b) Shed construction | 18 | 0.99 | | | | | | | 18 | 0.99 |
| | c) Training -18 members | 18 | 0.06 | | | | | | | 18 | 0.06 |
| | d) Insurance | 180 | 0.18 | | | | | | | 180 | 0.18 |
| | e) Feed | 180 | 0.41 | | | | | | | 180 | 0.41 |
| | f) feed and dietary charges – 2000 Goats | 2000 | 4.5 | | | | | | | 2000 | 4.5 |
| 4 | Priceless milch cow distribution scheme | 556 | 201.55 | 500 | 181.25 | 501 | 183.36 | 600 | 219.6 | 2157 | 785.76 |
| 5 | Kalnadai Pathukappu Thittam | 160 | 1.92 | 160 | 1.92 | 160 | 1.92 | | | 480 | 5.76 |
| 6 | IAMWARM | 1225 | 26.66 | 1150 | 13.87 | 1025 | 18.3 | | | 3400 | 58.83 |
| 7 | Part II scheme | | | | | | | | | | |
| | a) SS Milk cans | 25 | 0.63 | 125 | 4.5 | | | | | | |
| | b) EMT | 2 | 0.6 | 2 | - | | | | | | |
| 8 | TN Livestock development agency | | | | | | | | | | |
| | a) Inferlity camp | | | | | 11 | 1.1 | | | | |
| 9 | IDDP scheme | | | | | | | | | | |
| | a) Mobile Veterinary Unit | | | | | 1 | 4.3 | | | | |
| | b) Milk analyzer | | | 3 | 1.05 | | | | | | |
| | **Total** | | **344.8** | | **257.22** | | **290.76** | | **219.6** | | **1100.2** |

## Sheep and Goat

**(₹ in lakhs)**

| Sl. No. | Specific intervention / Schemes identified | Budget from other schemes | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2011-12 | | 2012-13 | | 2013-14 | | 2014-15 | | Total | |
| | | Phy. | Fin. | Phy. | Fin. | Phy. | Fin. | Phy. | Fin. | Phy. | Fin. |
| 1 | Goat stall – feeding | | | | | | | | | | |
| 2 | Vaccination | | | | | | | | | | |
| 3 | Feeding | | | | | | | | | | |
| 4 | Genetic Upgradation of sheep and goat | | | | | | | | | | |
| 5 | Supply of rams | | | | | | | | | | |
| 6 | Priceless Goats scheme | 3264 | 416.16 | 3993 | 509.11 | 5395 | 701.35 | 4036 | 490.37 | 16688 | 2127.88 |

## Poultry

**(₹ in lakhs)**

| Sl. No. | Specific intervention / Schemes identified | Budget from other schemes | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2011-12 | | 2012-13 | | 2013-14 | | 2014-15 | | Total | |
| | | Phy. | Fin. | Phy. | Fin. | Phy. | Fin. | Phy. | Fin. | Phy. | Fin. |
| 1 | State poultry Development scheme | | | 138 | 286.52 | 25 | 53.86 | | | 163 | 340.38 |
| 2 | Encouraging backyard poultry | | | | | | | | | | |
| 3 | Poultry vaccination | | | | | | | | | | |
| 4 | Poultry health management | | | | | | | | | | |
| | **Total** | | | | 286.52 | | 53.86 | | | | 340.38 |

**SWOC Analysis of theDistrict**

Having pictured the natural resource - bases and their potentials in the earlier chapter, an attempt has been made to identify the various potentials for development of agriculture and allied sectors in this district through SWOC analysis, which is a planning tool normally employed by the development managers. The acronym SWOC indicates the following.

**Strengths**

- The district is well connected with good roads. NH 7, NH 208 and NH 45B pass through the district and all the villages in the district have well tar topped roads.
- The foothills have rich loamy soil with good vegetation cover. The plains with black cotton soil is suitable for cultivating cotton
- The district possesses wide range of climatic conditions favorable for cultivation of different crops.
- Rice is the predominant crop grown in this division during winter. There is a great potential to rice bran oil.
- Cotton, pulses, oilseeds and millets, which do not require much irrigation, are the main crops grown. Paddy and sugarcane are grown where tank or well irrigation is available.
- Two reservoirs, namely Periyar and Kovilar at Pilavakkal in Watrap irrigate about 3800 hectares through 40 tanks.
- Cotton is a major commercial crop of the district and the cotton industry therefore occupies an important place in the economy.
- The prevailing climate and soil condition in Virudhunagar district especially in the western ghats area is highly favourable for growing varieties of vegetable crops especially Onion, Tomato, Chillies, Brinjal, Coriander etc. The normal vegetable cultivation area of Virudhunagar district is around 6500 ha.
- Availability and cultivation of medicinal plants such as Senna in a large area.
- Virudhunagar is a traders' town. It has been involved in the marketing and distribution of commodities since British times and has a well-developed network for purchase of goods and commodities. Virudhunagar, Rajapalayam, Sattur, Watrap,

Aruppukkottai and Kamudi are important centres for wholesale and retail trade. Cotton, groundnut, chillies and spices are the main agricultural goods of trade.

- Two warehouses at Virudhunagar and Rajapalayam offer facilities for storage of food grains, spices, pulses, chillies, jaggery andcotton.
- The district has high sheep (3.89 lakhs) and goat (3.63 lakhs)population
- Government reservoirs - 8 nos (2280 ha) & Panchayat tanks of 974 (4794 ha) and Municipalities having 2 nos (27 ha) and HR and CE tanks 16 nos (19 ha) River stretch - 517.87 kms - providing a livelihood for local fisher folk and Inland fish production - 387 tonnes, (reservoir production 60.581 tonnes and irrigation tanks production 3026.419 tonnes) 5 fishermen cooperative societies
- The farmers in the district are predominantly small and have a strong positive attitude in implementation of the government schemes as experienced.
- Sivakasi is the hub of industrial activities for the whole of southern India specially in crackers and printing press
- Presence of cement factories in Alangulam and Thulukkapatti are the added industrial strength of the district.

**Weaknesses**

- Soil is one of the major inputs for dry land agriculture. Lack of knowledge in keeping the soil health is the major constraint.
- Periodical non-application of organic manures is another constraint. This is due to the reduced population of livestock in villages because of their maintenance cost.
- Leaving the land barren will make the land susceptible for soil erosion and ultimately the soil will be unsuitable for cultivation. This is mainly due to urbanization, industrialization, increased cost of cultivation and increased demand for agriculturallabour.
- Climate change is a serious public concern. Industrial pollution and rapid deforestation are the prime factors leading to climate change. This leads to changes in rainfall pattern and distribution and ultimately on the crop productivity.
- Low and skewed distribution in rainfall pattern especially during the North East monsoon period results in water stress especially for winter rainfed and summer irrigated crops

- Non-availability of adequate farm labourers for timely farm operations due to mushrooming of small scale industries like matches, crackers and fires.
- Because of the increased demand of agricultural labour, the farmers themselves are leaving the lands fallow and seeking jobs in the nearby industries like matches and fire-works.
- Lack of plant protection knowledge in the usage of pesticides in crops viz., cotton, chillies and paddy.
- Lack of motivation and technical know-how in the adoption of latest technologies in crop production as well as protection.
- Non-availability of quality seeds especially in cotton
- Lack of network for getting remunerative prices for farm produce like onion, maize and rice
- Lack of storage facilities for the perishable commodities like guava, onion, tomato, mango and lime which are produced abundance in this region.
- Lack of technical know-how in production and processing of export oriented horticulture produce and value added products. High price fluctuations for the agricultural commodities.
- In Virudhunagar district vast area is available barren for want of irrigation facilities. Many of the potential lands are under rain fed condition with low value crops.
- The Vegetable growing farmers of this district are still practicing the low value and less efficient plant protectionequipments.
- The cost of farm machines like planters and harvester is very high and it is not affordable by a small farmer.
- Irrigated area under canal system from the reservoirs / dams arevery meager.
- Majority of the farmers are marginal and small and their resource – base is also poor.

**Opportunities**

- Soil erosion should be arrested and rain water must be conserved by adopting suitable management technologies.

- Soil health care by application of organic manures, bio-fertilizers and soil amendments
- Encouraging the farmers to raise the green manure crops like Daincha and sunnhemp in the cropping system will improve the soil condition
- Establishment of rice bran oil mills and Cotton seed oil extraction industries will greatly enhance the economic status in this region besides filling the oil gap of the nation.
- Development and introduction of alkaline tolerant crop varieties to improve production and productivity.
- Adoption of low and no cost technologies and inter cropping of pulses for getting higher net income in rain fed areas.
- Senna is grown in an area of 430 Ha and there is a good potential to improve the quality and export by following GAP
- Mechanized farming may be encouraged in a cooperative manner in labour scarce areas. Tree cropping and growing medicinal plants in marginal lands and growing fruit trees in medium fertile soils
- Mushroom cultivation and goat rearing for marginal farmers and land less people.
- Exploration of short duration drought evading crops to tide over rainfall aberrations. Adopting suitable contingent cropping system for aberrant weather situations
- Contingency plans like farm pond, formation of broad bed, contour bed and other allied water harvesting techniques for effective utilization of available water.
- Imparting plant protection knowledge for effective and timely use of pesticides.
- Motivating the farmers to adopt latest technologies on production and protection. Introduction of seed village and motivating the farmers to grow their ownseed.
- Formation of registered cooperative societies in marketing network (as in Dairy) to fetch higher remunerative prices.
- Establishment of cold storage units for perishable commodities.
- In general there exist scope for increasing productivity and hence production of major crops namely paddy, jowar, bazra, cotton etc., through the application of

latest agricultural production technologies.

- There exists vast export potentials for chilli and coriander based processed cutlery departments as well as for rawchillies.
- Presence of cotton ginning and spinning mills indicates the scope for increasing cotton yield and production and for contract farming.
- The Mango variety locally called as “sapattai” is having excellent taste. Hence, there is scope for increasing productivity, area and production of mango particularly in the western pocket of the district.
- Mango and pineapple cultivation in western parts of the district give way for the growth for mango /pineapple fruit based processing industry in that part of the district.
- Maize and sunflower cultivation in the recent years is fast picking up in this district and further support and encouragement would boost the production of the same in the years to come. More over this also indicates the scope for starting maize based feed mixing unit in this district.
- Predominant of dryland agriculture indicates the opportunities for developing agroforestry.
- Cotton research station at Srivilliputhur develops new varieties and technologies constantly and the same reach out to the farmers of the district.

**Challenges**

- Poor economic condition of the dry land farmers
- Profitability of agriculture in comparison to the other livelihood activities
- Conversion of Agricultural land for residential and industrial purpose.
- Increased area under barren and fallow lands due to high cost of cultivation
- Increased demand of agriculturallabour.
- Acute fodder shortage (deficit 86.80 percent)
- High level of industrializationlike textile mills, cement factories, matches printing and fire-works.

**SWOC Analysis - Dairy Sector**

**Strengths**

- High population of non-descript cows that can be exploited by grading up
- High demand for fluid milk

**Weaknesses**

- Acute fodder shortage (deficit 86.80 percent)
- Unscientific management
- Reproductive problems in cross breeds due to green fodder shortage
- Lack of good source for purchase of quality cross bred bulls Opportunities

**Opportunities**

- Steady increase in demand for milk and milk products

**Challenges**

- Occurrence of major livestock diseases especially foot and mouth, which cause heavy mortality in, crossbred cattle.
- Increasing cost of milk production due to steady increase in the prices of feed ingredients without proportionate increase in milk prices production.

**SWOC Analysis– Small Ruminants**

**Strengths**

- Good sheep (3.89 lakhs) and goat (3.63 lakhs) population
- Huge demand for mutton andchevon
- Easy marketability

**Weaknesses**

- Poor quality of grazing lands
- High incidence of parasitic diseases
- Lack of awareness regarding scientific management
- Challenges from killer diseases like Blue Tongue, PPR and Sheep pox

**Opportunities**

- Increasing demand for chevon and mutton
- Increasing people's interest in sheep & goat rearing which is reflected by steady increase in their population

**Challenges**

- Frequent occurrence of killer disease especially PPR, Sheep pox and Bluetongue.
- Lack of availability of sufficient quantity of blue tongue vaccine.

**SWOC Analysis– Poultry Sector**

**Strengths**

- Favorable climate – hot and dry weather
- Vast availability of land

**Weaknesses**

- Higher capital requirement for establishing commercial broiler / layer units.
- Lack of awareness

**Opportunities**

- Very High demand for chicken meat
- Promotion of broiler integration by private hatcheries

**Challenges**

- Fluctuating prices of egg & chicken meat due to fear of bird flu.

**SWOC Analysis – Fisheries sector**

**Strengths**

- River stretch - 517.87 kms - providing a livelihood for localfisherfolk
- Great scope for development of Inland fish farming
- Four major fish whole sale markets - Virudhunagar, Sivakasi, Srivilliputhur and Rajapalayam
- Five fishermen cooperative societies (Members1644)

**Weaknesses**

- Vast gap between seed supply and demand.

- Virudhunagar district is located at the foothills of Western Ghats. Because of this geographical position, the south west monsoon is very scanty as, this area becomes the shadow region.
- Due to non-availability of major carps seeds during North East monsoon, there is a huge gap between the demand and supply.
- Rainfall in this district is highly erratic.
- The district occasionally gets copious amount of rainfall during some years and during majority of the years the rain fall is very scanty thereby there is a lesser production of fishery.
- Presently the fish farmers depend upon the availability of fish seeds for stocking from the Government fish farms which could not cater the need of all.

**Opportunities**

- Scope for backyard ornamental fish breeding unit
- Composite fish culture in dug out ponds for rearing fast growing carp fish species for about 5 months rearing period

**Challenges**

- Technology transfer of ornamental fish farming.
- Limited awareness for freshwater fish farming

**AccommodatingSWOC**

- Irrigated Cotton cultivation in the mid-west and rainfed cotton cultivation in the middle and mid-west parts required financial and technical supports to the farmers. The cotton research station at Srivilliputhur also requires further strengthening and supports.
- Predominant of dry land agriculture warrants the soil and moisture conservation as well as Water harvesting activities in a big way.
- The western part of the district requires strengthening of Horticulture development activities.
- Scientific Cotton cultivation on contract – farming and active involvement of ginning and spinning mills are the need of the hour in strengthening the cotton industry in thedistrict.
- The agri – export possibilities is huge and this requires development support

## SWOC Analysis of the Blocks

## Aruppukottai block

| A. | **Strengths** |
|---|---|
| 1 | Major Millets and Pulses growing area |
| 2 | Minor Millet growing area i.e Kuthiraivali |
| 3 | Major spices (corionder seeds) area |
| **B.** | **Weakness** |
| 1 | 95 % area grown under rainfed condition |
| **C.** | **Opportunities** |
| | Nil |
| **D.** | **Challenges** |
| | Uneven rain rainfall |
| | Lack of manpower |
| | Non- availability of frequent transport |

**Problems / Issues identified in the block**

**(Assign priority based on importance or seriousness of the problem/issue)**

| a. | **Agriculture** |
|---|---|
| 1 | Lack of storage godown facilities at the village levels |
| 2 | Lack of drying yards with covering materials like tarpaulin. |
| 3 | Poor maintenance of Tanks and Supply channels |
| 4 | Lack of Proper transport facilities from villages to major markets. |
| 5 | Late issuance of notification of crop insurance scheme at the end of crop season of Aruppukottai block mainly for rabi season. |
| 6 | Lack of choice of performing varieties of major crops |
| 7 | Lack of motivation among farmers regarding organic farming |
| **b.** | **Horticulture** |
| 1 | Lack of irrigation facility |
| 2 | Constant rate for vegetables |
| 3 | Lack of awareness to adopt new technology |
| c. | Agricultural Marketing |
| 1. | Lack of Value addition industries for major crops like Maize, Cholam and Pulses. |
| 2 | Lack of storage facilities at village levels. |

**Probable solutions to the problems / Issues**

**(Assign priority based on importance or seriousness of the problem/issue)**

| Sl. No. | Enterprise | Problem | Probable solution |
|---|---|---|---|
| a. | **Agriculture** | | |
| 1 | | Lack of storage godowns facilities at the village levels | Providing storage godowns in all major villages. Storage godowns may be given in charge of Farmers groups like that of godowns constructed and maintained under IAMWARM schemes. |
| 2 | | Lack of drying yards with covering materials like tarpalin. | Drying yards may be constructed in various sizes and numbers depending upon the cultivation area in all the villages. |
| 3 | | Poor maintenance of Tanks and Supply channels | *Prosopis* grown in the Tanks may be cleaned and farmers may be allowed to use the tank silt at the end of the season every year. Concrete supply channels may be provided for every tank irrespective of the size and ayacut area. |
| 4 | | Lack of Proper transport facilities from villages to major markets. | Common Transport facilities may be provided at the call of a farmer to transport his produce to the nearby market with minimum cost. Transport veichles may be stationed in the nearby regulated markets. Pacca road facilities must be provided even to the remote small village. |
| 5 | | Late issuance of notification of crop insurance scheme at the end of crop season of Aruppukottai block mainly for rabi season. | Notification for crop insurance must be issued before the start of cropping season. As for as Aruppukottai block is concerned notification must be issued in the month of early October for all rabi crops. |

| Sl. No. | Enterprise | Problem | Probable solution |
|---|---|---|---|
| 6 | | Lack of choice of performing varieties of major crops | Farmers must have access to all performing varieties of all crops irrespective of their year of release. |
| 7 | | Lack of motivation among farmers regarding orgonic farming | Crop specific Farmer groups may be formed for major crops and motivating the Farmer groups to cultivate crops purely under organic condition and the groups may registred under Participatory guaranty system of organic cultivation. |
| b. | **Horticulture** | | |
| | | Lack of irrigation facility | Convert channel irrigation method to 100 % drip irrigation |
| | | Constant rate for vegetables | Establishing vegetable regulated market with cold storage facilities. |
| c. | **Agricultural Marketing** | | |
| 1 | | Lack of Value addition industries for major crops like Maize,Cholam and Pulses. | Identified Value addition industries may be estabilished both under private and public sectors for the major crops of this block like Maize,Cholam and Pulses. |
| 2 | | Lack of storage facilities at village levels. | Drying yards may be constructed in various sizes and numbers depending upon the cultivation area in all the villages |

**Yield gap**

| Sl. No. | Crops | Yield gap (per cent) | Reasons for yield gap | Intervention required |
|---|---|---|---|---|
| 1 | Bhendi | 20% | YMV | Introduce susceptible varieties |
| 2 | Banana | 30% | Wind | Introduce short varieties |

**Technological gap**

| Sl. No. | Enterprise | Technologies recommended | Adoption in percent | Reasons for technology gap | How to fill up the gap |
|---|---|---|---|---|---|
| a. | **Agriculture (cropwise)** | | | | |
| | Paddy | Application of organic soil ameliorants | 30 | Lack of awarness about soil humus content improve-ment | Application of organic waste, compost, vermicompost, insitu ploughing of greenmatter |
| | | Raising Greenmanure crop and incorporate in the field | 100 | 100 | |
| | | HYV | 100 | 100 | --- |
| | | Seed Treatment with Bio Fertilizer and Bio Fungicides | 80 | Lack of awarness about the credibility of the technology | Conducting Awareness campaign |
| | | Application of weedicides | 70 | High cost of the chemical | Providing weedicides at subsidised cost |
| | | SRI | 65 | Lack of manpower and Machineries | Providing assistance for the adoption of the technology for a period of three years. |

| Sl. No. | Enterprise | Technologies recommended | Adoption in percent | Reasons for technology gap | How to fill up the gap |
|---|---|---|---|---|---|
| | | INM And IPM | 70 | Lack of awarness | Awareness campaign, Conducting demos, Exposure visit |
| | | Need based spray of Bio pesticide | 50 | Indiscriminate use of chemical pesticides for instant control | Conducting Awareness campaign to create safer controlling of pest and disease and to avoid the insect to develop resistance & Conducting demos |
| | Cholam | HYBRID & HYV | 100 | 100 | --- |
| | | Application organic soil ameliorants | 30 | Lack of awarness about soil humus content improvement | Application of organic waste,composte,vermicompost, insitu ploughing of greenmatter |
| | | Seed Treatment with Bio Fertilizer and Bio Fungicides | 80 | Lack of awarness about the credibility of the technology | Conducting Awareness campaign |
| | | Application of MN mixtures | 40 | Lack of awarness about the role of micro nutrients in increasing the yield and quality of the produce. | Conducting Awareness campaign & demos |
| | | Application of weedicides | 70 | High cost of the chemical | Providing weedicides at subsidised cost |
| | Cumbu | HYBRID | 100 | 100 | |
| | | Application of organic soil ameliorants | 30 | Lack of awarness about soil humus content improvement | Application of organic waste,composte,vermicompost, insitu ploughing of greenmatter |

| Sl. No. | Enterprise | Technologies recommended | Adoption in percent | Reasons for technology gap | How to fill up the gap |
|---|---|---|---|---|---|
| | | Application of MN mixtures | 40 | Lack of awarness about the role of micro nutrients in increasing the yield and quality of the produce. | Conducting Awareness campaign & demos |
| | | Application of weedicides | 70 | High cost of the chemical | Providing weedicides at subsidised cost |
| | Maize | HYBRID | 100 | 100 | --- |
| | | Application organic soil ameliorants | 30 | Lack of awarness about soil humus content improvement | Application of organic waste,composte,vermicompost, insitu ploughing of greenmater |
| | | Application of MN mixtures | 40 | Lack of awarness about the role of micro nutrients in increasing the yield and quality of the produce. | Conducting Awareness campaign & demos |
| | | Application of weedicides | 70 | High cost of the chemical | Providing weedicides at subsidised cost |
| | | INM And IPM | 50 | Lack of awarness | Awareness campaign, Conducting demos, Exposure visit |
| | Blackgram and Greengram | Application organic soil ameliorants | 30 | Lack of awarness about soil humus content improvement | Application of organic waste,composte,vermicompost, insitu ploughing of greenmatter |

| Sl. No. | Enterprise | Technologies recommended | Adoption in percent | Reasons for technology gap | How to fill up the gap |
|---|---|---|---|---|---|
| | | Seed treatment with bio fungicides and bio fertilizers | 10 | Lack of awarness about the credibility of the technology | Conducting Awareness campaign |
| | | Maintaining plant population | 100 | | |
| | | Foliar spraying (2% DAP) | 50 | Lack of awarness | Conducting Awareness campaign, Conducting demos |
| | Redgram | Application organic soil ameliorants | 30 | Lack of awarness about soil humus content improvement | Application of organic waste, compost, vermicompost, insitu ploughing of greenmatter |
| | | Transplanting method | 25 | Lack of awarness | Conducting Awareness campaign, Conducting demos |
| | | INM and IPM | 30 | Lack of awarness | Awareness campaign, Conducting demos, Exposure visit |
| | Groundnut | Application of organic soil ameliorants | 30 | Lack of awareness about soil humus content improve-ment | Application of organic waste, compost, vermicompost, insitu ploughing of greenmatter |
| | | HYV | 100 | | |
| | | Gypsum Application and earthing up | 45 | Non Availability of sufficient quantity of Gypsum | Support to Supply of sufficient quantity of Gypsum |
| | | Combined nutrient spray | 25 | Lack of awarness | Awareness campaign, Conducting demos |

| Sl. No. | Enterprise | Technologies recommended | Adoption in percent | Reasons for technology gap | How to fill up the gap |
|---|---|---|---|---|---|
| | | IPM | 50 | Lack of awarness | Awareness campaign, Conducting demos, Exposure visit |
| | Cotton | Application of organic soil ameliorants | 30 | Lack of awarness about soil humus content improvement | Application of organic waste, compost, vermicompost, insitu ploughing of greenmatter |
| | | High Density Planting | 5 | Non availabilty of suitable variety and lack of awarness about the benefit of the technology | Providing seeds of suitable variety under demonstrations. |
| | | Topping | 30 | Labour intensive technology | Assistance for the adoption of the technology. |
| | | INM and IPM | 30 | Lack of awarness | Awareness campaign, Conducting demos, Exposure visit |
| b. | **Horticulture ( Crop wise )** | | | | |
| | Guava | Training & Pruning | 40 | 60 | Awareness campaign and training |
| | Vegetables | Drip irrigation | 30 | 70 | Availing 100% subsidy, Awarness about maintenance of Drip systems |

## 2. SATTUR BLOCK

**Problems / Issues identified in the block**
**(Assign priority based on importance or seriousness of the problem/issue)**

| | |
|---|---|
| **a.** | **Agriculture** |
| | 1. Labour shortage - The need of labour for carrying out agricultural operations is increasing day by day. |

**Yield gap**

| Sl. No. | Crops | Yield gap (per cent) | Reasons for yield gap | Intervention required |
|---|---|---|---|---|
| 1 | Paddy | 15% | Decrease in organic matter content | Application of more organic manure and Green manure seeds |
| 2 | Sorghum | 5% | Micronutrient Deficiency and Non availability of hybrids in Depo | Application of Micronutrient mixture |
| 3 | Cumbu | 8% | Micronutrient Deficiency and labour shortage | Application of Micronutrient mixture |
| 4 | Maize | 15% | Non availability of high yielding varieties and Micronutrient deficiency | Application of Micronutrient mixture |
| 5 | Ragi | 17% | Use of non-certified seeds | |
| 6 | Blackgram, & Greengram | 16% | Use of locally available seeds through farmers exchange | Making the farmers to buy only certified seeds |
| 7 | Groundnut | 10% | Non availability of Suitable varieties other than TMV7 | |

**Technological gap**

| Sl.No. | Enterprise | Technologies recommended | Adoption in percent | Reasons for technology gap | How to fill up the gap |
|---|---|---|---|---|---|
| a. | **Agriculture ( Crop wise )** | Use of certified seeds in pulses | 50% | Lack of awareness and confidence | |
| | | Machine planting in paddy | 2% | Non availability of machinaries due to fragmentation of holdings and higher maintenance cost | |
| | | Millet MN Mixture | 40% | | Soil test based fertiliser recommendation |

**Technological interventions in the block**

| Sl. No. | Constraint | Intervention suggested | Role of different departments |
|---|---|---|---|
| a. | **Agriculture ( Crop wise )** | Introduction of machineries package for the entire crop operation @ subsidy<br>for ex: SRI Paddy<br>levelling - laser leveller<br>nursery raising<br>transplanting - Transplanter<br>harvesting- harvester<br>should be made available @ 50% subsidy | Can have tie up with any private agency for the entire operation or Agricultural Engineering Department should provide the machinery |
| | Harvester for minor millets | combined harvester machineries should be developed for all minor millets | |
| | Unstable price for Agricultural produce<br><br>1. Excess supply of a produce at same time beyond the demand makes the unstable price in the market | 1. A state should have a proper crop plan for an every individual farmer which should avoid excess supply at same time<br>2. Corporate farming or cooperative farming should be introduced. by that the farmers can produce and demand the price for their product. use of inputs and machineries can also be effectively utilized . | |

### 3. Srivilliputhur block

| | |
|---|---|
| **1.** | **Strengths** |
| | Mainly Paddy, millets especially maize , Cotton and sugarcane cultivated in this area |
| **2.** | **Weakness** |
| | 70% of the area is mainly irrigated by Kanmai |
| | Main source of Irrigation through Kanmai and wells |
| | The Main source of irrigation to the paddy crop is through Kanmai |
| | There is no Major Dam available to feed the Kanmai and depending only rainfall. |
| | Garden land crop like millets cultivated depending on dugwells |
| | For the Past 4 years there is a continuous drought. So the water level of the wells are gone down and not enough to fulfil the needs of the crops |
| **3.** | **Opportunities-**Nil |
| **4.** | **Challenges** |
| | Lack of Man Power |
| | Un even distribution of rainfall |

**Problems / Issues identified in the block**
**(Assign priority based on importance or seriousness of the problem/issue)**

| | |
|---|---|
| **a.** | **Agriculture** |
| | **Seed subsidy may be extended to all the ruling varieties in Paddy.** |
| | **Organic** |
| 1 | For Mechanised cultivation of Paddy the subsidy may be extended up to 75 % for machine planting. |
| 2. | To increase the productivity of Paddy, Millets and Pulses farmers need the Micronutrient mixture at 50 % Subsidy cost. |
| 3. | To Control the weeds, the herbicides may be supplied through AEC at 75 % subsidy cost for paddy, pulses and Millets |
| 4. | To increase the fertility of the soil green manure seed to be supplied through AEC at 50 % subsidy cost. |
| 5. | To promote the usage of liquid biofertilizer subsidy may be given at 50% rate.<br>Among the farmers they need 75% to 100 % subsidy cost. |
| 6 | Saline and alkali patches in some pockets of srivilliputtur block to overcome the the problem gypsum may be distributed at 50% subsidy cost especially for Paddy |
| 7 | The farmers need Agri Machiners like hand Sprayer & Tarpaulin at 50 % subsidycost. |
| | Farmers need national Agricultural Insurance scheme based on the need based individual relief. |

**Probable solutions to the problems / Issues**

**(Assign priority based on importance or seriousness of the problem/issue)**

| Sl. No. | Enterprise | Problem | Probable solution |
|---|---|---|---|
| a. | **Agriculture** | Lack of man Power | Machineries to be arranged on higher basis |
| | | Saline Alkali | Distribution of Gypsum at 50 % subsidy cost |

**Infrastructures needed with approximate budget**

| Sl. No. | Enterprise | Details of Infrastructure suggested | Place / Location | Budget (Rs.) |
|---|---|---|---|---|
| a. | **Agriculture** | Thrashing and drying yards for Paddy and millets | Mamsapuram, Idayankulam | 10,00,000 |

**Yield gap**

| Sl. No. | Crops | Yield gap (per cent) | Reasons for yield gap | Intervention required |
|---|---|---|---|---|
| 1. | Paddy | 15 % | Decrease in usage of organic manures. | Application of More organic manure and green manure seeds |
| 2 | Paddy,Millets pulses | 5-10 % | Micronutrient deficiency | Application of Micronutrient |
| 3 | Paddy | 25% | Saline alkali soil | Application of gypsum |
| 4 | Blackgram & green gram | 50 % | Yellow mosaic Virus | Introducing Resistant Varieties |
| 5 | Pulses | 25% | Sulphur deficiency | Appication of Gypsum |

**Technological gap**

| Sl. No. | Enterprise | Technologies recommended | Adoption in percent | Reasons for technology gap | How to fill up the gap |
|---|---|---|---|---|---|
| a. | **Agriculture( Crop wise )** | | | | |
| 1. | Paddy | Machine Planting | 25 % | Non availability of Paddy transplanter. There is a higher labour cost. Changes in the | Increase the subsidy portion to 75% and giving training to the Machine planting operators. |

| Sl. No. | Enterprise | Technologies recommended | Adoption in percent | Reasons for technology gap | How to fill up the gap |
|---|---|---|---|---|---|
| | | | | mechanism of Paddy machine transplanter especially suitable for high clay soil | |
| 2. | | Liquid Biofertilizer usage | 10% | Lack of awareness among the farmers | Arranging demonstration plots and providing 50 % subsidy cost to the Farmers |
| | Millets | MN Mixture | 10% | Non awareness among the farmers | Conducting demonstration plots |
| | Pulses | DAP foliar spray | 40% | Higher cost of DAP and Spraying cost | Providing 50 % subsidy to all farmers |

**Technological interventions in the block**

| Sl. No. | Constraint | Intervention suggested | Role of different departments |
|---|---|---|---|
| a. | **Agriculture( Crop wise )** | | |
| | Paddy | Machine Planting | Machine planting to be carried out to be coordinate with Agri Engg. Department |

## 4. Virudhunagar Block

| 1 | **Strengths** |
|---|---|
| 1. | NH – 7 |
| 2. | Arjuna River sub basin |
| 3. | More number of small scale industries related to agriculture |
| **2.** | **Weakness** |
| 1. | Most of the area dry land agriculture |
| 2. | Intensive agriculture is not practiced |
| 3. | Cultivated area scattered around 59 revenue villages each villages located average of 3 km distance |
| **3.** | **Opportunities** |
| 1. | possibility of development of small scale industries related to post harvest technologies |
| 2. | Development of formation of FPO of minor millets |
| 3. | Large scale industries for value addition of minor millets |
| **4.** | **Challenges** |
| 1. | Organisation of farming community in groups |
| 2. | cultivation of crops in cluster basis |
| 3. | irregular rainfall and erratic rainfall |

**Problems / Issues identified in the block**
**(Assign priority based on importance or seriousness of the problem/issue)**

| a. | **Agriculture** |
|---|---|
| 1. | Non availability of timely technical advisory to farming community |
| 2. | Lack of hybrid varities in case of pulses, paddy |
| 3. | Lack of crop varities suitable for early and terminal drought tolerance varities |
| 4. | Purchasing power of farming community and loan availability very low |
| 5. | Subsidy pattern quantitative one not qualitative |
| 6. | During adverse weather condition pre disaster mitigation strategic very low |

**Probable solutions to the problems / Issues**
**(Assign priority based on importance or seriousness of the problem/issue)**

| Sl. No. | Enterprise | Problem | Probable solution |
|---|---|---|---|
| **a.** | **Agriculture** | | |
| | | Non availability of timely technical advisory to farming community | Extention machineries reformed based on the farmers need |

| Sl. No. | Enterprise | Problem | Probable solution |
|---|---|---|---|
| | | | |
| | | Lack of hybrid varities in case of pulses, paddy | short statured paddy and non-shattering pulses hybrids |
| | | Lack of crop varities suitable for early and terminal drought tolerance varities | Crop varities suitable for early and terminal drought |
| | | Purchasing power of farming community and loan availability very low | Providing the adequate loan facilities for the farming community |
| | | Subsidy pattern quantitative one not qualitative | Crop specific complete package of practices given to the farming community |
| | | During adverse weather condition pre disaster mitigation strategic very low | Providing adequate and timely plant protection measures with important plant protection (During the campaign work) |

**Infrastructures needed with approximate budget**

| Sl. No. | Enterprise | Details of Infrastructure suggested | Place / Location | Budget (Rs.) |
|---|---|---|---|---|
| a. | **Agriculture** | | | |
| | | Training institute with advance facilities both for farmer and field executive | Virudhunagar | 2.00 Crores |

**Yield gap**

| Sl. No. | Crops | Yield gap (per cent) | Reasons for yield gap | Intervention required |
|---|---|---|---|---|
| 1. | Paddy | 15 % | Terminal drought variety susceptible to blast | Provide the varieties/ Hybrid tolerance to terminal drought and resistant to blast disease with consumer preference |
| 2. | Pulses | 10 % | Lack of practices in IPM varities susceptible to YMV | Inadequate supply of biological agents with location specific and varieties resistant to YMV |
| 3. | Millets | 15 % | Mostly grown varieties | Providing Hybrid varieties |
| 4. | cotton | 10 – 25 % | lack of IPM practices in cotton | inadequate input of biological agents with |

| | | | | |
|---|---|---|---|---|
| | | | | location specific |

**Technological gap**

| Sl. No. | Enterprise | Technologies recommended | Adoption in percent | Reasons for technology gap | How to fill up the gap |
|---|---|---|---|---|---|
| a. | **Agriculture ( Crop wise )** | | | | |
| | Paddy | SRI | 15 | not suitable for machineries for weeding | Machineries designing suitable for weeding |
| | Pulses | Seed treatment | 40 | Lack of awareness | Provide adequate training for farming community |
| | | IPM practices | 15 | Lack of awareness | |
| | Millets | Hybrid varieties | 10 | Non availability of hybrids | Providing hybrid varieties |
| | cotton | IPM practices | 15 | inadequate input biological agents with location specific | Provide biological agents with location specific |

**Technological interventions in the block**

| Sl. No. | Constraint | Intervention suggested | Role of different departments |
|---|---|---|---|
| a. | **Agriculture ( Crop wise )** | | |
| | Paddy | SRI | TNAU provide adequate machineries for weeding operation and idendify the bio agent suitable for local condition efficient strain |
| | Pulses | Seed treatment | |
| | Millets | Hybrid varieties | |
| | Cotton | IPM practices | |

## 5. Rajapalayam Block

| | |
|---|---|
| **1.** | **Strengths** |
| | Major Millets and Pulses growing area |
| **2.** | **Weakness** |
| | 80% of the area is purely rainfed |
| **3.** | **Oppurtunity-Nil** |
| **4** | **Challenges** |
| 1 | Uneven distribution of rainfall |
| 2 | Lack of manpower |

**Problems / Issues identified in the block**

**(Assign priority based on importance or seriousness of the problem/issue)**

| | |
|---|---|
| **a.** | **Agriculture** |
| | The farmers need more of agriculture machineries like Hand sprayer,Tarpaulins |
| | Lack of manpower during the crucial period of harvest |

**Probable solutions to the problems / Issues**

**(Assign priority based on importance or seriousness of the problem/issue)**

| Sl. No. | Enterprise | Problem | Probable solution |
|---|---|---|---|
| a. | Agriculture | Lack of manpower | Machinaries to be arranged on hire basis |

**Infrastructures needed with approximate budget**

| Sl. No. | Enterprise | Details of Infrastructure suggested | Place / Location | Budget (Rs.) |
|---|---|---|---|---|
| a. | Agriculture | Thrashing and Drying Yards for Millets and Pulses | Muthuramalingapuram | 500000 |

**Yield gap**

| Sl. No. | Crops | Yield gap (per cent) | Reasons for yield gap | Intervention required |
|---|---|---|---|---|
| 1 | Paddy | 15% | Decrease in organic matter content | Application of more organic manure and Green manure seeds |
| 2 | Sorghum | 5% | Micronutrient Deficiency and Non availability of hybrids in Depo | Application of Micronutrient mixture |
| 3 | Cumbu | 8% | Micronutrient Deficiency and labour shortage | Application of Micronutrient mixture |
| 4 | Maize | 15% | Non availability of high yielding varieties and Micronutrient deficiency | Application of Micronutrient mixture |
| 5 | Ragi | 17% | Use of non-certified seeds | |
| 6 | Blackgram, & Greengram | 16% | Use of locally available seeds through farmers exchange | Making the farmers to buy only certified seeds |
| 7 | Groundnut | 10% | Non availability of Suitable varieties other than TMV7 | |

**Technological gap**

| Sl. No. | Enterprise | Technologies recommended | Adoption in percent | Reasons for technology gap | How to fill up the gap |
|---|---|---|---|---|---|
| a. | Agriculture ( Crop wise ) | | | | |
| 1 | Paddy | Machine planting | 2% | Non availability of machinaries due to fragmentation of holdings and higher maintenance cost | |
| | Millets | Millet MN Mixture | 40% | | Soil test based fertiliser recommendation |
| | Pulses | DAP Foliar spray | 50% | | |

**Technological interventions in the block**

| Sl. No. | Constraint | Intervention suggested | Role of different departments |
|---|---|---|---|
| **a.Agriculture( Crop wise )** | | | |
| | Paddy | Machine planting | Agriculture and Agriculture engineering departments to coordinate for arranging paddy transplanter |

## 6. VEMBAKOTTAI BLOCK

| | |
|---|---|
| **1.** | **Strengths** |
| | Major Millets and Pulses growing area |
| **2.** | **Weakness** |
| | 80% of the area is purely rainfed |
| **3.** | **Oppurtunities**-Nil |
| **4.** | **Challenges** |
| 1 | Uneven distribution of rainfall |
| 2 | Lack of manpower |

**Problems / Issues identified in the block**
**(Assign priority based on importance or seriousness of the problem/issue)**

| | |
|---|---|
| a. | Agriculture |
| | The farmers need more of agriculture machineries like Hand sprayer,Tarpaulins |
| | Lack of manpower during the crucial period of harvest |
| | Drying Yards Facility |
| | Irrigation Canals to be rectified |
| | Prosopis Clearance in wastelands for free of cost |

**Probable solutions to the problems / Issues**
**(Assign priority based on importance or seriousness of the problem/issue)**

| Sl. No. | Enterprise | Problem | Probable solution |
|---|---|---|---|
| a. | Agriculture | Lack of manpower | Machinaries to be arranged on hire basis |

**Infrastructures needed with approximate budget**

| Sl. No. | Enterprise | Details of Infrastructure suggested | Place / Location | Budget (Rs.) |
|---|---|---|---|---|
| a. | Agriculture | Thrashing and Drying Yards for Millets and Pulses | A.Lakshmiapuram | 5,00,000 |
| | | | Guhanparai | 5,00,000 |
| | | | Melanmarainadu | 5,00,000 |
| | | | Panaiyadipatti | 5,00,000 |
| | | | Nathikudi | 5,00,000 |
| | | | E.Ramanathapuram | 5,00,000 |
| | | | M.Rediapatti | 5,00,000 |

**Yield gap**

| Sl. No. | Crops | Yield gap (per cent) | Reasons for yield gap | Intervention required |
|---|---|---|---|---|
| 1 | Paddy | 15% | Decrease in organic matter content | Application of more organic manure and Green manure seeds |
| 2 | Sorghum | 5% | Micronutrient Deficiency and Non availability of hybrids in Depo | Application of Micronutrient mixture |
| 3 | Cumbu | 8% | Micronutrient Deficiency and labour shortage | Application of Micronutrient mixture |
| 4 | Maize | 15% | Non availability of high yielding varieties and Micronutrient deficiency | Application of Micronutrient mixture |
| 5 | Ragi | 17% | Use of non-certified seeds | |
| 6 | Blackgram, & Greengram | 16% | Use of locally available seeds through farmers exchange | Making the farmers to buy only certified seeds |
| 7 | Groundnut | 10% | Non availability of Suitable varieties other than TMV7 | |

**Technological gap**

| Sl. No. | Enterprise | Technologies recommended | Adoption in percent | Reasons for technology gap | How to fill up the gap |
|---|---|---|---|---|---|
| **Agriculture( Crop wise )** | | | | | |
| 1 | Paddy | Machine planting | 2% | Non availability of machinaries due to fragmentation of holdings and higher maintenance cost | |
| | Millets | Millet MN Mixture | 40% | | Soil test based fertiliser recommendation |
| | Pulses | DAP Foliar spray | 50% | | |

**Technological interventions in the block**

| Sl. No. | Constraint | Intervention suggested | Role of different departments |
|---|---|---|---|
| a. | **Agriculture( Crop wise )** | | |
| | Paddy | Machine planting | Agriculture and Agriculture engineering departments to coordinate for arranging paddy transplanter |

## 7. KARIAPATTI BLOCK

| | |
|---|---|
| **1.** | **Strengths** |
| | Millets, Pulses and Oilseeds growing area |
| | |
| **2.** | **Weakness** |
| | 80% of the area is purely rainfed |
| | |
| **3.** | **Opportunities** |
| | Nil |
| **4.** | **Challenges** |
| 1 | Uneven distribution of rainfall |
| 2 | Lack of manpower |

**Problems / Issues identified in the block**
**(Assign priority based on importance or seriousness of the problem/issue)**

| | |
|---|---|
| a. | **Agriculture** |
| | The farmers need more of agriculture machineries like Hand sprayer,Tarpaulins, Rotavator ans powertiller |
| | Lack of manpower during the crucial period of harvest |

**Probable solutions to the problems / Issues**
**(Assign priority based on importance or seriousness of the problem/issue)**

| Sl. No. | Enterprise | Problem | Probable solution |
|---|---|---|---|
| a. | Agriculture | Lack of manpower | Machinaries to be arranged on hire basis |

**Yield gap**

| Sl. No. | Crops | Yield gap (per cent) | Reasons for yield gap | Intervention required |
|---|---|---|---|---|
| 1 | Paddy | 15% | Decrease in organic matter content, increase the disease attack | Application of more organic manure and Green manure seeds |
| 2 | Sorghum | 5% | Micronutrient Deficiency and Non availability of hybrids in Depo | Application of Micronutrient mixture |
| 3 | Maize | 15% | Non availability of high yielding varieties and Micronutrient deficiency | Application of Micronutrient mixture |
| 4 | Ragi | 17% | Use of non-certified seeds | |
| 5 | Blackgram, & Greengram | 16% | Use of locally available seeds through farmers exchange | Motivating the farmers to buy only certified seeds |
| 6 | Groundnut | 10% | Non availability of Suitable varieties other than TMV7 | |

**Technological gap**

| Sl. No. | Enterprise | Technologies recommended | Adoption in percent | Reasons for technology gap | How to fill up the gap |
|---|---|---|---|---|---|
| a. | **Agriculture ( Crop wise )** | | | | |
| 1 | Paddy | Machine planting | 2% | | |
| | Millets | Millet MN Mixture | 40% | | Soil test based fertiliser recommendation |
| | Pulses | DAP Foliar spray | 50% | | |

**Technological interventions in the block**

| Sl. No. | Constraint | Intervention suggested | Role of different departments |
|---|---|---|---|
| a. | **Agriculture ( Crop wise )** | | |
| | Paddy | Machine planting | Agriculture and Agriculture engineering departments to coordinate for arranging paddy transplanter |
| | Groundnut | Seed drill sowing | Agriculture and Agriculture engineering departments to coordinate for arranging seed drills |

**8 .M.REDDIAPATTY BLOCK**

| | |
|---|---|
| **1.** | **Strengths** |
| | Major Millets and Pulses growing area |
| **2.** | **Weakness** |
| | 80% of the area is purely rainfed |
| **3.** | **Oppurtunity** |
| | Nil |
| **4.** | **Challenges** |
| 1 | Uneven distribution of rainfall |
| 2 | Lack of manpower |

**Problems / Issues identified in the block**
**(Assign priority based on importance or seriousness of the problem/issue)**

| | |
|---|---|
| **a.** | **Agriculture** |
| | The farmers need more of agriculture machineries like Hand sprayer,Tarpaulins |
| | Lack of manpower during the crucial period of harvest |

**Probable solutions to the problems / Issues**
**(Assign priority based on importance or seriousness of the problem/issue)**

| Sl. No. | Enterprise | Problem | Probable solution |
|---|---|---|---|
| a. | Agriculture | Lack of manpower | Machinaries to be arranged on hire basis |

**3. Infrastructures needed with approximate budget**

| Sl. No. | Enterprise | Details of Infrastructure suggested | Place / Location | Budget (Rs.) |
|---|---|---|---|---|
| a. | Agriculture | Thrashing and Drying Yards for Millets and Pulses | Muthuramalingapuram | 5,00,000 |

**4. Yield gap**

| Sl. No. | Crops | Yield gap (per cent) | Reasons for yield gap | Intervention required |
|---|---|---|---|---|
| 1 | Paddy | 15% | Decrease in organic matter content | Application of more organic manure and raising Green manure crops |
| 2 | Sorghum | 5% | Micronutrient Deficiency and Non availability of hybrids in Depo | Application of Micronutrient mixture |
| 3 | Cumbu | 8% | Micronutrient Deficiency and labour shortage | Application of Micronutrient mixture |
| 4 | Maize | 15% | Non availability of high yielding varieties and Micronutrient deficiency | Application of Micronutrient mixture |
| 5 | Ragi | 17% | Use of non-certified seeds | |
| **Sl. No.** | **Crops** | **Yield gap (per cent)** | **Reasons for yield gap** | **Intervention required** |
| 6 | Blackgram, & Greengram | 16% | Use of locally available seeds through farmers exchange | Motivating the farmers to buy only certified seeds |
| 7 | Groundnut | 10% | Non availability of Suitable varieties other than TMV7 | |

**Technological gap**

| Sl. No. | Enterprise | Technologies recommended | Adoption in percent | Reasons for technology gap | How to fill up the gap |
|---|---|---|---|---|---|
| **Agriculture( Crop wise )** | | | | | |
| 1 | Paddy | Machine planting | 2% | Non availability of machinaries due to fragmentation of holdings and higher maintenance cost | |
| | Millets | Millet MN Mixture | 40% | | Soil test based fertiliser recommendation |
| | Pulses | DAP Foliar spray | 50% | | |

**Technological interventions in the block**

| Sl. No. | Constraint | Intervention suggested | Role of different departments |
|---|---|---|---|
| **Agriculture( Crop wise )** | | | |
| | Paddy | Machine planting | Agriculture and Agriculture engineering departments to coordinate for arranging paddy transplanter |

**9. Narikudi block**

| | |
|---|---|
| **1.** | **Strengths** |
| | Major Millets and Pulses growing area |
| **2.** | **Weakness** |
| | 80% of the area is purely rainfed |
| **3.** | **Opportunities** |
| | Nil |
| **4.** | **Challenges** |
| 1 | Uneven distribution of rainfall |
| 2 | Lack of manpower |

**Problems / Issues identified in the block**
**(Assign priority based on importance or seriousness of the problem/issue)**

| | |
|---|---|
| **a.** | **Agriculture** |
| | The farmers need more of agriculture machineries like Hand sprayer, Tarpaulins |
| | Lack of manpower during the crucial period of harvest |

**Probable solutions to the problems / Issues**
**(Assign priority based on importance or seriousness of the problem/issue)**

| Sl. No. | Enterprise | Problem | Probable solution |
|---|---|---|---|
| a. | Agriculture | Lack of manpower | Machineries to be arranged on hire basis |

**Infrastructures needed with approximate budget**

| Sl. No. | Enterprise | Details of Infrastructure suggested | Place / Location | Budget (Rs.) |
|---|---|---|---|---|
| a. | Agriculture | Processing Machine for Millets and Pulses | Thimmapuram | 5,00,000 |

**Yield gap**

| Sl. No. | Crops | Yield gap (per cent) | Reasons for yield gap | Intervention required |
|---|---|---|---|---|
| 1 | Paddy | 15% | Decrease in organic matter content | Application of more organic manure and Green manure seeds |
| 2 | Sorghum | 5% | Micronutrient Deficiency and Non availability of hybrids in Depo | Application of Micronutrient mixture |
| 3 | Cumbu | 8% | Micronutrient Deficiency and labour shortage | Application of Micronutrient mixture |
| 4 | Maize | 15% | Non availability of high yielding varieties and Micronutrient deficiency | Application of Micronutrient mixture |
| 5 | Ragi | 17% | Use of non-certified seeds | |
| 6 | Blackgram, &Greengram | 16% | Use of locally available seeds through farmers exchange | Motivating the farmers to buy only certified seeds |
| 7 | Groundnut | 10% | Non availability of Suitable varieties other than TMV7 | |

**5. Technological gap**

| Sl. No. | Enterprise | Technologies recommended | Adoption in percent | Reasons for technology gap | How to fill up the gap |
|---|---|---|---|---|---|
| a. | **Agriculture ( Crop wise )** | | | | |
| 1 | Paddy | Machine planting | 2% | Non availability of machinaries due to fragmentation of holdings and higher maintenance cost | |
| | Millets | Millet MN Mixture | 40% | | Soil test based fertiliser recommendation |
| | Pulses | DAP Foliar spray | 50% | | |

**Technological interventions in the block**

| Sl. No. | Constraint | Intervention suggested | Role of different departments |
|---|---|---|---|
| **a.** | **Agriculture ( Crop wise )** | | |
| | Paddy | Machine planting | Agriculture and Agriculture engineering departments to coordinate for arranging paddy transplanted |

## 10. SIVAKASI BLOCK

| | |
|---|---|
| **1.** | **Strengths** |
| | Major Millets growing area |
| | |
| **2.** | **Weakness** |
| | 80% of the area is purely rainfed |
| | |
| **3.** | **Opportunities** |
| | |
| **4.** | **Challenges** |
| 1 | Uneven distribution of rainfall |
| 2 | Lack of manpower |

**Problems / Issues identified in the block**
**(Assign priority based on importance or seriousness of the problem/issue)**

| | |
|---|---|
| **a.** | **Agriculture** |
| | The farmers need more of agriculture machineries like Hand sprayer,Tarpaulins |
| | Lack of manpower during the crucial period of harvest |

**Probable solutions to the problems / Issues**
**(Assign priority based on importance or seriousness of the problem/issue)**

| Sl. No. | Enterprise | Problem | Probable solution |
|---|---|---|---|
| a. | Agriculture | Lack of manpower | Machinaries to be arranged on hire basis |

**Infrastructures needed with approximate budget**

| Sl. No. | Enterprise | Details of Infrastructure suggested | Place / Location | Budget (Rs.) |
|---|---|---|---|---|
| a. | Agriculture | Thrashing and Drying Yards for Millets | Naranapuram | 1,50,000 |

**Yield gap**

| Sl. No. | Crops | Yield gap (per cent) | Reasons for yield gap | Intervention required |
|---|---|---|---|---|
| 1 | Paddy | 10% | Decrease in organic matter content | Application of more organic manure and Green manure cropping. |
| 2 | Sorghum | 5% | Micronutrient Deficiency and Non availability of hybrids in Depo | Application of Micronutrient mixture |
| 3 | Cumbu | 7% | Micronutrient Deficiency and labour shortage | Application of Micronutrient mixture |
| 4 | Maize | 15% | Non availability of high yielding varieties and Micronutrient deficiency | Application of Micronutrient mixture |
| 5 | Ragi | 15% | Use of non-certified seeds | |
| 6 | Blackgram, & Greengram | 14% | Use of locally available seeds through farmers exchange | Motivating the farmers to buy only certified seeds |
| 7 | Groundnut | 10% | Non availability of Suitable varieties other than TMV7 | |

**Technological gap**

| Sl. No. | Enterprise | Technologies recommended | Adoption in percent | Reasons for technology gap | How to fill up the gap |
|---|---|---|---|---|---|
| a. | **Agriculture ( Crop wise )** | | | | |
| 1 | Paddy | Machine planting | 10% | Non availability of machinaries due to fragmentation of holdings and higher maintenance cost | |
| | Millets | Millet MN Mixture | 40% | | Soil test based fertiliser recommendation |
| | Pulses | DAP Foliar spray | 50% | | |

**Technological interventions in the block**

| Sl. No. | Constraint | Intervention suggested | Role of different departments |
|---|---|---|---|
| a. | **Agriculture ( Crop wise )** | | |
| | Paddy | Machine planting | Agriculture and Agriculture engineering departments to coordinate for arranging paddy transplanter |

## 11. Watrap block

| | |
|---|---|
| **1.** | **Strengths** |
| | Major paddy, kudiraivali and Pulses growing area |
| | **Assured water irrigation through 2 dams** |
| **2.** | **Weakness** |
| | Tanks are not properly renovated |
| **3.** | **Opportunities** |
| | **If tanks are renovated 3 crops per year is possible in all villages** |
| **4.** | **Challenges** |
| 1 | Uneven distribution of rainfall |
| 2 | Lack of manpower |
| **3** | **storing rainfall in tanks due to poor maintenance** |

**Problems / Issues identified in the block**
**(Assign priority based on importance or seriousness of the problem/issue)**

| a. | **Agriculture** |
|---|---|
| | The farmers need more of agriculture machineries like Hand prayer, Tarpaulins, storage bin, rotovators. |
| | Lack of manpower during the crucial period of harvest and planting |

**Probable solutions to the problems / Issues**
**(Assign priority based on importance or seriousness of the problem/issue)**

| Sl. No. | Enterprise | Problem | Probable solution |
|---|---|---|---|
| a. | Agriculture | Lack of manpower | Machinaries to be arranged on hire basis |

**Infrastructures needed with approximate budget**

| Sl. No | Enterprise | Details of Infrastructure suggested | Place / Location | Budget (Rs.) |
|---|---|---|---|---|
| a. | Agriculture | Thrashing and Drying Yards for Millets and Pulses | Kottaiyur,Thambipatti,Maharajapuram,elanthaikulam,sethunarayanapuram,watrap,khansapuram,koomapatti | 40,00,000 |

**Yield gap**

| Sl. No. | Crops | Yield gap (per cent) | Reasons for yield gap | Intervention required |
|---|---|---|---|---|
| 1 | Paddy | 20 % | Decrease in organic matter content | Application of more organic manure and Green manure seeds |
| 2 | Sorghum | 5% | Micronutrient Deficiency and Non availability of hybrids in Depo | Application of Micronutrient mixture |
| 3 | Maize | 15% | Non availability of high yielding varieties and Micronutrient deficiency | Application of Micronutrient mixture |
| 5 | Ragi | 15% | Use of non-certified seeds | |
| 6 | Blackgram, & Greengram | 10% | Use of locally available seeds through farmers exchange | Making the farmers to buy only certified seeds |
| 7 | Groundnut | 10% | Non availability of Suitable varieties other than TMV7 | |

**Technological gap**

| Sl. No. | Enterprise | Technologies recommended | Adoption in percent | Reasons for technology gap | How to fill up the gap |
|---|---|---|---|---|---|
| **a.** | **Agriculture ( Crop wise )** | | | | |
| 1 | Paddy | Machine planting | 25% | Non availability of machinaries and after plantation 30 days crop establishment is poor. | creating awareness about maintenance of machine planted crops . |
| | Millets | Millet MN Mixture | 5% | Non availability of Mn mix | Giving MN mix through depos with subsid y |
| | Pulses | DAP Foliar spray | 10% | - | Giving DAP through depos with subsidy |
| | Cotton | Millet MN Mixture | 5% | Non availability of Mn mix | Giving MN mix through depos with subsidy |
| | Coconut | Millet MN Mixture | 5% | Non availability of Mn mix | Giving MN mix through depos with subsid y |
| | Paddy | Millet MN Mixture | 5% | Non availability of Mn mix | Giving MN mix through depos with subsidy |
| | All crops | Usage of bio fertilizers | 15 % | Cost is high | Giving bio fertilizers through depots with 75 % subsidy |

**Technological interventions in the block**

| Sl. No. | Constraint | Intervention suggested | Role of different departments |
|---|---|---|---|
| **a.** | **Agriculture( Crop wise )** | | |
| | Paddy | Machine planting | Agriculture and Agriculture engineering departments to coordinate for arranging paddy transplanter |

# CHAPTER IV

# DISTRICT AGRICULTURE PLAN

## 4.1. Agriculture

### 4.1.1. Enhancing the Paddy productivity

Paddy is cultivated both under rain fed and irrigated conditions. Rain fed sowing commences during August and extend upto September. Under tank fed conditions the crop is sown in the month of September and extends till October. The annual normal rainfall of Virudhunagar district is 820 mm out of which major portion is mainly contributed by North East monsoon. Paddy is cultivated in about 29650 ha with average productivity of 3713 kg per hactare. The major paddy cultivating areas of the district are Rajapalayam, Srivilliputtur, Watrap, Sattur, Karipatti, and M.Reddiyapatty blocks. Since productivity of paddy mainly depends on the use of quality seed materials, production and distribution of seeds of high yielding varieties is highly essential for increasing the productivity of paddy.

**Project components**

a) Promotion of SRI Technology to increase the yield
b) Distribution of foundation and certified seeds
c) Incentives to foundation and certified seed production
d) Incentives for paddy machine planting
e) Distribution of protray, MN mixture, bio fertilizers,zinc sulphate, bio control agents herbicide and gypsum
f) Hybrid rice seed production
g) Distribution of polyvinyl coated tarpauline to mitigate drought

**Budget**

It is proposed to incur ₹.**4648.16** lakhs over a period of five years with the finance facilities under the NADP and other sources.

**Expected outcome**

The proposed components will ensure production of rice and increase the income of paddy farmers to the tune of 15-20 percent as against the present level.

**Implementing agency**

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

## Table 4.1. Budget for interventions in Paddy

**(₹. 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 |
| 1 | Promotion of SRI | All Blocks | Ha | 0.15 | 2750 | 412.50 | 3150 | 472.50 | 3500 | 525.00 | 3800 | 570.00 | 4100 | 615.00 | 17300 | 2595.00 |
| 2 | Distribution of High Yielding Varieties | All Blocks | MT | 0.35 | 141 | 49.21 | 140 | 49.00 | 140 | 49.14 | 140 | 49.11 | 141 | 49.25 | 702 | 245.70 |
| 3 | Distribution of Foundation | | MT | 0.4 | 3 | 1.00 | 3 | 1.00 | 3 | 1.00 | 3 | 1.00 | 3 | 1.00 | 13 | 5.00 |
| 4 | seed production - Foundation | | MT | 0.32 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| 5 | seed production - Certified class | All Blocks | MT | 0.26 | 137 | 35.49 | 139 | 36.01 | 142 | 36.79 | 144 | 37.31 | 146 | 37.96 | 706 | 183.56 |
| 6 | Incentives for paddy machine planting | Sattur | Ha | 0.1 | 200 | 20.00 | 250 | 25.00 | 300 | 30.00 | 350 | 35.00 | 400 | 40.00 | 1500 | 150.00 |
| 7 | Distribution of Protray | Rajapalayam and Sirivalliputtur | No | 0.0008 | 580 | 0.46 | 420 | 0.34 | 420 | 0.34 | 420 | 0.34 | 420 | 0.34 | 2260 | 1.81 |
| 8 | Distribution of MN mixture/ Copper Sulphate | All Blocks except Aruppukottai | Ha | 0.01 | 935 | 9.35 | 946 | 9.46 | 962 | 9.62 | 973 | 9.73 | 989 | 9.89 | 4805 | 48.05 |
| 9 | Distribution of biofertilizer / PPFM / bioinputs / plant nutrient mobilizing bacteria | All Blocks except Aruppukottai | Ha | 0.003 | 862 | 2.59 | 889 | 2.67 | 910 | 2.73 | 921 | 2.76 | 937 | 2.81 | 4519 | 13.56 |
| 10 | Distribution of Zinc sulphate (Soil application & foliar) | All Blocks except Aruppukottai, M.Reddipatti and Watrap | Ha. | 0.01 | 1540 | 15.40 | 1575 | 15.75 | 1605 | 16.05 | 1620 | 16.20 | 1640 | 16.40 | 7980 | 79.80 |
| 11 | Distribution of biocontrol agents/biopesticides | Rajapalayam, Sattur and Sirivalliputtur | Ha.. | 0.01 | 400 | 4.00 | 440 | 4.40 | 444 | 4.44 | 450 | 4.50 | 454 | 4.54 | 2188 | 21.88 |
| 12 | Gypsum application | Rajapalayam and Sirivalliputtur | Ha. | 0.015 | 0 | 0.00 | 40 | 0.60 | 44 | 0.66 | 50 | 0.75 | 54 | 0.81 | 188 | 2.82 |

| 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 |
| 13 | Distribution of herbicides | M.Reddipatti, Narikudi, Rajapalayam, Sattur and Sirivalliputtur | Ha. | 0.01 | 1800 | 18.00 | 1815 | 18.15 | 1830 | 18.30 | 1845 | 18.45 | 1860 | 18.60 | 9150 | 91.50 |
| 14 | Hybrid Rice seed distribution | Rajapalayam and Sirivalliputtur | Ha | 0.04 | 0 | 0.00 | 40 | 1.60 | 44 | 1.76 | 50 | 2.00 | 54 | 2.16 | 188 | 7.52 |
| 15 | Polyvinyl coated Tarpaulin (6m x 5m) | All Blocks except Aruppukottai and Virudhunagar | No. | 0.02 | 434 | 8.68 | 546 | 10.92 | 560 | 11.20 | 572 | 11.44 | 486 | 9.72 | 2598 | 51.96 |
| 16 | Direct Sown Paddy with seed Drill sowing | Kariapatti, M.Reddipatti, Narikudi | Ha | 0.07 | 3000 | 210.00 | 3000 | 210.00 | 3000 | 210.00 | 3000 | 210.00 | 3000 | 210.00 | 15000 | 1050.00 |
| 17 | Demonstration of drip irrigation | All Blocks | Ha | 1 | 20 | 20.00 | 20 | 20.00 | 20 | 20.00 | 20 | 20.00 | 20 | 20.00 | 100 | 100.00 |
| | | | | | | **806.68** | | **877.39** | | **937.03** | | **988.58** | | **1038.47** | | **4648.16** |

Arupukottai- B1, Kariapatti – B2, Narikudi – B3, Rajapalayam – B4, M.Reddipatti – B5, Sattur – B6, Sivakasi – B7, Srivilluputhur – B8, Vembakottai – B9, Virudhunagar – B10, Watrap – B11

### 4.1.2. Millets

**Enhancing the Millets productivity**

Cumbu, Cholam, Ragi, Varagu, Samai, and Kudiravali are the millets produced in the district. Large areas in the taluks of Sattur and Aruppukottai coming under Cumbu, whereas Cholam is grown in the taluks of Aruppukottai. Fodder Cholam in Sattur, Srivilliputtur and Aruppukottaitaluks, Varagu in Aruppukottai, and Samai in Aruppukottai and Srivilliputturtaluks are grown in larger areas. Cholam is cultivated both under irrigated and rainfed conditions and the sowing commences in August/September in rain fed condition and February/March in irrigated condition. Thenai, Varagu, Samai and Kuthraivali are cultivated under rain fed conditions alone. Thenai, Samai, Varagu and Kuthiraivali are sown in the months of September which extend up to October. Therefore, there is scope for increasing the productivity and production of millets through the use of appropriate technologies like distribution of quality seeds, soil health enhancers, plant protection measures and demonstration of technologies.

**Project components**

a) Formation of small millets group to share and get the farming knowledges
b) Distribution of LPG operated Bird scarrer
c) Expansion of area under minor millets
d) Formation of millet processing units
e) Distribution of herbicides for maize
f) Providing drip irrigation components
g) Distribution of hybrid seed for cumbu and maize
h) Distribution of MN mixture

**Budget**

It is proposed to incur ₹.**1825.60** lakhs over a period of five years with the finance facilities under the NADP and other sources.

**Expected outcome**

The proposed components will ensure production of Millets and increase the income of the Millet growers to the tune of 20 per cent as against the present status.

**Implementing Agency**

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

## Table 4.2. Budget for interventions in Millets

**(₹. 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 |
| | **Millets** | | | | | | | | | | | | | | | |
| 1 | Distribution of LPG operated Bird Scarrer | Nos. | 0.1 | Sattur | 100 | 10.00 | 100 | 10.00 | 100 | 10.00 | 100 | 10.00 | 100 | 10.00 | 500 | 50.00 |
| 2 | Distribution on biofertilizer - Liquid / Carrier | Ha | 0.003 | Aruppukottai, M.Reddipatti, Sattur, Sivakasi, Vembakkottai, Virudhunagar | 5940 | 17.82 | 6040 | 18.12 | 5400 | 16.20 | 8400 | 25.20 | 5400 | 16.20 | 31180 | 93.54 |
| 3 | Expansion of area under Minor Millets (Demo - supply of seed, seed treatment, MN mixture & Organic package) | Ha | 0.05 | Aruppukottai, Narikudi, Sattur, Sivakasi and Vembakkottai | 210 | 10.50 | 370 | 18.50 | 390 | 19.50 | 400 | 20.00 | 420 | 21.00 | 1790 | 89.50 |
| 4 | Formation of small millet groups | Nos. | 0.2 | Kariapatti, Sattur and Vembakkottai | 5 | 1.00 | 5 | 1.00 | 6 | 1.20 | 6 | 1.20 | 7 | 1.40 | 29 | 5.80 |
| 5 | Millet Processing unit - Minor millet | Nos. | 2.5 | Kariapatti, Sattur and Vembakkottai | 2 | 5.00 | 2 | 5.00 | 4 | 10.00 | 3 | 7.50 | 4 | 10.00 | 15 | 37.50 |
| 6 | Seed Production / Incentives for quality seed | MT | 0.63 | All Blocks except Narikudi | 24 | 15.12 | 24 | 15.12 | 24 | 15.12 | 24 | 15.12 | 24 | 15.12 | 120 | 75.60 |

| 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 |
| 7 | Soil moisture conservation practices | Ha | 0.05 | All Blocks | 150 | 7.50 | 100 | 5.00 | 175 | 8.75 | 125 | 6.25 | 130 | 6.50 | 680 | 34.00 |
| 8 | Initiative for Nutritional Security through Intensive Millet Promotion ( INSIMP) | ha | 0.04 | All Blocks | 300 | 12.00 | 300 | 12.00 | 300 | 12.00 | 300 | 12.00 | 300 | 12.00 | 1500 | 60.00 |
| | **Sorghum** | | | | | | | | | | | | | | | |
| 7 | Demonstration (Supply of seed, seed treatment, MN mixture & Organic package) | Ha | 0.05 | Kariapatti and Sattur | 50 | 2.50 | 150 | 7.50 | 150 | 7.50 | 150 | 7.50 | 150 | 7.50 | 650 | 32.50 |
| 8 | Distribution of biofertilizers - Liquid / Carrier | Ha | 0.003 | Aruppukottai, Kariapatti, Sattur and Virudhunagar | 1420 | 4.26 | 1520 | 4.56 | 1520 | 4.56 | 1520 | 4.56 | 1520 | 4.56 | 7500 | 22.50 |
| 9 | Distribution of MN mixture (12.5kg/ha) | Ha | 0.007 | Aruppukottai, Kariapatti, Sattur and Virudhunagar | 1920 | 13.44 | 2020 | 14.14 | 1520 | 10.64 | 1520 | 10.64 | 1520 | 10.64 | 8500 | 59.50 |
| 10 | Seed distribution | MT | 0.7 | Sattur | 7.5 | 5.25 | 7.5 | 5.25 | 7.5 | 5.25 | 7.5 | 5.25 | 7.5 | 5.25 | 37.5 | 26.25 |
| | **Maize** | | | | | | | | | | | | | | | |
| 11 | Demonstration (Supply of seed, seed treatment & MN mixture, | Ha | 0.05 | Sattur, Sivakasi and Vembakkottai | 170 | 8.50 | 170 | 8.50 | 180 | 9.00 | 180 | 9.00 | 190 | 9.50 | 890 | 44.50 |

| 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 |
| | organic package) | | | | | | | | | | | | | | | |
| 12 | Distribution of biofertilizers - Liquid / Carrier | Ha | 0.003 | All Blocks except Narikudi and Watrap | 4640 | 13.92 | 4330 | 12.99 | 4350 | 13.05 | 4360 | 13.08 | 4380 | 13.14 | 22060 | 66.18 |
| 13 | Distribution of herbicides | Ha | 0.008 | Rajapalayam, Sivakasi, Sirivalliputtur and Vembakkottai | 170 | 1.36 | 370 | 2.96 | 390 | 3.12 | 400 | 3.20 | 420 | 3.36 | 1750 | 14.00 |
| 14 | Distribution of Maize maxim (15 kg/ha) | Ha | 0.045 | Rajapalayam, Sattur, Sirivalliputtur | 3500 | 157.50 | 3540 | 159.30 | 3550 | 159.75 | 3560 | 160.20 | 3570 | 160.65 | 17720 | 797.40 |
| 15 | Drip irrigation for maize | Ha | 1 | Sattur | 5 | 5.00 | 5 | 5.00 | 5 | 5.00 | 5 | 5.00 | 5 | 5.00 | 25 | 25.00 |
| 16 | Seed Distribution | MT | 0.4 | Sattur | 70 | 28.00 | 70 | 28.00 | 70 | 28.00 | 70 | 28.00 | 70 | 28.00 | 350 | 140.00 |
| 17 | Seed Distribution Hybrid seeds for maize | MT | 1.8 | Rajapalayam, Sivakasi, Sirivalliputtur, Vembakkottai and Watrap | 3 | 5.40 | 6 | 10.80 | 6 | 10.80 | 6.6 | 11.88 | 8.2 | 14.76 | 29.8 | 53.64 |
| | **Cumbu** | | | | | | | | | | | | | | | |
| 18 | Demonstration (Supply of seed, seed treatment & MN mixture, organic package) | Ha | 0.05 | Aruppukottai, Sattur and Vembakkottai | 30 | 1.50 | 80 | 4.00 | 90 | 4.50 | 90 | 4.50 | 100 | 5.00 | 390 | 19.50 |
| 19 | Distribution of biofertilizers Liquid / Carrier | Ha | 0.003 | Aruppukottai, Sattur, Vembakkottai, Virudhunagar | 510 | 1.53 | 510 | 1.53 | 520 | 1.56 | 520 | 1.56 | 530 | 1.59 | 2590 | 7.77 |

| 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 |
| 20 | Distribution of cumbu hybrid seed | MT | 2.6 | All Blocks except Narikudi and Rajapalayam | 3 | 7.80 | 3 | 7.80 | 3 | 7.80 | 3 | 7.80 | 3 | 7.80 | 15 | 39.00 |
| 21 | Distribution of MN mixture (12.5kg/ha) | Ha | 0.007 | Aruppukottai, Sattur, Vembakkottai, Virudhunagar | 510 | 3.57 | 510 | 3.57 | 520 | 3.64 | 520 | 3.64 | 530 | 3.71 | 2590 | 18.13 |
| 22 | Seed Distribution | MT | 0.53 | Aruppukottai, Sattur, Sivakasi, Vembakkottai, Virudhunagar | 4.3 | 2.28 | 4.3 | 2.28 | 4.8 | 2.54 | 5.3 | 2.81 | 5.3 | 2.81 | 24 | 12.72 |
| | **Ragi** | | | | | | | | | | | | | | | |
| 23 | Demonstration (supply of seed, seed treatment, MN mixture & organic package) | Ha | 0.05 | Sattur | 2 | 0.10 | 2 | 0.10 | 2 | 0.10 | 2 | 0.10 | 2 | 0.10 | 10 | 0.50 |
| 24 | Distribution of biofertilizers - Liquid / Carrier | Ha | 0.003 | Sattur | 10 | 0.03 | 10 | 0.03 | 10 | 0.03 | 10 | 0.03 | 10 | 0.03 | 50 | 0.15 |
| 25 | Distribution of MN mixture | Ha | 0.007 | Sattur | 10 | 0.07 | 10 | 0.07 | 10 | 0.07 | 10 | 0.07 | 10 | 0.07 | 50 | 0.35 |
| 26 | Seed Distribution | MT | 0.66 | Sattur | 0.02 | 0.01 | 0.02 | 0.01 | 0.02 | 0.01 | 0.02 | 0.01 | 0.02 | 0.01 | 0.1 | 0.07 |
| | **Total** | | | | | **340.96** | | **363.13** | | **369.70** | | **376.10** | | **375.70** | | **1825.60** |

Arupukottai- B1, Kariapatti – B2, Narikudi – B3, Rajapalayam – B4, M.Reddipatti – B5, Sattur – B6, Sivakasi – B7, Srivilluputhur – B8, Vembakottai – B9, Virudhunagar – B10, Watrap – B11

### 4.1.3. Enhancing the productivity of pulses

Redgram, Blackgram, Greengram, Cowpea are the major pulses produced in the district. Large area of 17,400 ha in the blocks of Sattur, Sivakasi, Aruppukottai, Virudhunagar, Thiruchuli, Vembakottai are cultivated with major pulses both under irrigated and rainfed conditions and the sowing commences in August/September in rain fed condition and February/March in irrigated condition. Demonstration with improved production technologies could improve the yield of pulses in the district.The parts of the district namely, Sattur, Sivakasi, Aruppukottai, Virudhunagar, Thiruchuli and Vembakottai are the major pulses growing areas. Introduction of Technology demonstration, Supply of MN mixture, certified seed production and Bio fertilizers application are the main components through this project which will definitely increase the production of pulses in Virudhunagar district.

**Project components**

a) Production of foundation and certified seeds
b) Distribution of certified seeds for better germination of the crop
c) Purchase of breeder seed
d) Seed treatment and soil application with Trichoderma
e) Demonstration on intercropping of pulses with other crops
f) Promotion of redgram transplantation for nursery preparation
g) Supply of pulse wonder/DAP to foliar spray through supply of sprayers
h) Distribution of rain guns, gypsum, bio fertiliser,micronutrients, pulse wonder,yellow sticky trap

**Budget**

To enhance the production of pulses in this district a budget **₹. 2136.27** lakhs is proposed.

**Expected outcome**

The expected outcome will be increasing area under pulse with improved varieties along with the package of practices resulting in an increase tune of 10-15 percent in the pulse production and productivity.

**Implementing Agency**

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

## Table 4.3. Budget for interventions in Pulses

**( 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 | B10 | 8.5 | 21.25 | 8.5 | 21.25 | 8.5 | 21.25 | 8.5 | 21.25 | 8.5 | 21.25 | 42.5 | 106.25 |
| 2 | Production of Foundation/ Certified pulses seeds | MT | 86000 | All Blocks | 69 | 59.34 | 69 | 59.34 | 69 | 59.34 | 69 | 59.34 | 69 | 59.34 | 345 | 296.70 |
| 3 | Distribution of Certified Seeds | MT | 100000 | All Blocks | 61 | 61.00 | 61 | 61.00 | 61 | 61.00 | 61 | 61.00 | 61 | 61.00 | 305 | 305.00 |
| 4 | Distribution of Gypsum | ha | 400 | B1,B4,B8 | 80 | 0.32 | 100 | 0.40 | 120 | 0.48 | 130 | 0.52 | 150 | 0.60 | 580 | 2.32 |
| 5 | Distribution of Biofertilizer/ Organic packages ( Rhizobium + Phosphobacteria) - Liquid / Carrier | Ha | 600 | B7,B10, B11 | 3190 | 19.14 | 3240 | 19.44 | 3250 | 19.50 | 3250 | 19.50 | 3260 | 19.56 | 16190 | 97.14 |
| 6 | Distribution of Micro Nutrients(5 kgs/ Ha) | Ha | 350 | B7,B10, B11 | 3145 | 11.01 | 3195 | 11.18 | 3205 | 11.22 | 3205 | 11.22 | 3215 | 11.25 | 15965 | 55.88 |
| 7 | DAP Spray | Ha | 700 | B3,B5, B11 | 3349 | 23.44 | 3490 | 24.43 | 3500 | 24.50 | 3510 | 24.57 | 3520 | 24.64 | 17369 | 121.58 |
| 8 | Pulse wonder - 5 kg/ha | Ha | 1000 | B3,B4,B8 | 110 | 1.10 | 110 | 1.10 | 120 | 1.20 | 130 | 1.30 | 130 | 1.30 | 600 | 6.00 |
| 9 | Bund Cropping | Ha | 300 | B7,B9, B10, B11 | 1340 | 4.02 | 1365 | 4.10 | 1379 | 4.14 | 1385 | 4.16 | 1399 | 4.20 | 6868 | 20.60 |
| 10 | Line sowing | Ha | 2250 | B3 | 3220 | 72.45 | 3520 | 79.20 | 3532 | 79.47 | 3545 | 79.76 | 3557 | 80.03 | 17374 | 390.92 |
| 11 | Distribution of Yellow sticky trap | ha | 1000 | B2,B3,B6 | 1151 | 11.51 | 1176 | 11.76 | 1176 | 11.76 | 1176 | 11.76 | 1176 | 11.76 | 5855 | 58.55 |

| 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 |
| | /pheromone trap | | | | | | | | | | | | | | | |
| 12 | Cropping system based demonstration | Ha | 12500 | B6,B9, B10 | 300 | 37.50 | 310 | 38.75 | 310 | 38.75 | 310 | 38.75 | 310 | 38.75 | 1540 | 192.50 |
| 13 | Distribution of weedicide | Ha | 1000 | B1,B3,B4, B6,B7, B8 | 610 | 6.10 | 690 | 6.90 | 700 | 7.00 | 710 | 7.10 | 720 | 7.20 | 3430 | 34.30 |
| 14 | Plant Protection Chemicals | Ha | 1000 | B1,B2, B3,B5, B6, B7 | 1770 | 17.70 | 1845 | 18.45 | 1855 | 18.55 | 1855 | 18.55 | 1865 | 18.65 | 9190 | 91.90 |
| 15 | Seed treatment and soil application with Trichoderma viridi | Ha | 700 | B2,B3,B6, B7,B9 | 3060 | 21.42 | 3085 | 21.60 | 3085 | 21.60 | 3085 | 21.60 | 3085 | 21.60 | 15400 | 107.80 |
| 16 | Pure crop demonstration - Black gram and green gram | Ha | 6300 | B1,B5, B6,B9 | 275 | 17.33 | 275 | 17.33 | 275 | 17.33 | 275 | 17.33 | 275 | 17.33 | 1375 | 86.63 |
| 17 | Demonstration on intercropping of pulses with other crops | Ha | 8300 | B2,B6 | 300 | 24.90 | 400 | 33.20 | 400 | 33.20 | 400 | 33.20 | 400 | 33.20 | 1900 | 157.70 |
| 18 | Promotion of Redgram Transplantation for nursery preparation | Ha | 5000 | B6 | 10 | 0.50 | 15 | 0.75 | 20 | 1.00 | 20 | 1.00 | 25 | 1.25 | 90 | 4.50 |
| | **Grand total** | | | | | **410.03** | | **430.17** | | **431.27** | | **431.90** | | **432.90** | | **2136.27** |

Arupukottai- B1, Kariapatti – B2, Narikudi – B3, Rajapalayam – B4, M.Reddipatti – B5, Sattur – B6, Sivakasi – B7, Srivilluputhur – B8, Vembakottai – B9, Virudhunagar – B10, Watrap – B11

### 4.1.4. Enhancing the productivity of oilseeds

An area of 10,184 ha is being cultivated with oilseed crops in the district. Parts of the district namely Kariapatty, M.Reddiapatti, Narikudi, Sattur, Virudhunagar are the major groundnut growing areas. The soil is highly suitable for cultivation of rainfed groundnut. Gingelly is mainly grown in the blocks of Narikudi, Kariapatty, Srivilliputtur and Watrap. Sunflower occupies the major area in Virudhunagar, Sattur, Vembakottai, Sivakasi, Srivilliputtur and Aruppukottai. The soil of Virudhunagar district is highly suitable for groundnut cultivation. Major area under rainfed Groundnut is covered by older varieties. Farmers are well experienced in Groundnut cultivation under rainfed areas and suitable marketing infrastructure is available in the form of Regulated Market Committees.

**Project components**

a) Purchase of breeder seed
b) CBD – groundnut and gingelly
c) Production and distribution of certified seeds in groundnut, gingelly and sunflower
d) Production of foundation seed
e) Distribution of herbicides, light trap,bio pesticide and MN mixture

**Budget**

It is proposed to incur ₹.**1076.75** lakhs over a period of five years with the finance facilities under the NADP and other sources.

**Expected outcome**

The oilseed area would also increase from 10 to 15 per cent from the existing area especially groundnut and gingelly in this district.

**Implementing Agency**

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

**Table 4.4. Budget for interventions in Oilseeds**

**(₹. In Lakhs)**

| Sl. No | Inter-ventions | 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 |
| I | **OILSEEDS** | | | | | | | | | | | | | | | |
| 1 | Purchase of Breeder seed | Mt | 1.50 | B3 | 1 | 1.50 | 1 | 1.50 | 1 | 1.50 | 1 | 1.50 | 1 | 1.50 | 5 | 7.50 |
| 2 | Herbicide | Ha | 0.01 | B1,B3,B10 | 212 | 2.12 | 212 | 2.12 | 212 | 2.12 | 212 | 2.12 | 212 | 2.12 | 1060 | 10.60 |
| 3 | Light trap (NCIPM) | Nos. | 0.01 | B2 | 0 | 0.00 | 100 | 1.00 | 150 | 1.50 | 150 | 1.50 | 150 | 1.50 | 550 | 5.50 |
| 4 | Bio pesticide/ fungicide | Ha | 0.01 | B1,B6 | 50 | 0.50 | 75 | 0.75 | 75 | 0.75 | 75 | 0.75 | 75 | 0.75 | 350 | 3.50 |
| 5 | Compact Block Demonstration - Groundnut | Ha | 0.20 | B1,B2,B3,B5 ,B10 | 62 | 12.40 | 88 | 17.60 | 88 | 17.60 | 88 | 17.60 | 88 | 17.60 | 414 | 82.80 |
| 6 | Compact Block Demonstration -Gingelly / Castor | Ha | 0.06 | | 10 | 0.60 | 10 | 0.60 | 10 | 0.60 | 10 | 0.60 | 10 | 0.60 | 50 | 3.00 |
| | **Groundnut** | | | | | | | | | | | | | | | |
| 7 | Seed Production-Foundation seeds | Mt | 0.76 | B2,B3, B5 | 9.7 | 7.37 | 10.2 | 7.75 | 10.2 | 7.75 | 10.2 | 7.75 | 10.2 | 7.75 | 50.5 | 38.38 |
| 8 | Seed Production - certified seeds | Mt | 0.73 | B1,B2,B3,B5 ,B10 | 79.6 | 58.11 | 77.3 | 56.43 | 77.3 | 56.43 | 77.3 | 56.43 | 77.3 | 56.43 | 388.8 | 283.82 |
| 9 | Distribution of Certified seeds | Mt | 0.84 | B1,B2,B3,B5 ,B10 | 86.7 | 72.83 | 81.5 | 68.46 | 81.5 | 68.46 | 81.5 | 68.46 | 81.5 | 68.46 | 412.7 | 346.67 |
| 10 | Distribution of Seed Treatment | Kg | 0.00 | B1,B3 | 100 | 0.15 | 150 | 0.23 | 150 | 0.23 | 150 | 0.23 | 150 | 0.23 | 700 | 1.05 |

| Sl. No | Inter-ventions | 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 |
| | Chemicals and Bioagents (T.Viridi) | | | | | | | | | | | | | | | |
| 11 | Application of Gypsum to Groundnut Crop | Ha | 0.02 | B1,B2,B3,B5 ,B10 | 590 | 9.44 | 640 | 10.24 | 640 | 10.24 | 640 | 10.24 | 640 | 10.24 | 3150 | 50.40 |
| 12 | Distribution of Micro Nutrient Mixture | Ha | 0.02 | B3 | 100 | 1.50 | 100 | 1.50 | 100 | 1.50 | 100 | 1.50 | 100 | 1.50 | 500 | 7.50 |
| 13 | Distribution of Biofertilizer | Ha | 0.01 | B1,B3,B6 | 160 | 0.96 | 160 | 0.96 | 160 | 0.96 | 160 | 0.96 | 160 | 0.96 | 800 | 4.80 |
| 14 | Distribution of Liquid Biofertilizer | Ha | 0.01 | B1,B2,B3,B6 ,B10 | 445 | 2.67 | 495 | 2.97 | 495 | 2.97 | 495 | 2.97 | 495 | 2.97 | 2425 | 14.55 |
| 15 | Distribution of Rhizobium/ PSB Culture | Ha | 0.01 | B3,B6 | 110 | 0.66 | 110 | 0.66 | 110 | 0.66 | 110 | 0.66 | 110 | 0.66 | 550 | 3.30 |
| 16 | Castor as Bund crop | Ha | 0.01 | B10,B11 | 35 | 0.21 | 37 | 0.22 | 39 | 0.23 | 41 | 0.25 | 44 | 0.26 | 196 | 1.18 |
| 17 | Seed Drill Sowing / Line sowing of Groundnut with Pulses as intercrop(hiring charges only) | Ha | 0.03 | B2,B3,B5 | 1100 | 33.00 | 1400 | 42.00 | 1450 | 43.50 | 1450 | 43.50 | 1450 | 43.50 | 6850 | 205.50 |
| | **Sunflower** | | | | | | | | | | | | | | | |
| 18 | Production of Certified Seeds | Mt | 0.50 | B6 | 0.3 | 0.15 | 0.3 | 0.15 | 0.3 | 0.15 | 0.3 | 0.15 | 0.3 | 0.15 | 1.5 | 0.75 |
| 19 | Distribution of certified seeds | Mt | 0.57 | B6 | 0.3 | 0.17 | 0.3 | 0.17 | 0.3 | 0.17 | 0.3 | 0.17 | 0.3 | 0.17 | 1.5 | 0.86 |
| 20 | **Gingelly** | | | | | | | | | | | | | | | |

| Sl. No | Inter-ventions | 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 |
| 21 | Production of Certified Seeds | Mt | 1.09 | B6 | 0.1 | 0.11 | 0.1 | 0.11 | 0.1 | 0.11 | 0.1 | 0.11 | 0.1 | 0.11 | 0.5 | 0.55 |
| 22 | Distribution of certified seeds | Mt | 1.25 | B3,B6 | 0.6 | 0.75 | 0.6 | 0.75 | 0.6 | 0.75 | 0.6 | 0.75 | 0.6 | 0.75 | 3 | 3.75 |
| 23 | Distribution of Micro nutrients (Manganese sulphate/ Zinc sulphate) | Ha | 0.00 | B6 | 40 | 0.16 | 40 | 0.16 | 40 | 0.16 | 40 | 0.16 | 40 | 0.16 | 200 | 0.80 |
| | **Grand total** | | | | | **205.36** | | **216.33** | | **218.34** | | **218.35** | | **218.37** | | **1076.75** |

Arupukottai- B1, Kariapatti – B2, Narikudi – B3, Rajapalayam – B4, M.Reddipatti – B5, Sattur – B6, Sivakasi – B7, Srivilluputhur – B8, Vembakottai – B9, Virudhunagar – B10, Watrap – B11

### 4.1.5. Enhancing the productivity of Cotton

Cotton is a major commercial crop of the District and the cotton industry therefore occupies an important place in the economy. Rajapalayam is the important centre for spinning mills and ginning factories. Surgical cotton and bandage cloth are manufactured here. Textile mills in the district produce a variety of cotton yarn.Presence of cotton ginning and spinning mills indicates the scope for increasing cotton yield and production and for contract farming. It is necessary to increase the productivity of cotton Therefore, it is necessary to provide the needed assistance to the farmers by way of subsidized inputs and promotion of technologies.

**Project components**

a) Distribution of certified and hybrid seeds
b) Development of compact genotype suitable for HDP and mechanised harvest
c) Frontline demonstration on ICM, desi and ELS cotton seed production
d) Trails on high density planting system
e) Distribution of bio fertiliser. Bio pesticides, MN mixture, pheromone trap , yellow sticky trap and plant protection chemicals
f) Field days and exposure visits

**Budget**

It is proposed to incur ₹.**1280.49** lakhs over a period of five years with the finance facilities under the NADP and other sources.

**Expected outcome**

The implementation of the above project will result in an increase in the productivity of cotton in Virudhunagar district. Adoption of improved cotton technologies would produce more cotton as well as supply of quality raw material to the textile industry 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 4.5. Budget for interventions in cotton

**(₹. 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 | Cotton seed treatment | Ha | 300 | B9 | 20 | 0.06 | 20 | 0.06 | 30 | 0.09 | 30 | 0.09 | 30 | 0.09 | 130 | 0.39 |
| 2 | Distribution of biofertilizer | Ha | 300 | B1 | 1074 | 3.22 | 1334 | 4.00 | 1355 | 4.07 | 1366 | 4.10 | 1387 | 4.16 | 6516 | 19.55 |
| 3 | Distribution of biopesticides / Bio agents | Ha | 1000 | B2,B3,B6,B7 ,B9,B10 | 1380 | 13.80 | 1380 | 13.80 | 1390 | 13.90 | 1390 | 13.90 | 1390 | 13.90 | 6930 | 69.30 |
| 4 | Distribution of MN Mixture | Ha | 1000 | B1 | 1094 | 10.94 | 1254 | 12.54 | 1268 | 12.68 | 1279 | 12.79 | 1290 | 12.90 | 6185 | 61.85 |
| 5 | Distribution of Pheromone trap | No | 6000 | B6 | 450 | 27.00 | 450 | 27.00 | 450 | 27.00 | 450 | 27.00 | 450 | 27.00 | 2250 | 135.00 |
| 6 | Distribution of PP chemicals | Ha | 1000 | B4,B8,B9, B11 | 1044 | 10.44 | 1244 | 12.44 | 1244 | 12.44 | 1244 | 12.44 | 1244 | 12.44 | 6020 | 60.20 |
| 7 | Distribution of Yellow Sticky trap | No | 3000 | B6 | 450 | 13.50 | 450 | 13.50 | 450 | 13.50 | 450 | 13.50 | 450 | 13.50 | 2250 | 67.50 |
| 8 | Exposure visits | No | 40000 | B2,B5,B10 | 2 | 0.80 | 3 | 1.20 | 3 | 1.20 | 3 | 1.20 | 3 | 1.20 | 14 | 5.60 |
| 9 | Farmers training | No | 20000 | B3,B6,B7, B10,B11 | 9 | 1.80 | 13 | 2.60 | 14 | 2.80 | 15 | 3.00 | 16 | 3.20 | 67 | 13.40 |
| 10 | Intercropping with pulses | Ha | 10000 | B3,B4,B6,B7 ,B8 | 200 | 20.00 | 260 | 26.00 | 320 | 32.00 | 330 | 33.00 | 340 | 34.00 | 1450 | 145.00 |
| 11 | Promotion of precision farming in cotton -WSF | Ha | 50000 | B6 | 5 | 2.50 | 5 | 2.50 | 5 | 2.50 | 5 | 2.50 | 5 | 2.50 | 25 | 12.50 |
| 12 | Certified seed production | MT | 107900 | B6,B7, | 9.5 | 10.25 | 9.5 | 10.25 | 9.5 | 10.25 | 9.5 | 10.25 | 9.5 | 10.25 | 47.5 | 51.25 |
| 13 | TNAU Cotton plus distribution (6 Kg./ Ha) | Ha | 1200 | B6 | 450 | 5.40 | 450 | 5.40 | 450 | 5.40 | 450 | 5.40 | 450 | 5.40 | 2250 | 27.00 |

| 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 | Frontline demo on ICM in cotton | Ha | 7000 | B6,B10, B11 | 17 | 1.19 | 26 | 1.82 | 27 | 1.89 | 28 | 1.96 | 29 | 2.03 | 127 | 8.89 |
| 15 | Frontline Demo on Desi and ELS cotton seed production | Ha | 8000 | B2 | 0 | 0.00 | 10 | 0.80 | 15 | 1.20 | 15 | 1.20 | 15 | 1.20 | 55 | 4.40 |
| 16 | Trials on High Density Planting system in cotton | Ha | 9000 | B1,B2,B5,B6 ,B10 | 68 | 6.12 | 71 | 6.39 | 71 | 6.39 | 71 | 6.39 | 71 | 6.39 | 352 | 31.68 |
| 17 | Application of weedicide | Ha | 3000 | B7 | 50 | 1.50 | 50 | 1.50 | 50 | 1.50 | 50 | 1.50 | 50 | 1.50 | 250 | 7.50 |
| 18 | Spraying of growth regulator | Ha | 3000 | B6 | 50 | 1.50 | 50 | 1.50 | 50 | 1.50 | 50 | 1.50 | 50 | 1.50 | 250 | 7.50 |
| 19 | Summer ploughing | Ha | 7500 | B2,B3,B4,B7 ,B8,B10 | 700 | 52.50 | 900 | 67.50 | 900 | 67.50 | 900 | 67.50 | 900 | 67.50 | 4300 | 322.50 |
| 20 | Development of compact genotypes suitable for High Density planting and mechanised harvest | Lumpsu m grant | | B2 | 1308 | 0.00 | 1521 | 0.00 | 1526 | 0.00 | 1526 | 0.00 | 1526 | 0.00 | 7407 | 0.00 |
| 21 | Distribution of Certified seed | MT | 115000 | All Blocks | 7.3 | 8.40 | 7.3 | 8.40 | 7.3 | 8.40 | 7.3 | 8.40 | 7.3 | 8.40 | 36.5 | 41.98 |
| 22 | Distribution of Hybrid seed | MT | 2500000 | B3 | 1.5 | 37.50 | 1.5 | 37.50 | 1.5 | 37.50 | 1.5 | 37.50 | 1.5 | 37.50 | 7.5 | 187.50 |
| | **Grand total** | | | | | **228.42** | | **256.70** | | **263.70** | | **265.11** | | **266.56** | | **1280.49** |

Arupukottai- B1, Kariapatti – B2, Narikudi – B3, Rajapalayam – B4, M.Reddipatti – B5, Sattur – B6, Sivakasi – B7, Srivilluputhur – B8, Vembakottai – B9, Virudhunagar – B10, Watrap – B11

### 4.1.6. Enhancing the productivity of Coconut

Virdhunagar district has an area of 9844 ha under coconut cultivation. Increase in yield can be obtained by way of introducing high yielding varieties/hybrids, incorporation of micronutrient mixtures, removal of wilt infected plants from existing coconut gardens and improved package of technologies.

**Project components**

a) Distribution of quality hybrid seedlings to establish better nuts producing trees
b) Distribution of tall type seedlings
c) Intercropping with green manure
d) Management of black headed caterpillar
e) Demonstration on integrated fertliser management
f) Control of Eriophid mite
g) Corpus fund release for FPG
h) Supply of MN mixtures
i) Distribution of tree climbers
j) Supply of power operated sprayers

**Budget**

It is proposed to incur ₹.**785.36** lakhs over a period of five years with the finance facilities under the NADP and other sources.

**Expected outcome**

The project will be increasing the Coconut yield per hectare so as to improve the production further at State level. Based on the profitability in coconut cultivation, it is expected that the coconut area would increase from 5 to 10 per cent from the existing area under coconut.

**Implementing Agency**

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

## Table 4.6. Budget for interventions in Coconut

**(₹. 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 | Distribution of T x D hybrid seedlings | No | 0.0006 | B2, B4, B6, B8, B11 | 1950 | 1.17 | 1950 | 1.17 | 1950 | 1.17 | 1950 | 1.17 | 1950 | 1.17 | 9750 | 5.85 |
| 2 | Distribution of Tall Seedlings | No | 0.0004 | B2, B4, B6 ,B8, B10, B11 | 1500 | 0.60 | 1600 | 0.64 | 1600 | 0.64 | 1600 | 0.64 | 1600 | 0.64 | 7900 | 3.16 |
| 3 | Distribution of D xT hybrid Seedlings | No | 0.0015 | B5, B7, B9 | 150 | 0.23 | 150 | 0.23 | 150 | 0.23 | 150 | 0.23 | 150 | 0.23 | 750 | 1.13 |
| 4 | Distribution of MN mixture | Ha | 0.1000 | B4, B8, B9, B11 | 305 | 30.50 | 505 | 50.50 | 505 | 50.50 | 505 | 50.50 | 505 | 50.50 | 2325 | 232.50 |
| 5 | Distribution of power operated rocker sprayer | No | 0.1000 | B4, B8 | 0 | 0.00 | 20 | 2.00 | 24 | 2.40 | 28 | 2.80 | 32 | 3.20 | 104 | 10.40 |
| 6 | Distribution of tree climbers | No | 0.1500 | B4, B8 | 0 | 0.00 | 10 | 1.50 | 12 | 1.80 | 14 | 2.10 | 16 | 2.40 | 52 | 7.80 |
| 7 | Intercropping with green manures | Ha | 0.0300 | B4, B8 | 0 | 0.00 | 40 | 1.20 | 50 | 1.50 | 60 | 1.80 | 70 | 2.10 | 220 | 6.60 |
| 8 | Management of Black headed caterpillar | Ha | 0.0500 | B4, B8 | 0 | 0.00 | 100 | 5.00 | 110 | 5.50 | 120 | 6.00 | 130 | 6.50 | 460 | 23.00 |
| 9 | Demonstration on Integrated fertiliser management | Ha | 0.7500 | B4, B8 | 0 | 0.00 | 10 | 7.50 | 12 | 9.00 | 14 | 10.50 | 16 | 12.00 | 52 | 39.00 |
| 10 | Control of Eriophid mite | No. of tree | 0.0002 | B4, B8 | 0 | 0.00 | 1000 | 0.20 | 1100 | 0.22 | 1200 | 0.24 | 1300 | 0.26 | 4600 | 0.92 |
| 11 | corpus fund release for FPG (2000 nos.) | No | 5.0000 | B3, B6, B7, B9, B10 | 16 | 80.00 | 21 | 105.00 | 18 | 90.00 | 18 | 90.00 | 18 | 90.00 | 91 | 455.00 |
| | **Grand total** | | | | | **112.50** | | **174.94** | | **162.96** | | **165.98** | | **169.00** | | **785.36** |

Arupukottai- B1, Kariapatti – B2, Narikudi – B3, Rajapalayam – B4, M.Reddipatti – B5, Sattur – B6, Sivakasi – B7, Srivilluputhur – B8, Vembakottai – B9, Virudhunagar – B10, Watrap – B11

### 4.1.7. Enhancing the productivity of sugarcane

Sugarcane is the second most important industrial crop in the country and is grown in about 5 million hectares. The growth of sugarcane agriculture in the country had been consistent during the past seven decades. There was increase in area, production, productivity and sugar recovery. The productivity of sugarcane in future need to be taken care since it is expected to show much lower in future than the current productivity. To improve the productivity and efficiency of the sugarcane production system, new varieties and technologies are introduced in Virudhunagar district.

**Project components**

a) Distribution of Chip cutter
b) Distribution of weedicide
c) Distribution of iron sulphate
d) Distribution of MN mixture
e) Distribution of drip irrigation components

**Budget**

It is proposed to incur ₹.**129.14** lakhs over a period of five years with the finance facilities under the NADP and other sources.

**Expected outcome**

The immediate effect will be increasing the productivity of sugarcane to an extent of 5 to 10 tonnes per acre which will help in making available required quantity of canes to the mills and also would enhance income and employment opportunities of farmers and farm labourers.

**Implementing Agency**

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

## Table 4.7. Budget for interventions in sugarcane

**(₹. 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 | Distri. of biofertilizer (Ha) | Ha | 0.006 | B6 | 10 | 0.06 | 10 | 0.06 | 10 | 0.06 | 10 | 0.06 | 10 | 0.06 | 50 | 0.30 |
| 2 | Distri. of weedicide (Ha) | Ha | 0.01 | B4,B8 | 0 | 0.00 | 60 | 0.60 | 80 | 0.80 | 100 | 1.00 | 120 | 1.20 | 360 | 3.60 |
| 3 | Distribution of Chip Cutter | Nos | 0.05 | B4,B8 | 0 | 0.00 | 40 | 2.00 | 60 | 3.00 | 80 | 4.00 | 100 | 5.00 | 280 | 14.00 |
| 4 | Distribution of FeSO4 Spray | Ha | 0.005 | B4,B8 | 0 | 0.00 | 60 | 0.30 | 80 | 0.40 | 100 | 0.50 | 120 | 0.60 | 360 | 1.80 |
| 5 | Distribution of ZnSO4 Spray | Ha | 0.005 | B4,B8 | 0 | 0.00 | 60 | 0.30 | 80 | 0.40 | 100 | 0.50 | 120 | 0.60 | 360 | 1.80 |
| 6 | Distribution of Micro Nutrient Mixture | Ha | 0.02 | B6 | 10 | 0.20 | 10 | 0.20 | 10 | 0.20 | 10 | 0.20 | 10 | 0.20 | 50 | 1.00 |
| 7 | Microirrigation - Drip (1.2x0.6) | ha | 1.24 | B4,B8 | 18 | 22.32 | 10 | 12.40 | 14 | 17.36 | 20 | 24.80 | 24 | 29.76 | 86 | 106.64 |
| | **Grand total** | | | | | **22.58** | | **15.86** | | **22.22** | | **31.06** | | **37.42** | | **129.14** |

Arupukottai- B1, Kariapatti – B2, Narikudi – B3, Rajapalayam – B4, M.Reddipatti – B5, Sattur – B6, Sivakasi – B7, Srivilluputhur – B8, Vembakottai – B9, Virudhunagar – B10, Watrap – B11

### 4.1.8. 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 Tocopherols 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**

- Area expansion programme
- Inputs for intercropping
- Cultivation maintenance

**Budget**

It is proposed to incur ₹.**34.55** 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 4.8. Budget for interventions in Oil Palm

**(₹. 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 |
| II | **OILPALM** | | | | | | | | | | | | | | | |
| | **NMOOP -Mini Mission -III (Tree Borne Oilseeds)** | | | | | | | | | | | | | | | |
| 1 | Neem/ Pungam Area Expansion Programme | Ha | 0.2 | B3,B5,B7,B9,B11 | 18 | 3.60 | 15 | 3.00 | 15 | 3.00 | 15 | 3.00 | 15 | 3.00 | 78 | 15.60 |
| 2 | Cultivation maintenance | Ha | 0.05 | B3,B5,B7,B9,B11 | 71 | 3.55 | 41 | 2.05 | 32 | 1.60 | 26 | 1.30 | 26 | 1.30 | 196 | 9.80 |
| 3 | Inputs for Intercropping | Ha | 0.05 | B3,B5,B7,B9,B11 | 72 | 3.60 | 39 | 1.95 | 28 | 1.40 | 22 | 1.10 | 22 | 1.10 | 183 | 9.15 |
| | **Grand total** | | | | | **10.75** | | **7.00** | | **6.00** | | **5.40** | | **5.40** | | **34.55** |

Arupukottai- B1, Kariapatti – B2, Narikudi – B3, Rajapalayam – B4, M.Reddipatti – B5, Sattur – B6, Sivakasi – B7, Srivilluputhur – B8, Vembakottai – B9, Virudhunagar – B10, Watrap – B11

### 4.1.9. 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. 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**

- State level and inter state level trainings to Extension officials with respect to moisture conservation practices, value addition , organic cultivation practices, soil testing and balanced nutrition
- Refresher training of all ATMA functionaries
- Training of farmers under mission soil health card
- State level and interstate level training and Exposure visits programmes to farmers
- Awareness campaign for farmers on cotton , major and minor millets, moisture conservation practices

**Budget**

It is proposed to incur **₹255.24** lakhs over a period of five years with the finance facilities under the NADP and other sources.

**Expected outcome**

The project will results 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 for interventions in Trainings

**(₹. In Lakhs)**

| Sl. No. | Cafeteria of Activities | 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 |
| | **State level** | | | | | | | | | | | | | | | |
| I | **Training Extension Functionaries** | | | | | | | | | | | | | | | |
| 1 | Inter State Training of Extension functionaries | Nos. | 0.75 | B4,B8,B9,B11 | 1 | 0.75 | 3 | 2.25 | 6 | 4.50 | 5 | 3.75 | 6 | 4.50 | 21 | 15.75 |
| 2 | With in the StateTraining of Extension functionaries | Nos. | 0.9 | B3 | 5 | 4.50 | 5 | 4.50 | 5 | 4.50 | 5 | 4.50 | 5 | 4.50 | 25 | 22.50 |
| 3 | Paddy | Nos. | 0.9 | B4,B8,B11 | 0 | 0.00 | 5 | 4.50 | 7 | 6.30 | 9 | 8.10 | 11 | 9.90 | 32 | 28.80 |
| 4 | Cotton | Nos. | 0.9 | B3 | 2 | 1.80 | 2 | 1.80 | 2 | 1.80 | 2 | 1.80 | 2 | 1.80 | 10 | 9.00 |
| 5 | Moisture conservation practices | Nos. | 0.9 | B3,B9 | 6 | 5.40 | 6 | 5.40 | 5 | 4.50 | 6 | 5.40 | 6 | 5.40 | 29 | 26.10 |
| 6 | Value addition training | | 0.9 | B9 | 1 | 0.90 | 1 | 0.90 | 0 | 0.00 | 1 | 0.90 | 1 | 0.90 | 4 | 3.60 |
| 7 | Organic cultivation practices | Nos. | 0.9 | B4,B8,B9 | 1 | 0.90 | 5 | 4.50 | 6 | 5.40 | 9 | 8.10 | 11 | 9.90 | 32 | 28.80 |
| 8 | Training of Extension functionaries on Soil Testing and balanced Nutrition | Nos. | 0.2 | B9 | 1 | 0.20 | 1 | 0.20 | 1 | 0.20 | 1 | 0.20 | 1 | 0.20 | 5 | 1.00 |
| 9 | Refresher Training of all ATMA functionaries | Nos. | 1.2 | B11 | 0 | 0.00 | 1 | 1.20 | 1 | 1.20 | 2 | 2.40 | 2 | 2.40 | 6 | 7.20 |

| Sl. No. | Cafeteria of Activities | 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 |
| | **District Level** | | | | | | | | | | | | | | | |
| | **Training of Farmers** | | | | | | | | | | | | | | | |
| 10 | Inter State Training of Farmers | Nos. | 1.25 | B9,B11 | 1 | 1.25 | 1 | 1.25 | 2 | 2.50 | 2 | 2.50 | 3 | 3.75 | 9 | 11.25 |
| 11 | Inter State Training of Farmers | Nos. | 1.75 | B11 | 0 | 0.00 | 1 | 1.75 | 1 | 1.75 | 2 | 3.50 | 2 | 3.50 | 6 | 10.50 |
| 12 | Training of 536 Groups of Seed Village Farmers in quality Seed Production technology. | Nos. | 0.1 | B9 | 3 | 0.30 | 3 | 0.30 | 3 | 0.30 | 3 | 0.30 | 3 | 0.30 | 15 | 1.50 |
| 13 | Training of Farmers under Mission Soil Health Card | Nos. | 0.15 | B9 | 3 | 0.45 | 3 | 0.45 | 3 | 0.45 | 3 | 0.45 | 3 | 0.45 | 15 | 2.25 |
| 14 | With in the district training of Farmers | Nos. | 0.1 | B1,B2,B9,B10,B11 | 13 | 1.30 | 19 | 1.90 | 17 | 1.70 | 19 | 1.90 | 18 | 1.80 | 86 | 8.60 |
| 15 | With in the State training of Farmers | Nos. | 1.2 | B9,B11 | 0 | 0.00 | 7 | 8.40 | 6 | 7.20 | 8 | 9.60 | 7 | 8.40 | 28 | 33.60 |
| | **Training of Farmers With in the district** | | | | | | | | | | | | | | | |
| 16 | Awareness campaigns | Nos. | 0.1 | B9 | 3 | 0.30 | 3 | 0.30 | 3 | 0.30 | 3 | 0.30 | 3 | 0.30 | 15 | 1.50 |
| 17 | Cotton | Nos. | 0.1 | B4,B8 | 0 | 0.00 | 4 | 0.40 | 6 | 0.60 | 8 | 0.80 | 10 | 1.00 | 28 | 2.80 |
| 18 | Major & Minor Millets | Nos. | 0.1 | B4,B8 | 0 | 0.00 | 4 | 0.40 | 6 | 0.60 | 8 | 0.80 | 10 | 1.00 | 28 | 2.80 |

| Sl. No. | Cafeteria of Activities | 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 |
| 19 | Moisture conservation practices | Nos. | 0.1 | B9 | 3 | 0.30 | 3 | 0.30 | 3 | 0.30 | 3 | 0.30 | 3 | 0.30 | 15 | 1.50 |
| 20 | Paddy | Nos. | 0.1 | B9,B8,B11 | 0 | 0.00 | 13 | 1.30 | 15 | 1.50 | 17 | 1.70 | 20 | 2.00 | 65 | 6.50 |
| 21 | Sugarcane | Nos. | 0.1 | B4,B8 | 0 | 0.00 | 4 | 0.40 | 6 | 0.60 | 8 | 0.80 | 10 | 1.00 | 28 | 2.80 |
| 22 | Value addition training | Nos. | 0.1 | B9 | 3 | 0.30 | 3 | 0.30 | 3 | 0.30 | 3 | 0.30 | 3 | 0.30 | 15 | 1.50 |
| | **Exposure visit of Farmers** | | | | | | | | | | | | | | | |
| 23 | Rodent Pest Management Demonstration | Nos. | 0.04 | B4,B8 | 0 | 0.00 | 4 | 0.16 | 4 | 0.16 | 4 | 0.16 | 4 | 0.16 | 16 | 0.64 |
| 24 | With in State Exposure visit | Nos. | 0.4 | B1,B4,B9,B11 | 2 | 0.80 | 8 | 3.20 | 8 | 3.20 | 9 | 3.60 | 9 | 3.60 | 36 | 14.40 |
| 25 | Organisation of Kisan gosthies on Soil test based nutrient application (Campaign) | Nos. | 0.15 | B1,B4,B9,B10 | 2 | 0.30 | 4 | 0.60 | 5 | 0.75 | 5 | 0.75 | 5 | 0.75 | 21 | 3.15 |
| 26 | With in the district exposure visit | Nos. | 0.15 | B1,B4,B9,B10,B11 | 3 | 0.45 | 10 | 1.50 | 11 | 1.65 | 12 | 1.80 | 12 | 1.80 | 48 | 7.20 |
| | **Grand total** | | | | | **20.20** | | **48.16** | | **52.26** | | **64.71** | | **69.91** | | **255.24** |

Arupukottai- B1, Kariapatti – B2, Narikudi – B3, Rajapalayam – B4, M.Reddipatti – B5, Sattur – B6, Sivakasi – B7, Srivilluputhur – B8, Vembakottai – B9, Virudhunagar – B10, Watrap – B11

### 4.1.10. Infrastructure development

**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 confirm the approved seed standards to send the seeds in the market for commercial transaction.

**The major interventions are**

1. Establishment of Seed Godown, seed processing unit machineries
2. Construction of IAEC with vehicle shed and compound wall
3. Establishment of Thrashing floor/drying yard
4. Distribution of moisture meter, bag closure, electronic platform balance, seed rack and tarpauline

**Budget**

It is proposed to incur ₹. **1513.90** lakhs over a period of five years with the finance facilities under the NADP and other sources.

**Expected outcome**

The project will results better income to farmers. They may learn many things to improve their knowledge of cultivation through basic infrastructure facilities 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 for interventions in Infrastructure Development

**(₹. 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 | Seed godown (300 MT) | Nos. | 2500000 | B3 | 1 | 25.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 1 | 25.00 |
| 2 | Seed Processing Unit Machineries | Nos. | 2650000 | B6 | 0 | 0.00 | 1 | 26.50 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 1 | 26.50 |
| 3 | Construction of IAEC (383 Nos.) with vehicle shed and compound wall | Nos. | 25000000 | B5,B6,B9 | 1 | 250.00 | 1 | 250.00 | 1 | 250.00 | 0 | 0.00 | 0 | 0.00 | 3 | 750.00 |
| 4 | Construction of Sub-AEC (498 Nos.) | Nos. | 3000000 | B2,B5 | 1 | 30.00 | 1 | 30.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 2 | 60.00 |
| 5 | Establishment of Threshing floor/drying yard | Nos. | 500000 | B2,B9 | 2 | 10.00 | 1 | 5.00 | 1 | 5.00 | 1 | 5.00 | 1 | 5.00 | 6 | 30.00 |
| 6 | Dunnage | Nos. | 7500 | All Blocks | 160 | 12.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 160 | 12.00 |
| 7 | Moisture meter | Nos. | 25000 | All Blocks | 16 | 4.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 16 | 4.00 |
| 8 | Bag closure | Nos. | 10000 | All Blocks | 16 | 1.60 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 16 | 1.60 |
| 9 | Electronic platform balance | Nos. | 150000 | All Blocks | 16 | 24.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 16 | 24.00 |
| 10 | Seed rack | Nos. | 30000 | All Blocks | 16 | 4.80 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 16 | 4.80 |
| 11 | Tarpaulin | Nos. | 25000 | All Blocks | 16 | 4.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 16 | 4.00 |
| 12 | Office Furnishings and other amenities | Nos. | 200000 | All Blocks | 11 | 22.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 11 | 22.00 |

| 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 |
| 13 | Strengthening of training institute / nursery / FTC / KVK | Nos. | 50000000 | All Blocks | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 1 | 500.00 | 0 | 0.00 | 1 | 500.00 |
| 14 | 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** | | | | | **387.40** | | **311.50** | | **305.00** | | **505.00** | | **5.00** | | **1513.90** |

Arupukottai- B1, Kariapatti – B2, Narikudi – B3, Rajapalayam – B4, M.Reddipatti – B5, Sattur – B6, Sivakasi – B7, Srivilluputhur – B8, Vembakottai – B9, Virudhunagar – B10, Watrap – B11

### 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.

**Project Component**

- Production of enriched FYM and composting of farm waste through *Pluerotus*
- Distribution of enriched press mud
- Establishment of permanent vermicompost units
- Establishment of model organic villages
- Distribution of soil health card
- Adoption of PGS certification through cluster approach

**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 Thiruvarur district is ₹.**328.45** lakhs.

**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 into the future.

**Implementing Agency**

The projects will be implemented by the Department of Agriculture.

## Table 4.11. Budget for interventions in Soil Health Management

**(₹. 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 |
| | **Soil Health Management** | | | | | | | | | | | | | | | |
| 1 | Permanent Vermi compost units | Cluster Nos. | 50000 | B1,B5,B9 | 7 | 3.50 | 14 | 7.00 | 16 | 8.00 | 14 | 7.00 | 14 | 7.00 | 65 | 32.50 |
| 2 | Establishment of Model organic villages | Ha | 1000000 | B5 | 1 | 10.00 | 1 | 10.00 | 1 | 10.00 | 1 | 10.00 | 1 | 10.00 | 5 | 50.00 |
| 3 | Adoption of PGS certification through cluster approach | Nos | 1495000 | B5,B10 | 3 | 44.85 | 3 | 44.85 | 3 | 44.85 | 3 | 44.85 | 3 | 44.85 | 15 | 224.25 |
| 4 | Production of Enriched FYM | MT | 2500 | B6,B9 | 51 | 1.28 | 102 | 2.55 | 152 | 3.80 | 152 | 3.80 | 152 | 3.80 | 609 | 15.23 |
| 5 | Composting of Farm Waste Through Pluerotus (Production and Distribution of Kits) | MT | 200 | B5 | 14 | 0.03 | 14 | 0.03 | 14 | 0.03 | 14 | 0.03 | 14 | 0.03 | 70 | 0.14 |
| 11 | Strengthening of Four Soil survey and Land Use Organization Units Vellore, Coimbatore, Tirunelveli and Thanjavur | Ha | 1125000 | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| 12 | Distribution of Soil Health Card | Ha | 300 | B1,B5,B9 | 410 | 1.23 | 410 | 1.23 | 380 | 1.14 | 380 | 1.14 | 380 | 1.14 | 1960 | 5.88 |
| 13 | Distribution of Enriched Pressmud (37.5 Mt/ha) | units | 1000 | B2 | 5 | 0.05 | 10 | 0.10 | 10 | 0.10 | 10 | 0.10 | 10 | 0.10 | 45 | 0.45 |
| | **Grand total** | | | | | **60.93** | | **65.76** | | **67.92** | | **66.92** | | **66.92** | | **328.45** |

Arupukottai- B1, Kariapatti – B2, Narikudi – B3, Rajapalayam – B4, M.Reddipatti – B5, Sattur – B6, Sivakasi – B7, Srivilluputhur – B8, Vembakottai – B9, Virudhunagar – B10, Watrap – B11

### 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 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 for enhancement of farmer's income and livelihood support for reduction of poverty in rainfed areas.

**Project components**

- Small ruminant (9+1) + 1 ha cropping system with inter crop & border plantation like castor/sesbania etc. Organic Mulching
- Creation of Farm pond
- Promotion of Farmers club for Sustainable Dryland Agriculture

**Budget**

It is proposed to incur ₹.**2149.31** 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.The progress of the project will be monitored by Director of Agriculture and Joint Director of Agriculture.

**Table 4.12. Budget for interventions in Rainfed Area Development**

**(Rs. 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 | Small ruminant (9+1)+ 1 ha Tree based farming system (Cropping system with inter crop & border plantation like castor/sesbania etc.) @ Rs.23500/ as subsidy per Unit | Ha | 0.47 | B2 | 0 | 0.00 | 50 | 23.50 | 60 | 28.20 | 60 | 28.20 | 60 | 28.20 | 230 | 108.10 |
| 2 | Creation of Farm pond | Nos. | 0.75 | B2 | 0 | 0.00 | 50 | 37.50 | 60 | 45.00 | 60 | 45.00 | 60 | 45.00 | 230 | 172.50 |
| 3 | Promotion of Farmers club for Sustainable Dryland Agriculture | Cluster | 84.9415 | B6 | 7 | 594.59 | 15 | 1274.12 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 22 | 1868.71 |
| | **Grand total** | | | | | **594.59** | | **1335.12** | | **73.20** | | **73.20** | | **73.20** | | **2149.31** |

Arupukottai- B1, Kariapatti – B2, Narikudi – B3, Rajapalayam – B4, M.Reddipatti – B5, Sattur – B6, Sivakasi – B7, Srivilluputhur – B8, Vembakottai – B9, Virudhunagar – B10, Watrap – B11

### 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 is used in agriculture, horticulture, forestry, human habitations, preventive conservation and in 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 government 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)
2. Field days
3. Integrated Pest Management Villages

**Budget**

It is proposed to incur ₹. **32.20** lakhs over a period of five years with the finance facilities under the NADP and other sources.

**Expected outcome**

The project will increase the productivity of crops through following of IPm technologies for controlling of pest and disease 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 for interventions in IPM

**(Rs. 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 | Farmers Field Schools (FFS) | Nos. | 20000 | B3,B5, B9 | 5 | 1.00 | 7 | 1.40 | 7 | 1.40 | 7 | 1.40 | 7 | 1.40 | 33 | 6.60 |
| 2 | Field days | No. | 20000 | B3,B5, B9 | 4 | 0.80 | 6 | 1.20 | 6 | 1.20 | 6 | 1.20 | 6 | 1.20 | 28 | 5.60 |
| 3 | Integrated Pest Management Villages | Nos. | 100000 | B6,B9 | 1 | 1.00 | 4 | 4.00 | 5 | 5.00 | 5 | 5.00 | 5 | 5.00 | 20 | 20.00 |
| | **Grand total** | | | | | **2.80** | | **6.60** | | **7.60** | | **7.60** | | **7.60** | | **32.20** |

Arupukottai- B1, Kariapatti – B2, Narikudi – B3, Rajapalayam – B4, M.Reddipatti – B5, Sattur – B6, Sivakasi – B7, Srivilluputhur – B8, Vembakottai – B9, Virudhunagar – B10, Watrap – B11

### 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 Virudhunagar district.

**Project Component:**

- Distribution of tractor, mini tractor and power tiller
- Distribution of rotavator and paddy transplanter
- Distribution of tractor drawn seed cum fertilizer drill
- Distribution of pump set, mobile sprinklers, rain guns and PVC Pipes to carry irrigation water from source to field
- Distribution of Solar power pump system and Solar light trap
- Distribution of sprayers (power, hand and battery operated sprayer)
- Distribution of rotary power weeder

**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 ₹.**1415.16** lakhs.

**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.

**Implementing Agency:**

The projects will be implemented by the Department of Agriculture.

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**Table 4.14. Budget for interventions in Farm Machineries**

**(₹. 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 |
| | **Farm Mechanization** | | | | | | | | | | | | | | | |
| 1 | Solar light trap | No. | 4000 | All Blocks except Aruppukottai, Kariapatti, M.Reddipatti and Virudhunagar | 116 | 4.64 | 112 | 4.48 | 112 | 4.48 | 112 | 4.48 | 112 | 4.48 | 564 | 22.56 |
| 2 | Battery operated sprayer | Nos. | 4000 | Sattur, Vembakkottai and Watrap | 3 | 0.12 | 13 | 0.52 | 8 | 0.32 | 14 | 0.56 | 9 | 0.36 | 47 | 1.88 |
| 3 | Power operated sprayer | Nos. | 8000 | All Blocks | 41 | 3.28 | 181 | 14.48 | 183 | 14.64 | 185 | 14.80 | 187 | 14.96 | 777 | 62.16 |
| 4 | Hand operated sprayer | 0 | 0 | All Blocks | 260 | 3.90 | 480 | 7.20 | 484 | 7.26 | 490 | 7.35 | 511 | 7.67 | 2225 | 33.38 |
| 5 | Distribution of Mini Tractor | Nos | 300000 | Kariapatti, M.Reddipatti, Rajapalayam, Srivilliputtur and Vembakkottai | 4 | 12.00 | 9 | 27.00 | 9 | 27.00 | 9 | 27.00 | 9 | 27.00 | 40 | 120.00 |
| 6 | Distribution of Mobile Sprinklers | Ha | 30000 | Aruppukottai, M.Reddipatti, Narikudi and Vembakkottai | 50 | 15.00 | 22 | 6.60 | 22 | 6.60 | 22 | 6.60 | 22 | 6.60 | 138 | 41.40 |
| 7 | Distribution of Paddy transplanter | Nos | 1200000 | M.Reddipatti | 0 | 0.00 | 1 | 12.00 | 1 | 12.00 | 1 | 12.00 | 1 | 12.00 | 4 | 48.00 |
| 8 | Distribution of Powertiller | Nos | 150000 | Kariapatti, M.Reddipatti, Narikudi, Sattur, Vembakkottai and Virudhunagar | 21 | 31.50 | 36 | 54.00 | 37 | 55.50 | 36 | 54.00 | 35 | 52.50 | 165 | 247.50 |
| 9 | Distribution of Pumpset | Nos | 30000 | M.Reddipatti and Vembakkottai | 2 | 0.60 | 4 | 1.20 | 4 | 1.20 | 4 | 1.20 | 4 | 1.20 | 18 | 5.40 |
| 10 | Distribution of Rain guns | Ha | 40000 | M.Reddipatti, Narikudi and Vembakkottai | 15 | 6.00 | 17 | 6.80 | 17 | 6.80 | 17 | 6.80 | 17 | 6.80 | 83 | 33.20 |

| 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 |
| 11 | Distribution of Rotary Power weeder | Nos | 70000 | Sattur | 0 | 0.00 | 5 | 3.50 | 5 | 3.50 | 5 | 3.50 | 5 | 3.50 | 20 | 14.00 |
| 12 | Distribution of Rotavator | Nos | 80000 | All Blocks except Kariapatti and Watrap | 23 | 18.40 | 50 | 40.00 | 50 | 40.00 | 50 | 40.00 | 50 | 40.00 | 223 | 178.40 |
| 13 | Distribution of Tarpaulins | Nos | 8000 | All Blocks except Kariapatti | 47 | 3.76 | 272 | 21.76 | 293 | 23.44 | 314 | 25.12 | 335 | 26.80 | 1101 | 100.88 |
| 14 | Distribution of Tractor | Nos | 600000 | Kariapatti, M.Reddipatti, Narikudi, Sivakasi, Vembakkottai and Watrap | 6 | 36.00 | 10 | 60.00 | 14 | 84.00 | 14 | 84.00 | 14 | 84.00 | 58 | 348.00 |
| 15 | Distribution of Tractor Drawn Seed cum Fertilizer Drill | Nos | 70000 | Sattur | 0 | 0.00 | 2 | 1.40 | 2 | 1.40 | 2 | 1.40 | 2 | 1.40 | 8 | 5.60 |
| 16 | PVC Pipes to carry Irrigation water from source to field | Unit | 40000 | All Blocks except Kariapatti, Sattur and Watrap | 56 | 22.40 | 64 | 25.60 | 59 | 23.60 | 63 | 25.20 | 65 | 26.00 | 307 | 122.80 |
| 17 | Solar power pump system | Nos | 600000 | Vembakkottai | 1 | 6.00 | 1 | 6.00 | 1 | 6.00 | 1 | 6.00 | 1 | 6.00 | 5 | 30.00 |
| | **Grand total** | | | | | **163.60** | | **292.54** | | **317.74** | | **320.01** | | **321.27** | | **1415.16** |

Arupukottai- B1, Kariapatti – B2, Narikudi – B3, Rajapalayam – B4, M.Reddipatti – B5, Sattur – B6, Sivakasi – B7, Srivilluputhur – B8, Vembakottai – B9, Virudhunagar – B10, Watrap – B11

### 4.1.15. 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.

**Budget**

It is proposed to incur ₹.**83.16** 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 for interventions in Information Technology

(₹. 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 | Procurement of Hardware for replacement of old hardware | Nos | 50000 | All Blocks | 11 | 5.50 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 11 | 5.50 |
| 2 | Connectivity Charges | Nos | 11000 | All Blocks | 11 | 1.21 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 11 | 1.21 |
| 3 | Printer cum Scanner | Nos | 20000 | All Blocks | 11 | 2.20 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 11 | 2.20 |
| 4 | UPS and Electrical Accessories | Nos | 35000 | All Blocks | 11 | 3.85 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 11 | 3.85 |
| 5 | Xerox machine | Nos | 75000 | All Blocks | 11 | 8.25 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 11 | 8.25 |
| 6 | Laptop/Desktop | Nos | 50000 | All Blocks | 11 | 5.50 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 11 | 5.50 |
| 7 | Anti -virus software | Nos | 2500 | All Blocks | 11 | 0.28 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 11 | 0.28 |
| 8 | Television | Nos | 100000 | All Blocks | 11 | 11.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 11 | 11.00 |
| 9 | Colour printer | Nos | 15000 | All Blocks | 11 | 1.65 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 11 | 1.65 |
| 10 | 4G Internet - Dongle | Nos | 2500 | All Blocks | 11 | 0.28 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 11 | 0.28 |
| 11 | **Equipments for Documentation** | | | | | | | | | | | | | | | |
| a | Handycam | Nos | 30000 | All Blocks | 11 | 3.30 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 11 | 3.30 |
| b | Camera | Nos | 25000 | All Blocks | 11 | 2.75 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 11 | 2.75 |
| c | GPS instrument | Nos | 20000 | All Blocks | 11 | 2.20 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 11 | 2.20 |
| 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 | 11 | 0.55 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 11 | 0.55 |
| 12 | Audio - visual Aids | Nos | 150000 | All Blocks | 11 | 16.50 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 11 | 16.50 |
| | LCD projector | Nos | 75000 | All Blocks | 11 | 8.25 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 11 | 8.25 |
| | pico Projector | Nos | 35000 | All Blocks | 11 | 3.85 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 11 | 3.85 |
| 13 | Air conditioner for computer room | Nos | 40000 | All Blocks | 11 | 4.40 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 11 | 4.40 |
| | **Grand total** | | | | | **83.16** | | **0.00** | | **0.00** | | **0.00** | | **0.00** | | **83.16** |

Arupukottai- B1, Kariapatti – B2, Narikudi – B3, Rajapalayam – B4, M.Reddipatti – B5, Sattur – B6, Sivakasi – B7, Srivilluputhur – B8, Vembakottai – B9, Virudhunagar – B10, Watrap – B11

**Table 4.16. Budget Abstract for Agriculture sector**

**(₹. in lakhs)**

| Sl. No. | Interventions | 2017-18 | 2018-19 | 2019-20 | 2020-21 | 2021-22 | Total |
|---|---|---|---|---|---|---|---|
| 1 | Paddy | 806.68 | 877.39 | 937.03 | 988.58 | 1038.47 | 4648.16 |
| 2 | Millets | 340.96 | 363.13 | 369.70 | 376.10 | 375.70 | 1825.60 |
| 3 | Pulses | 410.03 | 430.17 | 431.27 | 431.90 | 432.90 | 2136.27 |
| 4 | Oilseeds | 205.36 | 216.33 | 218.34 | 218.35 | 218.37 | 1076.75 |
| 5 | Oilpalm | 10.75 | 7.00 | 6.00 | 5.40 | 5.40 | 34.55 |
| 6 | Sugarcane | 22.58 | 15.86 | 22.22 | 31.06 | 37.42 | 129.14 |
| 7 | Coconut | 112.50 | 174.94 | 162.96 | 165.98 | 169.00 | 785.36 |
| 8 | Cotton | 228.42 | 256.70 | 263.70 | 265.11 | 266.56 | 1280.49 |
| 9 | Training | 20.20 | 48.16 | 52.26 | 64.71 | 69.91 | 255.24 |
| 10 | Infrastructure | 387.40 | 311.50 | 305.00 | 505.00 | 5.00 | 1513.90 |
| 11 | Soil Health Management | 60.93 | 65.76 | 67.92 | 66.92 | 66.92 | 328.45 |
| 12 | Rainfed Area Development | 594.59 | 1335.12 | 73.20 | 73.20 | 73.20 | 2149.31 |
| 13 | Integrated Pest Management | 2.80 | 6.60 | 7.60 | 7.60 | 7.60 | 32.20 |
| 14 | Farm mechanisation | 163.60 | 292.54 | 317.74 | 320.01 | 321.27 | 1415.16 |
| 15 | Agriculture Information Technology | 83.16 | 0.00 | 0.00 | 0.00 | 0.00 | 83.16 |
| | **Grand total** | **3449.96** | **4401.20** | **3234.94** | **3519.92** | **3087.72** | **17693.74** |

## 4.2. HORTICULTURE

Horticulture plays a vital role in the food and nutritional security of the people as well as in earning foreign exchange through export of raw and value added horticultural crops. The farmers are ready for the cultivation of horticultural crops which prove remunerative. The challenge lies in taking the technologies to 90 per cent of farmers who are small and marginal farmers. In all, horticulture crops are grown in 10.01 lakh hectares, of which vegetables, spices, plantation crops, flowers and medicinal plants are the major crops cultivated in the State. Totally, 86 horticultural crops are grown in the State which clearly indicates the crop diversity and also the possibility of augmenting the income of farmers. The major strategies suggested are as follows:

**Area expansion of Horticultural crops**

**Fruit Crops**

Today's changing food pattern enhances the area expansion under fruits. Hence fruit crops like banana, pine apple, UHDP in papaya, mango, guava, pome acid lime, jack, sapota and amla have been promoted in the district.

**Vegetable crops**

Vegetables are the store houses of most of the vitamins and minerals and also proteins. In order to ensure continuous supply of fresh vegetables to the burgeoning urban markets, it is absolutely necessary to create forward linkages from rural to urban areas. This will also ensure assured income to farmers in the rural areas adjoining the cities. Cultivation of vegetables, formation of farmer clusters, formation of farmers society, collection centers, reefer vans, retail outlets, mobile stores are the components to be promoted for increasing the productivity and marketing of vegetables.In the district promotion of area under brinjal, chillies, gourds, peas, greens, onion, cauliflower, moringa, tapioca, yam are suggested.

**Flower crops**

Floriculture activity has evolved as a viable and profitable alternative, with a potential to generate remunerative self-employment among small & marginal farmers. The flower crops require lots of manpower for picking flowers and perform other operations, hence providing opportunity to marginal and small farmers for generating more income, employment and promote greater involvement of women work force. Keeping this in mind,

the promotion of area of cultivation of traditional and cut flowers are planned for different flower crops like jasmine, crossandra, marigold, rose, chrysanthemum, nerium, and torenia.

**Spice crops**

Spice crops play a unique role in India's economy by improving the income of the rural people. Cultivation of spices is labor intensive so it can generate lot of employment opportunities for the rural population. The demand of Indian spice is more in other countries. Hence production of spices has very much scope to meet that demand by huge production.In the district the cultivation of spices like ginger, cumin seed, fennel, fenugreek, cardamom, coriander and turmeric have been promoted.

**Plantation crops**

Plantation crops are high value commercial crops of greater economic importance and play a vital role in our Indian economy. These crops help to conserve the soil and ecosystem. So the promotion of cultivation of plantation crops in the potential districts like cocoa, cashew and betel vine are in need.

**Rejuvenation of Old Orchards – Mango and Guava**

In general, 40-45 years old mango trees exhibit decline in fruit yield because of dense and overcrowded canopy. The trees do not get proper sunlight resulting in decreased production of shoots. New emerging shoots are weak and are unsuitable for flowering and fruiting. The population of insects and pests builds up and the incidence of diseases increases in such orchards. These unproductive trees can be converted into productive ones by pruning with the techniques developed. Similarly, a procedure to rejuvenate and restore the production potential of old unproductive and wilt affected guava orchards has been developed, which employs pruning of branches at different periodicity and at different severities. Crowding and encroachment of guava trees with subsequent inefficient light utilization is an obvious problem with older orchards, if trees are not well managed. The internal bearing capacity of guava trees also decreases with time, due to overshadowing of internal bearing wood.

**Organic farming**

Organic farming is an alternative agricultural system which originated early in the 20$^{th}$ Century in reaction to rapidly changing farming practices. It relies on fertilizers of organic

origin such as compost, manure, green manure, and bone meal and places emphasis on techniques such as crop rotation, companion planting. Biological pest control, mixed cropping and fostering of insect predators are encouraged. Since 1990, the market for organic food and other products has grown rapidly, reaching $63 billion worldwide in 2012. This demand has driven a similar increase in organically managed farmland that grew from 2001 to 2011 at a compounding rate of 8.9 per cent per annum. As of 2011, approximately 3.70 lakh hectares worldwide were formed organically, representing approximately 0.9 per cent of total world farmland. Organic farming encourages crop diversity. The science of agro ecology has revealed the benefits of polyculture (multiple crops in the same space), which is often employed in organic farming. Planting a variety of vegetable crops supports a wider range of beneficial insects, soil microorganisms, and other factors that add up to overall farm health. Crop diversity helps environments thrive and protects species from going extinct. The profitability of organic agriculture can be attributed to a number of factors. First, organic farmers do not rely on synthetic fertilizer and pesticide inputs, which can be costly. In addition, organic foods currently enjoy a price premium over conventionally produced foods, meaning that organic farmers can often get more for their yield.

The price premium for organic food is an important factor in the economic viability of organic farming. Organic agriculture can contribute to ecologically sustainable, socio-economic development, especially in poorer countries. Application of organic principles enables employment of local resources (e.g., local seed varieties, manure, etc.) and therefore cost-effectiveness. Local and international markets for organic products show tremendous growth prospects and offer creative producers and exporter's excellent opportunities to improve their income and living conditions.

**Bee keeping for pollination**

Production of apiary honey in the country reached 10,000 tons, valued at about Rs.300 million. Bee-Keeping Industry is one of the important activities. The Government provides financial support to this Industry by way of providing grant for supply of bee-hives to the Tribal on hill areas, Scheduled Castes /Scheduled Tribes under Western Ghats Development Programmes, Hill Area Development Programme and Integrated Tribal Development Programme. The income earned by the farmers through bee-keeping activities is an additional income to their agriculture income. Honey industry in the country can well become a major foreign exchange earner if international standards are met. Beekeeping is

an age-old tradition in India but it is considered a no-investment profit giving venture in most areas. Of late, it has been recognized that it has the potential to develop as a prime agri-horticultural and forest-based industry. Honey production is a lucrative business and it generates employment.

**Protected cultivation**

Protected cultivation is a unique and specialized form of agriculture. Devices or technologies for protection (wind breaks, irrigation, soil mulches) or structures (green houses, tunnels, row covers) may be used with or without heat. The intent is to grow crops where otherwise they could not survive by modifying the natural environment to prolong the harvest period, often with earlier maturity to increase yields improve quality, enhances the stability of production and make commodities available when there is no outdoor production. Interventions proposed are establishment of Poly green house and shade net for vegetable production

**Establishment of Mushroom unit**

Mushrooms have been valued throughout the world as both food and medicine for thousands of years. They are having rich source of nutrition and form a major chunk of health foods. Earlier mushroom eating was restricted to specific regions and areas of the world but due to globalization, interaction between different cultures, growing consumerism has ensured the accessibility of mushrooms in all areas. Mushrooms are increasingly gaining acceptance in different Cusines and in everday consumption. They have created a space in a common man's kitchen. Also, current trend of consumption conveys the opportunity that lies in the area of mushroom exports. The interventions proposed in the district include compost making, spawn production and cotton mushroom unit.

**Vermicompost unit**

Earthworms are often referred to as farmer's friend and nature's ploughmen. Earthworms are extremely important in soil formation, principally through their activities in consuming organic matter, fragmenting and mixing it intimately with mineral particles to form aggregates. During their feeding, earthworms promote microbial activity greatly, which in turn accelerates the breakdown of organic matter and stabilization of soil aggregates. The end product, commonly termed vermicompost and obtained as the organic wastes pass through

the earthworm gut, is quite different from the parent waste material.The project proposes permanent vermicompost unit for the district.

**Supporting structures for vegetable production**

Supporting and training vegetables to grow upright, away from the soil surface, takes up less space in the bed. So in order to enhance the vegetables production the supporting structure such as Staking/ Trellis/ Propping and Permanent Pandhal structure has to be established

**Post-harvest management**

Temperature management is most effective tool for maintaining quality and safety and for extending the post-harvest life of fresh horticultural commodities. It begins with the rapid removal of field heat by initial cooling and continuous throughout the cold chain (cold storage), refrigerated transportation, refrigerated retail display and cold storage at wholesale distribution. In order to reduce the post-harvest losses its necessary to establish Pack house (9m X 6m), low cost onion structure 25 mt, drying yard and pre cooling unit.

**Mechanization**

Farm mechanization has been helpful to bring about significant improvement in horticulture productivity by bridging the demand- supply gap of farm workers. Thus the main objective is to supply the horticulture machinery/implements such as Power Tiller (8BHP and above), Mini Tractor, Tractor Land development, tillage and seed bed preparation equipments, Manual Sprayer-Knapsack/Foot operated Sprayer, Tractor Mounted / Operated Sprayer (Below 20HP), Tractor Mounted / Operated Sprayer (Above 20HP),Post Hole Digger/Augur, Pneumatic/ other Planter, Mulch laying machine, Hand operated sprayer with face mask, Nets for safe harvesting of fruits & Headlights for flower picking, Power operated Sprayer, Plastic crates for vegetable & fruits handling,5 layered Polythene spread sheets for drying horticulture produce Aluminium Ladders for Harvesting Equipments for manure management(Motorized Shredder for cutting biomass for making Vermicompost and organic mulching).

**Water and irrigation management**

Irrigation plays an important role in raising and stabilizing yield of horticultural crops. Many orchards depend on rainfall. Trees suffer water deficit during crucial fruit development period. This is the reason why many times both productivity as well as fruit quality is not up to

the level desired. Thus effective scheduling of irrigation is very important in decisions related to maximizing yields and improving fruit size.

**Capacity building**

Promotion of innovation in application of information communication technology in agriculture and dissemination of knowledge is a critical role in knowledge based growth of horticulture. Therefore it is important to provide the Training to farmers within the State. Training to farmers outside the state, Exposure visit to farmers for 5 days, Training to farmers at HTC, Exposure visit of farmers outside India, Training to staff outside the state, Training to staff outside India, District level seminar, Computerization & governance, Publicity and Documentation.

**Special interventions**

Some interventions like off season annual moringa production for pod and leaf, promotion of roof top garden, AESA based IPM in fruits and vegetables are also listed.

**Budget**

The budget requirement for fulfilling the various interventions is ₹**15471.04** Lakhs.

**Implementing agency**

The projects will be implemented by the Department of Horticulture.

## Table.4.17. Budget for Horticulture Development

**(Rs. 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 | Banana / Hill Banana sucker & Pine apple sucker | Ha | 0.875 | All Blocks except B6 | 226 | 197.75 | 227 | 198.63 | 259 | 226.63 | 291 | 254.63 | 312 | 273.00 | 1315 | 1150.63 |
| 2 | UHDP in Papaya, Mango, Guava, Pomegranate, Acidlime | Ha | 1.25 | B6 | 70 | 87.50 | 75 | 93.75 | 75 | 93.75 | 80 | 100.00 | 80 | 100.00 | 380 | 475.00 |
| 3 | HDP in Mango, Guava, Litchi, Pomegranate | Ha | 1 | All Blocks except B1, B5 & B6 | 19 | 19.00 | 21 | 21.00 | 24 | 24.00 | 26 | 26.00 | 31 | 31.00 | 121 | 121.00 |
| 4 | Area expansion fruits with traditional varieties | Ha | 0.6 | B2, B3, B6 & B8 | 8 | 4.80 | 8 | 4.80 | 8 | 4.80 | 11 | 6.60 | 11 | 6.60 | 46 | 27.60 |
| 5 | Normal Planting in lime / lemons | Ha | 0.6 | All Blocks except B2, B3, B6 & B8 | 24 | 14.40 | 30 | 18.00 | 36 | 21.60 | 44 | 26.40 | 53 | 31.80 | 187 | 112.20 |
| 6 | Normal Planting in Mango | Ha | 0.6 | All Blocks except B1 & B3 | 60 | 36.00 | 79 | 47.40 | 105 | 63.00 | 119 | 71.40 | 133 | 79.80 | 496 | 297.60 |
| 7 | Normal planting in Guava | Ha | 0.6 | All Blocks | 173 | 103.80 | 202 | 121.20 | 233 | 139.80 | 262 | 157.20 | 302 | 181.20 | 1172 | 703.20 |
| 8 | Normal planting in Sapota | Ha | 0.6 | All Blocks | 31 | 18.60 | 41 | 24.60 | 55 | 33.00 | 65 | 39.00 | 77 | 46.20 | 269 | 161.40 |
| 9 | Normal planting in Amla | Ha | 0.6 | All Blocks | 25 | 15.00 | 32 | 19.20 | 41 | 24.60 | 56 | 33.60 | 63 | 37.80 | 217 | 130.20 |
| 10 | Normal planting in Papaya | Ha | 0.6 | All Blocks | 49 | 29.40 | 80 | 48.00 | 98 | 58.80 | 121 | 72.60 | 149 | 89.40 | 497 | 298.20 |
| 11 | Normal planting in Jack | Ha | 0.6 | B4 & B7 | 15 | 9.00 | 10 | 6.00 | 13 | 7.80 | 13 | 7.80 | 15 | 9.00 | 66 | 39.60 |
| 12 | Commercial production of Traditional fruits (Woodapple, Manila | Ha | 0.6 | B1 | 2 | 1.20 | 4 | 2.40 | 6 | 3.60 | 8 | 4.80 | 10 | 6.00 | 30 | 18.00 |

| 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. |
| | Tamarind, Jamun, Ber, Karonda, Annona, Egg fruit, etc.,) | | | | | | | | | | | | | | | |
| **II** | **Area expansion of vegetable crops** | | | | | | | | | | | | | | | |
| 13 | Brinjal | Ha | 0.5 | All Blocks | 76 | 38.00 | 103 | 51.50 | 132 | 66.00 | 154 | 77.00 | 172 | 86.00 | 637 | 318.50 |
| 14 | Bhendi | Ha | 0.5 | All Blocks | 94 | 47.00 | 126 | 63.00 | 176 | 88.00 | 219 | 109.50 | 252 | 126.00 | 867 | 433.50 |
| 15 | Green Chillies | Ha | 0.5 | All Blocks | 195 | 97.50 | 230 | 115.00 | 259 | 129.50 | 302 | 151.00 | 307 | 153.50 | 1293 | 646.50 |
| 16 | Tomato | Ha | 0.5 | All Blocks | 83 | 41.50 | 111 | 55.50 | 134 | 67.00 | 162 | 81.00 | 194 | 97.00 | 684 | 342.00 |
| 17 | Gourds including pumpkin and tinda | Ha | 0.5 | All Blocks except B3 | 35 | 17.50 | 46 | 23.00 | 60 | 30.00 | 70 | 35.00 | 84 | 42.00 | 295 | 147.50 |
| 18 | Peas & Beans | Ha | 0.5 | B7 | 2 | 1.00 | 2 | 1.00 | 5 | 2.50 | 5 | 2.50 | 7 | 3.50 | 21 | 10.50 |
| 19 | Greens | Ha | 0.5 | B1, B4, B5, B9 & B11 | 13 | 6.50 | 16 | 8.00 | 22 | 11.00 | 28 | 14.00 | 34 | 17.00 | 113 | 56.50 |
| 20 | Small Onion | Ha | 0.5 | All Blocks | 169 | 84.50 | 195 | 97.50 | 225 | 112.50 | 274 | 137.00 | 298 | 149.00 | 1161 | 580.50 |
| 21 | Cauliflower | Ha | 0.5 | B11 | 2 | 1.00 | 2 | 1.00 | 2 | 1.00 | 2 | 1.00 | 2 | 1.00 | 10 | 5.00 |
| 22 | Annual Moringa | Ha | 0.5 | All Blocks except B7, B8, B10 & B11 | 17 | 8.50 | 22 | 11.00 | 34 | 17.00 | 43 | 21.50 | 54 | 27.00 | 170 | 85.00 |
| 23 | Cucumber/gherkin | Ha | 0.5 | B5 | 20 | 10.00 | 25 | 12.50 | 30 | 15.00 | 35 | 17.50 | 35 | 17.50 | 145 | 72.50 |
| 24 | Cluster bean | Ha | 0.5 | B1, B4, B5 & B7 | 18 | 9.00 | 27 | 13.50 | 38 | 19.00 | 35 | 17.50 | 31 | 15.50 | 149 | 74.50 |
| 25 | Tapioca | Ha | 0.5 | B11 | 2 | 1.00 | 2 | 1.00 | 22 | 11.00 | 2 | 1.00 | 2 | 1.00 | 30 | 15.00 |
| 26 | Yams and colacassia | Ha | 0.5 | B6 | 2 | 1.00 | 4 | 2.00 | 6 | 3.00 | 6 | 3.00 | 8 | 4.00 | 26 | 13.00 |
| 27 | Commercial production of location specific traditional vegetables (Athalakkai, Palu Pavakkai, Mullu kathiri, Poiyur kathiri, Kottapatti kathiri etc.,) | Ha | 0.5 | B1, B3, B5 & B6 | 25 | 12.50 | 45 | 22.50 | 70 | 35.00 | 80 | 40.00 | 90 | 45.00 | 310 | 155.00 |

| 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. |
| 28 | Cultivation of hybrid Vegetables under protected structures | 1000 Sq.m | 1.4 | B7, B10 & B11 | 1 | 1.40 | 0 | 0.00 | 1000 | 1400.00 | 1000 | 1400.00 | 0 | 0.00 | 2001 | 2801.40 |
| **III** | **Area expansion of Medicinal and Aromatic plants** | | | | | | | | | | | | | | | |
| 29 | Neem | Ha | 0.4483 | All Blocks | 110 | 49.31 | 110 | 49.31 | 110 | 49.31 | 110 | 49.31 | 110 | 49.31 | 550 | 246.57 |
| 30 | Senna | Ha | 0.2988 | All Blocks except B6, B8 & B11 | 160 | 47.81 | 192 | 57.37 | 223 | 66.63 | 254 | 75.90 | 287 | 85.76 | 1116 | 333.46 |
| 31 | Periwinkle | Ha | 0.2988 | All Blocks except B6 | 159 | 47.51 | 197 | 58.86 | 220 | 65.74 | 234 | 69.92 | 264 | 78.88 | 1074 | 320.91 |
| 32 | Ocimum | Ha | 0.3586 | B4, B7 & B11 | 9 | 3.23 | 9 | 3.23 | 13 | 4.66 | 16 | 5.74 | 25 | 8.97 | 72 | 25.82 |
| **IV** | **Area expansion of Spices crops** | | | | | | | | | | | | | | | |
| 33 | Seed and Rhizomatic spices (Coriander, Turmeric, Ginger, Dry Chilly, Cumin, Fennel, Fenu greek, Dil, Cardamom etc.,) | Ha | 0.3 | All Blocks except B2, B4, B6 & B11 | 132 | 39.60 | 136 | 40.80 | 95 | 28.50 | 184 | 55.20 | 211 | 63.30 | 758 | 227.40 |
| 34 | Perennial spices (Pepper, Curry leaf, All spice, Cinnamon, Clove, Tamarind, Nut meg etc.,) | Ha | 0.5 | B1, B2, B4, B6, B7 & B10 | 16 | 8.00 | 24 | 12.00 | 28 | 14.00 | 36 | 18.00 | 40 | 20.00 | 144 | 72.00 |
| **V** | **Area expansion of Flower crops** | | | | | | | | | | | | | | | |
| 35 | Loose flowers - Jasminum sp, Crossandra, Marigold, Rose, Chrysanthemum, Nerium, Torenia | Ha | 0.4 | All Blocks except B9 | 105 | 42.00 | 160 | 64.00 | 210 | 84.00 | 260 | 104.00 | 315 | 126.00 | 1050 | 420.00 |
| **VI** | **Area expansion /Gap filling of Plantation crops** | | | | | | | | | | | | | | | |

| 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. |
| 36 | Cocoa | Ha | 0.5 | B4 | 2 | 1.00 | 2 | 1.00 | 2 | 1.00 | 2 | 1.00 | 2 | 1.00 | 10 | 5.00 |
| 37 | Cashew | Ha | 0.5 | B4, B7 & B11 | 6 | 3.00 | 6 | 3.00 | 6 | 3.00 | 8 | 4.00 | 8 | 4.00 | 34 | 17.00 |
| 38 | Betelvine | Ha | 0.5 | B10 | 2 | 1.00 | 4 | 2.00 | 6 | 3.00 | 8 | 4.00 | 10 | 5.00 | 30 | 15.00 |
| 39 | Bamboo and Other crops | Ha | 0.6 | B10 | 2 | 1.20 | 2 | 1.20 | 2 | 1.20 | 2 | 1.20 | 2 | 1.20 | 10 | 6.00 |
| **VII** | **Rejuvenation/INM-IPM/Mulching/Anti bird net** | | | | | | | | | | | | | | | |
| 40 | Mango/Cashew - Rejuvenation | Ha | 0.4 | B7 | 1 | 0.40 | 1 | 0.40 | 1 | 0.40 | 1 | 0.40 | 1 | 0.40 | 5 | 2.00 |
| 41 | INM/IPM for Horticultural crops | Ha | 0.04 | B4, B5 & B7 | 3 | 0.12 | 5 | 0.20 | 7 | 0.28 | 10 | 0.40 | 13 | 0.52 | 38 | 1.52 |
| 42 | Mulching | Ha | 0.32 | B4 & B7 | 2 | 0.64 | 0 | 0.00 | 0 | 0.00 | 2 | 0.64 | 0 | 0.00 | 4 | 1.28 |
| 43 | Anti Bird net | 1000 Sq.m | 0.35 | B4 | 2 | 0.70 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 2 | 0.70 |
| **VIII** | **Pollination Support through Bee Keeping** | | | | | | | | | | | | | | | |
| 44 | Bee hive & Colony | No | 0.04 | B3, B7, B8, B9 & B11 | 123 | 4.92 | 123 | 4.92 | 123 | 4.92 | 123 | 4.92 | 128 | 5.12 | 620 | 24.80 |
| 45 | Honey Extractor | No | 0.2 | B3, B7, B8 & B11 | 3 | 0.60 | 3 | 0.60 | 4 | 0.80 | 4 | 0.80 | 5 | 1.00 | 19 | 3.80 |
| **IX** | **Organic Farming** | | | | | | | | | | | | | | | |
| 46 | Organic farming and PGS certification in 50 acre cluster | 1 cluster | 14.95 | B9 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 1 | 14.95 | 1 | 14.95 |
| 47 | HDPE Vermibed | No | 0.16 | B4, B5, B8, B9 & B11 | 4 | 0.64 | 1 | 0.16 | 2 | 0.32 | 3 | 0.48 | 3 | 0.48 | 13 | 2.08 |
| **X** | **Rainfed Area development** | | | | | | | | | | | | | | | |
| 48 | Integrated farming system - Horticulture Based farming | Ha | 0.5 | B4, B5, B7, B8 & B9 | 0 | 0.00 | 1 | 0.50 | 1 | 0.50 | 6 | 3.00 | 7 | 3.50 | 15 | 7.50 |
| 49 | Green manuring | Ha | 0.04 | B4, B7, B8 & B11 | 5 | 0.20 | 7 | 0.28 | 0 | 0.00 | 13 | 0.52 | 10 | 0.40 | 35 | 1.40 |

| 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. |
| 50 | Moisture stress management - Minimum irrigation gurantee by PUSA hydrogel | Ha | 0.1 | B4, B5 & B8 | 5 | 0.50 | 5 | 0.50 | 9 | 0.90 | 9 | 0.90 | 7 | 0.70 | 35 | 3.50 |
| **B** | **Infra structures and Assets creation** | | | | | | | | | | | | | | | |
| I | Protected cultivation | | | | | | | | | | | | | | | |
| 1 | Poly Green House | 1000 Sq.m | 9.35 | All Blocks | 6 | 56.10 | 6 | 56.10 | 5 | 46.75 | 6 | 56.10 | 6 | 56.10 | 29 | 271.15 |
| 2 | Shadenet | 1000 Sq.m | 7.1 | All Blocks except B5 | 5 | 35.50 | 4 | 28.40 | 5 | 35.50 | 4 | 28.40 | 3 | 21.30 | 21 | 149.10 |
| **II** | **Mushroom production** | | | | | | | | | | | | | | | |
| 3 | Mushroom production and compost making | 1 No. | 20 | All Blocks except B9 | 4 | 80.00 | 5 | 100.00 | 7 | 140.00 | 9 | 180.00 | 6 | 120.00 | 31 | 620.00 |
| 4 | Spawn Production | 1 No. | 15 | B8 | 1 | 15.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 1 | 15.00 |
| 5 | Cottage mushroom unit | 1 No. | 1 | B8 | 1 | 1.00 | 0 | 0.00 | 1 | 1.00 | 0 | 0.00 | 1 | 1.00 | 3 | 3.00 |
| **III** | **Vermicompost unit** | | | | | | | | | | | | | | | |
| 6 | Permanent Vermicompost Unit | 600 cu.ft | 1 | All Blocks except B1, B6, B9 & B11 | 1 | 1.00 | 1 | 1.00 | 2 | 2.00 | 4 | 4.00 | 3 | 3.00 | 11 | 11.00 |
| **IV** | **Supporting structures for Horticulture crop production** | | | | | | | | | | | | | | | |
| 7 | Staking/ Trellies/ Propping | Ha | 1 | B3, B7, B8 & B10 | 0 | 0.00 | 3 | 3.00 | 8 | 8.00 | 2 | 2.00 | 5 | 5.00 | 18 | 18.00 |
| 8 | Permanent Pandhal structure | Ha | 4 | All Blocks except B2, B3, B6 & B9 | 1 | 4.00 | 3 | 12.00 | 7 | 28.00 | 5 | 20.00 | 7 | 28.00 | 23 | 92.00 |
| **V** | **District Horticulture information and training centre** | | | | | | | | | | | | | | | |

| 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. |
| **VI** | **Community seed bank** | | | | | | | | | | | | | | | |
| **C** | **Special interventions** | | | | | | | | | | | | | | | |
| 9 | Offseason Annual Moringa production - Pod | Ha | 1.25 | B3, B4, B7, B10 & B11 | 2 | 2.50 | 1 | 1.25 | 4 | 5.00 | 5 | 6.25 | 5 | 6.25 | 17 | 21.25 |
| 10 | Offseason Annual Moringa production -Leaf | Ha | 2 | B6 | 0 | 0.00 | 1 | 2.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 1 | 2.00 |
| 11 | Farm deficiency correction | Ha | 0.04 | All Blocks except B1, B2, B8 & B9 | 310 | 12.40 | 330 | 13.20 | 300 | 12.00 | 300 | 12.00 | 300 | 12.00 | 1540 | 61.60 |
| 12 | Promotion of Roof top Garden/ Potager garden Kit | No | 0.005 | All Blocks except B9 & B11 | 525 | 2.63 | 435 | 2.18 | 435 | 2.18 | 495 | 2.48 | 495 | 2.48 | 2385 | 11.93 |
| 13 | Promotion of Roof top Garden/ Potager garden Kit with shadenet | No | 0.0735 | All Blocks except B9 & B11 | 360 | 26.46 | 260 | 19.11 | 260 | 19.11 | 260 | 19.11 | 260 | 19.11 | 1400 | 102.90 |
| 14 | Banana Bunch Sleeve | Ha | 0.25 | B9 | 10 | 2.50 | 10 | 2.50 | 10 | 2.50 | 10 | 2.50 | 10 | 2.50 | 50 | 12.50 |
| 15 | AESA based IPM in fruits and vegetables Pheramone trap | Ha | 0.04 | All Blocks except B4 | 58 | 2.32 | 58 | 2.32 | 65 | 2.60 | 63 | 2.52 | 63 | 2.52 | 307 | 12.28 |
| 16 | AESA Based IPM in fruits and vegetables Yellow sticky trap | Ha | 0.04 | All Blocks except B4 | 56 | 2.24 | 56 | 2.24 | 63 | 2.52 | 61 | 2.44 | 61 | 2.44 | 297 | 11.88 |
| 17 | AESA Based IPM in fruits and vegetables Light trap | Ha | 0.08 | All Blocks except B4 | 46 | 3.68 | 46 | 3.68 | 48 | 3.84 | 46 | 3.68 | 46 | 3.68 | 232 | 18.56 |
| **D** | **Post Harvest Management** | | | | | | | | | | | | | | | |
| 18 | Pack house (9m X 6m) | 1 No | 4 | All Blocks except B1 & B9 | 5 | 20.00 | 3 | 12.00 | 6 | 24.00 | 7 | 28.00 | 9 | 36.00 | 30 | 120.00 |
| 19 | Low cost onion structure 25 mt | 1 No | 1.75 | B1, B2, B3, B7 & B11 | 2 | 3.50 | 7 | 12.25 | 5 | 8.75 | 6 | 10.50 | 5 | 8.75 | 25 | 43.75 |

| 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. |
| 20 | Drying yard | 1 No | 5 | B1, B3, B4, B6, B7, B8 & B10 | 1 | 5.00 | 1 | 5.00 | 6 | 30.00 | 2 | 10.00 | 5 | 25.00 | 15 | 75.00 |
| 21 | Pre cooling unit 6 mt | 1 No | 25 | B11 | 0 | 0.00 | 0 | 0.00 | 1 | 25.00 | 1 | 25.00 | 1 | 25.00 | 3 | 75.00 |
| 22 | Collection centre | 1 No | 15 | B10 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 1 | 15.00 | 1 | 15.00 |
| **E** | **Development of Farms, Nurseries and Parks** | | | | | | | | | | | | | | | |
| 23 | Developmental activities in new/ exsisting state Horticultural farm, Keelapalur | No | 25 | B7 | 0 | 0.00 | 0 | 0.00 | 1 | 25.00 | 1 | 25.00 | 1 | 25.00 | 3 | 75.00 |
| **F** | **Mechanization - Machineries, Equipments & Tools** | | | | | | | | | | | | | | | |
| 24 | Land development, tillage and seed bed preparation equipments | Nos | 0.3 | B4 & B5 | 0 | 0.00 | 0 | 0.00 | 1 | 0.30 | 1 | 0.30 | 2 | 0.60 | 4 | 1.20 |
| 25 | Manual Sprayer-Knapsack/Foot operated Sprayer | Nos | 0.12 | All Blocks | 50 | 6.00 | 65 | 7.80 | 50 | 6.00 | 52 | 6.24 | 52 | 6.24 | 269 | 32.28 |
| 26 | Tractor Mounted / Operated Sprayer (Below 20HP) | Nos | 0.2 | All Blocks except B7 | 53 | 10.60 | 58 | 11.60 | 65 | 13.00 | 70 | 14.00 | 70 | 14.00 | 316 | 63.20 |
| 27 | Tractor Mounted / Operated Sprayer (Above 20HP) | Nos | 1.26 | All Blocks | 58 | 73.08 | 58 | 73.08 | 65 | 81.90 | 70 | 88.20 | 70 | 88.20 | 321 | 404.46 |
| 28 | Post Hole Digger/Augur, Pneumatic/ other Planter | | 1.26 | B2 & B8 | 50 | 63.00 | 15 | 18.90 | 20 | 25.20 | 25 | 31.50 | 25 | 31.50 | 135 | 170.10 |

| 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. |
| 29 | Fruit Plucker, Tree pruners, Fruit Harvester, Fruit Graders, Track Trolley, Nursery Media Filling Machine, Power operated horticulture tools for pruning, budding, grating, shearing etc. | No | 2.5 | B4, B7 & B11 | 22 | 55.00 | 19 | 47.50 | 11 | 27.50 | 13 | 32.50 | 15 | 37.50 | 80 | 200.00 |
| 30 | Potato planter/Potato harvester / Onion harvester | No | 0.3 | B3, B4, B7, B8, B9 & B11 | 3 | 0.90 | 1 | 0.30 | 3 | 0.90 | 5 | 1.50 | 5 | 1.50 | 17 | 5.10 |
| 31 | Hand operated sprayer with face mask | Nos | 0.025 | All Blocks | 190 | 4.75 | 140 | 3.50 | 140 | 3.50 | 140 | 3.50 | 140 | 3.50 | 750 | 18.75 |
| 32 | Nets for safe harvesting of fruits,Headlights for flower picking | Nos | 0.005 | B4, B7 & B11 | 6 | 0.03 | 5 | 0.03 | 5 | 0.03 | 10 | 0.05 | 10 | 0.05 | 36 | 0.18 |
| 33 | Power operated sprayer | Nos | 0.05 | All Blocks except B5, B7 & B11 | 45 | 2.25 | 40 | 2.00 | 40 | 2.00 | 40 | 2.00 | 40 | 2.00 | 205 | 10.25 |
| 34 | Plastic crates for vegetable & fruits handling | No of sets containing 10 crates | 0.075 | All Blocks | 140 | 10.50 | 145 | 10.88 | 145 | 10.88 | 145 | 10.88 | 145 | 10.88 | 720 | 54.00 |
| 35 | 5 layered Polythene spread sheets for drying horticulture produce | No | 0.16 | B1, B4, B5, B6, B7 & B8 | 4 | 0.64 | 1 | 0.16 | 1 | 0.16 | 8 | 1.28 | 10 | 1.60 | 24 | 3.84 |
| **G** | **Water / Irrigation Management** | | | | | | | | | | | | | | | |
| 36 | Micro Irrigation - Drip | Ha | 1.12 | All Blocks | 183 | 204.96 | 183 | 204.96 | 183 | 204.96 | 183 | 204.96 | 183 | 204.96 | 915 | 1024.80 |

| 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. |
| 37 | Rain gun | Ha | 0.34 | All Blocks | 11 | 3.74 | 11 | 3.74 | 11 | 3.74 | 11 | 3.74 | 11 | 3.74 | 55 | 18.70 |
| 38 | Sprinkler | No | 0.195 | All Blocks | 11 | 2.15 | 11 | 2.15 | 11 | 2.15 | 11 | 2.15 | 11 | 2.15 | 55 | 10.73 |
| 39 | Community Tank / On Farm Pond | No | 20 | B10 | 1 | 20.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 1 | 20.00 |
| 40 | Water harvesting system for individuals | No | 1.5 | All Blocks except B6, B9 & B11 | 4 | 6.00 | 5 | 7.50 | 6 | 9.00 | 9 | 13.50 | 6 | 9.00 | 30 | 45.00 |
| **H** | **Capacity Building** | | | | | | | | | | | | | | | |
| 41 | Training to farmers within the State. 2 days Rs.1000/farmer/day | No | 0.02 | All Blocks | 550 | 11.00 | 550 | 11.00 | 550 | 11.00 | 550 | 11.00 | 550 | 11.00 | 2750 | 55.00 |
| 42 | Training to farmers outside the state. 30 farmers/Batch | No | 0.105 | All Blocks | 330 | 34.65 | 330 | 34.65 | 330 | 34.65 | 330 | 34.65 | 330 | 34.65 | 1650 | 173.25 |
| 43 | Exposure visit to farmers for 5 days. Rs.1000/farmer/day | No | 0.05 | All Blocks | 260 | 13.00 | 265 | 13.25 | 270 | 13.50 | 252 | 12.60 | 255 | 12.75 | 1302 | 65.10 |
| 44 | Training to farmers at HTC | No | 0.0025 | All Blocks except B7 | 285 | 0.71 | 290 | 0.73 | 295 | 0.74 | 305 | 0.76 | 305 | 0.76 | 1480 | 3.70 |
| 45 | Training to staff outside the state / Batch of 5 members | No | 0.04 | All Blocks except B9 | 34 | 1.36 | 34 | 1.36 | 34 | 1.36 | 34 | 1.36 | 34 | 1.36 | 170 | 6.80 |
| 46 | HRD for supervisors and enterpreuners | No | 20 | All Blocks | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 1 | 20.00 | 1 | 20.00 |
| 47 | HRD for gardeners | No | 15 | All Blocks | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 1 | 15.00 | 0 | 0.00 | 1 | 15.00 |
| 48 | District level seminar | No | 2 | All Blocks except B1, B3, B4 & B8 | 2 | 4.00 | 0 | 0.00 | 3 | 6.00 | 1 | 2.00 | 2 | 4.00 | 8 | 16.00 |
| 49 | Computerization & governance | No | 1 | All Blocks | 11 | 11.00 | 12 | 12.00 | 12 | 12.00 | 12 | 12.00 | 12 | 12.00 | 59 | 59.00 |

| 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. |
| 50 | Publicity and Documentation | No | 0.5 | All Blocks | 24 | 12.00 | 24 | 12.00 | 24 | 12.00 | 24 | 12.00 | 24 | 12.00 | 120 | 60.00 |
| **I** | **Crop Insurance and Risk Mitigating schemes** | | | | | | | | | | | | | | | |
| 51 | Crop Insurance | Ha | 0.025 | All Blocks except B4 & B5 | 240 | 6.00 | 255 | 6.38 | 260 | 6.50 | 265 | 6.63 | 280 | 7.00 | 1300 | 32.50 |
| | **Grand Total** | | | | | **1999.87** | | **2146.98** | | **3950.74** | | **4273.11** | | **3100.34** | | **15471.04** |

Arupukottai- B1, Kariapatti – B2, Narikudi – B3, Rajapalayam – B4, M.Reddipatti – B5, Sattur – B6, Sivakasi – B7, Srivilluputhur – B8, Vembakottai – B9, Virudhunagar – B10, Watrap – B11

### 4.3. Agricultural Engineering

Agricultural mechanization is the process whereby equipments, machineries and implements are utilized to boost 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 inorder to ensure performance testing of agricultural machinery and equipment, capacity building of farmers and end users and promoting farm mechanization through demonstrations.
- 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.
- Establishment of Agricultural Engineering Extension centres 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
- Promotion of training to AED engineers onpost-harvest techniques and bio energy

**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 foodgrains 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 ₹. **8960.30** lakhs .

**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 | 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 |
| | **Capacity Building** | | | | | | | | | | | | | | | |
| 1 | **Demonstration of Agricultural Machinery** | All Blocks | No's/Ha | 0.04 | 38 | 1.52 | 39 | 1.56 | 38 | 1.52 | 39 | 1.56 | 39 | 1.56 | 193 | 7.72 |
| 2 | **Training of farmers** | All Blocks | No's/Ha | 0.04 | 170 | 6.80 | 170 | 6.80 | 170 | 6.80 | 170 | 6.80 | 170 | 6.80 | 850 | 34.00 |
| 3 | **Training of Rural Youth in workshops** | All Blocks | No's/Ha | 0.04 | 170 | 6.80 | 170 | 6.80 | 170 | 6.80 | 170 | 6.80 | 170 | 6.80 | 850 | 34.00 |
| 4 | **Demonstration of Post Harvest Technologies** | All Blocks | No's/Ha | 0.04 | 16 | 0.64 | 17 | 0.68 | 17 | 0.68 | 16 | 0.64 | 16 | 0.64 | 82 | 3.28 |
| 5 | **Financial assistance for Post Harvest Equipment** | All Blocks | No's/Ha | 4 | 10 | 40.00 | 2 | 8.00 | 8 | 32.00 | 5 | 20.00 | 4 | 16.00 | 29 | 116.00 |
| 6 | **Financial assistance for Procurement of Agricultural Machinery and Equipment** | | | | | | | | | | | | | | | |
| 7 | **Tractors** | | | | | | | | | | | | | | | |
| 8 | Tractor (15-20 PTO HP) | All Blocks | No's/Ha | 4 | 23 | 92.00 | 21 | 84.00 | 19 | 76.00 | 19 | 76.00 | 18 | 72.00 | 100 | 400.00 |
| 9 | Tractor (Above 20-40 PTO HP) | All Blocks | No's/Ha | 6 | 8 | 48.00 | 7 | 42.00 | 7 | 42.00 | 6 | 36.00 | 7 | 42.00 | 35 | 210.00 |
| 10 | Tractor (40-70 PTO HP) | All Blocks | No's/Ha | 8.5 | 32 | 272.00 | 26 | 221.00 | 26 | 221.00 | 21 | 178.50 | 21 | 178.50 | 126 | 1071.00 |
| 11 | **Power Tillers** | | | | | | | | | | | | | | | |

| 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 |
| 12 | Power Tiller (below 8 BHP) | All Blocks | No's/Ha | 1 | 14 | 14.00 | 12 | 12.00 | 13 | 13.00 | 12 | 12.00 | 13 | 13.00 | 64 | 64.00 |
| 13 | Power Tiller (8 BHP & above) | All Blocks | No's/Ha | 1.75 | 23 | 40.25 | 20 | 35.00 | 18 | 31.50 | 13 | 22.75 | 15 | 26.25 | 89 | 155.75 |
| 14 | **Rice Transplanter** | | | | | | | | | | | | | | | |
| 15 | Self Propelled Rice Transplanter (4 rows) | B10, B11 & B4 | No's/Ha | 2.5 | 2 | 5.00 | 1 | 2.50 | 1 | 2.50 | 1 | 2.50 | 1 | 2.50 | 6 | 15.00 |
| 16 | Self Propelled Rice Transplanter (Above 4-8 rows) | B10, B11 & B4 | No's/Ha | 16 | 1 | 16.00 | 0 | 0.00 | 1 | 16.00 | 0 | 0.00 | 2 | 32.00 | 4 | 64.00 |
| 17 | **Specialized Self Propelled Machinery** | | | | | | | | | | | | | | | |
| 18 | Post Hole Digger / Augur | B10 & B4 | No's/Ha | 0.63 | 1 | 0.63 | 1 | 0.63 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 2 | 1.26 |
| 19 | **Tractor/Power Tiller (below 20 BHP) driven equipments** | | | | | | | | | | | | | | | |
| 20 | **a. Land Development, tillage and seed bed preparation equipments** | | | | | | | | | | | | | | | |
| 21 | MB Plow | All Blocks | No's/Ha | 0.3 | 7 | 2.10 | 7 | 2.10 | 7 | 2.10 | 7 | 2.10 | 7 | 2.10 | 35 | 10.50 |
| 22 | Disc Plow | All Blocks | No's/Ha | 0.3 | 13 | 3.90 | 13 | 3.90 | 13 | 3.90 | 13 | 3.90 | 13 | 3.90 | 65 | 19.50 |
| 23 | Cultivator | All Blocks | No's/Ha | 0.2 | 9 | 1.80 | 9 | 1.80 | 9 | 1.80 | 9 | 1.80 | 9 | 1.80 | 45 | 9.00 |
| 24 | Harrow | B10, B11 & B4 | No's/Ha | 0.6 | 1 | 0.60 | 1 | 0.60 | 1 | 0.60 | 0 | 0.00 | 0 | 0.00 | 3 | 1.80 |
| 25 | Leveler Blade | B10, B11 & B4 | No's/Ha | 0.15 | 1 | 0.15 | 1 | 0.15 | 1 | 0.15 | 0 | 0.00 | 0 | 0.00 | 3 | 0.45 |
| 26 | Rotavator | All Blocks | No's/Ha | 0.35 | 15 | 5.25 | 15 | 5.25 | 15 | 5.25 | 15 | 5.25 | 15 | 5.25 | 75 | 26.25 |

| 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 |
| 27 | **b. Sowing Planting, Reaping and Digging Equipments:** | | | | | | | | | | | | | | | |
| 28 | Post Hole Digger | All Blocks | No's/Ha | 0.8 | 1 | 0.80 | 1 | 0.80 | 1 | 0.80 | 1 | 0.80 | 1 | 0.80 | 5 | 4.00 |
| 29 | Zero till seed cum fertilizer drill | All Blocks | No's/Ha | 0.5 | 3 | 1.50 | 3 | 1.50 | 3 | 1.50 | 3 | 1.50 | 3 | 1.50 | 15 | 7.50 |
| 30 | **c. Inter cultivation Equipments** | | | | | | | | | | | | | | | |
| 31 | Power Weeder (engine operated below 2 BHP) | All Blocks | No's/Ha | 0.25 | 9 | 2.25 | 9 | 2.25 | 9 | 2.25 | 8 | 2.00 | 8 | 2.00 | 43 | 10.75 |
| 32 | **d. Equipment for residue management / hay and forage equipments** | | | | | | | | | | | | | | | |
| 33 | Sugarcane thrash Cutter | B10, B11 & B4 | No's/Ha | 1.5 | 2 | 3.00 | 2 | 3.00 | 2 | 3.00 | 1 | 1.50 | 1 | 1.50 | 8 | 12.00 |
| 34 | **e. Harvesting and Threshing equipments** | | | | | | | | | | | | | | | |
| 35 | Multi crop Threshers | B10, B11 & B4 | No's/Ha | 2.5 | 2 | 5.00 | 2 | 5.00 | 2 | 5.00 | 2 | 5.00 | 2 | 5.00 | 10 | 25.00 |
| 36 | Brush Cutter | All Blocks | No's/Ha | 0.25 | 8 | 2.00 | 8 | 2.00 | 8 | 2.00 | 8 | 2.00 | 8 | 2.00 | 40 | 10.00 |
| 37 | **f. Chaff Cutter (Operated by engine / electric motor below 3 hp and by power tiller and tractor of below 20 BHP tractor)** | All Blocks | No's/Ha | 0.25 | 6 | 1.50 | 6 | 1.50 | 6 | 1.50 | 3 | 0.75 | 3 | 0.75 | 24 | 6.00 |
| 38 | **Tractor (above 20-35 BHP) driven equipments** | | | | | | | | | | | | | | | |

| 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 |
| 39 | **a. Land Development, tillage and seed bed preparation equipments** | | | | | | | | | | | | | | | |
| 40 | MB Plow | All Blocks | No's/Ha | 0.8 | 6 | 4.80 | 6 | 4.80 | 6 | 4.80 | 6 | 4.80 | 6 | 4.80 | 30 | 24.00 |
| 41 | Disc Plow | All Blocks | No's/Ha | 0.4 | 7 | 2.80 | 7 | 2.80 | 7 | 2.80 | 7 | 2.80 | 7 | 2.80 | 35 | 14.00 |
| 42 | Cultivator | All Blocks | No's/Ha | 0.25 | 10 | 2.50 | 10 | 2.50 | 10 | 2.50 | 10 | 2.50 | 10 | 2.50 | 50 | 12.50 |
| 43 | Rotavator | All Blocks | No's/Ha | 0.8 | 18 | 14.40 | 23 | 18.40 | 15 | 12.00 | 13 | 10.40 | 13 | 10.40 | 82 | 65.60 |
| 44 | **b. Sowing, Planting, Reaping and Digging Equipments** | | | | | | | | | | | | | | | |
| 45 | Post Hole digger | All Blocks | No's/Ha | 0.9 | 2 | 1.80 | 2 | 1.80 | 3 | 2.70 | 3 | 2.70 | 1 | 0.90 | 11 | 9.90 |
| 46 | Zero till seed cum fertilizer drill | All Blocks | No's/Ha | 0.6 | 10 | 6.00 | 10 | 6.00 | 6 | 3.60 | 6 | 3.60 | 7 | 4.20 | 39 | 23.40 |
| 47 | Seed drill | B10 & B4 | No's/Ha | 0.5 | 1 | 0.50 | 1 | 0.50 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 2 | 1.00 |
| 48 | **c.Inter Cultivation Equipments** | | | | | | | | | | | | | | | |
| 49 | Power Weeder (engine operated above 2 BHP) | All Blocks | No's/Ha | 0.7 | 10 | 7.00 | 10 | 7.00 | 10 | 7.00 | 10 | 7.00 | 10 | 7.00 | 50 | 35.00 |
| 50 | **d. Equipments for Residue management/Hay and Forage Equipments** | | | | | | | | | | | | | | | |
| 51 | Sugarcane thrash Cutter | B10, B11 & B4 | No's/Ha | 1.75 | 1 | 1.75 | 1 | 1.75 | 1 | 1.75 | 1 | 1.75 | 1 | 1.75 | 5 | 8.75 |
| 52 | **e.Harvesting & Threshing Equipments** | | | | | | | | | | | | | | | |

| 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 |
| 53 | Multi crop Threshers | All Blocks | No's/Ha | 3 | 4 | 12.00 | 4 | 12.00 | 4 | 12.00 | 4 | 12.00 | 4 | 12.00 | 20 | 60.00 |
| 54 | Paddy Thresher | B10, B11 & B4 | No's/Ha | 1.9 | 1 | 1.90 | 1 | 1.90 | 1 | 1.90 | 1 | 1.90 | 1 | 1.90 | 5 | 9.50 |
| 55 | Brush Cutter | All Blocks | No's/Ha | 0.3 | 2 | 0.60 | 2 | 0.60 | 2 | 0.60 | 2 | 0.60 | 2 | 0.60 | 10 | 3.00 |
| 56 | **f.Chaff Cutter (Operated by engine / electric motor above 3-5 hp and by power tiller and tractor of below 35 BHP tractor)** | All Blocks | No's/Ha | 0.4 | 6 | 2.40 | 6 | 2.40 | 5 | 2.00 | 4 | 1.60 | 4 | 1.60 | 25 | 10.00 |
| 57 | **Tractor (above 35 BHP) driven equipments** | | | | | | | | | | | | | | | |
| 58 | **a.Land Development, tillage and seed bed preparation equipments** | | | | | | | | | | | | | | | |
| 59 | MB Plow | All Blocks | No's/Ha | 1 | 16 | 16.00 | 14 | 14.00 | 14 | 14.00 | 12 | 12.00 | 11 | 11.00 | 67 | 67.00 |
| 60 | Disc Plow | All Blocks | No's/Ha | 0.6 | 12 | 7.20 | 11 | 6.60 | 12 | 7.20 | 12 | 7.20 | 11 | 6.60 | 58 | 34.80 |
| 61 | Cultivator | All Blocks | No's/Ha | 0.3 | 17 | 5.10 | 14 | 4.20 | 14 | 4.20 | 15 | 4.50 | 13 | 3.90 | 73 | 21.90 |
| 62 | Harrow | B10, B11 & B4 | No's/Ha | 1 | 1 | 1.00 | 1 | 1.00 | 1 | 1.00 | 1 | 1.00 | 1 | 1.00 | 5 | 5.00 |
| 63 | Leveler Blade | B10, B11 & B4 | No's/Ha | 0.3 | 1 | 0.30 | 1 | 0.30 | 1 | 0.30 | 1 | 0.30 | 1 | 0.30 | 5 | 1.50 |
| 64 | Rotavator | All Blocks | No's/Ha | 0.95 | 73 | 69.35 | 64 | 60.80 | 58 | 55.10 | 49 | 46.55 | 47 | 44.65 | 291 | 276.45 |
| 65 | Reversible Hydraulic plough | All Blocks | No's/Ha | 2 | 8 | 16.00 | 6 | 12.00 | 6 | 12.00 | 6 | 12.00 | 6 | 12.00 | 32 | 64.00 |
| 66 | **b. Sowing Planting, Reaping and Digging Equipments:** | | | | | | | | | | | | | | | |

| 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 |
| 67 | Zero till seed cum fertilizer drill | All Blocks | No's/Ha | 0.7 | 17 | 11.90 | 15 | 10.50 | 17 | 11.90 | 15 | 10.50 | 12 | 8.40 | 76 | 53.20 |
| 68 | Post Hole digger | All Blocks | No's/Ha | 1.05 | 8 | 8.40 | 8 | 8.40 | 7 | 7.35 | 7 | 7.35 | 5 | 5.25 | 35 | 36.75 |
| 69 | **d.Harvesting & Threshing Equipments** | | | | | | | | | | | | | | | |
| 70 | Thresher/Multi Crop threshers | All Blocks | No's/Ha | 4 | 4 | 16.00 | 3 | 12.00 | 3 | 12.00 | 1 | 4.00 | 2 | 8.00 | 13 | 52.00 |
| 71 | **e.Equipments for Residue management/Hay and Forage Equipments** | | | | | | | | | | | | | | | |
| 72 | Coconut Frond chopper | B10, B11 & B4 | No's/Ha | 1.05 | 1 | 1.05 | 1 | 1.05 | 1 | 1.05 | 1 | 1.05 | 1 | 1.05 | 5 | 5.25 |
| 73 | Baler (Rectangular) | B10, B11 & B4 | No's/Ha | 8 | 0 | 0.00 | 0 | 0.00 | 1 | 8.00 | 1 | 8.00 | 1 | 8.00 | 3 | 24.00 |
| 74 | **All Manual/animal drawn equipment/implements / Tools** | | | | | | | | | | | | | | | |
| 75 | Drum Seeder (Above 4 Row) | All Blocks | No's/Ha | 0.15 | 2 | 0.30 | 2 | 0.30 | 2 | 0.30 | 2 | 0.30 | 2 | 0.30 | 10 | 1.50 |
| 76 | Tree climber | All Blocks | No's/Ha | 0.07 | 27 | 1.89 | 17 | 1.19 | 17 | 1.19 | 17 | 1.19 | 12 | 0.84 | 90 | 6.30 |
| 77 | **Plant protection equipments** | | | | | | | | | | | | | | | |
| 78 | Manual sprayer: Knapsack/foot operated sprayer | All Blocks | No's/Ha | 0.015 | 215 | 3.23 | 200 | 3.00 | 190 | 2.85 | 180 | 2.70 | 155 | 2.33 | 940 | 14.10 |
| 79 | Powered Knapsack Sprayer/Power operated Taiwan sprayer (capacity 8-12 lts) | All Blocks | No's/Ha | 0.06 | 83 | 4.98 | 82 | 4.92 | 82 | 4.92 | 62 | 3.72 | 62 | 3.72 | 371 | 22.26 |

| 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 |
| 80 | Powered Knapsack Sprayer/Power operated Taiwan sprayer (capacity above 12-16 lts) | All Blocks | No's/Ha | 0.08 | 64 | 5.12 | 64 | 5.12 | 64 | 5.12 | 51 | 4.08 | 46 | 3.68 | 289 | 23.12 |
| 81 | Powered Knapsack Sprayer/Power operated Taiwan sprayer (capacity above 16 lts) | All Blocks | No's/Ha | 0.1 | 43 | 4.30 | 43 | 4.30 | 39 | 3.90 | 34 | 3.40 | 34 | 3.40 | 193 | 19.30 |
| 82 | Establishment of Farm Machinery Banks for Custom Hiring | All Blocks | No's/Ha | 28 | 10 | 280.00 | 8 | 224.00 | 7 | 196.00 | 4 | 112.00 | 5 | 140.00 | 34 | 952.00 |
| 83 | Establishment of Hi-Tech, High Productive Equipment Hub for Custom Hiring | All blocks except B10,B3 & B2 | No's/Ha | 112 | 2 | 224.00 | 2 | 224.00 | 1 | 112.00 | 1 | 112.00 | 1 | 112.00 | 7 | 784.00 |
| 84 | Promotion of Farm Mechanization in Selected Villages | All Blocks | No's/Ha | 11.5 | 6 | 69.00 | 6 | 69.00 | 6 | 69.00 | 6 | 69.00 | 6 | 69.00 | 30 | 345.00 |
| 85 | Financial assistance for promotion of Mechanized Farming operations | All blocks except B3 | No's/Ha | 0.04 | 240 | 9.60 | 220 | 8.80 | 210 | 8.40 | 200 | 8.00 | 190 | 7.60 | 1060 | 42.40 |
| 86 | **Tractor Hiring Scheme** | | | | | | | | | | | | | | | |
| 87 | Purchase of Tractors for AED | All Blocks | No's/Ha | 8 | 16 | 128.00 | 4 | 32.00 | 4 | 32.00 | 4 | 32.00 | 4 | 32.00 | 32 | 256.00 |
| 88 | Purchase of Tractor drawn implemnets for AED | All Blocks | No's/Ha | 0.5 | 39 | 19.50 | 10 | 5.00 | 10 | 5.00 | 10 | 5.00 | 10 | 5.00 | 79 | 39.50 |
| 89 | Purchase of Bull Dozers for AED | B10 & B4 | No's/Ha | 80 | 3 | 240.00 | 1 | 80.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 4 | 320.00 |

| 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 |
| 90 | Purchase of Paddy Transplanter for AED | All Blocks | No's/Ha | 18 | 10 | 180.00 | 0 | 0.00 | 1 | 18.00 | 0 | 0.00 | 1 | 18.00 | 12 | 216.00 |
| 91 | Purchase of Paddy combine Harvester for AED | B10, B11 & B4 | No's/Ha | 17 | 2 | 34.00 | 2 | 34.00 | 2 | 34.00 | 0 | 0.00 | 0 | 0.00 | 6 | 102.00 |
| 92 | Purchase of Balers for AED | B10, B11 & B4 | No's/Ha | 4.5 | 6 | 27.00 | 0 | 0.00 | 1 | 4.50 | 0 | 0.00 | 2 | 9.00 | 9 | 40.50 |
| 93 | Purchase of Multi Crop Thresher for AED | B10, B11 & B4 | No's/Ha | 3.5 | 5 | 17.50 | 1 | 3.50 | 1 | 3.50 | 0 | 0.00 | 0 | 0.00 | 7 | 24.50 |
| 94 | **Minor Irrigation Scheme** | | | | | | | | | | | | | | | |
| 95 | Purchase of Resitivity Metres for AED | B10 | No's/Ha | 3 | 1 | 3.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 1 | 3.00 |
| 96 | Purchase of Electrical Loggers for AED | B10 | No's/Ha | 7.5 | 1 | 7.50 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 1 | 7.50 |
| 97 | **Solar Energy** | | | | | | | | | | | | | | | |
| 98 | 5 hp | All Blocks | No's/Ha | 3.75 | 61 | 228.75 | 52 | 195.00 | 53 | 198.75 | 50 | 187.50 | 45 | 168.75 | 261 | 978.75 |
| 99 | 7.5 hp | All Blocks | No's/Ha | 5.3 | 18 | 95.40 | 22 | 116.60 | 19 | 100.70 | 14 | 74.20 | 12 | 63.60 | 85 | 450.50 |
| 100 | 10 hp | All Blocks | No's/Ha | 6.75 | 11 | 74.25 | 9 | 60.75 | 9 | 60.75 | 6 | 40.50 | 5 | 33.75 | 40 | 270.00 |
| 101 | upto 200sq.ft | All Blocks | No's/Ha | 2 | 6 | 12.00 | 4 | 8.00 | 3 | 6.00 | 2 | 4.00 | 20 | 40.00 | 35 | 70.00 |
| 102 | upto 400sq.ft | All Blocks | No's/Ha | 4.25 | 9 | 38.25 | 6 | 25.50 | 4 | 17.00 | 6 | 25.50 | 4 | 17.00 | 29 | 123.25 |
| 103 | 400-600sq.ft | All Blocks | No's/Ha | 6.5 | 4 | 26.00 | 2 | 13.00 | 3 | 19.50 | 3 | 19.50 | 1 | 6.50 | 13 | 84.50 |
| 104 | **Any other innovative schemes of AED with Components & its unit cost** | | | | | | | | | | | | | | | |
| 105 | J C B | B10, B11 & B4 | No's/Ha | 28 | 7 | 196.00 | 1 | 28.00 | 1 | 28.00 | 1 | 28.00 | 1 | 28.00 | 11 | 308.00 |

| 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 |
| 106 | **Information Technology (IT) related items** | | | | | | | | | | | | | | | |
| 107 | Computer & its accessories | B10 | No's/Ha | 0.8 | 0 | 0.00 | 1 | 0.80 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 1 | 0.80 |
| 108 | Tablet (Tab) | All Blocks | No's/Ha | 0.25 | 0 | 0.00 | 4 | 1.00 | 4 | 1.00 | 4 | 1.00 | 0 | 0.00 | 12 | 3.00 |
| 109 | Xerox machine | B10, B11 & B4 | No's/Ha | 1.5 | 0 | 0.00 | 1 | 1.50 | 1 | 1.50 | 1 | 1.50 | 0 | 0.00 | 3 | 4.50 |
| 110 | Mecanized row crop cultivation-Pilot mechanization Demonstration | B10, B11 & B4 | No's/Ha | 0.04 | 0 | 0.00 | 2 | 0.08 | 4 | 0.16 | 5 | 0.20 | 0 | 0.00 | 11 | 0.44 |
| 111 | **Post Harvest Technology and Management machinery (PHTM)** | | | | | | | | | | | | | | | |
| 112 | **Self propelled / other power driven Horticultural Machinery** | | | | | | | | | | | | | | | |
| 113 | Chain saw/ Wheel barrow/ Mango grader/ planter and other suitable self propelled machineries and equipments for horticulture Crops | All Blocks | No's/Ha | 1 | 0 | 0.00 | 10 | 10.00 | 10 | 10.00 | 8 | 8.00 | 0 | 0.00 | 28 | 28.00 |
| 114 | **Manual Horticultural Equipments** | | | | | | | | | | | | | | | |
| 115 | Aluminium Ladder/ Ladder | All Blocks | No's/Ha | 0.2 | 0 | 0.00 | 5 | 1.00 | 6 | 1.20 | 10 | 2.00 | 0 | 0.00 | 21 | 4.20 |
| 116 | Aluminium pole | All Blocks | No's/Ha | 0.03 | 0 | 0.00 | 5 | 0.15 | 6 | 0.18 | 10 | 0.30 | 0 | 0.00 | 21 | 0.63 |

| 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 |
| 117 | Plucker | All Blocks | No's/Ha | 0.02 | 0 | 0.00 | 5 | 0.10 | 6 | 0.12 | 10 | 0.20 | 0 | 0.00 | 21 | 0.42 |
| 118 | Post Harvest Equipments for food grains, oil seeds and Horticultural Equipments | | | | | | | | | | | | | | | |
| 119 | Mini Dal Mill | B10 & B4 | No's/Ha | 1.7 | 0 | 0.00 | 0 | 0.00 | 1 | 1.70 | 1 | 1.70 | 0 | 0.00 | 2 | 3.40 |
| 120 | Millet Mill | B10 & B4 | No's/Ha | 1.5 | 0 | 0.00 | 0 | 0.00 | 1 | 1.50 | 1 | 1.50 | 0 | 0.00 | 2 | 3.00 |
| 121 | Oil mill with filter press (for all type of Horticulture / Food grain / Oil seeds crop) | B10 & B4 | No's/Ha | 1.2 | 0 | 0.00 | 0 | 0.00 | 1 | 1.20 | 1 | 1.20 | 0 | 0.00 | 2 | 2.40 |
| 122 | Extractor (for all type of Horticulture / Food grain / Oil seeds crop) | B10 & B4 | No's/Ha | 1 | 0 | 0.00 | 0 | 0.00 | 1 | 1.00 | 1 | 1.00 | 0 | 0.00 | 2 | 2.00 |
| 123 | Packing Machines (for all types of Horticulture / Food grain / Oil seeds crop) | B10 & B4 | No's/Ha | 3 | 0 | 0.00 | 0 | 0.00 | 1 | 3.00 | 2 | 6.00 | 0 | 0.00 | 3 | 9.00 |
| 124 | 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) | B10 & B4 | No's/Ha | 1.2 | 0 | 0.00 | 0 | 0.00 | 2 | 2.40 | 1 | 1.20 | 0 | 0.00 | 3 | 3.60 |
| 125 | All types of Washing Machines (for all | B10 & B4 | No's/Ha | 1.5 | 0 | 0.00 | 1 | 1.50 | 0 | 0.00 | 1 | 1.50 | 0 | 0.00 | 2 | 3.00 |

| 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 |
| | type of Horticulture / Food grain / Oil seed crop) | | | | | | | | | | | | | | | |
| 126 | All types of Grinder/ Pulveriser/ Polisher (for all type of Horticulture / Food grain / Oil seed crop) | B10 | No's/Ha | 0.3 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 1 | 0.30 | 0 | 0.00 | 1 | 0.30 |
| 127 | Construction of Agricultural Engineering Extension centres (AEECs) | B10 & B4 | No's/Ha | 75 | 0 | 0.00 | 1 | 75.00 | 1 | 75.00 | 0 | 0.00 | 0 | 0.00 | 2 | 150.00 |
| 128 | Training of AED Engineers on " Agricultural Processing" and " Bio- Energy" | B10 & B4 | No's/Ha | 0.04 | 0 | 0.00 | 2 | 0.08 | 5 | 0.20 | 2 | 0.08 | 0 | 0.00 | 9 | 0.36 |
| | **Grand total** | | | | | **2713.81** | | **1881.31** | | **1698.94** | | **1316.52** | | **1349.72** | | **8960.30** |

Arupukottai- B1, Kariapatti – B2, Narikudi – B3, Rajapalayam – B4, M.Reddipatti – B5, Sattur – B6, Sivakasi – B7, Srivilluputhur – B8, Vembakottai – B9, Virudhunagar – B10, Watrap – B11

### 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 stake holders *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**

- Promotion of commodity groups and market information
- Post harvest infrastructure and machineries
- Capacity building programmes

**Budget**

The district plan proposes an outlay of **Rs.1209.40** lakhs over a period of five years

**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 Virudhunagar 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 |
| | **Promotion of Commodity Groups and Market Information** | | | | | | | | | | | | | | | |
| 1 | Own building for AGMARK Lab | Nos. | 50 | B2 | 0 | 0.00 | 1 | 50.00 | 0 | 0.00 | | 0.00 | 0 | 0.00 | 1 | 50.00 |
| 2 | Provision of Agmark Lab equipments | Nos. | 0.5 | B2 | 3 | 1.50 | | 0.00 | | 0.00 | | 0.00 | | 0.00 | 3 | 1.50 |
| | **Strengthening of Uzhavar Sandhai and Regulated Market** | | | | | | | | | | | | | | | |
| 3 | Drying Yard | Nos. | 5.5 | All Blocks | 33 | 181.50 | 35 | 192.50 | 33 | 181.50 | 33 | 181.50 | 33 | 181.50 | 167 | 918.50 |
| | **Formation of FPO / Strengthening of Existing Commodity Groups** | | | | | | | | | | | | | | | |
| 4 | FPO | Nos. | 15 | B4, B5, B6, B7 | 0 | 0.00 | 0 | 0.00 | 1 | 15.00 | 1 | 15.00 | 1 | 15.00 | 3 | 45.00 |
| | **Provision of Market Access and Market Activities** | | | | | | | | | | | | | | | |
| 5 | Moisturemeter | Nos. | 0.1 | B1, B2, B3, B6 | 4 | 0.40 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 4 | 0.40 |
| 6 | NIR Analyser | Nos. | 10 | B2 | 1 | 10.00 | | 0.00 | | 0.00 | | 0.00 | | 0.00 | 1 | 10.00 |
| 7 | Plastic crates | Nos. | 0.004 | All Blocks | 1100 | 4.40 | 1100 | 4.40 | 1100 | 4.40 | 0 | 0.00 | 0 | 0.00 | 3300 | 13.20 |
| 8 | Tarpaulin | Nos. | 0.03 | All Blocks | 110 | 3.30 | 165 | 4.95 | 220 | 6.60 | 220 | 6.60 | 275 | 8.25 | 990 | 29.70 |
| 9 | Tinto Meter | Nos. | 5 | B2 | 1 | 5.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 1 | 5.00 |

| 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 |
| 10 | Travelling Microscope. | Nos. | 0.5 | B2 | 0 | 0.00 | 0 | 0.00 | 1 | 0.50 | 0 | 0.00 | 0 | 0.00 | 1 | 0.50 |
| | **Post Harvest Infrastructure and Machinaries** | | | | | | | | | | | | | | | |
| 11 | Coconut Ladder | Nos. | 0.03 | B6, B7 | 100 | 3.00 | 100 | 3.00 | 80 | 2.40 | 60 | 1.80 | 60 | 1.80 | 400 | 12.00 |
| 12 | Millet Mini Mill | Nos. | 10 | B1, B2, B3, B5, B | 5 | 50.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 5 | 50.00 |
| | **Capacity building Programme** | | | | | | | | | | | | | | | |
| 13 | Exposure Visits - within state | Nos. | 0.2 | All Blocks | 31 | 6.20 | 31 | 6.20 | 30 | 6.00 | 10 | 2.00 | 10 | 2.00 | 112 | 22.40 |
| 14 | Exposure Visits - outside state - 3 days | Nos. | 0.6 | All Blocks | 13 | 7.80 | 13 | 7.80 | 3 | 1.80 | 3 | 1.80 | 2 | 1.20 | 34 | 20.40 |
| 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 | 33 | 6.60 | 33 | 6.60 | 33 | 6.60 | 33 | 6.60 | 22 | 4.40 | 154 | 30.80 |
| | **Grand total** | | | | | **279.70** | | **275.45** | | **224.80** | | **215.30** | | **214.15** | | **1209.40** |

B1- Arupukottai, B2-Kariappatti, B3-Narikudi, B4-Rajapalayam, B5-Sattur, B6- Sivakasi, B7-Srivilliputhur, B8-Tiruchuli, B9-Vembakottai, B10-Virudhunagar, B11-Watrap

### 4.5. Seed and Organic Certification

Seed is a critical input for long-term sustained growth of agriculture. Timely availability of certified quality seeds with good yield potential continues to be a decisive factor in agricultural production. Farmers in Tamilnadu state are well aware of the benefits of using quality seeds which include foundation, certified and truthfully labelled seeds. In our State, the seed replacement rate is being adopted as per the guidelines of Government of India. In order to achieve the target of doubling the income of farmers, timely availability of quality seeds is given utmost importance. Concerted efforts are essential in ensuring timely availability of seeds as well as increasing the Seed Replacement Rate (SRR). The National Mission on Seeds has been formulated with a view to upgrade the quality of farm saved seeds and also to enhance Seed Replacement Rate. The Department of Seed Certification & Organic Certification plays the supporting role in the enhancement of Seed Replacement Rate by certifying quality seeds in an increasing trend over the years.

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, and 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**

- Strengthening of Seed Testing laboratories

  Samples received in a seed testing laboratory should be processed through various stages in the laboratory as quickly as possible so that result may be sent to sender promptly. The space provided for seed testing, the arrangement of that space and furnishing available would contribute greatly in the efficient functioning of the

laboratory. In order to carry out seed quality tests and maintaining the purity in the seed testing laboratory the equipments such as blower, conductivity meter, dehuller/scarifier, hot air oven, humidifier, incubator and seed grinder are required.

- Creation of infrastructure facilities in seed testing laboratories

  A laboratory may be a completely separate building, or a part of a larger building housing a department. Regardless of how this space need is met a minimum of 1500 sq. ft. of working space should be provided for the laboratory analyzing about 10000 samples annually. The space provided should be divided into general work areas. These may be completely separate rooms or they may be portions of the same room. The areas to be considered include sample receiving, preparation, purity analysis, germination, seed storage, tags, supplies, mailing, general storage and office with a main objective to occupy large number of samples.

- Capacity building

  Promotion of quality seed production and distribution the training programmes would be organized.The traininghave to be given on seed production to seed producers.

- Strengthening of communication and networking facilities

  Information on quality seed production techniques would be disseminate among the farmers and seed growers.

**Expected outcome**

Enhancement of infrastructure facilities, capacity building, communication and networking would promote the quality of seed and organic certification.

**Budget**

Seed testing plays a pivotal role in modern agriculture. It is being carried out to analyse factors like germination, physical purity, moisture, seed health and admixture of other distinguishable varieties. Seed testing is carried out in the notified seed testing laboratories. The Seed testing results are very important for the successful implementation of Seed Certification and Seed Law Enforcement programmes. Apart from certified seed samples and samples received from the seed quality control wing, the service samples sent by the farmers, seed dealers and seed producers are also tested in these laboratories of Virudhunagar district. The overall budget requirement for implementation of above interventions is ₹**303.57** lakhs.

**Implementing agency**

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

## Table.4.20. Budget requirement for Seed and Organic Certification

**(₹. 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 laboratory facilities** | | | | | | | | | | | | | | | |
| **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 | No's | 13.36 | 0.00 | 0.00 | 1.00 | 13.36 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 13.36 |
| **II** | **Strengthening of communication and networking facilities** | | | | | | | | | | | | | | | |
| **2** | Computer accessories | All Blocks | No's | 0.5 | 15 | 7.50 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 15 | 7.50 |
| **III** | **Capacity Building** | | | | | | | | | | | | | | | |
| **3** | Training to seed producers on seed certification procedures | All Blocks | No's | 0.1 | 0 | 0.00 | 1 | 0.10 | 1 | 0.10 | 1 | 0.10 | 1 | 0.10 | 4 | 0.40 |
| **IV** | **Infrastructure and assets** | | | | | | | | | | | | | | | |
| **4** | Strengthening of office premises by constructing new buildings | All Blocks | m2 | 0.235258 | 0 | 0.00 | 1200 | 282.31 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 1200 | 282.31 |
| | **Grand total** | | | | | **7.50** | | **295.77** | | **0.10** | | **0.10** | | **0.10** | | **303.57** |

Arupukottai- B1, Kariapatti – B2, Narikudi – B3, Rajapalayam – B4, M.Reddipatti – B5, Sattur – B6, Sivakasi – B7, Srivilluputhur – B8, Vembakottai – B9, Virudhunagar – B10, Watrap – B11

### 4.6. Animal husbandry

Livestock have been an integral component of India's agricultural and rural economy since time immemorial, supplying energy for crop production in terms of draught power and organic manure, and in turn deriving their own energy requirements from crop byproducts and residues. Livestock are now more valued as source of food and contribute over one-fourth to the agricultural gross domestic product and engage about 9% of the agricultural labour force. The livestock sector has been growing faster than crop sector; however, in recent years, the growth both in livestock production and productivity has decelerated considerably. India's livestock sector is one of the largest in the world. It has 56.7% of world's buffaloes, 12.5% cattle, 20.4% small ruminants, 2.4% camel, 1.4% equine, 1.5% pigs and 3.1% poultry. In 2010-11, livestock generated outputs worth Rs. 2075 billion which comprised 4% of the GDP and 26% of the agricultural GDP. The total output worth was higher than the value of food grains.

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.

Keeping this view in mind, various major interventions are being planned and proposed in the district agricultural plan to be implemented beyond 12$^{th}$ five year plan. The major interventions are:

1. Increasing the availability of fodder through field level interventions
2. Increasing the availability of fodder by strengthening farm infrastructure
3. Livestock breeding management
4. Livestock health
5. Improving the livestock productivity
6. Improving the service delivery at veterinary institutions
7. Enhancing livestock management
8. Capacity building

**Increasing the availability of fodder through field level interventions**

Livestock rearing is one of the major occupations in India and is making significant contribution to the country's GDP. The livestock population, over the years, has shown a steady growth on broadly two counts i.e. (i) increase in the number of stall feeding based bovine livestock viz. buffaloes and hybrid cattle, and (ii) increase in the number of free grazing based livestock like goats and sheep that can survive on the fast degrading pasturage.The animal husbandry sector has a good growth potential. However, further growth of the sector will be as much dependent upon the availability of fodder.The available data reveals that the present fodder availability in the country is well below requirement. The data also reveals that only about half of the annual fodder requirement is met from the cultivated fodder and crop residues, whereas open grazing and fodder availability from common property resources like forests, pastures, village commons, etc. fulfills the remaining half of the annual fodder requirement. The issue to be taken note of is that it is the open grazing and fodder availability from the common property resources that provides sustenance to a vast majority of households with animal husbandry as the only vocation.

The increasing number of livestock and the changing dynamics of animal husbandry practices require corresponding increase in the type of fodder needed to meet the requirements of these new situations. To overcome these issues the following field level interventions are proposed to improve the fodder availability.

1. Establishment of vermicomposting unit
2. Distribution of Azolla trays
3. Fodder plot development
4. Meichal land development
5. Distribution of seedlings, sprinklers, grass cutter and raingun to the farmers
6. Development of seed production plots

**Increasing the availability of fodder by strengthening farm infrastructure**

The livestock sector is handicapped due to inadequate infrastructure facilities as a result of low productivity. Infrastructure development for animal husbandry is felt essential to provide the desired veterinary services in the interior pockets of the districts so as to enable the livestock owners living in the remote areas can avail the opportunities to consider AH activities as livelihood option and maximize profit through livestock sector. 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 infrastructures. 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 following infrastructure facilities will strengthen the fodder availability such as

1. Establishment of farm production cover
2. Construction of silo pit and overhead tanks
3. Establishment of feed mixing units
4. Installation of rain gun and sprinklers
5. Procurement of agri inputs

**Livestock breeding management**

Over the past few decades, imported exotic cow varieties have gain a boost in milk production in Tamil Nadu. Most of the cattle breeds are exotic. These breeds theoretically produce a lot of milk, but are not well-adapted to our conditions. About 69% of Indian cows are owned by the economically poor strata of the society. These folks cannot afford to house these exotic breeds in regulated climate conditions.

The average milk yield per animal in India is just 3.2 kgs, compared to a global average of 6.6 kgs. The dairy policy and outlook is highly outdated and needs to be replaced with modern, evidence-based thinking

Livestock industry continues to demonstrate a beneficial impact on rural people by improving their income, employment and consumption and thereby acting as a potential tool in alleviating rural poverty. Artificial insemination (AI) has proven to be very effective for the improvement of the genetic potential of animals for higher production and there is no surprise why today AI is the back bone of all breeding programmes in India. The replacement of

unproductive and aged animals in the herd and its expansion are very important to maintain the scale of economy of the farm. Augmentation of fertility in repeat breeders and sex-sorted semen are some of the modern scientific tools which have been proposed to be employed for effective breeding management to enhance the livestock fertility and productivity. The following interventions will help to improve livestock breeding management, such as

1. CIDR
2. Establishment and distribution of sex-sorted semen facility
3. Establishment of IVF lab
4. Establishment of LN2 and embryo transfer lab
5. Oestrous synchronization

**Livestock health**

A large number of infectious and metabolic diseases prevalent in Indian livestock have serious implication for animal productivity, export potential and safety/ quality of livestock products and many of these diseases have zoonotic implications. The current efforts of prevention and control of livestock diseases needs to be strengthened. There is a shortage of veterinary and Para-veterinary manpower and facilities including mechanisms for diagnosis, treatment, tracking and prevention of the diseases. Adequate infrastructure for ensuring bio-security, proper quarantine systems and services to prevent the ingress of diseases across the states and national borders is not available. By providing the following facilities will prevent the above diseases such as

1. Upgradation of vaccine production facilities for bacteria and virus
2. Procurement of vaccines, medicine, diagnostic kit
3. Animal quarantine facility in govt. farm
4. Animal testing facility

**Improving the livestock productivity**

Although India is a major producer of livestock products the average productivity of livestock is lower compared to world average. Inadequate availability of feed and fodder, insufficient coverage through artificial insemination, low conception rates, non-availability of quality males for breeding, poor management practices, high mortality and morbidity losses due to diseases, inadequate marketing infrastructure and unorganized marketing are the

other major concerns. To maximize the livestock productivity the following activities should be implement. Intervention proposed are

1. Distribution of sheep, goat, buffalo, piggery, poultry units
2. Establishment of modern poultry, rabbit , piggery, sheep, goat and bull shed
3. Popularizing quail rearing
4. Integrated farming

**Improving the service delivery at veterinary institutions**

Veterinary hospitals, dispensaries, Aid Centers, diagnostic laboratories and veterinary manpower already available are much less than what is required. These services would be improved and expanded and will continue to be provided by the state owned facilities with an appropriate system of recovery of cost wherever feasible. Private investment to improve delivery of animal health services including facilities by private veterinary graduates would be encouraged. Mobile veterinary dispensaries with provision for vaccination and facilities to generate awareness of farmers regarding various livestock management issues would be promoted to improve outreach. For companion animals, state governments may consider to extend the veterinary services on full cost recovery basis. To improve the service delivery the below mentioned intervention have been proposed.

1. Deep freezer facility for storage of vaccines and medicines
2. Establishment of infrastructure facilities, disease diagnostic lab, mobile veterinary units, surgical theaters and ambulance facilities.

**Enhancing livestock management**

The country has rich and diverse genetic resources of livestock in the form of a large number of species, breeds, and strains within a species. India has some of the best breeds of cattle and buffaloes with traits for dairy, draught power and dual purposes, several carpet wool breeds of sheep, highly prolific breeds of goats and adaptive breeds of poultry.Such utility genes and breeds would be identified, conserved and utilized for breeding and research. The focus would be on conservation of indigenous breeds of livestock and poultry. By developing slaughter house, livestock shandy also be helpful to enhancing livestock management. The following interventions are proposed

1. Animal identification and traceability
2. Conservation of indigenous breeds
3. Improvement of livestock shandy
4. Establishment of slaughter house

**Capacity building**

Educating the farmers about the advanced crop production technologies as well as the techniques will enrich the knowledge of farmers through conduct of trainings and demonstrations to the farmers, youths and young entrepreneurs. On farm demonstrations are conducted on fodder production technologies, seed production, poultry farming and sheep farming etc.

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. To create awareness among the farmers the following trainings and campaigns have to be conducted by establishment of farmers training Centre

1. Conducting demonstrations camps and campaigns
2. Creating awareness of livestock management to the farmers through training programmes.

**Budget allocation**

The major themes proposed in the plan for animal husbandry sector with a total budget out lay of.**₹6552.25 lakhs**

**Project implementing agency**

The projects proposed will be implemented by the Department of Animal husbandry sector.

**Table. 4.21. Budget requirement for Animal Husbandry**

**(₹. 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 |
| | **Increasing the Availability of Fodder through Field level Interventions** | | | | | | | | | | | | | | | |
| 1 | Establishment of Vermicomposting unit (single bed) | Nos | 0.06 | All Blocks | 32 | 1.92 | 22 | 1.32 | 22 | 1.32 | 22 | 1.32 | 33 | 1.98 | 131 | 7.86 |
| 2 | Fodder production to the farmers by Hydrophonic methods | Nos | 20 | B3 | 0 | 0.00 | 0 | 0.00 | 1 | 20.00 | 0 | 0.00 | 0 | 0.00 | 1 | 20.00 |
| 3 | Distrbution of Azolla trays | Nos | 0.04403 | All Blocks Except B3, B9 | 135 | 5.94 | 135 | 5.94 | 130 | 5.72 | 135 | 5.94 | 135 | 5.94 | 670 | 29.50 |
| 4 | Distribution of Silage bags for conservation of fodder crops | Nos | 0.005 | All Blocks | 110 | 0.55 | 105 | 0.53 | 104 | 0.52 | 104 | 0.52 | 104 | 0.52 | 527 | 2.64 |
| 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 | 0.1 | All Blocks except B10 | 36 | 3.60 | 10 | 1.00 | 65 | 6.50 | 19 | 1.90 | 79 | 7.90 | 209 | 20.90 |
| 7 | Distribution of Chaff Cutter to farmers | Nos | 0.25 | All Blocks | 74 | 18.50 | 82 | 20.50 | 82 | 20.50 | 62 | 15.50 | 44 | 11.00 | 344 | 86.00 |
| 8 | Distribution of Grass Cutter to farmers | Nos | 0.2 | All Blocks | 52 | 10.40 | 68 | 13.60 | 64 | 12.80 | 38 | 7.60 | 34 | 6.80 | 256 | 51.20 |
| 9 | Distribution of Raingun to Livestock farmers | Nos | 0.25 | All Blocks | 80 | 20.00 | 82 | 20.50 | 80 | 20.00 | 80 | 20.00 | 80 | 20.00 | 402 | 100.50 |
| 10 | Distribution of Tree Seedlings to livestock farmers | Nos | 0.004 | All Blocks except B11 | 500 | 2.00 | 500 | 2.00 | 500 | 2.00 | 500 | 2.00 | 500 | 2.00 | 2500 | 10.00 |
| 11 | Distribution of sprinkler for fodder production | Nos | 0.15 | All Blocks | 110 | 16.50 | 110 | 16.50 | 110 | 16.50 | 110 | 16.50 | 110 | 16.50 | 550 | 82.50 |
| | **Increasing the Availability of Fodder by Strengthening Farm Infrastructure** | | | | | | | | | | | | | | | |
| 12 | Establishment of Vermicompost unit (10 beds) at Farms | Nos | 4 | B5 | 1 | 4.00 | 1 | 4.00 | 1 | 4.00 | 1 | 4.00 | 1 | 4.00 | 5 | 20.00 |

| 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 |
| 13 | Erection of Transformers to improve irrigation facility in Govt.farm | Nos | 30 | B5 | 0 | 0.00 | 1 | 30.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 1 | 30.00 |
| 14 | Establishment of Farm Protection Cover (Bio-security wall) | km | 5 | B5 | 5 | 25.00 | 5 | 25.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 10 | 50.00 |
| 15 | Establishment of Feed mixing/ feed block units | Nos | 25 | B5 | 0 | 0.00 | 1 | 25.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 1 | 25.00 |
| 16 | Construction of silo Pit for livestock farm | Nos | 1 | B5 | 2 | 2.00 | 2 | 2.00 | 2 | 2.00 | 2 | 2.00 | 2 | 2.00 | 10 | 10.00 |
| 17 | Construction of Over Head Tanks/ GLR / Pre-fabricated tanks in farm | Nos | 20 | B5 | 0 | 0.00 | 2 | 40.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 2 | 40.00 |
| 18 | Drip irrigation for livestock farms | acre | 0.6 | B5 | 30 | 18.00 | 30 | 18.00 | 30 | 18.00 | 0 | 0.00 | 0 | 0.00 | 90 | 54.00 |
| 19 | Borewell for livestock farms | Nos | 8 | B5 | 4 | 32.00 | 4 | 32.00 | 4 | 32.00 | 0 | 0.00 | 0 | 0.00 | 12 | 96.00 |
| 20 | Installation of Raingun in Govt.farm in cultivated areas | acre | 0.4 | B5 | 10 | 4.00 | 10 | 4.00 | 10 | 4.00 | 0 | 0.00 | 0 | 0.00 | 30 | 12.00 |
| 21 | Installation of Sprinkler system in fodder cultivated areas in Govt.farm | acre | 0.4 | B5 | 10 | 4.00 | 10 | 4.00 | 10 | 4.00 | 0 | 0.00 | 0 | 0.00 | 30 | 12.00 |
| 22 | Procurement of Agri inputs for Farms | acre | 0.15 | B5 | 50 | 7.50 | 50 | 7.50 | 50 | 7.50 | 0 | 0.00 | 0 | 0.00 | 150 | 22.50 |
| 23 | Procurement of Agricultural implements (tractor, trailers, harvesters, ploughs, chaff cutter, grass cutter etc) | Pack | 50 | B5 | 1 | 50.00 | 1 | 50.00 | 1 | 50.00 | 1 | 50.00 | 1 | 50.00 | 5 | 250.00 |
| | **Livestock Breeding Management** | | | | | | | | | | | | | | | |
| 24 | CIDR (Controlled Internal Drug Release) for increasing Fertility in Cattle | Nos | 0.01 | B2, B5, B8 | 30 | 0.30 | 40 | 0.40 | 30 | 0.30 | 40 | 0.40 | 30 | 0.30 | 170 | 1.70 |
| 25 | Induction of new Genetic Pool | Nos | 0.2 | B5 | 50 | 10.00 | 50 | 10.00 | 50 | 10.00 | 50 | 10.00 | 50 | 10.00 | 250 | 50.00 |
| 26 | Oestrous Synchronisation for timely conception in animals | Nos | 0.01 | All Blocks | 240 | 2.40 | 230 | 2.30 | 240 | 2.40 | 230 | 2.30 | 230 | 2.30 | 1170 | 11.70 |

| 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 |
| | **Livestock Health** | | | | | | | | | | | | | | | |
| 27 | Animal Quarantine Facility in Govt.farm to prevent disease outbreak | Nos | 30 | B5 | 1 | 30.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 1 | 30.00 |
| | **Improving the Livestock Productivity** | | | | | | | | | | | | | | | |
| 28 | Distibution of Sheep/Goat units -semi intensive system | Nos | 0.6 | All Blocks | 88 | 52.80 | 79 | 47.40 | 76 | 45.60 | 77 | 46.20 | 76 | 45.60 | 396 | 237.60 |
| 29 | Distribution of Buffalo units(5 Buffaloes) | Nos | 4.5 | All Blocks | 93 | 418.50 | 100 | 450.00 | 90 | 405.00 | 90 | 405.00 | 90 | 405.00 | 463 | 2083.50 |
| 30 | 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 |
| 31 | 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 |
| 32 | Establishment of disposal pits for poultry unit | Nos | 1 | All Blocks | 25 | 25.00 | 25 | 25.00 | 25 | 25.00 | 25 | 25.00 | 25 | 25.00 | 125 | 125.00 |
| 33 | Distribution of Piggery units (fattening-5 Nos) | Nos | 1.25 | All Blocks | 50 | 62.50 | 56 | 70.00 | 50 | 62.50 | 56 | 70.00 | 50 | 62.50 | 262 | 327.50 |
| 34 | Starting of Rural Backyard Poultry Scheme (50) to unemployed | Nos | 0.025 | All Blocks | 600 | 15.00 | 600 | 15.00 | 600 | 15.00 | 600 | 15.00 | 600 | 15.00 | 3000 | 75.00 |
| 35 | Establishment of Rabbit Units | Nos | 0.03 | All Blocks | 75 | 2.25 | 20 | 0.60 | 55 | 1.65 | 40 | 1.20 | 55 | 1.65 | 245 | 7.35 |
| 36 | Establishment of Modern Sheep/Goat Shed | Nos | 50 | B5 | 1 | 50.00 | 0 | 0.00 | 0 | 0.00 | 1 | 50.00 | 0 | 0.00 | 2 | 100.00 |
| | **Improving the Service Delivery at Veterinary Institutions** | | | | | | | | | | | | | | | |
| 37 | Deep freezer facility for Storage of vaccines and Medicines | Nos | 10 | All Blocks | 0 | 0.00 | 0 | 0.00 | 11 | 110.00 | 0 | 0.00 | 0 | 0.00 | 11 | 110.00 |
| 38 | Establishment of Infrastructure facilities for Veterinary Institutions | Nos | 30 | All Blocks | 12 | 360.00 | 11 | 330.00 | 2 | 60.00 | 1 | 30.00 | 0 | 0.00 | 26 | 780.00 |
| 39 | Establishment of Mobile Disease Diagnostic Labs | Nos | 20 | B2, B3, B4 | 3 | 60.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 3 | 60.00 |

| 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 |
| 40 | Establishment of Mobile Veterinary Units | Nos | 10 | All Blocks | 9 | 90.00 | 2 | 20.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 11 | 110.00 |
| 41 | Establishment of surgical theatres at veterinary institution | Nos | 30 | All Blocks | 2 | 60.00 | 2 | 60.00 | 2 | 60.00 | 3 | 90.00 | 2 | 60.00 | 11 | 330.00 |
| 42 | Providing solar lighting panels at veterinary institution | Nos | 1 | B1, B3, B9 | 16 | 16.00 | 0 | 0.00 | 0 | 0.00 | 10 | 10.00 | 0 | 0.00 | 26 | 26.00 |
| 43 | Package of Modern Veterinary Diagnostic Aids to Veterinary Institutions such as Computerised X rays, Ultrasound, Diathermy etc. | Nos | 30 | All Blocks | 2 | 60.00 | 2 | 60.00 | 2 | 60.00 | 3 | 90.00 | 2 | 60.00 | 11 | 330.00 |
| 44 | Establishment of Ambulance facility for animals | Nos | 80 | B10 | 1 | 80.00 | 1 | 80.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 2 | 160.00 |
| | **Livestock Management** | | | | | | | | | | | | | | | |
| 45 | 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 |
| 46 | 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** | | | | | | | | | | | | | | | |
| 47 | Establishment of Farmers training Centre | Nos | 200 | B10 | 0 | 0.00 | 1 | 200.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 1 | 200.00 |
| 48 | Conducting Demonstrations, Camps and Campaigns | Nos | 0.1 | B3 | 2 | 0.20 | 2 | 0.20 | 2 | 0.20 | 2 | 0.20 | 2 | 0.20 | 10 | 1.00 |
| 49 | Creating awarness of livestock management to the farmers through Training Programmes | Nos | 0.1 | All Blocks | 32 | 3.20 | 33 | 3.30 | 32 | 3.20 | 33 | 3.30 | 33 | 3.30 | 163 | 16.30 |
| | **Grand total** | | | | | **1719.06** | | **1765.59** | | **1156.21** | | **1033.88** | | **877.49** | | **6552.25** |

Arupukottai- B1, Kariapatti – B2, Narikudi – B3, Rajapalayam – B4, M.Reddipatti – B5, Sattur – B6, Sivakasi – B7, Srivilluputhur – B8, Vembakottai – B9, Virudhunagar – B10, Watrap – B11

## 4.7. Dairy development

The importance of dairying in a country like India hardly needs emphasize. India has vast resources of livestock, which play an important role in the national economy and also in the socioeconomic development of millions of rural households. India has one of the largest stocks of cattle and buffaloes: more than 50 percent of the world's buffaloes and 20 percent of its cattle.

Dairy sector acts as an important source of income for rural families, plays a vital role in providing gainful employment and income generating opportunities in the district. Dairy industry in the country is expected to witness spectacular growth in 2017, according to experts.

During the last 10 years, the annual growth rate in Indian dairy industry is 4.6 per cent as compared to the global growth rate of 2.2 per cent. During this period, per capita consumption of milk in the country was 340 g a day as against 299 g globally. “India’s milk production has touched 155.4 metric tonnes during 2015-16. Consumption is increasing at a faster rate. However in the country more than 90 per cent of the dairying is at the subsistence level so the emerging trends have to increase the county’s milk production moreover. To fulfill the shortage in dairy sector the following interventions have been suggested.

### Strengthening of milk storages and processing units

Clean milk production is a concept being used everywhere, where quality of milk has become prime importance. It has to be maintained throughout the milk supply chain right from the dairy farm environment to cooling & storage to its packaging. 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 storage tanks, washer, coolers, pumps and processing equipment’s. Except for this some electrical installation also required to provide proper storage facilities.

The major interventions are,

1. Milk storage tanks of various capacities
2. Milk tankers
3. Milk pumps

4. Processing equipment's
5. Pasteurizers
6. Heaters and chillers
7. Washer and conveyors
8. Pipes and fittings
9. Cleaning equipment's
10. Electrical installations (UPS, generators, stabilizers, control panel)

**Enhancing milk production and milk processing units**

The quality of animals is critical in determining its milk productivity and hence overall production. Currently, low productivity per animal hinders development of the dairy sector. Despite being the world's largest milk producer, India's productivity per animal is very low, at 987 kg per lactation, compared with the global average of 2038 kg per lactation.

The low productivity is a result of ineffective cattle and buffalo breeding programmes, limited extension and management on dairy enterprise development, traditional feeding practices that are not based on scientific feeding methods, and limited availability and affordability of quality feed and fodder. Animal health and breeding services provision, veterinary infrastructure development and vaccinations are the responsibility of the state government. These services have traditionally been provided for free or at a very subsidized rate but in the past few years it has been payable. State livestock development agencies are being set up as autonomous bodies to offer services in animal breeding in the form of procurement, production and distribution of breeding inputs (such as semen and liquid nitrogen), training and promotional activities. Despite these initiatives, the availability of services remains limited and extension activities in dairy management are woefully lacking. Let to get a better improvement in milk production than before the following inputs have been suggested.

1. Provision of veterinary medicine
2. Fodder development equipment and seed material
3. Milk testing equipment's
4. Equipments for artificial insemination
5. Milk society buildings and cow shed
6. Cryogenic containers
7. Weighing machines
8. Computer accessories

**Capacity building**

India is the largest milk producer in the world with an annual production of over 155.4metric tonnes of milk, yet the sector faces numerous issues. One of the major challenges facing the dairy sector is the growing gap between milk supply and demand. Another major challenge arises from the fact that more than 92 percent of the animals are owned by smallholders who had little ownership of land to manage them. The small farmers do not have sufficient resources and lack training in dairy sector that leads to poor animal health and low milk yield. Furthermore, the small farmers lack knowledge of modern breeding practices. To make the farmers as scholars in particular thing some trainings and camps has to be conducted. To make sure this the following intervention has been proposed.

1. Training of personnel of MPCS, Union and federation
2. Infertility camps

**Marketing structures**

Marketing is generally defined as the process of planning and executing the conception, pricing, promotion, and distribution of ideas, goods, and services to create exchanges that satisfy individual and organizational objectives. The word Dairy marketing means where the milk is kept and marketed. Dairy marketing truly came into the public consciousness with the introduction of the “Got milk” campaign in 1993. Marketing plays a vital role not only in stimulating production and consumption, but also in accelerating the pace of economic development. An efficient marketing system minimizes costs, increases returns to farmers by reducing the number of middlemen or by restricting the commission of marketing system. To increase the income in dairy sector suitable marketing structure is vital. For that the following structures have been suggested

1. Parlour structure
2. Milk product storage cabinets
3. Product billing system

**Quality control**

Quality is a vital ingredient of a good brand. Remember the “core benefits” – the things consumers expect. These must be delivered well. To ensure the quality the following interventions have been suggested

1. Adulteration detection equipments
2. Milk testing equipment and laboratory

**Processing and value addition**

Adding value to farm and livestock products before they reach the local and international market is one of the key aims of Vision 2030. Product diversification has become an important aspect of business strategy with reasons for this increased focus being increased profitability, reduction in risk, increasing competition, higher growth and more efficient resource allocation. Value addition in the dairy value chain is still a challenge in our country.Value addition has been hailed as one of the solutions to the perishability challenge of milk by converting it to a more durable form and hence reducing farm losses. But only few of them undertake the value addition In India. To maximize the value addition in rural areas the following interventions have been suggested

1. Skim milk powder plant
2. Dairy processing plants
3. Water and effluent treatment plants
4. Steam raisning plant
5. Fat handling and other dairy equipment's

**Development for 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. Providing proper infrastructure to the veterinary health care institutions is necessary for the timely diagnosis and treatment of animal diseases.An efficient management of cattle will be incomplete without a well-planned and adequate housing of cattle. Good quality milk is essential for production of good quality dairy products, taste and flavor, free from pathogens and long keeping quality. Immediately after milking, the milk must be cooled preferably to 4° C. This requires mechanical refrigeration or milk cooling tanks. These are expensive and can usually be afforded by large scale commercial farms. For small scale dairy farmers, setting up a milk cooling centre centrally may be the ideal solution. The following buildings have been proposed for better storage and improvement

1. Construction of dairy farm and skim milk powder plant
2. BMC building
3. Cattle feed plants
4. Ware house for dairy products
5. Ice cream manufacturing buildings.

**Budget allocation**

An outlay of Rs.**7288.75** lakhs is proposed to fulfill the aforementioned interventions for five years.

**Implementing agency**

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

## Table.4.22. Budget Requirement for Dairy Development

**(₹. in lakhs)**

| Sl. No. | Intervention | 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 |
| | **Engineering section** | | | | | | | | | | | | | | | |
| 1 | Electrical installation like Tranformemr, UPS, Stabilisers, Control Panel MCC etc., | All blocks | 1 | 25 | 1 | 25.00 | 0 | 0.00 | 1 | 25.00 | 0 | 0.00 | 1 | 25.00 | 3 | 75.00 |
| 2 | Milk Storage Tanks of various capacities | All blocks | 1 | 15 | 0 | 0.00 | 2 | 30.00 | 0 | 0.00 | 2 | 30.00 | 0 | 0.00 | 4 | 60.00 |
| 3 | Tub washer, Canwashers, Crate conveyor systems. | All blocks | 1 | 10 | 1 | 10.00 | 0 | 0.00 | 1 | 10.00 | 0 | 0.00 | 0 | 0.00 | 2 | 20.00 |
| 4 | SS pipes and fittings | All blocks | 1 | 5 | 1 | 5.00 | 1 | 5.00 | 1 | 5.00 | 1 | 5.00 | 1 | 5.00 | 5 | 25.00 |
| 5 | Solar system for water heating | All blocks | 1 | 2 | 3 | 6.00 | 3 | 6.00 | 3 | 6.00 | 3 | 6.00 | 3 | 6.00 | 15 | 30.00 |
| 6 | Packing Machineries for milk, Butter, Ghee, SMP and Other Milk products | All blocks | 1 | 18 | 0 | 0.00 | 1 | 18.00 | 0 | 0.00 | 1 | 18.00 | 0 | 0.00 | 2 | 36.00 |
| 7 | Plate Heat type Chillers and pasteurizers | All blocks | 1 | 10 | 1 | 10.00 | 0 | 0.00 | 0 | 0.00 | 1 | 10.00 | 0 | 0.00 | 2 | 20.00 |
| 8 | Milk Tankers of various capacities | All blocks | 1 | 25 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 2 | 50.00 | 0 | 0.00 | 2 | 50.00 |
| 9 | Milk Pumps of Vaious capacities | All blocks | 1 | 0.5 | 3 | 1.50 | 3 | 1.50 | 3 | 1.50 | 3 | 1.50 | 3 | 1.50 | 15 | 7.50 |
| 10 | Generator of various capacities | All blocks | 1 | 20 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 2 | 40.00 | 2 | 40.00 |

| Sl. No. | Intervention | 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 |
| 11 | Curd processing equipments | All blocks | 1 | 50 | 0 | 0.00 | 0 | 0.00 | 2 | 100.00 | 0 | 0.00 | 0 | 0.00 | 2 | 100.00 |
| 12 | Cleaning In Place equipments with accessories | All blocks | 1 | 75 | 0 | 0.00 | 0 | 0.00 | 2 | 150.00 | 0 | 0.00 | 0 | 0.00 | 2 | 150.00 |
| | **Procurement and Input** | | | | | | | | | | | | | | | |
| 13 | Veterinary Medicine | All blocks | 1 | 2 | 4 | 8.00 | 4 | 8.00 | 4 | 8.00 | 4 | 8.00 | 4 | 8.00 | 20 | 40.00 |
| 14 | Two wheeler for AI technician | All blocks | 1 | 0.5 | 5 | 2.50 | 5 | 2.50 | 5 | 2.50 | 5 | 2.50 | 5 | 2.50 | 25 | 12.50 |
| 15 | Computer system with accessories | All blocks | 1 | 0.5 | 5 | 2.50 | 5 | 2.50 | 5 | 2.50 | 5 | 2.50 | 5 | 2.50 | 25 | 12.50 |
| 16 | Fodder seed materials | All blocks | 1 | 0.25 | 7 | 1.75 | 7 | 1.75 | 7 | 1.75 | 7 | 1.75 | 7 | 1.75 | 35 | 8.75 |
| 17 | Fodder development equipments like chaff cutter, Mower etc., | All blocks | 1 | 0.2 | 9 | 1.80 | 9 | 1.80 | 9 | 1.80 | 9 | 1.80 | 9 | 1.80 | 45 | 9.00 |
| 18 | Bulk Milk coolers of Various capacities | All blocks | 1 | 15 | 1 | 15.00 | 1 | 15.00 | 1 | 15.00 | 1 | 15.00 | 1 | 15.00 | 5 | 75.00 |
| 19 | Milk cans | All blocks | 1 | 0.035 | 300 | 10.50 | 300 | 10.50 | 300 | 10.50 | 300 | 10.50 | 300 | 10.50 | 1500 | 52.50 |
| 20 | Electronic milk testing equipments | All blocks | 1 | 1.25 | 5 | 6.25 | 5 | 6.25 | 5 | 6.25 | 5 | 6.25 | 5 | 6.25 | 25 | 31.25 |
| 21 | Milking machine | All blocks | 1 | 0.8 | 5 | 4.00 | 5 | 4.00 | 5 | 4.00 | 5 | 4.00 | 5 | 4.00 | 25 | 20.00 |
| 22 | Cow shed | All blocks | 1 | 5 | 5 | 25.00 | 5 | 25.00 | 5 | 25.00 | 5 | 25.00 | 5 | 25.00 | 25 | 125.00 |
| 23 | Society Buildings | All blocks | 1 | 20 | 2 | 40.00 | 2 | 40.00 | 2 | 40.00 | 2 | 40.00 | 2 | 40.00 | 10 | 200.00 |
| 24 | Cryogenic containers | All blocks | 1 | 0.35 | 5 | 1.75 | 5 | 1.75 | 5 | 1.75 | 5 | 1.75 | 5 | 1.75 | 25 | 8.75 |

| Sl. No. | Intervention | 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 |
| 25 | Equipments for Artificial Insemination | All blocks | 1 | 0.5 | 4 | 2.00 | 4 | 2.00 | 4 | 2.00 | 4 | 2.00 | 4 | 2.00 | 20 | 10.00 |
| | **Capacity building** | | | | | | | | | | | | | | | |
| 26 | Training of personnel of MPCS, Union and Federation. | All blocks | 1 | 0.05 | 100 | 5.00 | 100 | 5.00 | 100 | 5.00 | 100 | 5.00 | 100 | 5.00 | 500 | 25.00 |
| 27 | Infertility Camps | All blocks | 1 | 0.2 | 50 | 10.00 | 50 | 10.00 | 50 | 10.00 | 50 | 10.00 | 50 | 10.00 | 250 | 50.00 |
| | **Marketing** | | | | | | | | | | | | | | | |
| 28 | Parlour structures | All blocks | 1 | 5 | 5 | 25.00 | 5 | 25.00 | 5 | 25.00 | 5 | 25.00 | 5 | 25.00 | 25 | 125.00 |
| 29 | Milk product storage cabinets | All blocks | 1 | 0.3 | 100 | 30.00 | 100 | 30.00 | 100 | 30.00 | 100 | 30.00 | 100 | 30.00 | 500 | 150.00 |
| | **Quality control** | | | | | | | | | | | | | | | |
| 30 | Adulteration detection equipments | All blocks | 1 | 4 | 1 | 4.00 | 1 | 4.00 | 1 | 4.00 | 1 | 4.00 | 1 | 4.00 | 5 | 20.00 |
| 31 | Milk testing equipment and Laboratory. | All blocks | 1 | 5 | 1 | 5.00 | 1 | 5.00 | 1 | 5.00 | 1 | 5.00 | 1 | 5.00 | 5 | 25.00 |
| | **Processing** | | | | | | | | | | | | | | | |
| 32 | Water Treatment Plants. Reverse Osmosis plant | All blocks | 1 | 100 | 0 | 0.00 | 0 | 0.00 | 1 | 100.00 | 0 | 0.00 | 0 | 0.00 | 1 | 100.00 |
| 33 | Fat handling equipments | All blocks | 1 | 200 | 0 | 0.00 | 0 | 0.00 | 1 | 200.00 | 0 | 0.00 | 0 | 0.00 | 1 | 200.00 |
| 34 | Dairy equipments | All blocks | 1 | 50 | 0 | 0.00 | 1 | 50.00 | 0 | 0.00 | 1 | 50.00 | 0 | 0.00 | 2 | 100.00 |
| | **Civil work Infrastructure** | | | | | | | | | | | | | | | |

| Sl. No. | Intervention | 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 |
| 35 | BMC buildings | All blocks | 1 | 15 | 1 | 15.00 | 1 | 15.00 | 1 | 15.00 | 1 | 15.00 | 1 | 15.00 | 5 | 75.00 |
| 36 | Cattle feed Plants | All blocks | 1 | 5000 | 1 | 5000.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 1 | 5000.00 |
| 37 | Ware house for Dairy consumables | All blocks | 1 | 200 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 1 | 200.00 | 0 | 0.00 | 1 | 200.00 |
| | **Grand total** | | | | | **5272.55** | | **325.55** | | **812.55** | | **585.55** | | **292.55** | | **7288.75** |

Arupukottai- B1, Kariapatti – B2, Narikudi – B3, Rajapalayam – B4, M.Reddipatti – B5, Sattur – B6, Sivakasi – B7, Srivilluputhur – B8, Vembakottai – B9, Virudhunagar – B10, Watrap – B11

## 4.8. Fisheries sector

Fisheries sector is one of the important food production sector in the State contributing to the livelihood as well as food security of a large section of the economically under-privileged population. In recent years, it has assumed greater significance and its contribution towards the State and the National economy in terms of livelihood and nutritional security, rural employment generation and foreign exchange earnings have been enormous. Fisheries include marine, freshwater and brackish water subsectors. The Fisheries sector over the years has transformed from subsistence-based artisanal activities to modern livelihood activities with the application of science and modern technologies in the field of capture fishing and culture fisheries. It is developing as a major industry with diversifications viz., exploring deep sea resources and eco-friendly aquaculture practices for culture of finfish and shell fish, ornamental fish culture, eco-tourism, fish processing parks, mid sea fish processing units, etc.

### Enhancement of fisheries production

Fisheries sector occupies a very important place in the socio-economic development of the country. It has been recognized as a powerful income and employment generator as it stimulates growth of a number of subsidiary industries, and is a source of cheap and nutritious food besides being a foreign exchange earner. Most importantly, it is the source of livelihood for a large section of economically backward population of the country. The main challenges facing fisheries development in the country includes accurate data on assessment of fishery resources and their potential in terms of fish production, development of sustainable technologies for fin and shell fish culture, yield optimization, harvest and post-harvest operations, landing and berthing facilities for fishing vessels and welfare of fishermen.

With increasing pressure on the world's inland and coastal marine fisheries, increases in production and quality of yield are being sought through the application of a range of enhancement techniques. Which of these is applied depends on the attitude to the natural resource by societies at different levels of economic development. Stocking is extremely widespread but has generally been applied uncritically. A variety of models are proposed to serve as a basis for more rigorous evaluation of biological and economic effectiveness of this practice. Fertilization of water bodies is used to raise levels of production further. Elimination of unwanted species then becomes necessary to maximize benefits from the target species. Adjustments to the habitats within the water body assist in raising general levels of

productivity which culminate in the conversion of areas of the water into fish ponds or for cage culture. This process has important implications for the social, economic and policy context which necessitates shifts in ownership, finance and education among populations where these types of development occur**.**

In the inland fisheries sector, aquaculture is poised to play a pivotal role in increasing fish production, ensuring food security and enhancing growth of the State's economy. To maximize fish production from an unit area and to generate maximum income to the fish farmers, the Government has initiated innovative approaches such as stocking of fast growing fish species in the short seasonal water bodies, integrating aquaculture in the existing irrigation systems / rain water harvesting systems, brood stock development to produce quality fish fingerlings, promotion of fish culture in farm ponds and introduction of cage culture in reservoirs etc. 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

The interventions are

a) Increasing Fishing Efficiency of Inland Fishermen and Fish Farmers
b) Enhancement of Fish production in irrigation tanks and panchayat tanks by stocking fish seeds
c) Organization of Fish festival
d) Promotion of Ornamental fish culture
e) Introduction of short seasonal fish species in existing farm ponds

**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. Also, the fishery wealth in the inshore waters is being overexploited due to excessive fishing pressure on the resources. Artificial reefs help in augmenting the productivity of the marine ecosystem. Artificial reefs act as habitats to marine

aquatic organisms enhance the fish production through increased breeding activity and survival of young ones and act as a barrier for bottom trawling operations.

Availability of quality seed of cultivable freshwater fish species has been a limiting factor for intensification of fish farming and also for coverage of additional area under aquaculture. While availability of fish seed is satisfactory in certain parts of the country, in other areas farmers face difficulties in procurement of quality seed in required quantities Presently, there are inadequate seed rearing facilities for rearing of spawn/fry to fingerlings, even though there is a demand for stock size fingerlings. Therefore, there is every need for creation of infrastructure facilities for rearing of spawn/fry to fingerlings. Thus, availability of stock size fingerlings of cultivable freshwater fish species for stocking in reservoirs has been a limiting factor for limited fishery production from the reservoirs. Availability of fish fingerlings is satisfactory in certain parts of the country, whereas the farmers in other areas face difficulties in procurement of quality fingerlings in required quantities. Further, the fish fingerlings in such deficit areas have to be transported over a long distance, which adds to the cost of inputs. Therefore, to meet the requirement of fish fingerlings for supplementary stocking in the reservoirs and ponds/tanks, it is proposed to support the entrepreneurs/ farmers in setting up of fish seed rearing units for production of quality fish fingerlings.

The interventions are

a) Establishment of fish culture ponds and provision of inputs
b) Establishment of District Extension and Training centres
c) Renovation/additional area creation of Government fish farms (Unit)
d) Establishment of mini lab facilities in Government fish farms

**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 and organization of fish festival

**Budget**

The budget requirement for fulfilling the above interventions is ₹.**399.03** lakhs

**Implementing agency**

Department of Fisheries will be implementing the project.

## Table 4.23. Budget Requirement for Fisheries

**(₹. in lakhs)**

| Sl. No. | Intervention | 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 |
| | **Enhancement of fisheries** | | | | | | | | | | | | | | | |
| 1 | Promotion of Ornamental fish culture | Kariapatti, Rajapalayam, Srivilliputhur, Watrap | Nos | 3 | 0 | 0.00 | 2 | 6.00 | 0 | 0.00 | 0 | 0.00 | 2 | 6.00 | 4 | 12.00 |
| 2 | Introduction of short seasonal fish species in existing farm ponds | Kariapatti, Tiruchuli,Narikudi, Srivilliputhur, Watrap | Ha | 0.79 | 1.5 | 1.19 | 1 | 0.79 | 0.5 | 0.40 | 0 | 0.00 | 0 | 0.00 | 3 | 2.37 |
| 3 | Increasing fishing efficiency of inland fishermen and fish farmers | Arupukottai, Virudhunagar, Rajapalayam, Srivilliputhur, Watrap, Vembakottai | Nos | 0.15 | 30 | 4.50 | 15 | 2.25 | 15 | 2.25 | 5 | 0.75 | 15 | 2.25 | 80 | 12.00 |
| 4 | Enhancement of Fish production in irrigation tanks and Panchayat tanks by stocking fish seeds | All Blocks Except Narikudi | Ha. | 0.04 | 450 | 18.00 | 650 | 26.00 | 350 | 14.00 | 550 | 22.00 | 500 | 20.00 | 2500 | 100.00 |
| | **Creation of infrastructure facilities** | | | | | | | | | | | | | | | |
| 5 | Renovation / addition area creation govt. fish farm | Watrap | Nos | 175 | 1 | 175.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 1 | 175.00 |
| 6 | Establishment of fish culture ponds and provision of inputs | All Blocks Except Sattur, Vembakottai | Nos | 4.5 | 1 | 4.50 | 1.5 | 6.75 | 1 | 4.50 | 0.5 | 2.25 | 1 | 4.50 | 5 | 22.50 |

| Sl. No. | Intervention | 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 |
| 7 | Establishment of District Extension and Training centres | Virudhunagar | Nos | 50 | 1 | 50.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 1 | 50.00 |
| | **Infrastructure and Assets** | | | | | | | | | | | | | | | |
| 8 | Establishment of mini lab facilities in Government fish farms | Watrap | Nos | 5 | 0 | 0.00 | 1 | 5.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 1 | 5.00 |
| | **Capacity building programme** | | | | | | | | | | | | | | | |
| 9 | Exposure visit to farmers to other states | All Blocks | Nos | 0.06 | 30 | 1.80 | 30 | 1.80 | 20 | 1.20 | 20 | 1.20 | 30 | 1.80 | 130 | 7.80 |
| 10 | Organisation of Fish festivel | Virudhunagar | Nos | 5 | 0 | 0.00 | 1 | 5.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 1 | 5.00 |
| 11 | Training to fish farmers | All Blocks | Nos | 0.03 | 60 | 1.80 | 50 | 1.50 | 50 | 1.50 | 45 | 1.35 | 40 | 1.20 | 245 | 7.35 |
| | **Grand total** | | | | | **256.79** | | **55.09** | | **23.85** | | **27.55** | | **35.75** | | **399.03** |

Arupukottai- B1, Kariapatti – B2, Narikudi – B3, Rajapalayam – B4, M.Reddipatti – B5, Sattur – B6, Sivakasi – B7, Srivilluputhur – B8, Vembakottai – B9, Virudhunagar – B10, Watrap – B11

## 4.9 Fisheries Research (TNFU)

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.

### Establishment of Advanced Hatchery Facility for Pangas, *Pangasianodon hypophthalmus* (Sauvage, 1878)

*Pangasianodon hypophthalmus* is one of the major fish species and one of the largest and most important inland fisheries in the world. (Food and Agriculture Organization of the United Nations).Pangas catfish (*Pangasianodon hypophthalamus*) are popular among catfish producers in India. It is the only catfish species that is widely used in commercial aquaculture across the country. Production of the fish as an ornamental species for the aquarium trade where it is sold at a small size and marketed as the iridescent or mystic shark. Initially, its culture was carried out in Andhra Pradesh and West Bengal in private sector but the Government of India permitted aquaculture of *P. hypophthalmus* in year 2010-2011. Mature fish can reach a maximum standard total length of 130 cm and up to 44 kg in weight. This species is benthopelagic, typically living within the ranges of pH 6.5-7.5 and 22-26°C. Females take at least three years to reach sexual maturity in captivity (being then over 3 kg in weight), while males often mature in their second year. The three most common on growing monoculture systems are earthen ponds, net cages and net pens. The culture of Pangasius (*Pangasianodon hypoththalmus*) has only increased during recent years. Among

these species, Pangasius were legally introduced during the last few years to supplement fish production. Pangasius has been used both for food as well as for ornamental purposes.

**Establishment of Native fish Asylum-to protect, restore and river ranch the dwindling species such as *Labeocalbasu*, *L. bata*, *L. fimbriatus*, *Anabas* and other minor carps**

Tamil Nadu ranks 8$^{th}$ place in inland fish production in India (1.85 Lakh MTs). The inland fisheries sector has about 3.73 lakh ha. of water spread area with nearly 2.23 lakh inland fisherman directly depending on this sector for their livelihood. Diversification of agricultural activities for increased production, employment and income is well - known. Likewise, aquacultural activities also increased fish production and economical status. Fish seeds and broodstock quality, Monsoon failure affects the inland fish production. Introduction of Gangetic carps (catla, rohu, mrigal) in inland waters affected the minor carps. Hence, minor carps restoration and production must be done to improve TN fish production.

Native fish species form a major component of food consumed by families, especially those living closer to freshwater resources. Some species available and amenable for diversified in freshwater aquaculture are *Labeocabasu*, *L.bata*,*L.gonius*,*L.fimbriatus*,*Puntiussarana*, *Mystusgulio*,*Anabas testudineus*,*Clariasbatrachus*, *H.fossilis*,*Pangasiuspangasius Channamarulius* and *Etroplussuratensis*. These species are a rich source of nutrition for the rural poor either on a seasonal basis or round the year. Small indigenous species enhancing rural food and livelihood security. These native species are considered as low volume and high value fish species.

**Interventions**

a) Establishment of regional labs for disease diagnosis, water qaulity and aquatic animal health management
b) Awareness to fishers on hygienic handling of fish
c) Creation of awareness among fishers on fish processing technologies
d) Capacity building and skill development programmes on fish processing technologies
e) Production of short films on nutritive value of fish and screening in theatres and television channels
f) Ensuring nutritional security through fish and fishery products
g) Utilization of fish processing waste and by catch

h) Establishment of trap setting vessel to impart eco friendly fish trapping technology among the fishermen of Tamil Nadu

i) Development of mobile gadgets/apps for remote monitoring system for aquaculture farms

**Overall budget**

The projects on fisheries research will be implemented with a budget out lay of Rs**. 141.6** lakhs**.**

**Implementing agency**

Department of Fisheries will be implementing the project

## Table 4.24. Budget requirement for fisheries research

**(₹. in lakhs)**

| Sl. No. | Interventions | Blocks covered | 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 |
| **1** | **Harvest and Post harvest** | | | | | | | | | | | | | | |
| **a** | **Enhancement of per capita consumption of fish** | | | | | | | | | | | | | | |
| **1** | Awareness campaign on health beneficial attributes of fish | Virudhunagar | 0.005 | 52 | 0.26 | 52 | 0.26 | 52 | 0.26 | 52 | 0.26 | 52 | 0.26 | 260 | 1.30 |
| **2** | Production of short films on nutritive value of fish and screening in theatres and television channels | Virudhunagar | 50 | 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** | | | | | | | | | | | | | | |
| **1** | supply of preserved ready to eat and ready to cook fish products through public distribution sytems | Virudhunagar | 12.9 | 0 | 0.00 | 0 | 0.00 | 1 | 12.90 | 0 | 0.00 | 0 | 0.00 | 1 | 12.90 |
| **2** | Supply of fish and fish products in mid day meal programme | Virudhunagar | 12.9 | 0 | 0.00 | 1 | 12.90 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 1 | 12.90 |
| **3** | Supply chain management to promote consumption of farmed freshwater fishes | Virudhunagar | 64.5 | 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

### Increasing the ground water level

The water resource organization of the Public Works Department has indicated a number of proposals for harnessing water resources as well as for reducing the losses from existing canal irrigation projects. As many of the old irrigation systems are in deteriorating condition and in a state of disrepair, it is absolutely necessary to rehabilitate and/or to carry out the repair works so as to economize the water use and improve the conveyance efficiency and water use efficiency as well. It is hoped that better water control and delivery could be achieved by these measures so that the productivity per unit of water could be enhanced sufficiently.

### Project components

a) Construction of check dams across the rivers
b) Construction of dividing dam across kanal odai in Nadarkulam village to feed Ambaneri and Anaikulam tank in Thiruchuli taluk.
c) Construction of an anicut across Gundar river in Pisindi village to feed Vakkanankundu tank in Kariapatti taluk.

### Budget

It is proposed to incur ₹.**53.15** crores over a period of five years.

### 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 estimate for PWD works

**(₹.in lakhs)**

| Sl. No. | Intervention | 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 |
| 1 | Construction of an anicut across kowshikanathi to feed Kalaperumalpatti tank in Avudaiapuram village in Virudhunagar Taluk . | Virudhu-nagar | Ha | 2.97 | 118 | 350.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 118 | 350.00 |
| 2 | Construction of check dam across kowshikanathi near Pavalai village in Virudhunagar Taluk | Virudhu-nagar | Ha | 1.90 | 112 | 213.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 112 | 213.00 |
| 3 | Construction of check dam across kowshikanathi near Vadamalaikurichi village in Virudhunagar Taluk . | Virudhu-nagar | Ha | 1.55 | 112 | 174.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 112 | 174.00 |
| 4 | Construction of check dam across Arjunanathi in S.Ammapatti and Vadugapatti village in Srivilliputhur taluk. | Watrap | Ha | 5.29 | 27 | 144.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 27 | 144.00 |
| 5 | Construction of check dam across Rengatheerthaodai in Pillayarnattam village of srivilliputhur taluk | Srivilli-puthur | Ha | 27.90 | 2 | 65.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 2 | 65.00 |

| Sl. No. | Intervention | 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 |
| 6 | Construction of check dam across Deviyar (vaippar river ) near Melanmarainadu village in Sivakasi taluk . | Vembak-kottaii | Ha | 2.33 | 120 | 280.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 120 | 280.00 |
| 7 | Construction of an anicut across Gundar river in Pisindi village to feed vakkanankundu tank in Kariapatti taluk . | Kariya-patti | Ha | 5.17 | 0 | 0.00 | 170 | 880.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 170 | 880.00 |
| 8 | Construction of anicut across Gundar river in Kalkurchi Village to feed Panthanethal and Thiruchuzhi tanks of Kariapatti taluk . | Kariya-patti | Ha | 3.99 | 0 | 0.00 | 221 | 880.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 221 | 880.00 |
| 9 | Construction of Check dam across Nalli Uppodai in nalli village near Saminatham village in Sattur taluk . | Sattur | Ha | 4.98 | 0 | 0.00 | 29 | 146.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 29 | 146.00 |
| 10 | Construction of check dam across Nalli Uppodai in M.Chokkalingapuram village in Sattur taluk | Sattur | Ha | 3.54 | 0 | 0.00 | 28 | 98.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 28 | 98.00 |
| 11 | Construction of Check dam across Ayadharmam odai in Ayadharaman village of Sirivilliputhur taluk . | Watrap | Ha | 3.83 | 0 | 0.00 | 0 | 0.00 | 30 | 115.00 | 0 | 0.00 | 0 | 0.00 | 30 | 115.00 |

| Sl. No. | Intervention | 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 |
| 12 | Construction of dividing dam across kanal odai in Nadarkulam village to feed Ambaneri and Anaikulam tank in Thiruchuli taluk. | Thiru-chuli | Ha | 1.52 | 0 | 0.00 | 0 | 0.00 | 95 | 144.00 | 0 | 0.00 | 0 | 0.00 | 95 | 144.00 |
| 13 | Construction of Check dam across Keelailluppaikulam surplus course in Nathampatti village of Rajapalayam taluk | Raja-palayam | Ha | 4.36 | 0 | 0.00 | 0 | 0.00 | 22 | 96.00 | 0 | 0.00 | 0 | 0.00 | 22 | 96.00 |
| 14 | Construction of check dam across Chinnaodai in Khansapuram village of Sirvilliputhur taluk | Watrap | Ha | 4.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 25 | 100.00 | 0 | 0.00 | 25 | 100.00 |
| 15 | Construction of check dam across Kandaneri kanmoi supply channel in Illanthaikulam village of Sirvilliputhur taluk | Watrap | Ha | 3.45 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 29 | 100.00 | 0 | 0.00 | 29 | 100.00 |
| 16 | Construction of an anicut across Gundar river to feed Pallimadam tank in Thiruchuzhi taluk . | Thiru-chuli | Ha | 3.75 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 160 | 600.00 | 0 | 0.00 | 160 | 600.00 |
| 17 | Construction of check dam across Gundar in Udayanendal village of Thiruchuli taluk. | Thiru-chuli | Ha | 7.43 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 70 | 520.00 | 70 | 520.00 |

| Sl. No. | Intervention | 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 |
| 18 | Construction of check dam across Keelarajakularaman channel in Saminathapuram village of Srivilliputhur taluk . | Raja-palayam | Ha | 3.11 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 37 | 115.00 | 37 | 115.00 |
| 19 | Construction of check dam across Arjunanathi in Namaskarithanpatti village of Virudhunagar taluk . | Virudhunagar | Ha | 1.58 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 76 | 120.00 | 76 | 120.00 |
| 20 | Construction of check dam across Marugal odai in Lakshmipuram village in Sivakasi taluk . | Raja-palayam | Ha | 2.69 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 65 | 175.00 | 65 | 175.00 |
| | **Grand total** | | | | | **1226.00** | | **2004.00** | | **355.00** | | **800.00** | | **930.00** | | **5315.00** |

Arupukottai- B1, Kariapatti – B2, Narikudi – B3, Rajapalayam – B4, M.Reddipatti – B5, Sattur – B6, Sivakasi – B7, Srivilluputhur – B8, Vembakottai – B9, Virudhunagar – B10, Watrap – B11

### 4.11. Agriculture Cooperation

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, and price support for agricultural commodities through Cooperative Wholesale stores, Public Distribution system etc., from a small beginning, the Cooperative movement in Tamil Nadu has grown in strength over the years. From Agricultural Banks to Marketing societies and Consumer Cooperatives provide service to the people in various economic activities. Cooperatives also run the Public Distribution system which provides relief to each and every family in the state.

**Project components**

a) Infrastructure development
b) Capital Asset Creation

**Budget**

It is proposed to incur **₹.2719.31** lakhs over a period of five years

**Expected outcome**

The expected outcome for the project agricultural credit, urban credit, market intervention, and price support for agricultural commodities through Cooperative Wholesale stores, Public Distribution system. This will result in the ensuring of food security for the people.

**Implementing agency**

Department of Agriculture Cooperation will be implementing the project.

## Table.4.26 Budget for Co-operative sector

**(₹. in lakhs)**

| Sl. No. | Intervention | 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 Office Building | B2,B9 | 1 | 20.00 | 3 | 60.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 4 | 80.00 |
| 2 | Construction of compound wall | All blocks | 41 | 430.26 | 30 | 364.13 | 24 | 285.33 | 14 | 104.45 | 15 | 145.02 | 124 | 1329.19 |
| 3 | Renovation Office Building | All blocks | 66 | 533.91 | 15 | 173.01 | 13 | 174.55 | 14 | 156.08 | 10 | 149.20 | 118 | 1186.75 |
| 4 | Construction of Road | B2 | 0 | 0.00 | 2 | 5.55 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 2 | 5.55 |
| 5 | Renovation Godown | B1,B3,B5, B6,B8,B10,B11 | 1 | 4.50 | 1 | 4.37 | 5 | 11.83 | 2 | 16.75 | 3 | 20.25 | 12 | 57.70 |
| 6 | Establishment of Processing unit | B10 | 0 | 0.00 | 1 | 6.50 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 1 | 6.50 |
| 7 | Construction of Drying Yard | B10 | 2 | 4.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 2 | 4.00 |
| 8 | 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 | 16 | 36.45 | 1 | 3.7 | 0 | 0 | 2 | 6.47 | 1 | 3 | 20 | 49.62 |
| | **Grand total** | | | **1029.12** | | **617.26** | | **471.71** | | **283.75** | | **317.47** | | **2719.31** |

Arupukottai- B1, Kariapatti – B2, Narikudi – B3, Rajapalayam – B4, M.Reddipatti – B5, Sattur – B6, Sivakasi – B7, Srivilluputhur – B8, Vembakottai – B9, Virudhunagar – B10, Watrap – B11

**Table.4.27 Consolidated Budget for Virudhunagar District**

**(₹.in lakhs)**

| Sl. No. | Sectors | 2017-18 | 2018-19 | 2019-20 | 2020-21 | 2021-22 | Total |
|---|---|---|---|---|---|---|---|
| 1 | Agriculture | 3449.96 | 4401.20 | 3234.94 | 3519.92 | 3087.72 | 17693.74 |
| 2 | Horticulture | 1999.87 | 2146.98 | 3950.74 | 4273.11 | 3100.34 | 15471.04 |
| 3 | Agricultural Engineering | 2713.81 | 1881.31 | 1698.94 | 1316.52 | 1349.72 | 8960.30 |
| 4 | Agricultural Marketing | 279.70 | 275.45 | 224.80 | 215.30 | 214.15 | 1209.40 |
| 5 | Seed certification and Organic Certification | 7.50 | 295.77 | 0.10 | 0.10 | 0.10 | 303.57 |
| 6 | Animal Husbandry | 1719.16 | 1765.59 | 1156.21 | 1033.88 | 877.49 | 6552.25 |
| 7 | Dairy Development | 5272.55 | 325.55 | 812.55 | 585.55 | 292.55 | 7288.75 |
| 8 | Fisheries | 256.79 | 55.09 | 23.85 | 27.55 | 35.75 | 399.03 |
| 9 | Fisheries Research (TNFU) | 64.76 | 63.16 | 13.16 | 0.26 | 0.26 | 141.60 |
| 10 | Public Works Department | 1226.00 | 2004.00 | 355.00 | 800.00 | 930.00 | 5315.00 |
| 11 | Civil Supplies and Co-Operation | 1029.12 | 617.26 | 471.71 | 283.75 | 317.47 | 2719.31 |
| | **Grand Total** | **18019.22** | **13831.36** | **11942.00** | **12055.94** | **10205.55** | **66054.07** |

The plan outlay for five years (2017-22) for Virudhunagar district is given in Table 4.27. Among the different activities, agriculture sector requires huge financial outlay (Rs. 17693.74 lakhs) of the total plan outlay of **₹. 66054.07 lakhs**. Greater emphasis has been given to farm mechanization and soil and water conservation measures as they have become pre-requisites to the implementation of modern technologies in Virudhunagar district.


KARNATAKA
KERALA
SRI LANKA