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LAND RESOURCE INVENTORY AND SOCIO-ECONOMIC STATUS OF FARM HOUSEHOLDS FOR WATERSHED PLANNING AND DEVELOPMENT

KADECHOORA (4D5B1Q1b) MICROWATERSHED

Sydhapur Hobli, Yadgir Taluk and District, Karnataka

Karnataka Watershed Development Project – II

SUJALA – III

World Bank funded Project

The World Bank

ICAR – NATIONAL BUREAU OF SOIL SURVEY AND LAND USE PLANNING

ICAR - NBSS & LUP

WATERSHED DEVELOPMENT DEPARTMENT
GOVT. OF KARNATAKA, BANGALORE

About ICAR - NBSS&LUP

The ICAR-National Bureau of Soil Survey and Land Use Planning (ICAR-NBSS&LUP), Nagpur, a premier Institute of the Indian Council of Agricultural Research (ICAR), was set up during 1976 with the objective to prepare soil resource maps at national, state and district levels and to provide research inputs in soil resource mapping and its applications, land evaluation, land use planning, land resource management, and database management using GIS for optimising land use on different kinds of soils in the country.

The Bureau has been engaged in carrying out soil resource survey, agro-ecological and soil degradation mapping at the country, state and district levels for qualitative assessment and monitoring the soil health towards viable land use planning. The research activities have resulted in identifying the soil potentials and problems, and the various applications of the soil surveys with the ultimate objective of sustainable agricultural development. The Bureau has the mandate to correlate and classify soils of the country and maintain a National Register of all the established soil series. The Institute is also imparting in-service training to staff of the soil survey agencies in the area of soil survey, land evaluation and soil survey interpretations for land use planning. The Bureau in collaboration with Panjabrao Krishi Vidyapeeth, Akola is running post-graduate teaching and research programme in land resource management, leading to M.Sc. and Ph.D. degrees.

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PREFACE

In Karnataka, as in other Indian States, the livelihoods of rural people are intertwined with farming pursuits. Thechallenges in agriculture are seriously threatening the livelihood of a large number of farmers as they have been practicing farming in contextual factors beyond their control. Climatic factors are the most important ones and have become much more significant in recent times due to rapid climate changes induced by intensive anthropogenic activities affecting our ecosystem in multiple ways. Climate change has become the reality, it is happening and efforts to evolve and demonstrate climate resilient technologies have become essential. Due to the already over stressed scenario of agrarian sector, the climate change is resulting in manifold increase in the complexities, pushing the rural mass to face more and more unpredictable situations. The rising temperatures and unpredictable rainfall patterns are going to test seriously the informed decisions farmers have to make in order to survive in farming and sustain their livelihood.

It is generally recognized that impacts of climate change shall not be uniform across the globe. It is said that impact of climate change is more severe in South Asia. Based on the analysis of meteorological data, it is predicted that in India, there will be upward trend in mean temperature, downward trend in relative humidity, annual rainfall and number of wet days in a year. Also, in general, phenomena like erratic monsoon, spread of tropical diseases, rise in sea levels, changes in availability of fresh water, frequent floods, droughts, heat waves, storms and hurricanes are predicted. Each one of these adverse situations are already being experienced in various parts of India and also at the global level. Decline in agricultural productivity of small and marginal farmers becoming more vulnerable is already witnessed.

In Karnataka, more than 60 per cent of the population live in rural areas and depend on agriculture and allied activities for their livelihood. Though the state has achieved significant progress in increasing the yield of many crops, there is tremendous pressure on the land resources due to the growing and competing demands of various land uses. This is reflected in the alarming rate of land degradation observed. Already more than 50 per cent of the area is affected by various forms of degradation. If this trend continues, the sustainability of the fragile ecosystem will be badly affected. The adverse effects of change in the climatic factors are putting additional stress on the land resources and the farmers dependent on this.

The natural resources (land, water and vegetation) of the state need adequate and constant care and management, backed by site-specific technological interventions and investments particularly by the government. Detailed database pertaining to the nature of

the land resources, their constraints, inherent potentials and suitability for various land based rural enterprises, crops and other uses is a prerequisite for preparing location-specific action plans, which are in tune with the inherent capability of the resources. Any effort to evolve climate resilient technologies has to be based on the baseline scientific database. Then only one can expect effective implementation of climate resilient technologies, monitor the progress, make essential review of the strategy, and finally evaluate the effectiveness of the implemented programs. The information available at present on the land resources of the state are of general nature and useful only for general purpose planning. Since the need of the hour is to have site-specific information suitable for farm level planning and detailed characterization and delineation of the existing land resources of an area into similar management units is the only option.

ICAR-NBSS&LUP, Regional Centre, Bangalore has taken up a project sponsored by the Karnataka Watershed Development Project-II, (Sujala-III), Government of Karnataka funded by the World Bank under Component -1 Land Resource Inventry. This study was taken up to demonstrate the utility of such a database in reviewing, monitoring and evaluating all the land based watershed development programs on a scientific footing. To meet the requirements of various land use planners at grassroots level, the present study on "Land Resource Inventory and Socio-Economic Status of Farm Households for Watershed Planning and Development of Kadechoora Microwatershed, Yadgir Taluk, Yadgir District, Karnataka" for integrated development was taken up in collaboration with the State Agricutural Universities, IISC, KSRSAC, KSNDMC as Consortia partners. The project provides detailed land resource information at cadastral level (1:7920 scale) for all the plots and socio-economic status of farm households covering thirty per cent farmers randomely selected representing landed and landless class of farmers in the micro-watershed. The project report with the accompanying maps for the microwatershed will provide required detailed database for evolving effective land use plan, alternative land use options and conservation plans for the planners, administrators, agricutural extention personnel, KVK officials, developmental departments and other land users to manage the land resources in a sustainable manner.

It is hoped that this database will be useful to the planners, administrators and developmental agencies working in the area in not only for formulating location specific developmental schemes but also for their effective monitoring at the village/watershed level.

Nagpur **S.K. SINGH**
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PART-A

LAND RESOURCE INVENTORY

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ECUTIVE SUMMARY

The land resource inventory of Kadechoora microwatershed was conducted using village cadastral maps and IRS satellite imagery on 1:7920 scale. The false colour composites of IRS imagery were interpreted for physiography and these physiographic delineations were used as base for mapping soils. The soils were studied in several transects and a soil map was prepared with phases of soil series as mapping units. Random checks were made all over the area outside the transects to confirm and validate the soil map unit boundaries. The soil map shows the geographic distribution and extent, characteristics, classification, behaviour and use potentials of the soils in the microwatershed.

The present study covers an area of 536 ha in Kadechoora microwatershed in Yadgir taluk of Yadgir district, Karnataka. The climate is semiarid and categorized as drought- prone with an average annual rainfall of 866 mm, of which about 652 mm is received during south–west monsoon, 138 mm during north-east and the remaining 76 mm during the rest of the year. An area of about 71 per cent is covered by soils, 29 per cent by water bodies, settlements and mining and industrial areas. The salient findings from the land resource inventory are summarized briefly below.

- *The soils belong to 9 soil series and 9 soil phases (management units) and 4 land management units.*
- *The length of crop growing period is about 120-150 days starting from the 1st week of June to 4th week of October.*
- *From the master soil map, several interpretative and thematic maps like land capability, soil depth, surface soil texture, soil gravelliness, available water capacity, soil slope and soil erosion were generated.*
- *Soil fertility status maps for macro and micronutrients were generated based on the surface soil samples collected at every 250 m grid interval.*
- *Land suitability for growing 26 major agricultural and horticultural crops were assessed and maps showing the degree of suitability along with constraints were generated.*
- *About 71 per cent area is suitable for agriculture and 29 per cent is not suitable for agriculture but well suited for forestry, pasture, agro-forestry, silvi-pasture, recreation, mining, installation of wind mills and as habitat for wildlife.*
- *About 3 per cent of the soils are moderately deep (75-100cm), about 59 per cent deep (100-150cm) to very deep (>150 cm) and 9 per cent are shallow to moderately shallow (25-75 cm) soils.*
- *About 62 per cent of the area has clayey soils, 8 per cent loamy soils and one per cent sandy soils at the surface.*
- *Entire area has non-gravelly soils.*

- *About 59 per cent of the area has soils that are very high (>200mm/m) in available water capacity, less than one per cent medium (100-150 mm/m) and about 12 per cent low (51-100 mm/m) to very low (<50 mm/m).*
- *Entire area has very gently sloping (1-3%) lands.*
- *An area of about 18 per cent has soils that are slightly eroded (e1), 52 per cent moderately eroded (e2) and 1 per cent severely eroded (e3).*
- *An area of about 7 per cent has slightly alkaline (pH 7.3-7.8), about 40 per cent has soils that are moderately alkaline (pH 7.8 to 8.4), about 21 per cent strongly alkaline (pH 8.4-9.0) and about 3 per cent very strongly alkaline (pH >9.0) in soil reaction.*
- *The Electrical Conductivity (EC) of the soils are dominantly <2 dsm^{-1} indicating that the soils are non-saline.*
- *About 34 per cent medium (0.5-0.75%), 18 per cent low (<0.5%) and 19 per cent high (>0.75%) in organic carbon.*
- *An area of 29 per cent has soils that are low (<23 kg/ha), 37 per cent medium (23-57 kg/ha) and 5 per cent high (>57 kg/ha) in available phosphorus.*
- *About 7 per cent medium (145-337 kg/ha) and 64 per cent high (>337 kg/ha) in available potassium.*
- *Available sulphur is low (<10 ppm) in about 54 per cent area, medium (10-20 ppm) in 16 per cent and high (>20 ppm) in about one per cent area.*
- *Available boron is low (<0.5 ppm) in about 13 per cent, 37 per cent medium (0.5-1.0 ppm) and high (>1.0 ppm) in about 22 per cent.*
- *About 29 per cent area has soils that are deficient (<4.5 ppm) in available iron and 42 per cent sufficient (>4.5 ppm).*
- *Available manganese and copper are sufficient in all the soils.*
- *About 69 per cent area has soils that are deficient (<0.6 ppm) in available zinc and 2 per cent sufficient (>0.6 ppm).*
- *The land suitability for 26 major crops grown in the microwatershed was assessed and the areas that are highly suitable (S1) and moderately suitable (S2) are given below. It is however to be noted that a given soil may be suitable for various crops but what specific crop to be grown may be decided by the farmer looking to his capacity to invest on various inputs, marketing infrastructure, market price and finally the demand and supply position.*

Land suitability for various crops in the Kadechoora microwatershed

Crop	***Suitability Area in ha (%)***			***Crop***	***Suitability Area in ha (%)***	
	Highly suitable (S1)	***Moderately suitable (S2)***			***Highly suitable (S1)***	***Moderately suitable (S2)***
Sorghum	-	*378 (70)*		*Sapota*	-	-
Maize	-	*44 (8)*		*Guava*	-	-
Red gram	-	*333 (62)*		*Pomegranate*	-	*333 (62)*
Bajra	-	*377 (70)*		*Jackfruit*	-	-
Ground nut	-	*22 (4)*		*Jamun*	-	*331 (62)*
Sunflower	-	*334 (62)*		*Musambi*	-	*333 (62)*
Cotton	-	*377 (70)*		*Lime*	-	*333 (62)*
Bengalgram	*16 (3)*	*362 (67)*		*Cashew*	-	-
Chilli	-	*377 (70)*		*Custard apple*	-	*378 (70)*
Tomato	-	*44 (8)*		*Amla*	-	*377 (70)*
Drumstick	-	*333 (62)*		*Tamarind*	-	*333 (62)*
Mulberry	-	-		*Marigold*	-	*377 (70)*
Mango	-	-		*Chrysanthemum*	-	*377 (70)*

Apart from the individual crop suitability, a proposed crop plan has been prepared for the 4 identified LMUs by considering only the highly and moderately suitable lands for different crops and cropping systems with food, fodder, fibre and horticulture crops that helps in maintaining the ecological balance in the microwatershed

- *Maintaining soil-health is vital to crop production and conserve soil and land resource base for maintaining ecological balance and to mitigate climate change. For this, several ameliorative measures have been suggested to these problematic soils like saline/alkali, highly eroded, sandy soils etc.,*
- *Soil and water conservation treatment plan has been prepared that would help in identifying the sites to be treated and also the type of structures required.*
- *As part of the greening programme, several tree species have been suggested to be planted in marginal and submarginal lands, field bunds and also in the hillocks, mounds and ridges, that are edible, ecological and produce lot of biomass that helps to restore the ecological balance in the microwatershed*

Chapter 1

INTRODUCTION

Soil being a vital natural resource on whose proper use depends the life supporting systems of a country and the socioeconomic development of its people. Soils provide food, fodder, fibre and fuel for meeting the basic human and animal needs. With the ever increasing growth in human and animal population, the demand on soil for more food and fodder production is on the increase. The area available for agriculture is about 51 per cent of the total geographical area and more than 60 per cent of the people are still dependant on agriculture for their livelihood. However, the capacity of a soil to produce is limited and the limits to the production are set by its intrinsic characteristics, agro climatic setting, and, use and management. There is, therefore, tremendous pressure on land and water resources, which is causing decline in soil-health and stagnation in productivity. The soils have been degrading at an estimated rate of one million hectares per year and ground water levels have been receding at an alarming rate resulting in decline in the ground water resource. Further, land degradation has emerged as a serious problem which has already affected about 38 lakh ha of cultivated area in the State. Soil erosion alone has degraded about 35 lakh ha. Almost all the uncultivated areas are facing various degrees of degradation, particularly soil erosion; salinity and alkalinity has emerged as a major problem in more than 3.5 lakh ha in the irrigated areas of the State. Nutrient depletion and declining factor productivity is common in both rainfed and irrigated areas. The degradation is continuing at an alarming rate and there appears to be no systematic effort among the stakeholders to contain this process. In recent times, an aberration of weather due to climate change phenomenon has added another dimension leading to unpredictable situation to be tackled by the farmers.

In this critical juncture, the challenge before us is not only to increase the productivity per unit area which is steadily declining and showing a fatigue syndrome, but also to prevent or at least reduce the severity of degradation. If the situation is not reversed at the earliest, then the sustainability of the already fragile crop production system and the overall ecosystem will be badly affected in the state. Added to this, every year there is a significant diversion of farm lands and water resources for non-agricultural purposes. Thus, developing strategies to slow down the degradation process or reclaim the soils to normal condition and ensure sustainability of production system are the major issues today. This demands a systematic appraisal of our soil and land resources with respect to their extent, geographic distribution, characteristics, behaviour and use potential, which is very important for developing an effective land use and cropping systems for augmenting agricultural production on a sustainable basis.

The soil and land resource inventories made so far in Karnataka had limited utility because the surveys were of different types, scales and intensities carried out at different times with specific objectives. Hence, there is an urgent need to generate detailed site-

specific farm level database on various land resources for all the villages/watersheds in a time bound manner that would help to protect the valuable soil and land resources and also to stabilize the farm production. Therefore, the land resource inventory required for farm level planning is the one which investigates all the parameters which are critical for productivity *viz.*, soils, site characteristics like slope, erosion, gravelliness and stoniness, climate, water, topography, geology, hydrology, vegetation, crops, land use pattern, animal population, socio-economic conditions, infrastructure, marketing facilities and various schemes and developmental works of the government etc. From the data collected at farm level, the specific problems and potentials of the area can be identified and highlighted, conservation measures required for the area can be planned on a scientific footing, suitability of the area for various uses can be worked out and finally viable and sustainable land use options suitable for each and every land holding can be prescribed.

The Land Resource Inventory is basically done for identifying potential and problem areas, developing sustainable land use plans, estimation of surface run off and water harvesting potential, preparation of soil and water conservation plans, land degradation/desertification etc. The Bureau is presently engaged in developing an LRI methodology using high resolution satellite remote sensing data and Digital Elevation Model (DEM) data to prepare Landscape Ecological Units (LEU) map representing agro-ecosystem as a whole. The LEU is preferred over landform as the base map for LRI. LEU is the assemblage of landform, slope and land use. An attempt has already been made to upscale the soil resource information from 1:250000 and 1:50000 scale to the LEU map in Goa and in some other states. Here, an attempt will be made later to uplink the LRI data generated under Sujala-III Project to the Landscape Ecological Units (LEUs) map.

The land resource inventory aims to provide site specific database for Kadechoora microwatershed in Yadgir Taluk and Yadgir District, Karnataka State for the Karnataka Watershed Development Department. The database was generated by using cadastral map of the village as a base along with high resolution IRS LISS IV and Cartosat-1 merged satellite imagery. Later, an attempt will be made to uplink this LRI data generated at 1:7920 scale under Sujala-III Project to the proposed Landscape Ecological Units (LEUs) map.

The study was organized and executed by the ICAR- National Bureau of Soil Survey and Land Use Planning, Regional Centre, Bangalore under Generation of Land Resource Inventory Data Base Component-1 of the Sujala-III Project funded by the World Bank.

Chapter 2

GEOGRAPHICAL SETTING

2.1 Location and Extent

The Kadechoora micro-watershed is located in the northeastern part of Karnataka in Yadgir Taluk, Yadgir District, Karnataka State (Fig.2.1). It comprises parts of Kadechoora and Sowrashtralli villages. It lies between 16^0 30' and 16^0 32' north latitudes and 77^0 18' and 77^0 20' east longitudes and covers an area of 536 ha. It is about 45 km from yadgir town and is surrounded by Kadechoora on the south, southeast and northwestern side and Sowrashtralli village on the northern side.

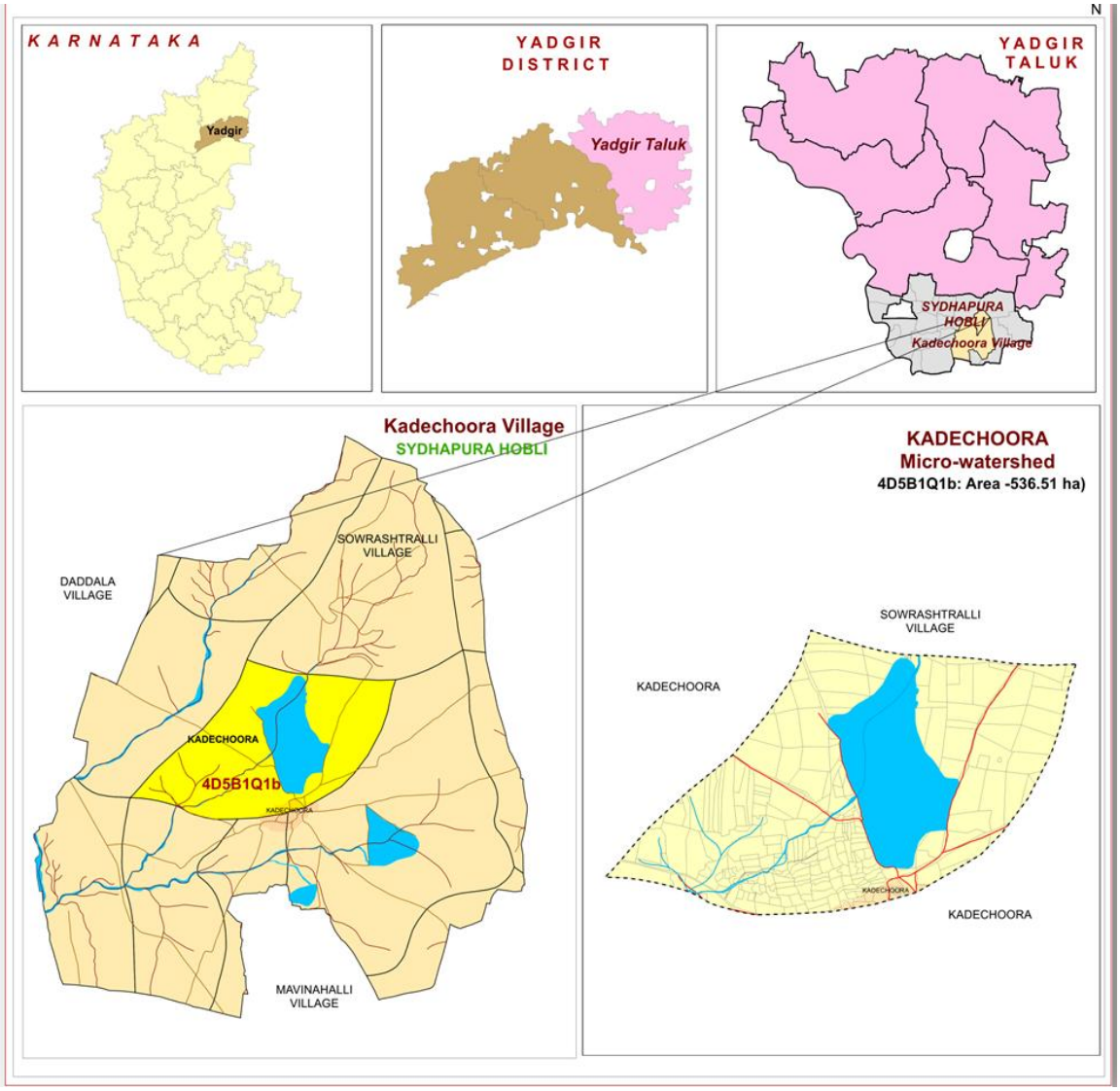


Fig.2.1 Location map of Kadechoora Microwatershed

2.2 Geology

Major rock formations observed in the microwatershed are granite gneiss and alluvium (Figs.2.2a and b). Granite gneisses are essentially pink to gray and are coarse to medium grained. They consist primarily of quartz, feldspar, biotite and hornblende. The

gray granite gneisses are highly weathered, fractured and fissured upto a depth of about 10 m. Dolerite dykes and quartz veins are common with variable width and found to occur in Dadal village. The most widespread and characteristic development of alluvium in the watershed region lying between the rivers Krishna and Bhima is a wide belt, the underlying formation is gneiss and alluvial soils occur over gneiss, limestone and shale are far more extensive and homogeneous than those found on the Deccan Trap country lying to the north of the river Krishna. The soil thickness of the alluvium generally is limited to less than a meter, except in river valleys where it is very deep extending to tens of meters. Such soils are transported and represent paleo black soils originally formed at higher elevation, but now occupying river valleys.

Fig.2.2a Granite and granite gneiss rocks

Fig. 2.2b Alluvium

2.3 Physiography

Physiographically, the area has been identified as granite gneiss and alluvial landscapes based on geology. The area has been further subdivided into five landforms, *viz;* mounds/ridges, summits, side slopes and very gently sloping uplands, plains and valleys based on slope and its relief features. The elevation ranges from 359-376 m above MSL. The mounds and ridges are mostly covered by rock outcrops.

2.4 Drainage

The area is drained by several parallel streams like Bori, Amerja and Kanga which finally join the river Bhima along its course. Though, they are not perennial, during rainy season they carry large quantities of rain water. The microwatershed has only few small tanks which are not capable of storing the water that flows during the rainy season. Due to this, the ground water recharge is very much affected. This is reflected in the failure of many bore wells in the villages. If the available rain water is properly harnessed by constructing new tanks and recharge structures at appropriate places in the villages, then the drinking and irrigation needs of the area can be easily met. The drainage network is parallel to sub parallel and dendritic.

2.5 Climate

The Yadgir district lies in the northern plains of Karnataka and falls under semiarid tract of the state and is categorized as drought- prone with total annual rainfall of 866 mm (Table 2.1). Of the total rainfall, maximum of 652 mm is received during the south–west monsoon period from June to September, the north-east monsoon from October to early December contributes about 138 mm, and the remaining 76 mm during the rest of the year. The summer season starts during the middle of February and continues up to the first week of June. The period from December to the middle of February is the cold season. December is the coldest month with mean daily maximum and minimum temperatures being 29.5^0C and 10^0C respectively. During peak summer, temperature shoots up to 45^0C. Relative humidity varies from 26% in summer to 62% in winter. Rainfall distribution is shown in Figure 2.3. The average Potential Evapo-Transpiration (PET) is 141 mm and varies from a low of 81 mm in December to 199 mm in the month of May. The PET is always higher than precipitation in all the months except July to end of September. Generally, the Length of crop Growing Period (LGP) is 120-150 days and starts from 1^{st} week of June to 4^{th} week of October.

Table 2.1 Mean Monthly Rainfall, PET, 1/2 PET at Yadgir Taluk

Sl.No.	Months	Rainfall	PET	1/2 PET
1	January	4.30	86.0	43.0
2	February	2.30	125.5	62.7
3	March	15.10	166.0	83.0
4	April	18.50	179.8	89.9
5	May	36.0	198.8	97.9
6	June	118.0	175.1	87.5
7	July	171.80	156.3	78.1
8	August	182.9	150.3	75.1
9	September	179.7	142.0	71.0
10	October	105.3	138.5	69.2
11	November	26.4	97.60	48.6
12	December	6.0	80.90	40.4
Total		**866.3**	**141.4**	

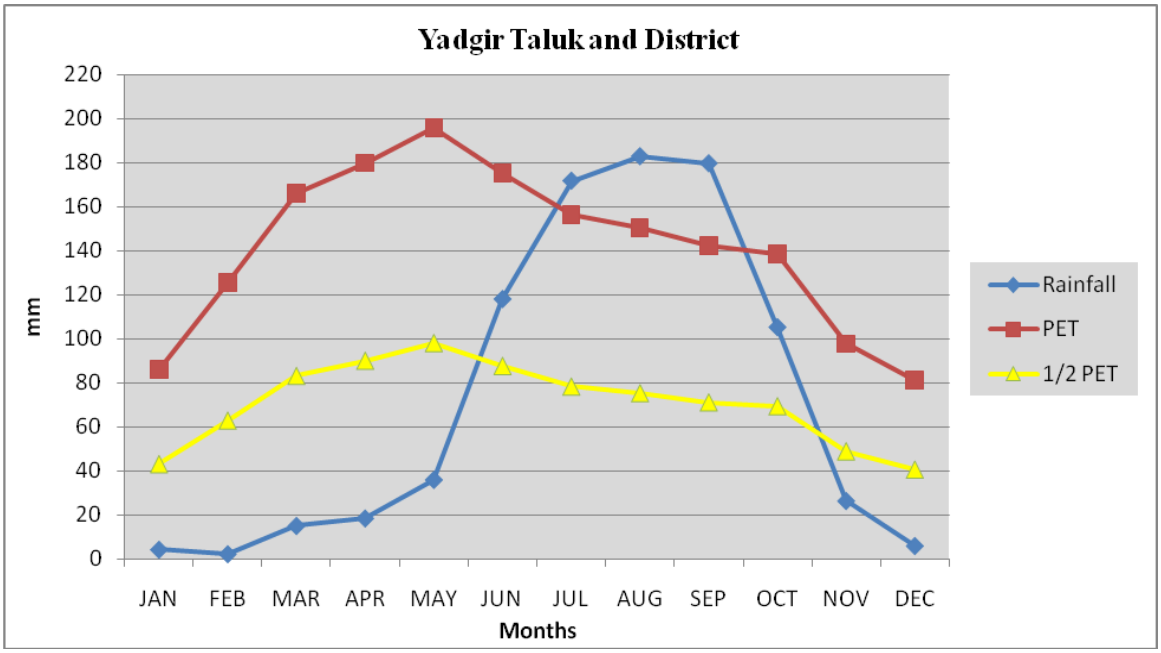


Fig 2.3 Rainfall distribution in Yadgir Taluk

2.6 Natural Vegetation

The natural vegetation is sparse comprising few tree species, shrubs and herbs. The mounds, ridges and boulders occupy very sizeable area which is under thin to moderately thick forest vegetation. Still, there are some remnants of the past forest cover which can be seen in patches in some ridges and hillocks in the microwatershed.

Apart from the continuing deforestation, the presence of large population of goats, sheep and other cattle in the microwatershed is causing vegetative degradation of whatever little vegetation left in the area. The uncontrolled grazing has left no time for the regeneration of the vegetative cover. This leads to the accelerated rate of erosion on the hill slopes resulting in the formation of deep gullies in the foot slopes that eventually result in the heavy siltation of tanks and reservoirs in the microwatershed.

2.7 Land Utilization

About 72 per cent area (Table 2.2) in Yadgir taluk is cultivated at present. An area of about 2 per cent is permanently under pasture, 20 per cent under current fallows and 6 per cent under non-agricultural land and 5 per cent under currently barren. Forests occupy an area of about 7 per cent and the tree cover is in a very poor state. Most of the mounds, ridges and bouldery areas have very poor vegetative cover. Major crops grown in the area are sorghum, maize, cotton, sunflower, groundnut, mango, pomegranate and marigold While carrying out land resource inventory, the land use/land cover particulars are collected from all the survey numbers and a current land use map of the microwatershed is prepared. The current land use map prepared shows the arable and non-arable lands, other land uses and different types of crops grown in the area. The current land use map of Kadechoora microwatershed is presented in Fig.2.4. The different crops and cropping systems adopted in the microwatershed is presented in the Figures 2.5a and 2.5b. Simultaneously, enumeration of wells (bore wells and open wells) and other conservation structures in the microwatershed was made and their location in different survey numbers is marked on the cadastral map. Map showing the location of wells structures and other water bodies in the Kadechoora microwatershed is given in Fig.2.6.

Table 2.2 Land Utilization in Yadgir Taluk

Sl. No.	**Agricultural land use**	**Area (ha)**	**Per cent**
1.	Total geographical area	516088	
2.	Total cultivated area	373617	72.4
3.	Area sown more than once	74081	14.3
4.	Trees and grooves	737	0.14
5.	Forest	33773	6.54
6.	Cultivable wasteland	2385	0.46
7.	Permanent Pasture land	11755	2.28
8.	Barren land	27954	5.41
9.	Non- Agriculture land	29623	5.73
10.	Current Fallows	105212	20.4

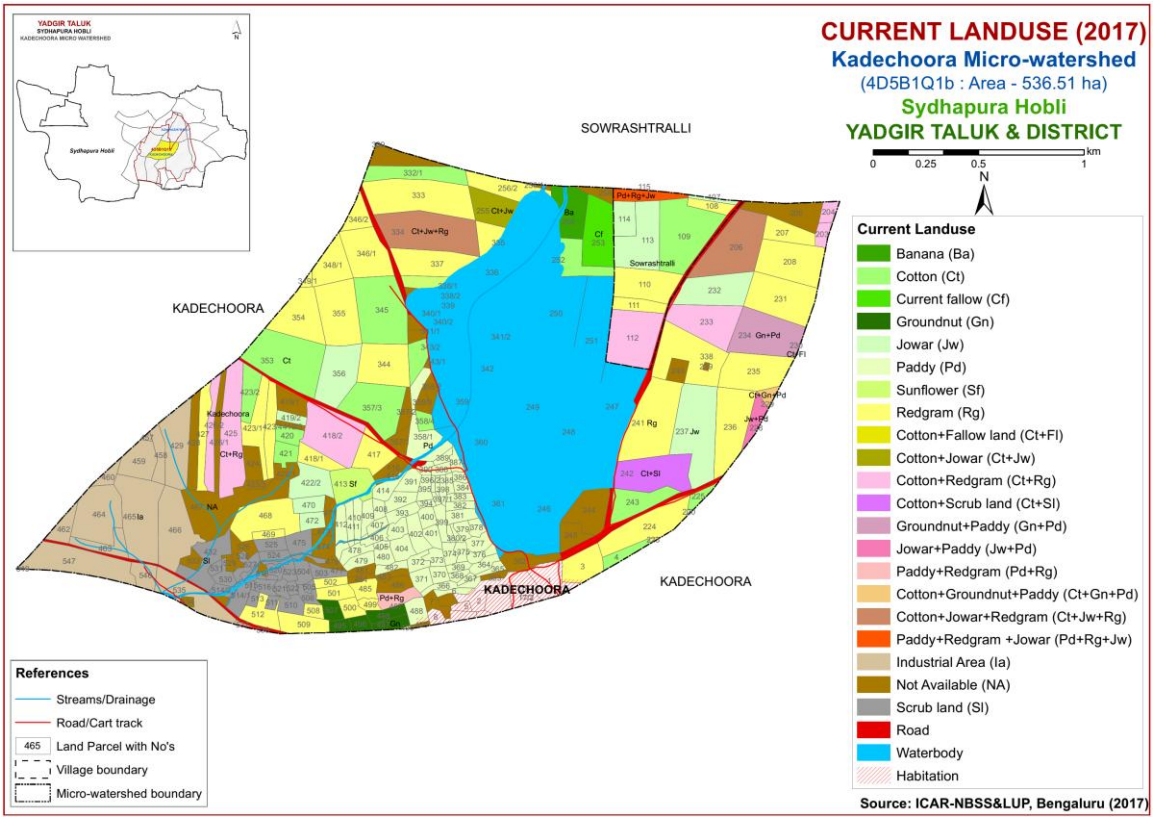


Fig.2.4 Current Land Use map of Kadechoora Microwatershed

Fig. 2.5 a. Different Crops and Cropping Systems in Kadechoora Microwatershed

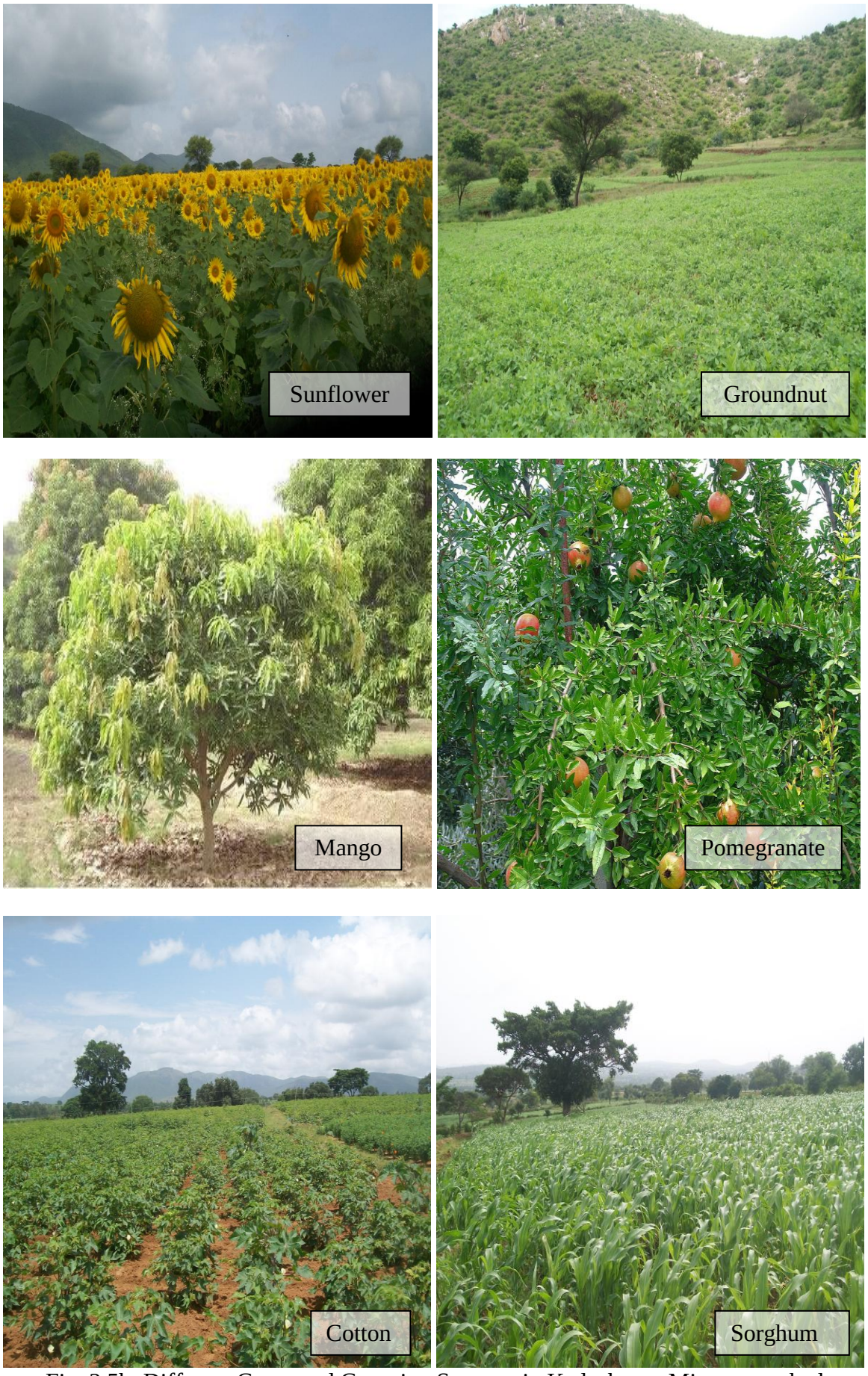


Fig. 2.5b. Different Crops and Cropping Systems in Kadechoora Microwatershed

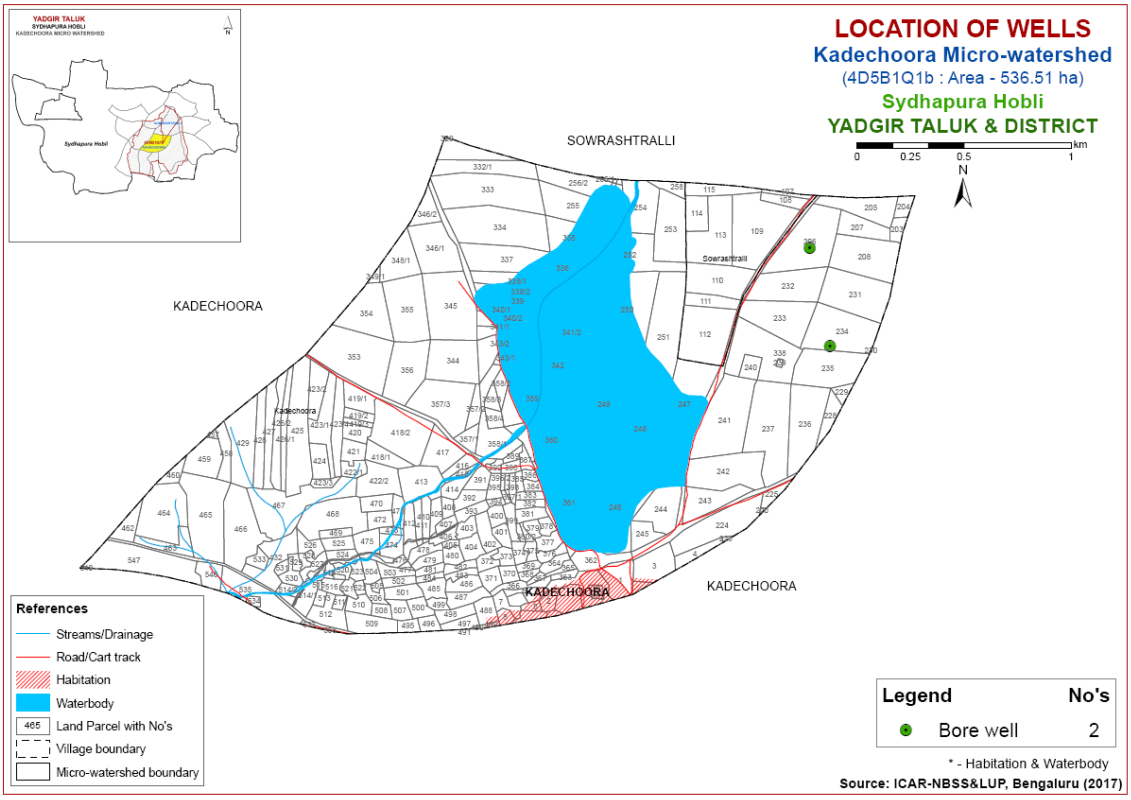


Fig.2.6 Location of Wells in Kadechoora Microwatershed

Chapter 3

SURVEY METHODOLOGY

The purpose of land resource inventory is to delineate similar areas (soil series and phases), which respond or expected to respond similarly to a given level of management. This was achieved in Kadechoora microwatershed by the detailed study of all the soil characteristics (depth, texture, colour, structure, consistence, coarse fragments, porosity, soil reaction, soil horizons etc.) and site (slope of the land, erosion, drainage, occurrence of rock fragments etc.) followed by grouping of similar areas based on soil-site characteristics into homogeneous (management units) units and showing area extent and their geographic distribution on the microwatershed cadastral map. The detailed survey at 1:7920 scale was carried out in 536 ha area. The methodology followed for carrying out land resource inventory was as per the guidelines given in Soil Survey Manual (IARI, 1971; Soil Survey Staff, 2006; Natarajan *et al.,* 2015) which is briefly described below.

3.1 Base Maps

The detailed survey of the land resources occurring in the microwatershed was carried out by using digitized cadastral map as a base. The cadastral map shows field boundaries with their survey numbers, location of tanks, streams and other permanent features of the area (Fig. 3.1). Apart from the cadastral map, remote sensing data products from Cartosat-1 and LISS-IV merged at the scale of 1:7920 were used in conjunction with the cadastral map to identify the rock types, the landscapes, landforms and other surface features. The imagery helped in the identification and delineation of boundaries between hills, uplands and lowlands, water bodies, forest and vegetated areas, roads, habitations and other cultural features of the area (Fig. 3.2). The cadastral map was overlaid on the satellite imagery (Fig.3.3) that helps to identify the parcel boundaries and other permanent features. Apart from cadastral maps and images, toposheets of the area (1:50,000 scale) were used for initial traversing, identification of geology and landforms, drainage features, present land use and also for selection of transects in the microwatershed.

3.2 Image Interpretation for Physiography

False Colour Composites (FCCs) of Cartosat-I and LISS-IV merged satellite data covering microwatershed area was visually interpreted using image interpretation elements and all the available collateral data with local knowledge. The delineated physiographic boundaries were transferred on to a cadastral map overlaid on satellite imagery. Physiographically, the area has been identified as granite gneiss and alluvial landscapes. It was divided into five landforms, *viz;* ridges and mounds, gently and very gently sloping uplands and lowlands based on slope and image characteristics. They were further subdivided into physiographic/image interpretation units based on image characteristics. The image interpretation legend for physiography is given below.

Image Interpretation Legend for Physiography

G- Granite Gneiss Landscape

- G1 Hills/ Ridges/ Mounds
  - G11 Summits
  - G12 Side slopes
    - G121 Side slopes with dark grey tones
- G2 Uplands
  - G21 Summits
  - G22 Gently sloping uplands
    - G221 Gently sloping uplands, yellowish green (eroded)
    - G222 Gently sloping uplands, yellowish white (severely eroded)
  - G23 Very gently sloping uplands
    - G231 Very gently sloping uplands, yellowish green
    - G232 Very gently sloping uplands, medium green and pink
    - G233 Very gently sloping uplands, pink and green (scrub land)
    - G234 Very gently sloping uplands, medium greenish grey
    - G235 Very gently sloping uplands, yellowish white (eroded)
    - G236 Very gently sloping uplands, dark green
    - G237 Very gently sloping uplands, medium pink (coconut garden)
    - G238 Very gently sloping uplands, pink and bluish white (eroded)
  - G24 Valleys/ lowlands
    - G241 Valleys, pink tones
    - G242 Valleys gray mixed with pink tones

DSe – Alluvial landscape

DSe 1 – Summit

DSe 11 –

DSe 12 –

DSe 2 – Very gently sloping

DSe 21 – Very gently sloping, dark gray tone

DSe 22 – Very gently sloping, medium gray tone

DSe 23 – Very gently sloping, yellowish grey tone

DSe 24 – Very gently sloping, whitish grey tone

DSe 25 – Very gently sloping, whitish/ eroded/ calcareous tone

DSe 26- Very gently sloping, medium pink

DSe 3 – Valley/ Lowland

DSe 31 – Whitish gray/Calcareous

DSe 32 – Gray with pink patches

DSe 33 – Medium gray tone

DSe 34 – Lightish gray tone

DSe 35 – Dark gray tone

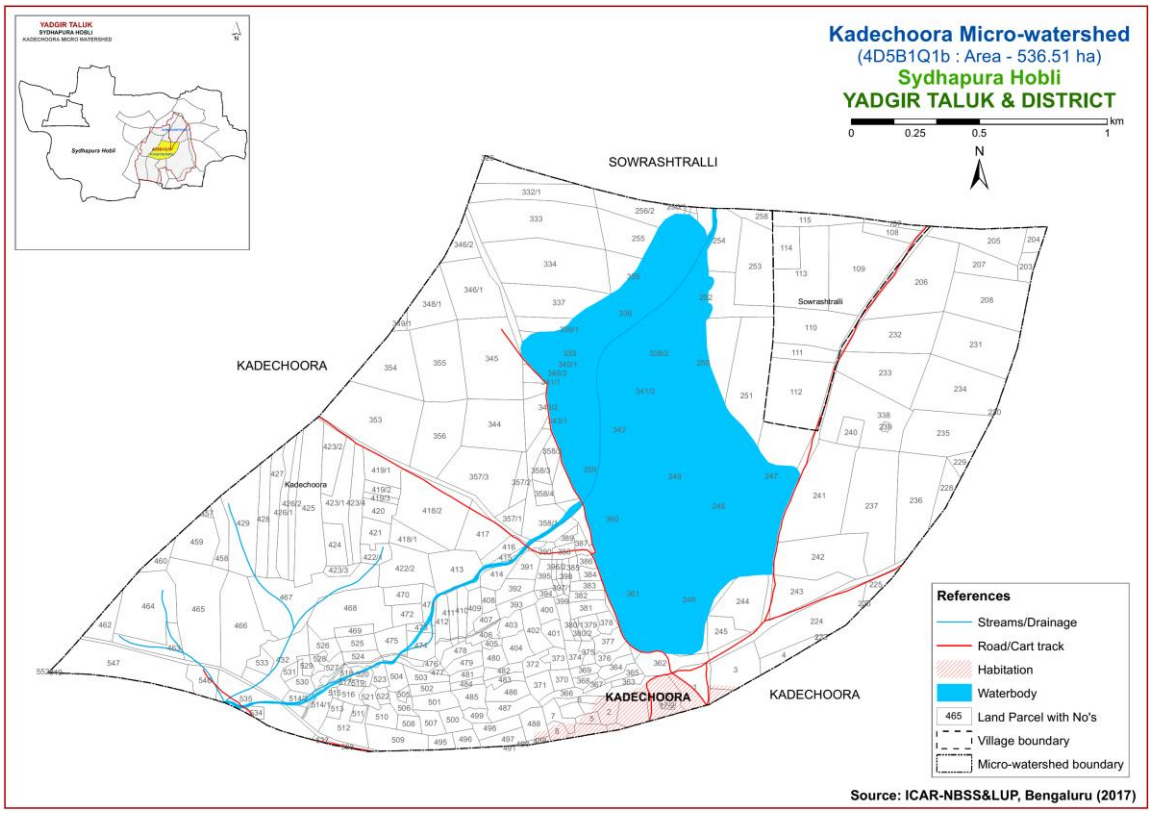


Fig 3.1 Scanned and Digitized Cadastral map of Kadechoora Microwatershed

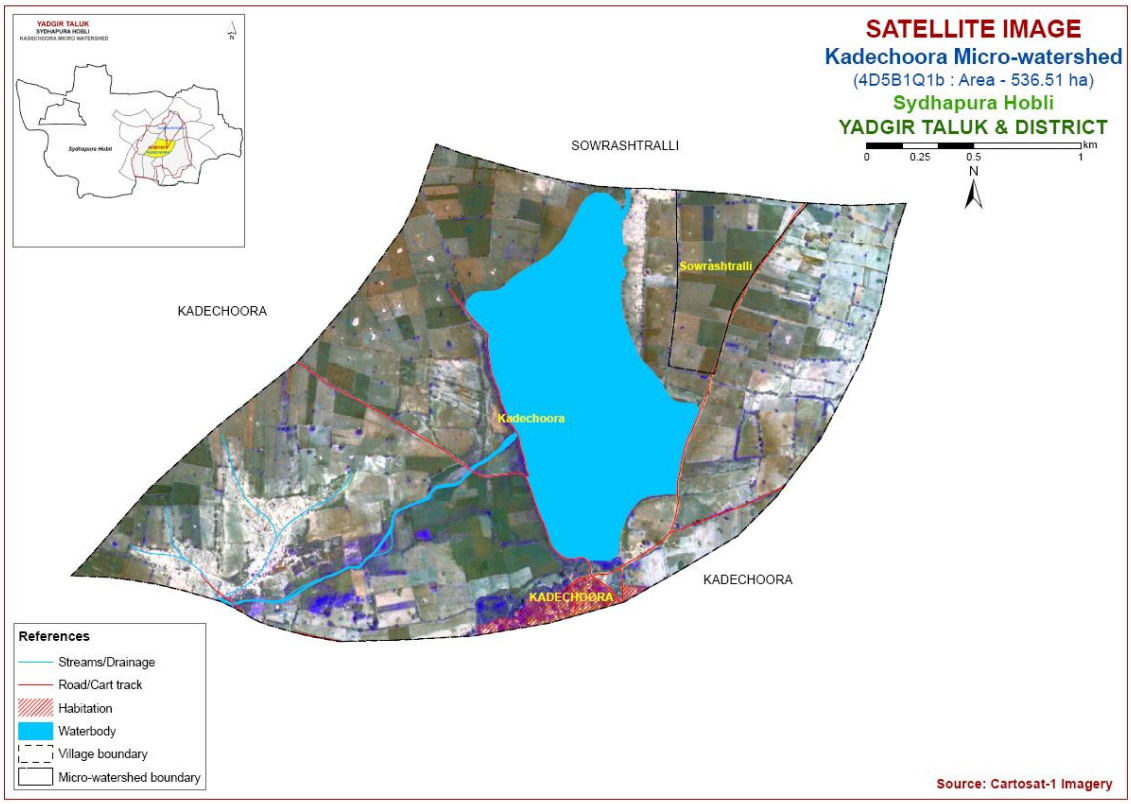


Fig.3.2 Satellite Image of Kadechoora Microwatershed

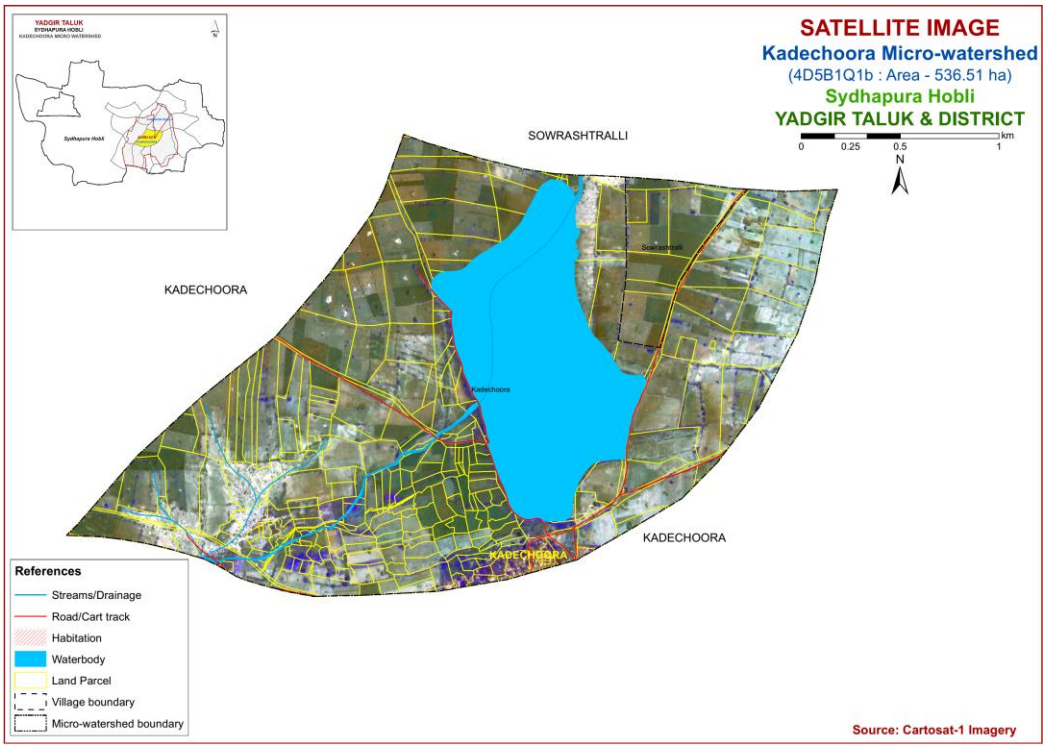


Fig.3.3 Cadastral map overlaid on IRS PAN+LISS IV merged imagery of Kadechoora Microwatershed

3.3 Field Investigation

The field boundaries and survey numbers given on the cadastral sheet were located on the ground by following permanent features like roads, cart tracks, nallas, streams, tanks etc., and wherever changes were noticed, they were incorporated on the microwatershed cadastral map. Preliminary traverse of the microwatershed was carried out with the help of cadastral map, imagery and toposheets. While traversing, landforms and physiographic units identified were checked and preliminary soil legend was prepared by studying soils at few selected places. Then, intensive traversing of each physiographic unit like hills, ridges, uplands and valleys was carried out. Based on the variability observed on the surface, transects (Fig. 3.4) were selected across the slope covering all the landform units in the microwatershed (Natarajan and Dipak Sarkar, 2010).

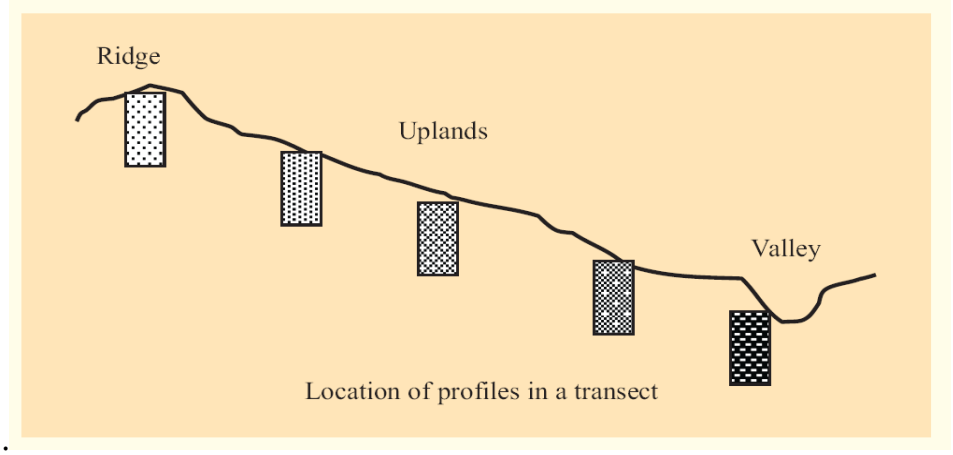


Fig: 3.4. Location of profiles in a transect

In the selected transect, soil profiles were located (Fig. 3.4) at closely spaced intervals to take care of any change in the land features like break in slope, erosion, gravel, stones etc. In the selected sites, soil profiles (vertical cut showing the soil layers from surface to the rock) were opened upto 200 cm or to the depth limited by rock or hard substratum and studied in detail for all their morphological and physical characteristics. The soil and site characteristics were recorded for all profile sites on a standard proforma as per the guidelines given in USDA Soil Survey Manual (Soil Survey Staff, 2012). Apart from the transect study, profiles were also studied at random, almost like in a grid pattern, outside the transect areas.

Based on the soil-site characteristics, the soils were grouped into different soil series (soil series is the most homogeneous unit having similar horizons and properties and behaves similarly for a given level of management). Soil depth, texture, colour, kind of horizon and horizon sequence, amount and nature of gravel present, nature of substratum etc, were used as the major differentiating characteristics for identifying soil series occurring in the area. The differentiating characteristics used for identifying soil series are given in Table 3.1. Based on the above characteristics, 9 soil series were identified in the Kadechoora microwatershed.

Table 3.1 Differentiating Characteristics used for Identifying Soil Series (Characteristics are of Series Control Section)

SOILS OF GRANITE AND GRANITE GNEISS LANDSCAPE							
Sl. No.	**Soil Series**	**Depth (cm)**	**Colour**	**Texture**	**Gravel (%)**	**Horizon sequence**	**Calcar-eousness**
1	Badiyala (BDL)	25-50	7.5YR2.5/3,2.5/ 2,3/3 10YR3/4,4/3	sl-scl	-	Ap-Bw	e
2	Halagera (HLG)	50-75	10YR3/2,4/4 7.5YR4/3,4/2	scl	-	Ap-Bw	ev
3	Jinakera (JNK)	50-75	10YR 3/1,3/2 7.5YR3/4	scl	-	Ap-Bw	e
4	Anur (ANR)	100-150	10YR4/3,4/1	scl-c	-	Ap-Bw	es
SOIL OF ALLUVIAL LANDSCAPE							
1	Rachanalli (RHN)	75-100	10YR3/2,4/3	scl	-	Ap- Bw	es
2	Sowrashtralli (SWR)	100-150	10YR4/1,3/2,3/1	c		Ap- Bss	es
3	Hegganakera (HGN)	>150	10YR4/2,4/1,3/1 ,4/1	c		Ap-BA-Bss	se
LOWLAND SOILS							
1	Kadechoor (KDH)	75-100	10YR 3/2	scl	-	Ap-Bw	e
2	Vankasambar (VKS)	100-150	10YR5/3,4/2,2/1 ,2/2,3/2,4/3	scl	-	Ap-Bw	ev

3.4 Soil Mapping

The area under each soil series was further separated into 9 soil phases and their boundaries delineated on the cadastral map based on the variations observed in the texture of the surface soil, slope, erosion, presence of gravel, stoniness etc. A soil phase is a subdivision of soil series based mostly on surface features that affect its use and management. The soil mapping units are shown on the map (Fig. 3.5) in the form of symbols. During the survey many profile pits, few minipits and a few auger bores representing different landforms occurring in the microwatershed were studied. In addition to the profile study, spot observations in the form of minipits, road cuts, terrace cuts etc., were studied to validate the soil boundaries on the soil map.

The soil map shows the geographic distribution of 9 mapping units representing 9 soil series occurring in the microwatershed. The soil map unit (soil legend) description is presented in Table 3.2. The soil phase map (management units) shows the distribution of 9 soil phases mapped in the microwatershed. Each mapping unit (soil phase) delineated on the map has similar soil and site characteristics. In other words, all the farms or survey numbers included in one phase will have similar management needs and have to be treated accordingly.

3.5 Land Management Units (LMU's)

The 9 soil phases identified and mapped in the microwatershed were grouped into four Land Management Units (LMU's) for the purpose of preparing a Proposed Crop Plan for sustained development of the microwatershed. The database (soil phases) generated under LRI was utilized for identifying Land Management Units (LMU's) based on the management needs. One or more than one soil site characteristic having influence on the management have been choosen for identification and delineation of LMUs. For Kadechoora microwatershed, five soil and site characteristics, namely soil depth, soil texture, slope, erosion and gravel content have been considered for defining LMUs. The Land Management Units are expected to behave similarly for a given level of management.

3.6 Laboratory Characterization

Soil samples for each soil series were collected from representative master profiles for laboratory characterization by following the methods outlined in the Laboratory Manual (Sarma *et al*, 1987). Surface soil samples collected in the year 20167 from farmer's fields (53 samples) for fertility status (major and micronutrients) at 250 m grid interval were analyzed in the laboratory (Katyal and Rattan, 2003). By linking the soil fertility data to the survey numbers through GIS using Kriging method, soil fertility maps for the 11 elements including pH and EC were generated for the microwatershed.

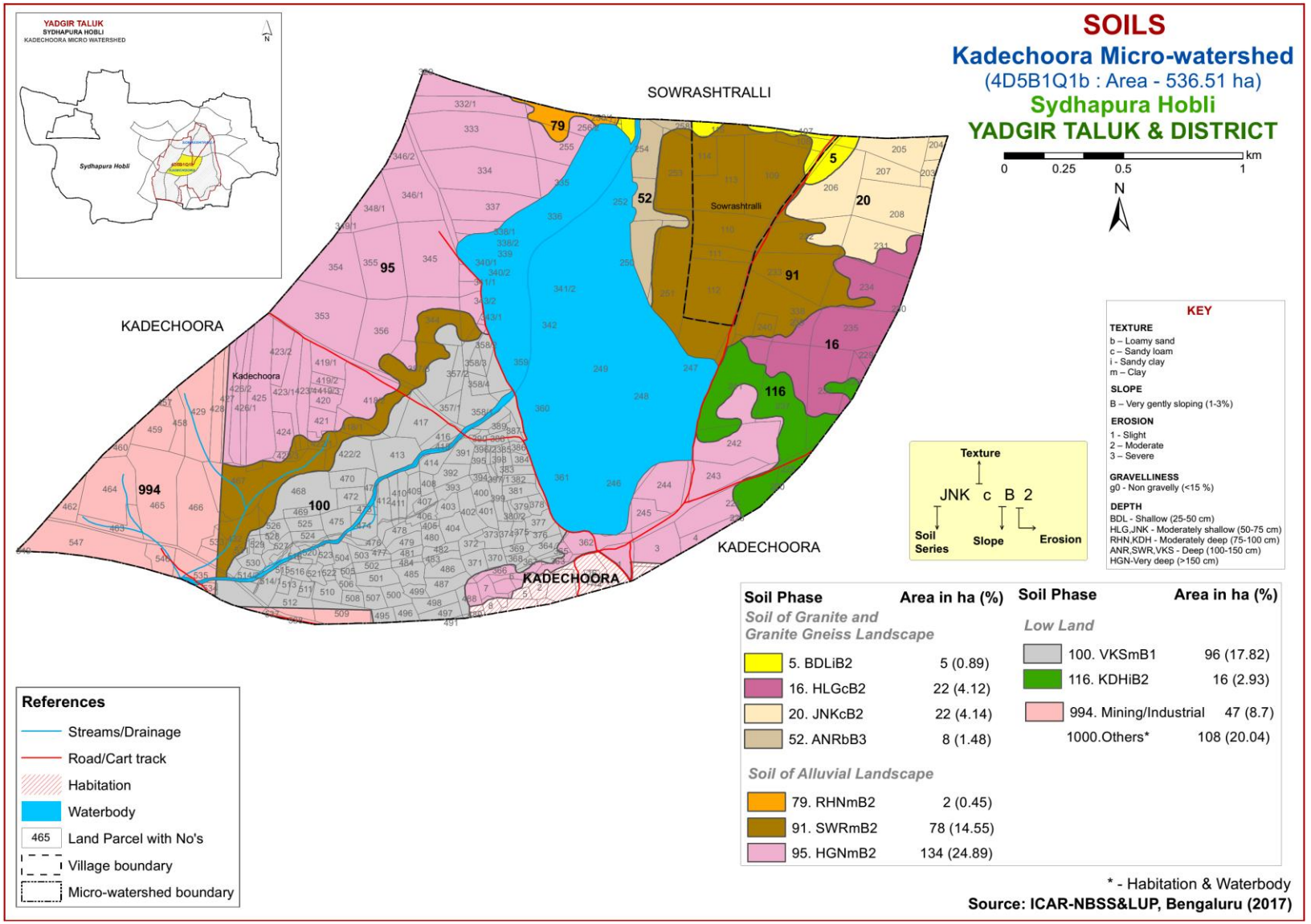


Fig 3.4 Soil phase or management units map of Kadechoora Microwatershed

Table 3.2 Soil Map Unit description of Kadechoora microwatershed

Soil Series	Map Symbol	Soil Map Unit	Mapping Unit Description	Area in ha (%)
Soil of Granite and Granite Gneiss Landscape				
BDL	Badiyala soils are shallow (25-50 cm), well drained, have dark brown to very dark brown and dark yellowish brown, sandy loam to sandy clay loam soils occurring on very gently sloping uplands under cultivation			5 (0.89)
1	BDLiB2	Sandy clay surface, slope 1-3%, moderate erosion		5 (0.89)
HLG	Halagera soils are moderately shallow (50-75 cm), moderately well drained, have dark brown to dark yellowish brown and dark grayish brown, calcareous sandy clay loam soils occurring on very gently sloping uplands under cultivation			22 (4.12)
2	HLGcB2	Sandy loam surface, slope 1-3%, moderate erosion		22 (4.12)
JNK	Jinkera soils are moderately shallow (50-75 cm), well drained, have dark brown to very dark grayish brown, sandy clay loam soils occurring on very gently sloping uplands under cultivation			22 (4.14)
	JNKcB2	Sandy loam surface, slope 1-3%, moderate erosion		22 (4.14)
ANR	Anur soils are deep (100-150 cm), moderately well drained, have dark gray to brown, calcareous sandy clay loam to clay soils occurring on very gently sloping uplands under cultivation			8 (1.48)
	ANRbB3	Loamy sand surface, slope 1-3%, severe erosion		8 (1.48)
Soil of Alluvial Landscape				
RHN	Rachanalli soils are moderately deep (75-100 cm), moderately well drained, have brown to very dark grayish brown, sandy clay loam calcareous soils occurring on very gently sloping uplands under cultivation			2 (0.45)
3	RHNmB2	Clay surface, slope 1-3%, moderate erosion		2 (0.45)
SWR	Sowrashtrahalli soils are deep (100-150 cm), moderately well drained, have dark gray to very dark grayish brown, calcareous black cracking clay soils occurring on very gently sloping uplands under cultivation			78 (14.55)
4	SWRmB2	Clay surface, slope 1-3%, moderate erosion		78 (14.55)
HGN	Hegganakera soils are very deep (>150 cm), moderately well drained, have dark gray to very dark grayish brown and brown, calcareous black cracking clay soils occurring on very gently sloping uplands under cultivation			134 (24.89)
5	HGNmB2	Clay surface, slope 1-3%, moderate erosion		134(24.89)
Low land soils				
KDH	Kadechoor soils are moderately deep (75-100 cm), moderately well drained, have very dark grayish brown, sandy clay loam black soils occurring on very gently sloping lowlands under cultivation			16 (2.93)
8	KDHiB2	Sandy clay surface, slope 1-3%, moderate erosion		16 (2.93)
VKS	Vankasambar soils are deep (100-150 cm), moderately well drained, have brown to very dark grayish brown and very dark brown, calcareous sandy clay laom black soils occurring on very gently sloping lowlands under cultivation			96 (17.82)
9	VKSmB1	Clay surface, slope 1-3%, slight erosion		96 (17.82)
994	Mining/Industrial area			47 (9)
1000	Others (Habitation and Water bodies)			108 (20)

Chapter 4

THE SOILS

Detailed information pertaining to the nature, extent and distribution of different kinds of soils occurring in Kadechoor microwatershed is provided in this chapter. The microwatershed area has been identified as granite gneiss and alluvial landscape. In all, 9 soil series were identified in these landscapes. Soil formation is the result of the combined effect of environmental and terrain factors that are reflected in soil morphology. In the granite gneiss and alluvial landscapes, it is by parent material, time and climate. A brief description of each of the 9 soil series identified followed by 9 soil phases (management units) mapped under each series are furnished below. The soils in any one map unit differ from place to place in their depth, texture, slope, gravelliness, erosion or any other site characteristics that affect management. The soil phase map can be used for identifying the suitability of areas for growing specific crops or for other alternative uses and also for deciding the type of conservation structures needed. The detailed information on soil and site-characteristics like soil depth, surface soil texture, slope, erosion, gravelliness, AWC, LCC etc, with respect to each of the soil phase identified is given village/survey number wise for the microwatershed in Appendix-I.

4.1 Soils of Granite and Granite Gneiss Landscape

In this landscape, 4 soil series are identified and mapped and occupy small area in the microwatershed. Jinakera (JNK) and Halagera (HLG) soil series occupies an area of about 22 ha (4%) each. The brief description of these series along with the soil phases identified and mapped is given below.

4.1.1 Badiyala (BDL) Series: Badiyala soils are shallow (25-50 cm), well drained, have very dark brown, dark yellow brown and dark brown, calcareous sandy loam to sandy clay loam soils. They are developed from weathered granite gneiss and occur on very gently to gently sloping uplands under cultivation.

The thickness of the solum ranges from 28 to 50 cm. The thickness of A horizon ranges from 4 to 12 cm. Its colour is in 10YR hue with value 3 to 4 and chroma 3 to 4. The texture is loamy sand, sandy clay loam and sandy clay. The thickness of B horizon ranges from 27 to 45 cm. Its colour is in 10 YR and 7.5 YR hue with value 2 to 4 and chroma 3 to 4. Its texture is sandy loam to sandy clay loam. The available water capacity is very low (<50mm/m). Only one phase was identified and mapped.

Landscape and Soil Profile characteristics of Badiyala (BDL) Series

4.1.2 Halagera (HLG) Series: Halagera soils are moderately shallow (50-75 cm), moderately well drained, have very dark grayish brown to dark yellowish brown, calcareous sandy clay loam soils. They are developed from weathered granite gneiss and occur on very gently sloping uplands under cultivation.

The thickness of the solum ranges from 51 to 75 cm. The thickness of A horizon ranges from 9 to 15 cm. Its colour is in 7.5 YR and 10 YR hue with value 3 to 4and chroma 2 to 4. The texture is loamy sand to sandy clay loam. The thickness of B horizon ranges from 44 to 66 cm. Its colour is in 10 YR and 7.5 YR hue with value 3 to 4 and chroma 2 to 3. Its texture is sandy clay loam to clay loam and sandy clay. The available water capacity is low (51-100 mm/m). Only one phase was identified and mapped.

Landscape and Soil Profile characteristics of Halagera (HLG) Series

4.2.3 Jinkera (JNK) Series: Jinkera soils are moderately shallow (50-75 cm), well drained, have very dark gray to very dark grayish brown and dark brown, calcareous sandy clay loam soils. They are developed from weathered granite gneiss and occur on very gently sloping uplands under cultivation.

The thickness of the solum ranges from 51-75 cm. Thickness of A horizon ranges from 6 to 11 cm. Its colour is in hue 10 YR and 7.5 YR with value and chroma of 3 to 4. The texture varies from sandy loam to sandy clay. The thickness of B horizon ranges from 53 to 66 cm. Its colour is in 10 YR and 7.5 YR hue with value and chroma of 2 to 4. The texture varies from sandy clay loam and is calcareous. The available water capacity is medium (100-150 mm/m). Only one phase was identified and mapped.

Landscape and Soil Profile characteristics of Jinkera (JNK) Series

4.1.5 Anur (ANR) Series: Anur soils are deep (100-150 cm), moderately well drained, have dark gray to dark brown, calcareous sandy clay loam to clay soils. They are developed from weathered granite gneiss and occur on very gently to gently sloping uplands under cultivation.

The thickness of the solum ranges from 102 to 148 cm. The thickness of A-horizon ranges from 9 to 17 cm. Its colour is in 10 YR hue with value 3 to 4 and chroma 2 to 4. The texture ranges from loamy sand to sandy clay loam and sandy clay and are calcareous. The thickness of B horizon ranges from 102 to 135 cm. Its colour is in 10 YR hue with value 3 to 5 and chroma 1 to 6. Texture is sandy clay loam to sandy clay and clay and is calcareous. The available water capacity is medium (100-150 mm/m). Only one phase was identified and mapped.

Landscape and Soil Profile characteristics of Anur (ANR) Series

4.1.4 Vankasambar (VKS) Series: Vankasambar soils are deep (100-150 cm), moderately well drained, very dark brown to brown, calcareous sandy clay loam soils. They are developed from weathered granite gneiss and occur on very gently to gently sloping lowlands under cultivation.

The thickness of the solum ranges from 120 to 150 cm. The thickness of A horizon ranges from 9 to 22 cm. Its colour is in 10 YR hue with value 4 to 5 and chroma 2 to 5. The texture varies from loamy sand, sandy clay loam and sandy clay. The thickness of B horizon ranges from 102 to 138 cm. Its colour is in 10 YR hue with value 2 to 5 and chroma 2 to 4. Texture is sandy clay loam and is calcareous in nature. The available water capacity is very high (>200 mm/m). Only one phase was identified and mapped.

Landscape and Soil Profile characteristics of Vankasambaar (VKS) Series

4.2.5 Kadechoor (KDH) Series: Kadechoor soils are moderately deep (75-100 cm), moderately well drained, have very dark grayish brown to dark brown, calcareous sandy clay loam soils. They are developed from weathered granite gneiss and occur on very gently to gently sloping lowlands under cultivation.

The thickness of the solum ranges from 75 to 98 cm. The thickness of A horizon ranges from 6 to 11 cm. Its colour is in hue 10 YR with value 3 to 4 and chroma 2. Its texture varies from sandy loam to sandy clay. The thickness of B horizon ranges from 73 to 90 cm. Its colour is in hue 10 YR with value 3 to 4 and chroma 2 to 3. The texture is sandy clay loam. The available water capacity is low (50-100 mm/m). Only one phase was identified and mapped.

Landscape and Soil Profile characteristics of Kadechoor (KDH) Series

4.2 Soils of Alluvial Landscape

In this landscape, 3 soil series are identified and mapped. (HGN) soil series occupies major area of about 134 ha (25%) followed by Sowrashtrahalli (SWR) about 78 ha (15%) and Rachanalli (RHN) about 2 ha (<1%). The brief description of each soil series along with the soil phases identified and mapped is given below.

4.2.4 Rachanalli (RHN) Series: Rachanalli soils are moderately deep (75-100 cm), moderately well drained, very dark grayish brown to dark brown calcareous sandy clay loam soils. They have developed from alluvium and occur on very gently sloping plains under cultivation.

The thickness of the solum ranges from 76 to 100 cm. The thickness of A horizon ranges from 6 to 13 cm. Its colour is in hue 10 YR with value 3 to 4 and chroma 2 to 4. Its texture varies from sandy loam to sandy clay loam and sandy clay. The thickness of B horizon ranges from 66 to 92 cm. Its colour is in hue 10 YR with value 3 to 4 and chroma 1 to 3. Its texture is sandy clay loam. The available water capacity is high (150-200 mm/m). Only one phase was identified and mapped.

Landscape and Soil Profile characteristics of Rachanalli (RHN) Series

4.2.6 Sowrashtrahalli (SWR) Series: Sowrashtrahalli soils are deep (100-150 cm), moderately well drained very dark gray to dark gray calcareous black cracking clay soils. They have developed from alluvium and occur on very gently sloping plains under cultivation.

The thickness of the solum ranges from 107 to 150 cm. The thickness of A horizon ranges from 7 to 13 cm. Its colour is in 10 YR hue with value 2 to 4 and chroma 1 to 2. The texture varies from sandy clay to clay. The thickness of B horizon ranges from 104 to 142 cm. Its colour is in 10 YR hue with value 2 to 4 and chroma 1 to 2. The texture is clay and is calcareous. The available water capacity is very high (>200 mm/m). Only one phase was identified and mapped.

Landscape and Soil Profile characteristics of Sowrashtrahalli (SWR) Series

4.2.7 Hegganakera (HGN) Series: Hegganakera soils are very deep (>150 cm), moderately well drained, very dark gray to dark grayish brown calcareous black cracking clay soils. They have developed from alluvium and occur on very gently sloping plains under cultivation.

The thickness of the solum is more than 150 cm. The thickness of A horizon ranges from 7 to 9 cm. Its colour is in 10 YR hue with value 3 to 4 and chroma 1 to 3 with clay texture. The thickness of B horizon ranges from 152 to 175 cm. Its colour is in 10 YR hue with value 2 to 4 and chroma 1 to 3. Its texture is clay. The available water capacity is very high (>200 mm/m). Only one phase was identified and mapped.

Landscape and Soil Profile characteristics of Hegganakera (HGN) Series

Chapter 5

INTERPRETATION FOR LAND RESOURCE MANAGEMENT

The most important soil and site characteristics that affect the land use and conservation needs of an area are land capability, soil depth, soil texture, coarse fragments, available water capacity, soil slope, soil erosion, soil reaction etc. These are interpreted from the data base generated through land resource inventory and several thematic maps are generated. These would help in identifying the areas suitable for growing crops and, soil and water conservation measures and structures needed thus helping to maintain good soil health for sustained crop production. The various thematic maps generated are described below.

5.1 Land Capability Classification

Land capability classification is an interpretative grouping of soil map units (soil phases) mainly based on inherent soil characteristics, external land features and environmental factors that limit the use of land for agriculture, pasture, forestry, or other uses on a sustained basis (IARI, 1971). The land and soil characteristics used to group the land resources in an area into various land capability classes, subclasses and units are

Soil characteristics: Depth, texture, gravel content, calcareousness.

Land characteristics: Slope, erosion, drainage, rock outcrops.

Climate: Total rainfall and its distribution, and length of crop growing period.

The Land capability classification system is divided into land capability classes, subclasses and units based on the level of information available. Eight land capability classes are recognized. They are

Class I: They are very good lands that have no limitations or very few limitations that restrict their use.

Class II: They are good lands that have minor limitations and require moderate conservation practices.

Class III: They are moderately good lands that have moderate limitations that reduce the choice of crops or that require special conservation practices.

Class IV: They are fairly good lands that have very severe limitations that reduce the choice of crops or that require very careful management.

Class V: Soils in these lands are not likely to erode, but have other limitations like wetness that are impractical to remove and as such not suitable for agriculture, but suitable for pasture or forestry with minor limitations.

Class VI: The lands have severe limitations that make them generally unsuitable for cultivation, but suitable for pasture or forestry with moderate limitations.

Class VII: The lands have very severe limitations that make them unsuitable for cultivation, but suitable for pasture or forestry with major limitations.

Class VIII: Soil and other miscellaneous areas (rock lands) that have very severe limitations that nearly preclude their use for any crop production, but suitable for wildlife, recreation and installation of wind mills.

The land capability subclasses are recognised based on the dominant limitations observed within a given land capability class. The subclasses are designated by adding a lower case letter like 'e', 'w', 's', or 'c' to the class numeral. The subclass "e" indicates that the main hazard is risk of erosion, "w" indicates drainage or wetness as a limitation for plant growth, "s" indicates shallow soil depth, coarse or heavy textures, calcareousness, salinity/alkali or gravelliness and "c" indicates limitation due to climate.

The land capability subclasses have been further subdivided into land capability units based on the kinds of limitations present in each subclass. Ten land capability units are used in grouping the soil map units. They are stony or rocky (0), erosion hazard (slope, erosion) (1), coarse texture (sand, loamy sand, sandy loam) (2), fine texture (cracking clay, silty clay) (3), slowly permeable subsoil (4), coarse underlying material (5), salinity/alkali (6), stagnation, overflow, high ground water table (7), soil depth (8) and fertility problems (9). The capability units thus identified have similar soil and land characteristics that respond similarly to a given level of management. The soils of the microwatershed have been classified upto land capability subclass level.

The 9 soil map units identified in the Kadechoora microwatershed are grouped under 2 land capability classes and 4 land capability subclasses. About 71 per cent area in the microwatershed is suitable for agriculture (Fig. 5.1) and 29 per cent is not suitable for agriculture.

Good cultivable lands (Class II) cover about 69 per cent area and are distributed in all parts of the microwatershed with minor problems of soil, drainage and erosion. Moderately good cultivable lands (Class III) cover an area of about 2 per cent and are distributed in the northeastern part of the microwatershed with moderate problems of soil and erosion.

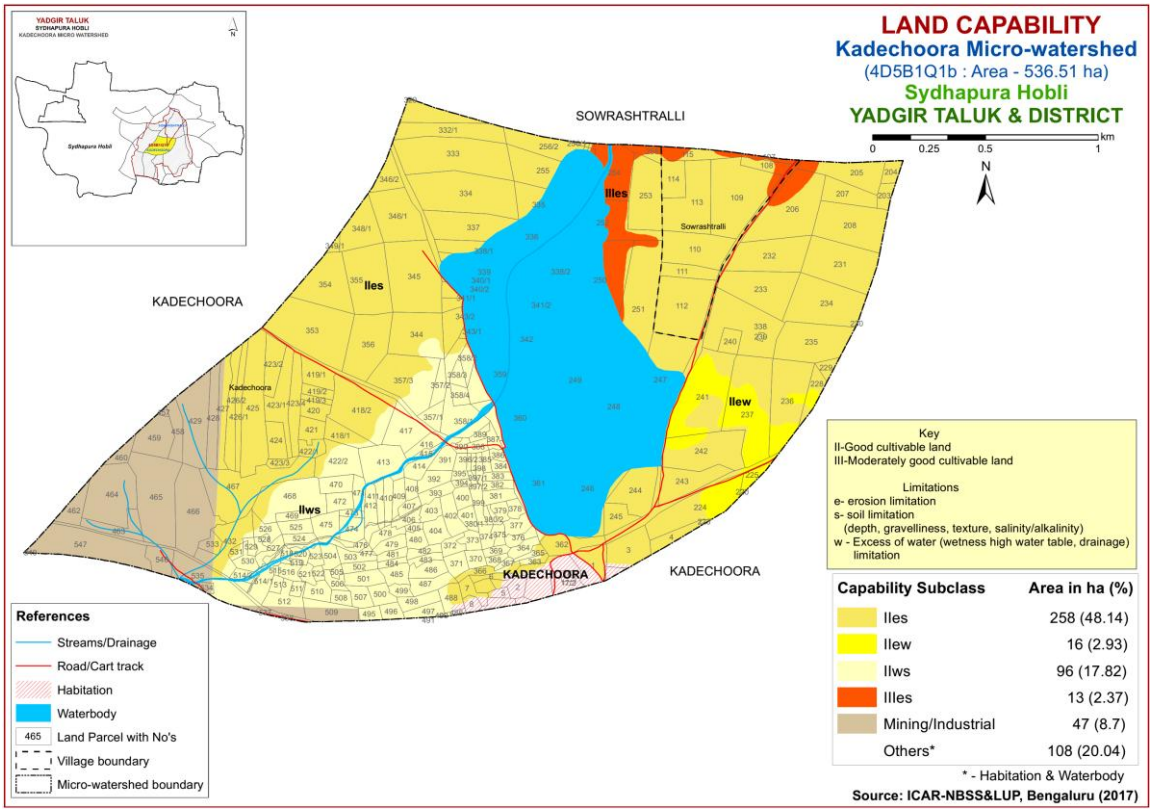


Fig. 5.1 Land Capability map of Kadechoora Microwatershed

5.2 Soil Depth

Soil depth refers to the depth of the soil occurring above the parent material or hard rock. The depth of the soil determines the effective rooting depth for plants and in accordance with soil texture, mineralogy and gravel content, the capacity of the soil column to hold water and nutrient availability. Soil depth is one of the most important soil characteristic that is used in differentiating soils into different soil series. The soil depth classes used in identifying soils in the field are very shallow (<25 cm), shallow (25-50 cm), moderately shallow (50-75 cm), moderately deep (75-100 cm), deep (100-150 cm) and very deep (>150 cm). They were used to classify the soils into different depth classes and a soil depth map was generated. The area extent and their geographical distribution in the microwatershed is shown in Figure 5.2.

Deep soils (100-150 cm) occur in maximum about 182 ha (34%) and are distributed in the southwestern, central and northeastern part of the microwatershed. Very deep soils (>150 cm) occur in an area of about 134 ha (25%) and are distributed in the southern, northern and northwestern part of the microwatershed. Moderately deep soils (75-100 cm) occur in an area of about 18 ha (3%) and are distributed in the southeastern and northeastern part of the microwatershed. An area of about 44 ha (8%) is moderately shallow soils (50-75 cm) and are distributed in the eastern and northeastern part of the microwatershed. Shallow soils (25-50 cm) occupy small area of about 5 ha (1%) and are distributed in the northeastern part of the microwatershed.

The most productive lands covering about 316 ha (59%) with respect to soil rooting depth where all climatically adapted annual and perennial crops can be grown are deep (100-150 cm) to very deep (>150 cm) occurring in all parts of the microwatershed.

The most problem lands with a small area of about 5 ha (1%) having shallow (25-50 cm) rooting depth occur in the central, northern and western part of the microwatershed. They are not suitable for growing agricultural crops but well suited for pasture, forestry or other recreational purposes. Occasionally, short duration crops may be grown if rainfall is normal.

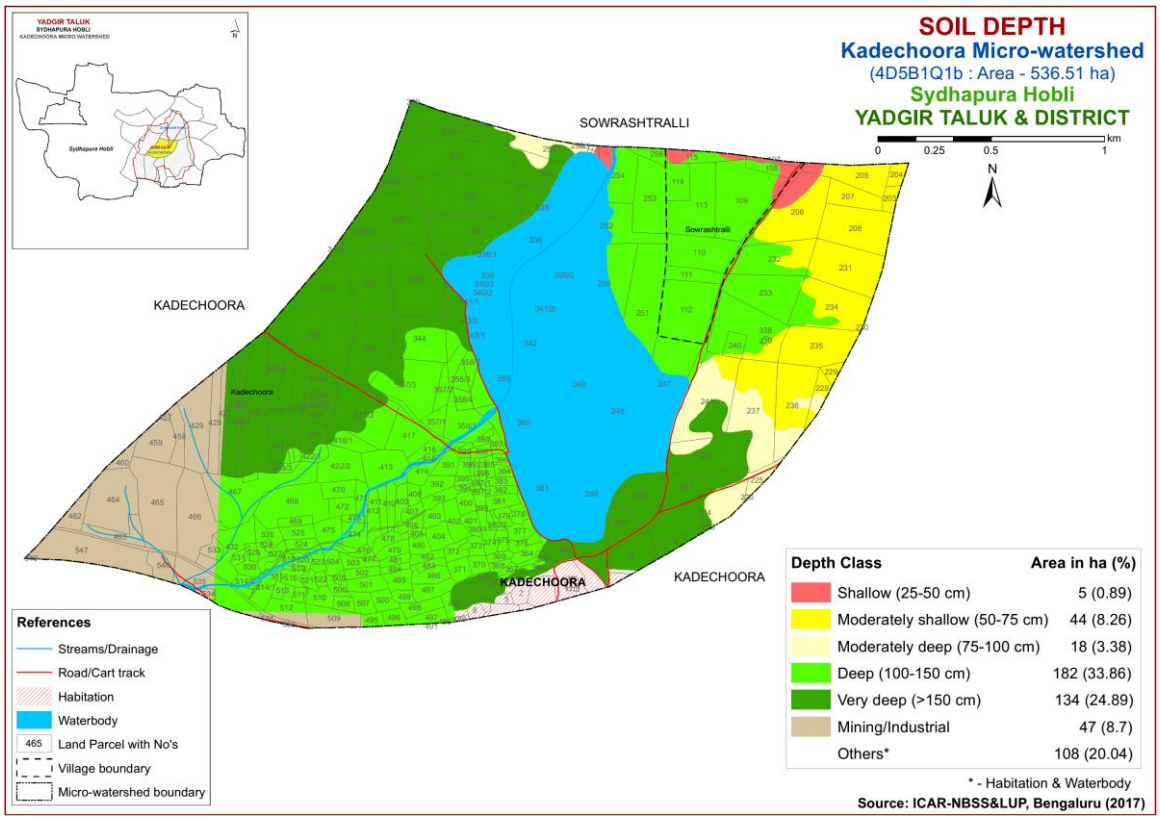


Fig. 5.2 Soil Depth map of Kadechoora Microwatershed

5.3 Surface Soil Texture

Texture is an expression to indicate the coarseness or fineness of the soil as determined by the relative proportion of primary particles of sand, silt and clay. It has a direct bearing on the structure, porosity, adhesion and consistence. The surface layer of a soil to a depth of about 25 cm is the layer that is most used by crops and plants. The surface soil textural class provides a guide to understanding soil-water retention and availability, nutrient holding capacity, infiltration, workability, drainage, physical and chemical behaviour, microbial activity and crop suitability. The textural classes used for LRI were used to classify and a surface soil texture map was generated. The area extent and their geographical distribution in the microwatershed is shown in Figure 5.3.

Maximum area of about 330 ha (62%) has clayey soils at the surface and are distributed in all parts of the microwatershed. Loamy soils occupy an area of about 44 ha

(8%) distributed in the eastern and northeastern part of the microwatershed. Sandy soils occupy small area of about 8 ha (1%) distributed in the southeastern and northeastern part of the microwatershed.

The most productive lands (62 %) with respect to surface soil texture are the clay soils that have high potential for soil-water retention and availability, and nutrient retention and availability, but have problems of drainage, infiltration, workability and other physical problems. The other productive lands (8 %) are loamy soils which also have high potential for soil-water retention and nutrient availability but have no drainage or other physical problems. The problematic lands are sandy soils that have less run-off and less soil moisture, less capillary rise and less evaporation losses, but are amenable to good soil tilth and are ideal for root crops.

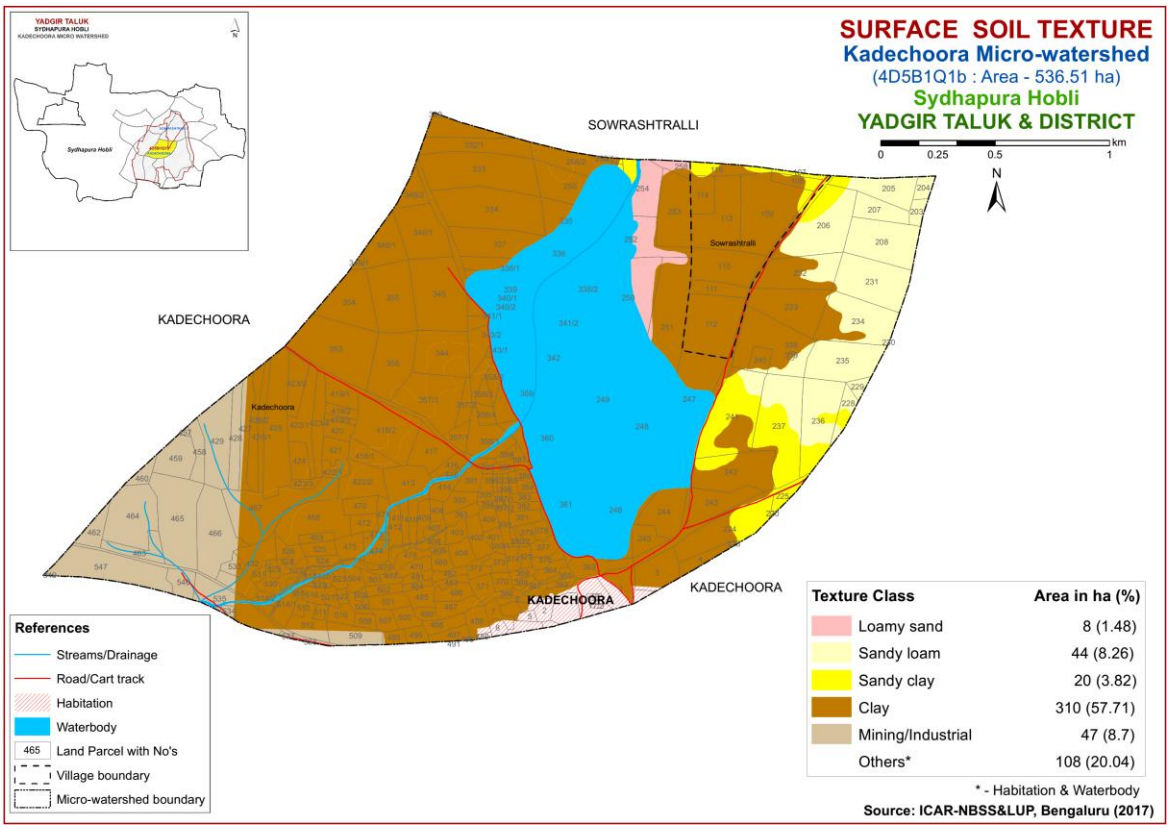


Fig. 5.3 Surface Soil Texture map of Kadechoora Microwatershed

5.4 Soil Gravelliness

Gravel is the term used for describing coarse fragments between 2 mm and 7.5 cm diameter and stones for those between 7.5 cm and 25 cm. The presence of gravel and stones in the soil reduces the volume of soil responsible for moisture and nutrient storage, drainage, infiltration and runoff and hinders plant growth by impeding root growth and seedling emergence, intercultural operations and farm mechanization. The gravelliness classes used in LRI were used to classify the soils and using these classes a gravelliness map was generated. The area extent and their geographical distribution in the microwatershed is shown in Figure 5.4.

Entire area has soils that are non gravelly (<15%) covering about 382 ha (71%) and are distributed in all parts of the microwatershed (Fig.5.4).

The most productive lands with respect to gravelliness are found to be 71 per cent. They are non gravelly (<15%) and have potential for growing all annual and perennial crops.

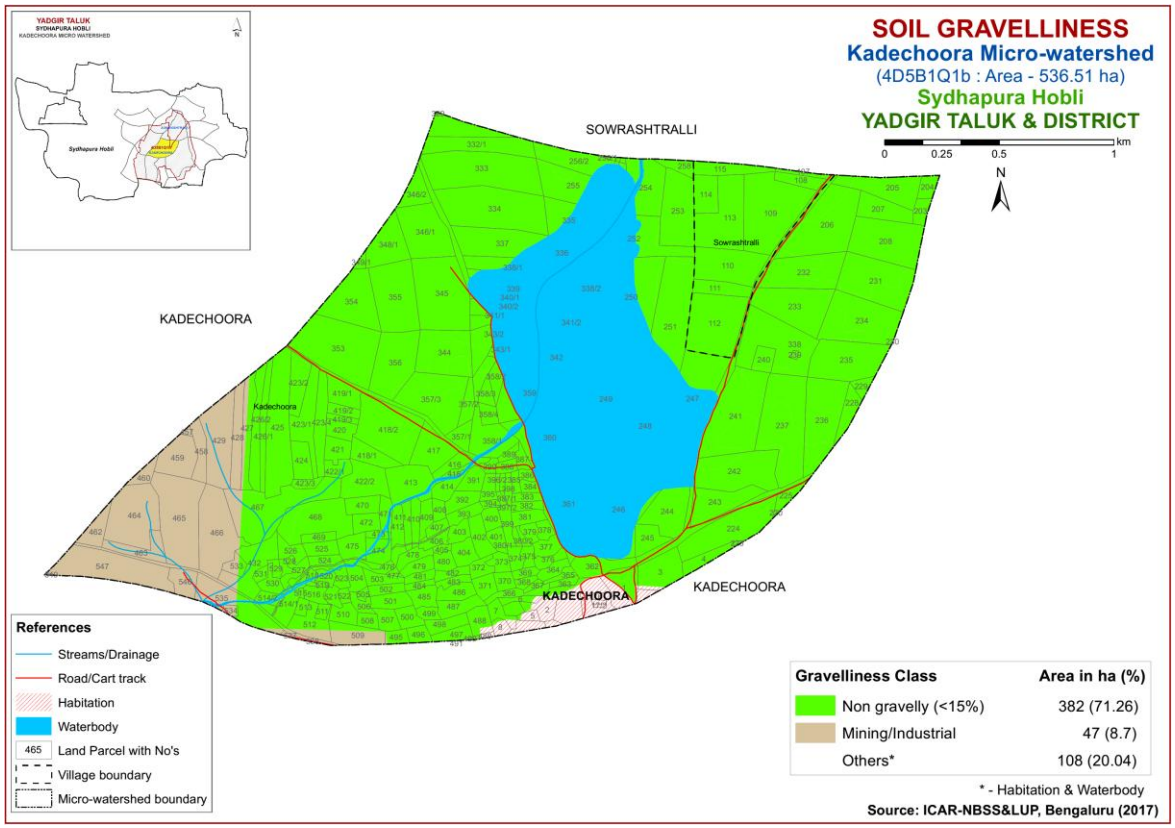


Fig. 5.4 Soil Gravelliness map of Kadechoora Microwatershed

5.5 Available Water Capacity

The soil available water capacity (AWC) is estimated based on the ability of the soil column to retain water between the tensions of 0.33 and 15 bar in a depth of 100 cm or the entire solum if the soil is shallower. The AWC of the soils (soil series) as estimated by considering the soil texture, mineralogy, soil depth and gravel content (Sehgal *et al.*, 1990) and accordingly the soil map units were grouped into five AWC classes *viz*, very low (<50 mm/m), low (50-100 mm/m), medium (100-150 mm/m), high (150-200 mm/m) and very high (>200 mm/m) and using these classes an AWC map was generated. The area extent and their geographical distribution in the microwatershed is shown in Figure 5.5.

Very small area of about 5 ha (1%) has soils that are very low (<50 mm/m) in available water capacity and are distributed in the northeastern part of the microwatershed. An area of about 60 ha (11%) has soils that are low (51-100 mm/m) in available water capacity and are distributed in the northeastern, eastern and southeastern part of the microwatershed. A very minute area of 2 ha (<1%) in the microwatershed has

soils that are medium (101-150 mm/m) in available water capacity and are distributed in the northeastern part of the microwatershed. The soils that are very high (>200 mm/m) in AWC covering major area of about 315 ha (59%) are distributed in all parts of the microwatershed.

An area of about 315 ha (59%) has soils that have very high potential (>200 mm/m) with regard to available water capacity and are distributed in all parts of the microwatershed. In these areas, if the rainfall is normal and well distributed, all climatically adapted long duration annual and perennial crops can be grown. About 65 ha (12%) area in the microwatershed has soils that are problematic with regard to available water capacity. Here, only the short or medium duration crops can be grown and the probability of crop failure is very high. These areas are best put to other alternative uses.

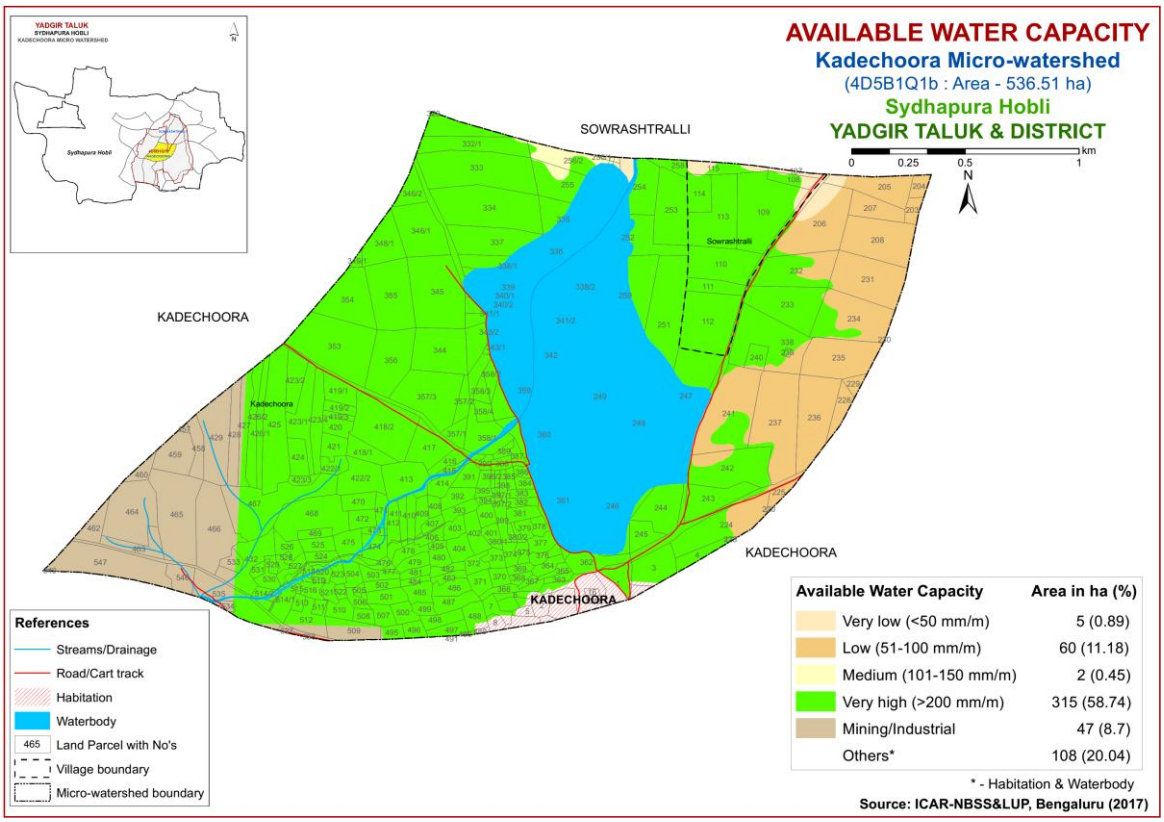


Fig. 5.5 Soil Available Water Capacity map of Kadechoora Microwatershed

5.6 Soil Slope

Soil slope refers to the inclination of the surface of the land. It is defined by gradient, shape and length, and is an integral feature of any soil as a natural body. Slope is considered important in soil genesis, land use and land development. The length and gradient of slope influences the rate of runoff, infiltration, erosion and deposition. The soil map units were grouped into four slope classes and a slope map was generated. The area extent and their geographical distribution in the microwatershed is shown in Figure 5.6.

Entire area in the microwatershed falls under very gently sloping (1-3%) slope class. It covers an area of about 382 ha (71%) and is distributed in all parts of the microwatershed.

An area of about 382 ha (71%) in the microwatershed has soils that have high potential in respect of soil slopes. In these areas, all climatically adapted annual and perennial crops can be grown without much soil and water conservation and other land development measures.

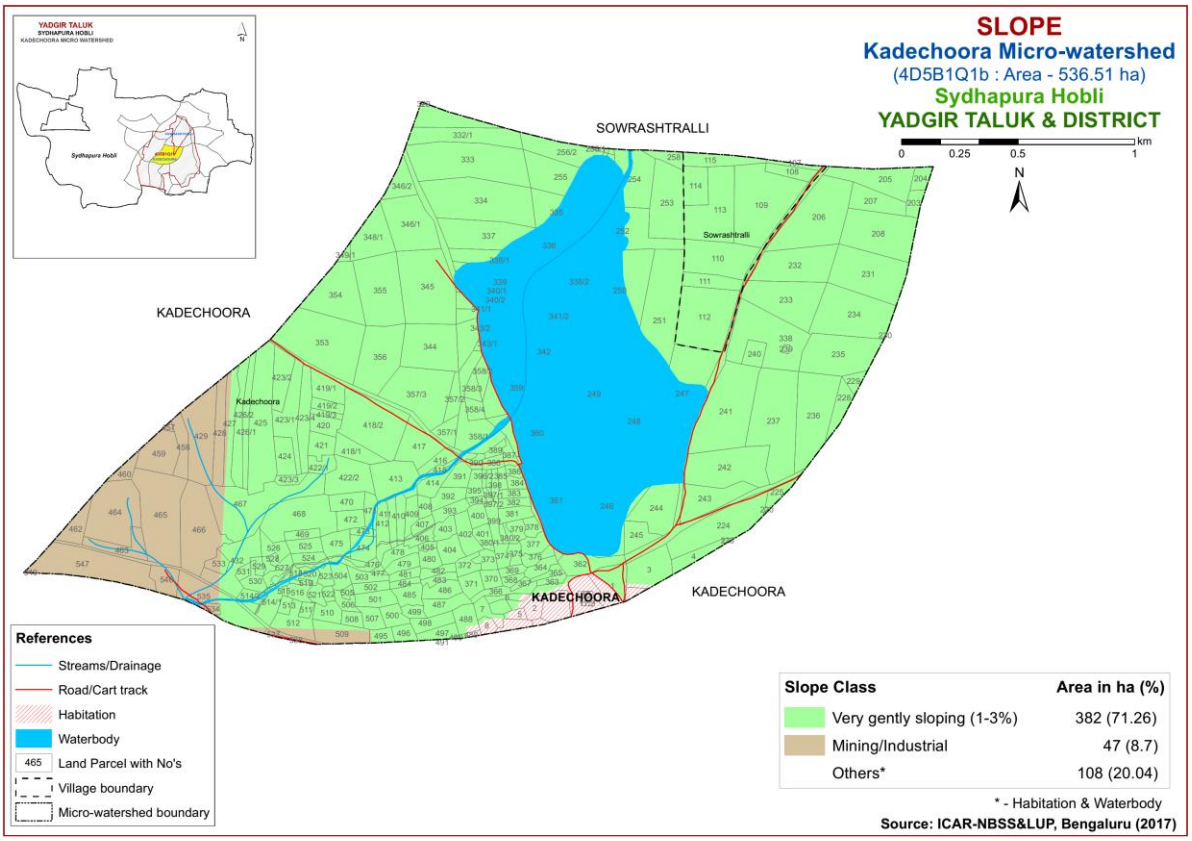


Fig. 5.6 Soil Slope map of Kadechoora Microwatershed

5.7 Soil Erosion

Soil erosion refers to the wearing away of the earth's surface by the forces of water, wind and ice involving detachment and transport of soil by raindrop impact. It is used for accelerated soil erosion resulting from disturbance of the natural landscape by burning, excessive grazing and indiscriminate felling of forest trees and tillage, all usually by man. The erosion classes showing an estimate of the current erosion status as judged from field observations in the form of rills, gullies or a carpet of gravel on the surface are recorded. Four erosion classes, viz, slight erosion (e1), moderate erosion (e2), severe erosion (e3) and very severe erosion (e4) are recognized. The soil map units were grouped into different erosion classes and a soil erosion map was generated. The area extent and their spatial distribution in the microwatershed is given in Figure 5.7.

Soils that are slightly eroded (e1 class) cover an area of about 96 ha (18%) and are distributed in the southwestern and central part of the microwatershed. Soils that are

moderately eroded (e2 class) cover a major area of about 279 ha (52%) and are distributed in all parts of the microwatershed. Severely eroded (e3 class) soils cover a small area of about 8 ha (1%) and are distributed in the northeastern part of the microwatershed.

Top priority is to be given to 8 ha area where they are severely eroded for taking up soil and water conservation and other land development measures followed by moderately eroded lands that cover about 279 ha.

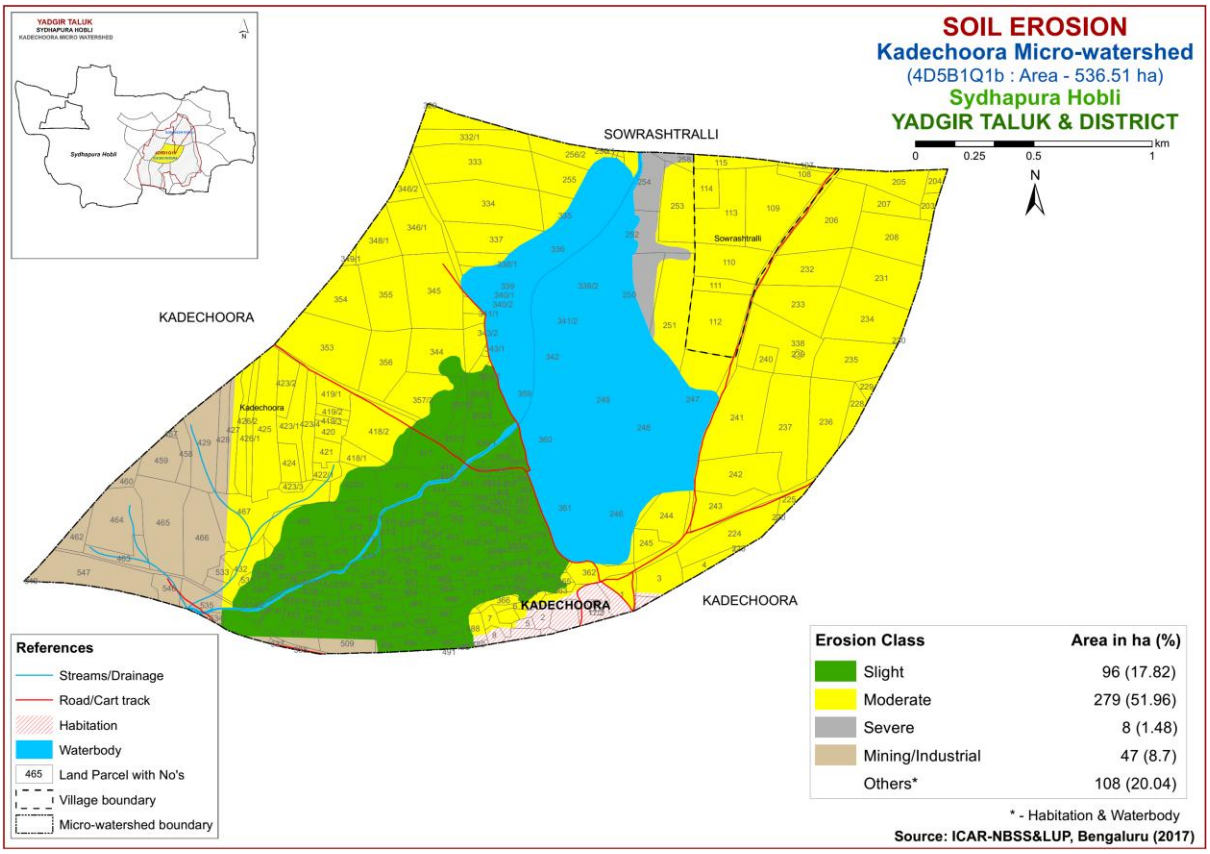


Fig. 5.7 Soil Erosion map of Kadechoora Microwatershed

Chapter 6

FERTILITY STATUS

Soil fertility plays an important role in increasing crop yield. The adoption of high yielding varieties that require high amounts of nutrients has resulted in deficiency symptoms in crops and plants due to imbalanced fertilization and poor inherent fertility status. Hence, it is necessary to know the fertility (macro and micro nutrients) status of the soils of the watersheds for assessing the kind and amount of fertilizers required for each of the crop intended to be grown. For this purpose, the surface soil samples (28 samples) collected from the grid points (one soil sample at every 250 m interval) all over the microwatershed through land resource inventory in the year 2017 were analysed for pH, EC, organic carbon, available phosphorus and potassium and for micronutrients like zinc, copper, iron and manganese, and secondary nutrient sulphur.

Soil fertility data generated has been assessed and individual maps for all the nutrients for the microwatershed have been generated using Kriging method. The village/survey number wise fertility data for the microwatershed is given in Appendix-II.

6.1 Soil Reaction (pH)

The soil fertility analysis of the Kadechoora microwatershed for soil reaction (pH) showed that major area of about 216 ha (40%) is moderately alkaline (pH 7.8-8.4) in reaction and is distributed in the southern, southwestern, southeastern, central, northeastern and northwestern part of the microwatershed (Fig.6.1). Slightly alkaline (pH 7.3-7.8) is around 39 ha (7%) area and is distributed in the eastern part of the microwatershed. An area of about 114 ha (21%) is strongly alkaline (pH 8.4-9.0) and is distributed in the southwestern, central, southeastern and northern part of the microwatershed. Very strongly alkaline (pH >9.0) is around 14 ha (3%) area and is distributed in the southwestern part of the microwatershed. Thus, all the soils in the microwatershed are alkaline in soil reaction.

6.2 Electrical Conductivity (EC)

The Electrical Conductivity of the soils of the entire microwatershed area is <2 dSm^{-1} (Fig 6.2) and as such the soils in the microwatershed are non-saline.

6.3 Organic Carbon

The soil organic carbon content (Fig.6.3) of the soils in the microwatershed is high (>0.75%) in an area of about 102 ha (19%) that are distributed in the southern and northern part of the microwatershed. Medium (0.5-0.75%) organic carbon content accounts major area of about 183 ha (34%) and is distributed in the southwestern, southeastern, central, eastern, northwestern and northeastern part of the microwatershed. Low (<0.5%) organic carbon content accounts for an area of about 97 ha (18%) and is distributed in the southwestern, southeastern, central and northwestern part of the microwatershed.

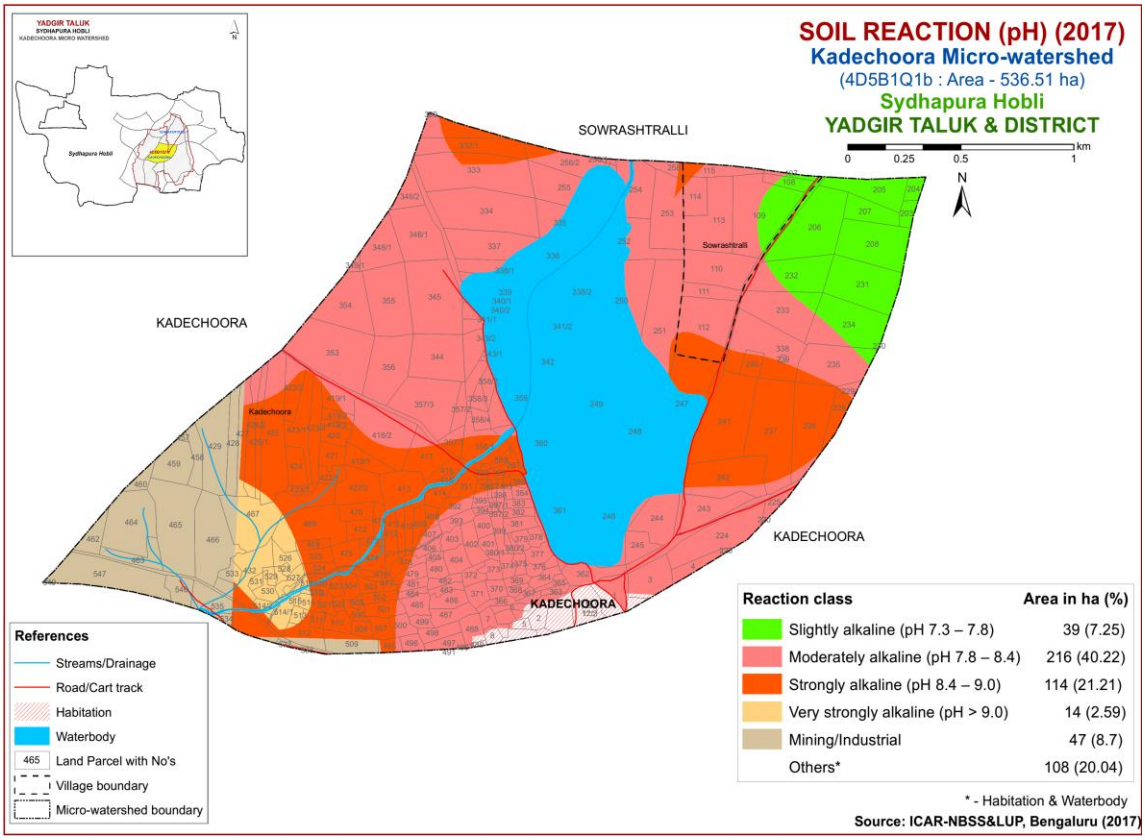


Fig.6.1 Soil Reaction (pH) map of Kadechoora Microwatershed

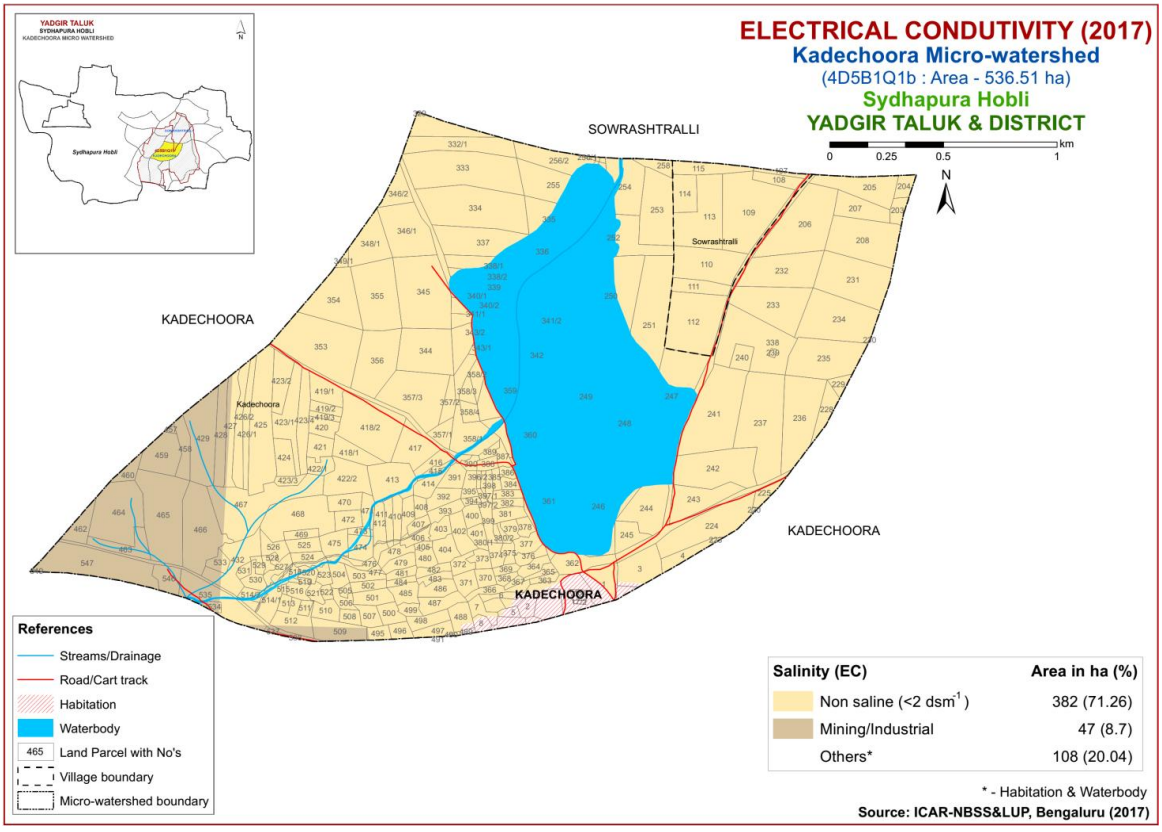


Fig.6.2 Electrical Conductivity (EC) map of Kadechoora Microwatershed

6.4 Available Phosphorus

The soil fertility analysis revealed that available phosphorus (Fig.6.4) is low (<23 kg/ha) in an area of about 154 ha (29%) and is distributed in the southwestern, central, northern, northwestern and northeastern part of the microwatershed. Major area of about 201 ha (37%) is medium (23-57 kg/ha) in available phosphorus and is distributed in the southwestern, southeastern, eastern, central, northeastern and northwestern part of the microwatershed. A small area of about 27 ha (5%) is high (>57 kg/ha) in available phosphorus and is distributed in the southern part of the microwatershed. There is an urgent need to increase the dose of phosphorous in soils that low and medium for all the crops by 25 per cent over the recommended dose to realize better crop performance.

6.5 Available Potassium

Available potassium content (Fig.6.5) is medium (145-337 kg/ha) in an area of 40 ha (7%) and is distributed in the eastern and southeastern part of the microwatershed. High available potassium (>337 kg/ha) content accounts for major area of 342 ha (64%) and is distributed in all parts of the microwatershed.

6.6 Available Sulphur

Available sulphur content is medium (10-20 ppm) in an area of about 87 ha (16%) and is distributed in the `southern, southeastern and northeastern part of the microwatershed. Available sulphur is low (<10 ppm) in major area of 288 ha (54%) and is distributed in all parts of the microwatershed and high (>20 ppm) in very small area of 7 ha (1%) and are distributed in the northeastern part of the microwatershed (Fig.6.6).

6.7 Available Boron

Available boron content (Fig.6.7) is medium (0.5-1.0 ppm) in major area of about 198 ha (37%) and is distributed in the southwestern, southeastern, central, northwestern and southern part of the microwatershed. An area of about 68 ha (13%) is low (<0.5ppm) in available boron and are distributed in the southern, southwestern and central part of the microwatershed. An area of about 116 ha (22%) is high (>1.0 ppm) in available boron and are distributed in the southwestern, northern, northeastern, northwestern and eastern part of the microwatershed.

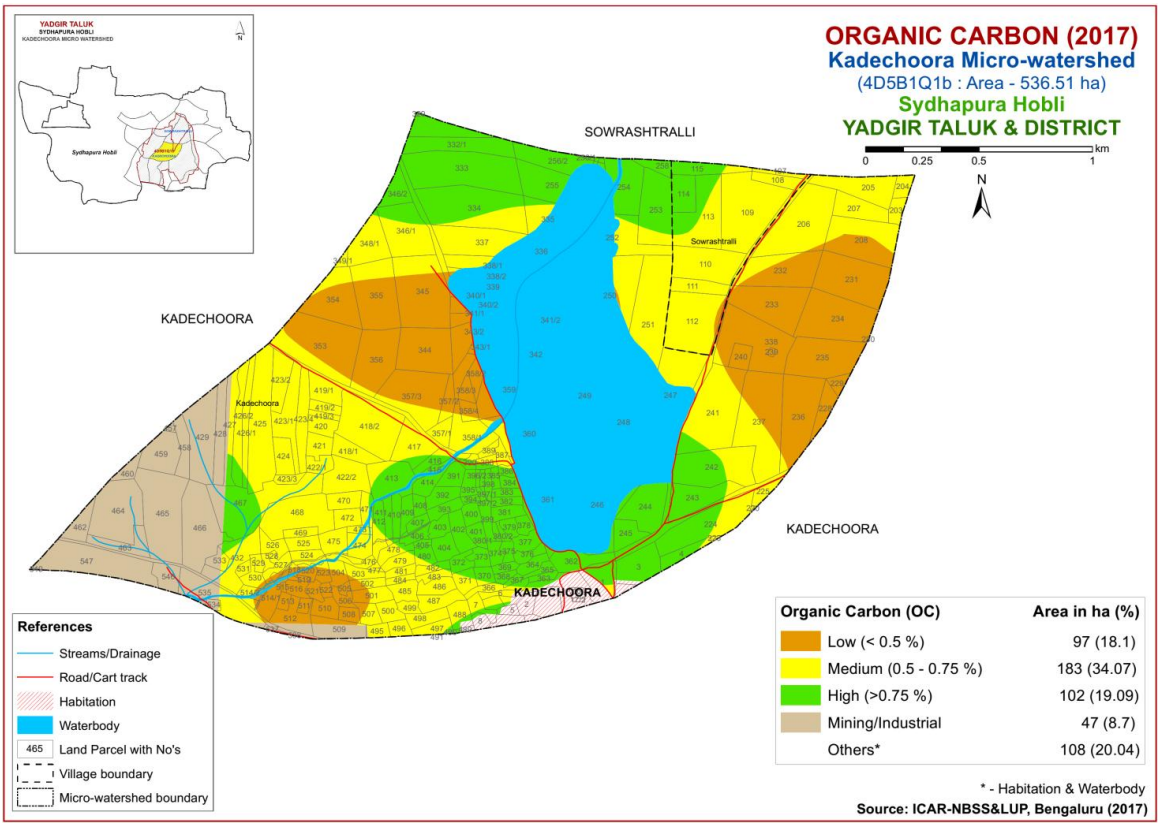


Fig.6.3 Soil Organic Carbon map of Kadechoora Microwatershed

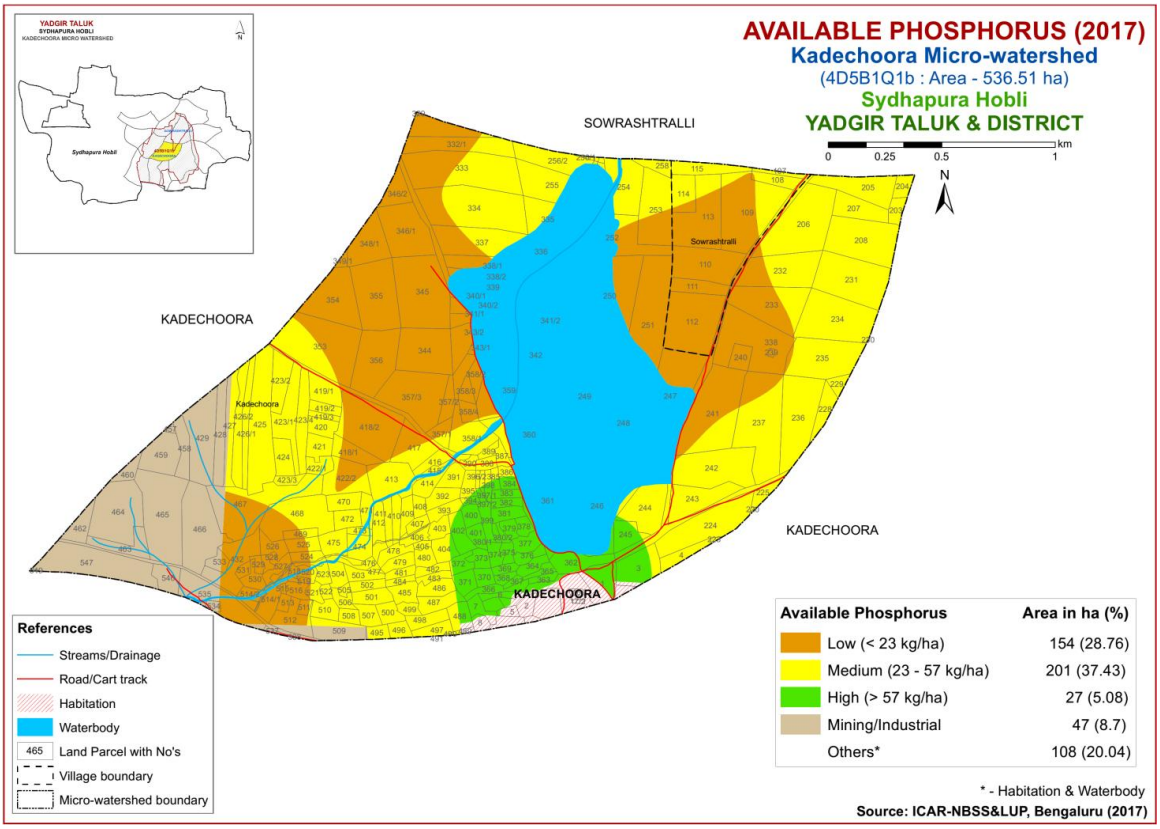


Fig.6.4 Soil available Phosphorus map of Kadechoora Microwatershed

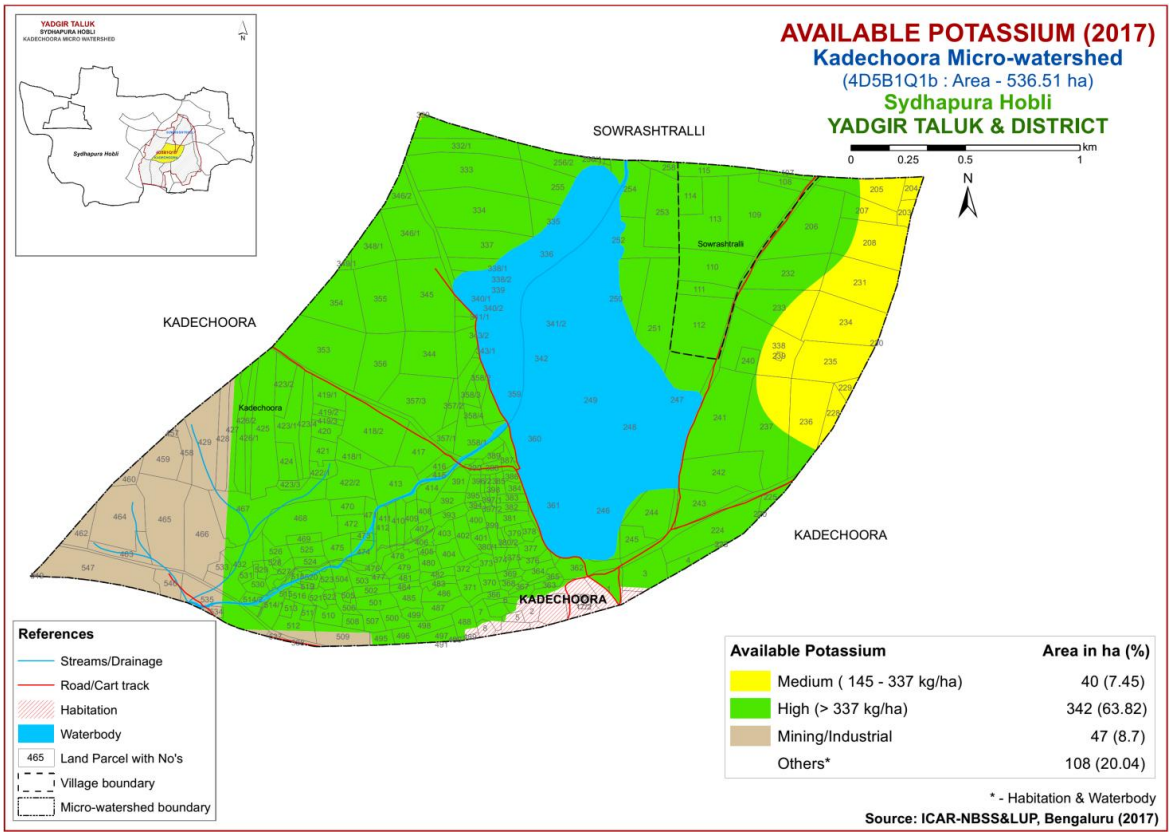


Fig.6.5 Soil available Potassium map of Kadechoora Microwatershed

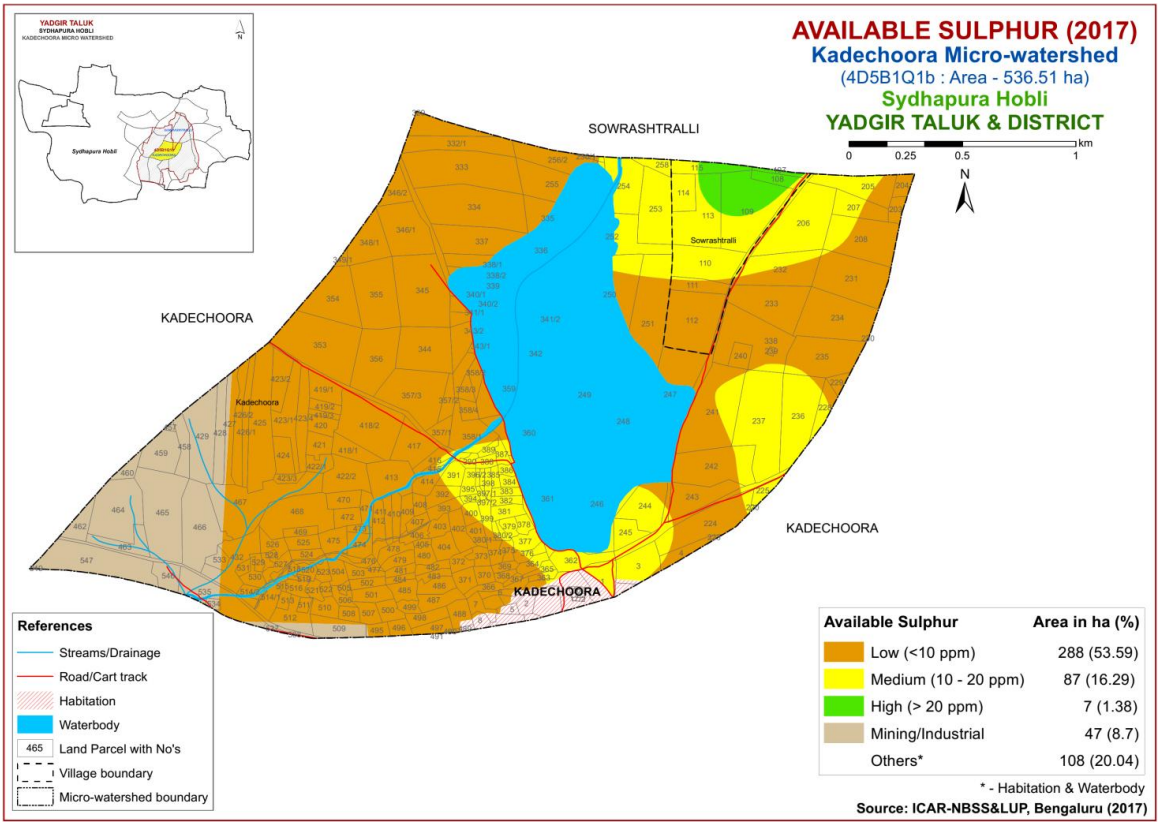


Fig.6.6 Soil available Sulphur map of Kadechoora Microwatershed

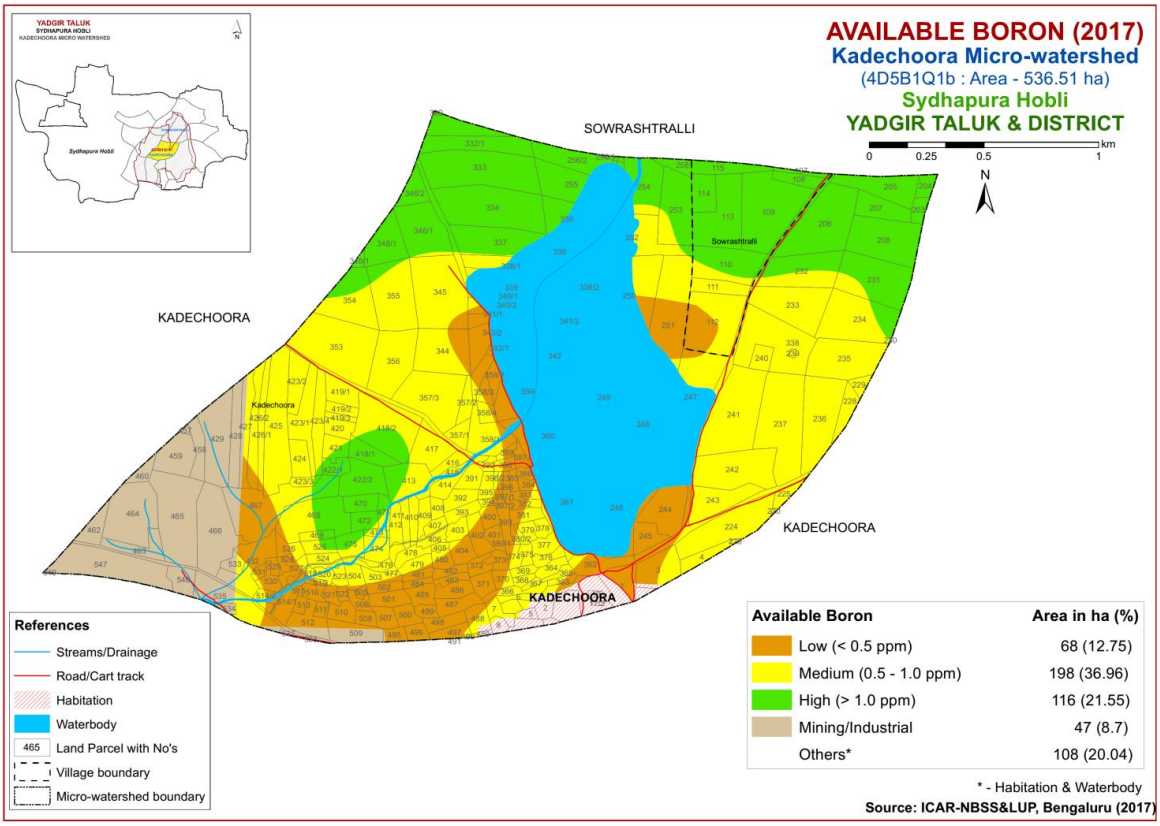


Fig.6.7 Soil available Boron map of Kadechoora Microwatershed

6.8 Available Iron

Available iron content is sufficient (>4.5 ppm) in major area of about 227 ha (42%) and is distributed in the southern, southwestern, southeastern, central, eastern and northeastern part of the microwatershed. It is deficient (<4.5 ppm) in an area of about 156 ha (29%) and is distributed in the southeastern, central, northern and northwestern part of the microwatershed. (Fig 6.8).

6.9 Available Manganese

Available manganese content is sufficient (>1.0 ppm) in the entire microwatershed area (Fig 6.9).

6.10 Available Copper

Available copper content is sufficient (>0.2 ppm) in the entire microwatershed area (Fig 6.10).

6.11 Available Zinc

Available zinc content is sufficient (>0.6 ppm) in an area of about 12 ha (2%) and is distributed in the southern part of the microwatershed. It is deficient (<0.6 ppm) in an area of about 370 ha (69%) and is distributed in all parts of the microwatershed. (Fig 6.11).

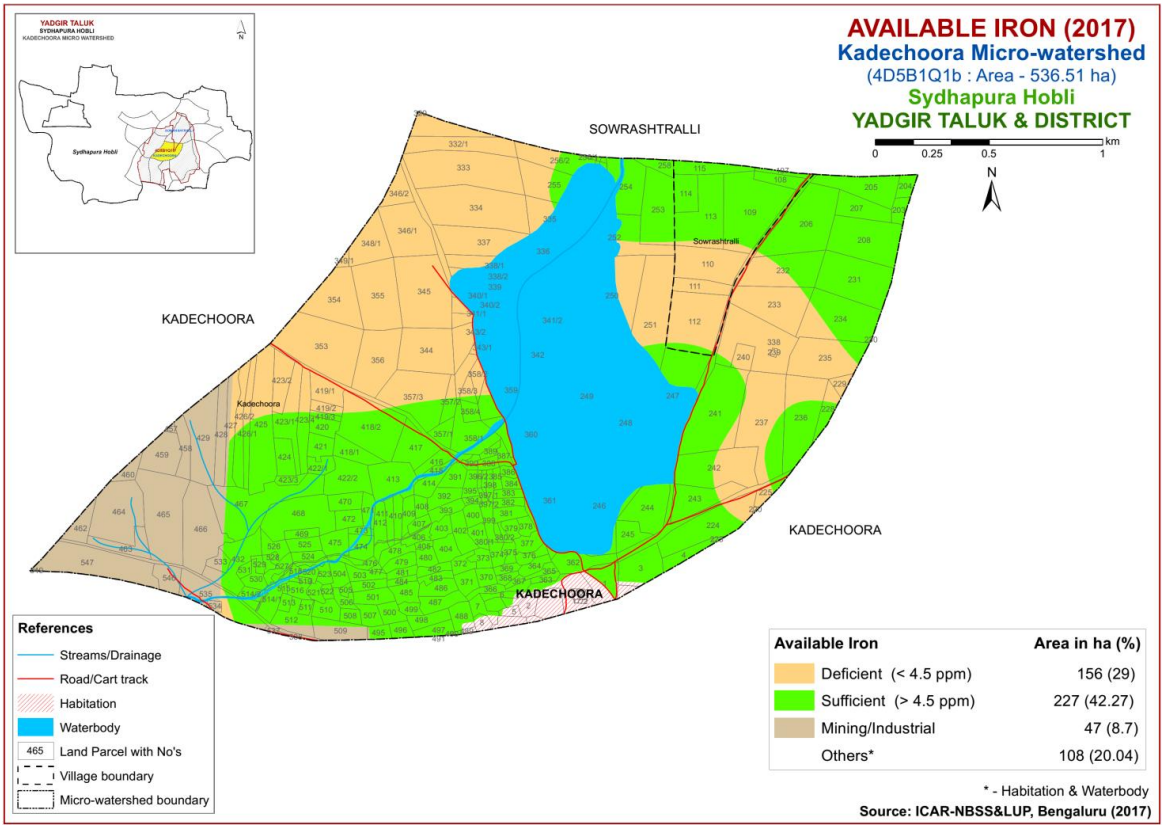


Fig.6.8 Soil available Iron map of Kadechoora Microwatershed

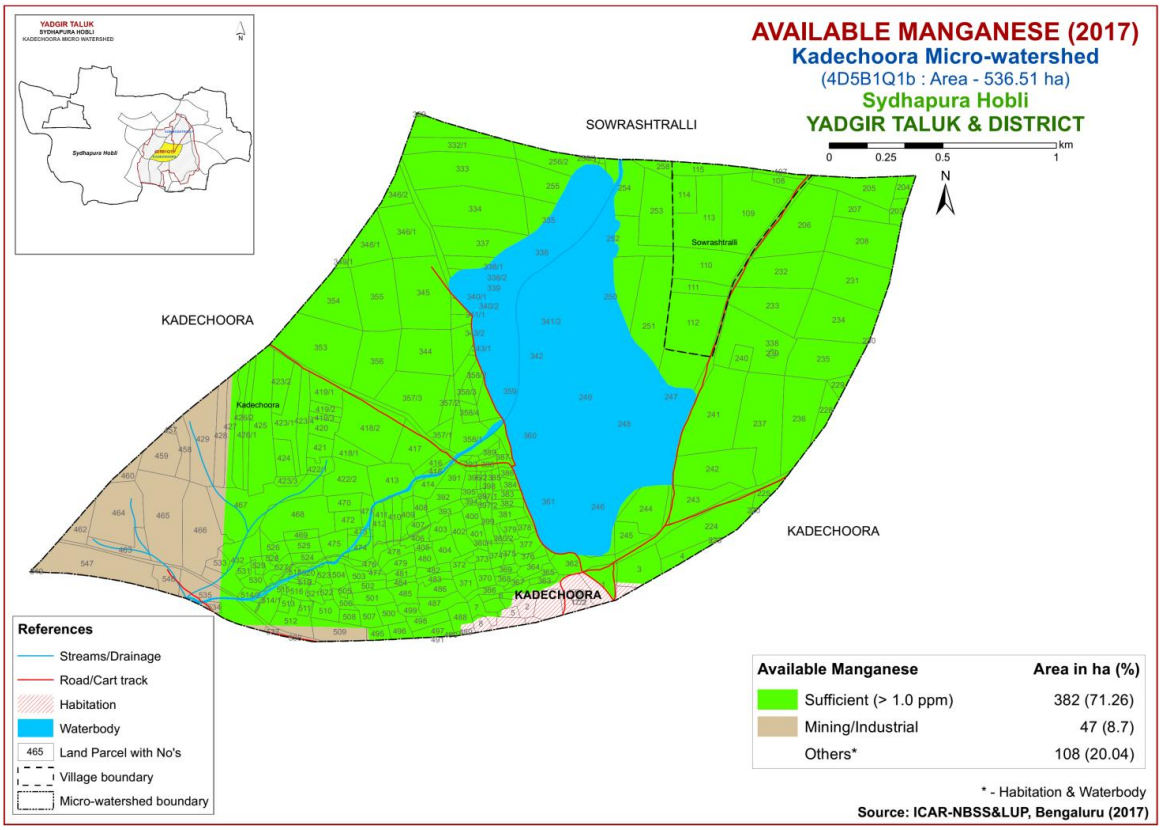


Fig.6.9 Soil available Manganese map of Kadechoora Microwatershed

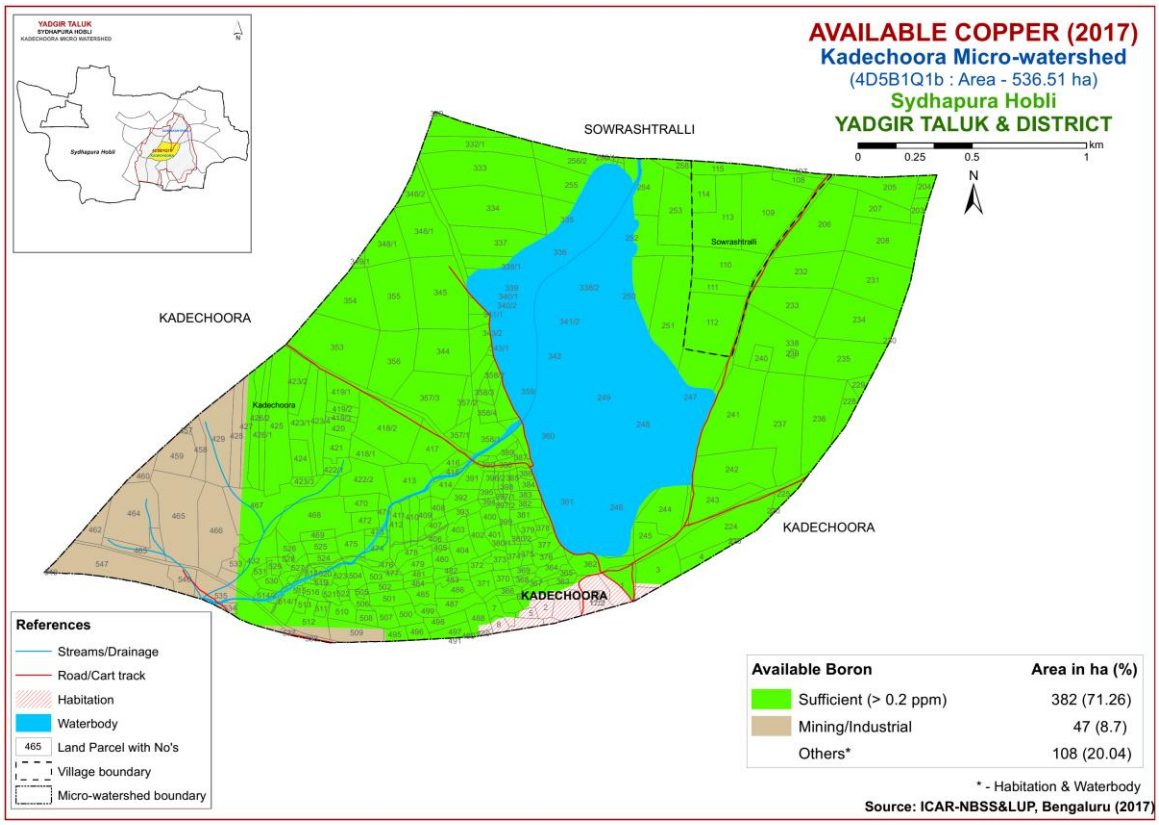


Fig.6.10 Soil available Copper map of Kadechoora Microwatershed

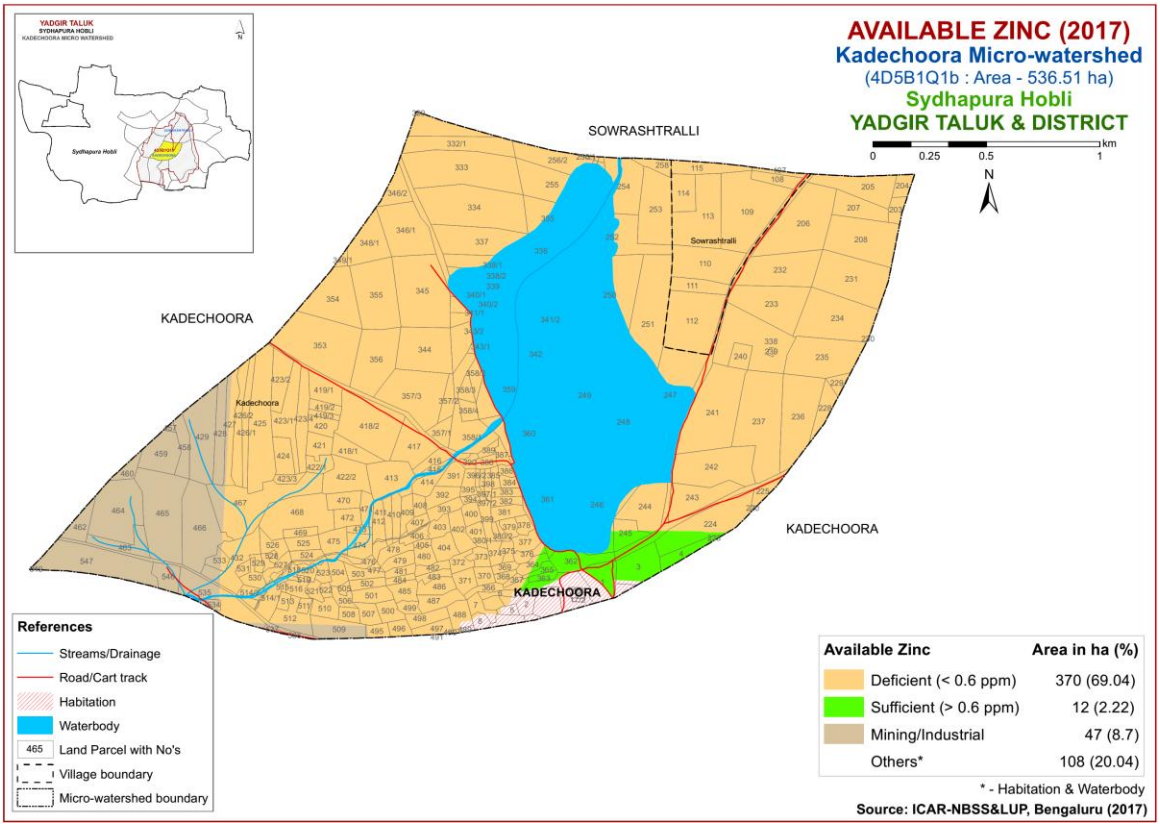


Fig.6.11 Soil available Zinc map of Kadechoora Microwatershed

Chapter 7

LAND SUITABILITY FOR MAJOR CROPS

The soil and land resource units (soil phases) of Kadechoora microwatershed were assessed for their suitability for growing food, fodder, fibre and other horticulture crops by following the procedure as outlined in FAO, 1976 and 1983. Crop requirements were developed for each of the crop from the available research data, and also by referring to Naidu *et al.* (2006) and Natarajan *et al* (2015). The crop requirements were matched with the soil and land characteristics (Table 7.1) to arrive at the crop suitability. In FAO land suitability classification, two orders are recognized. Order S-Suitable and Order N-Not suitable. The orders have classes, subclasses and units. Order-S has three classes, Class S1-Highly Suitable, Class S2-Moderately Suitable and Class S3-Marginally Suitable. Order N has two classes, N1-Currently not Suitable and N2-Permanently not Suitable. There are no subclasses within the class S1 as they will have very minor or no limitations for crop growth. Classes S2, S3 and N1 are divided into subclasses based on the kinds of limitations encountered. The limitations that affect crop production are 'c' for erratic rainfall and its distribution and length of growing period (LGP), 'e' for erosion hazard, 'r' for rooting condition, 't' for lighter or heavy texture, 'g' for gravelliness or stoniness, 'n' for nutrient availability, 'l' for topography, 'm' for moisture availability and 'w' for drainage. These limitations are indicated as lower case letters to the class symbol. For example, moderately suitable land with the limitations of soil depth and erosion is designated as S2re. For the microwatershed, the soil mapping units were evaluated and classified up to subclass level.

Using the above criteria, the soil map units of the microwatershed were evaluated and land suitability maps for 26 major agricultural and horticultural crops grown in the state were generated. The detailed information on the kind of suitability of each of the soil phase for the crops assessed are given village/ survey number wise for the microwatershed in Appendix-III.

7.1 Land Suitability for Sorghum (*Sorghum bicolor*)

Sorghum is one of the major crops grown in an area of 10.47 lakh ha in northern Karnataka in Bijapur, Kalaburgi, Raichur, Bidar, Belgaum, Dharwad and Bellary districts. The crop requirements for growing sorghum (Table 7.2) were matched with the soil-site characteristics (Table 7.1) of the soils of the microwatershed and land suitability map for growing sorghum was generated. The area extent and their geographic distribution of different suitability subclasses in the microwatershed is given in Figure 7.1.

Table 7.1 Soil-Site Characteristics of Kadechoora Microwatershed

Soil Map Units	Climate (P) (mm)	Growing period (Days)	Drainage class	Soil depth (cm)	Soil texture		Gravelliness		AWC (mm/m)	Slope (%)	Erosion	pH	EC	ESP	CEC [Cmol (p^+) kg^{-1}]	BS (%)
					Surf-ace	Sub-surface	Surface (%)	Sub sur face (%)								
BDLiB2	866	150	WD	25-50	sc	sl-scl	<15	<15	<50	1-3	Moderate					
HLGcB2	866	150	MWD	50-75	sl	scl	<15	<15	<100	1-3	Moderate					
JNKcB2	866	150	MWD	50-75	sl	scl	<15	<15	<100	1-3	Moderate					
ANRbB3	866	150	MWD	100-150	ls	scl-c	<15	<15	>200	1-3	Severe					
RHNmB2	866	150	MWD	75-100	c	scl	<15	<15	<150	1-3	Moderate					
SWRmB2	866	150	MWD	100-150	c	c	<15	<15	>200	1-3	Moderate					
HGNmB2	866	150	MWD	>150	c	c	<15	<15	>200	1-3	Moderate					
KDHiB2	866	150	MWD	75-100	sc	scl-sc	<15	<15	<100	1-3	Moderate					
VKSmB1	866	150	MWD	100-150	c	scl	<15	<15	>200	1-3	Slight					

*Symbols and abbreviations are according to Field Guide for LRI under Sujala-III Project, Karnataka

In Kadechoora microwatershed, there are no lands that are highly (Class S1) suitable for growing sorghum. Major area of about 378 ha (70%) is moderately suitable (Class S2) for growing sorghum and are distributed in all parts of the microwatershed. They have minor limitations of drainage, calcareousness and rooting depth. Marginally suitable lands (Class S3) occupy a very small area of about 5 ha (1%) and are distributed in the northeastern part of the microwatershed. They have moderate limitation of rooting depth.

Table 7.2 Crop suitability criteria for Sorghum

Crop requirement		Rating			
Soil –site characteristics	**Unit**	**Highly suitable(S1)**	**Moderately suitable(S2)**	**Marginally suitable (S3)**	**Not suitable(N)**
Slope	%	2-3	3-8	8-15	>15
LGP	Days	120-150	120-90	<90	
Soil drainage	class	Well to mod. drained	imperfect	Poorly/ excessively	V. poorly
Soil reaction	pH	6.0-8.0	5.5-5.9, 8.1-8.5	<5.5, 8.6-9.0	>9.0
Surface soil texture	Class	c, cl, sicl, sc	l, sil, sic	sl, ls	s,fragmental skeletal
Soil depth	Cm	100-75	50-75	30-50	<30
Gravel content	%vol	5-15	15-30	30-60	>60
Salinity (EC)	dSm^{-1}	2-4	4-8	8-10	>10
Sodicity (ESP)	%	5-8	8-10	10-15	>15

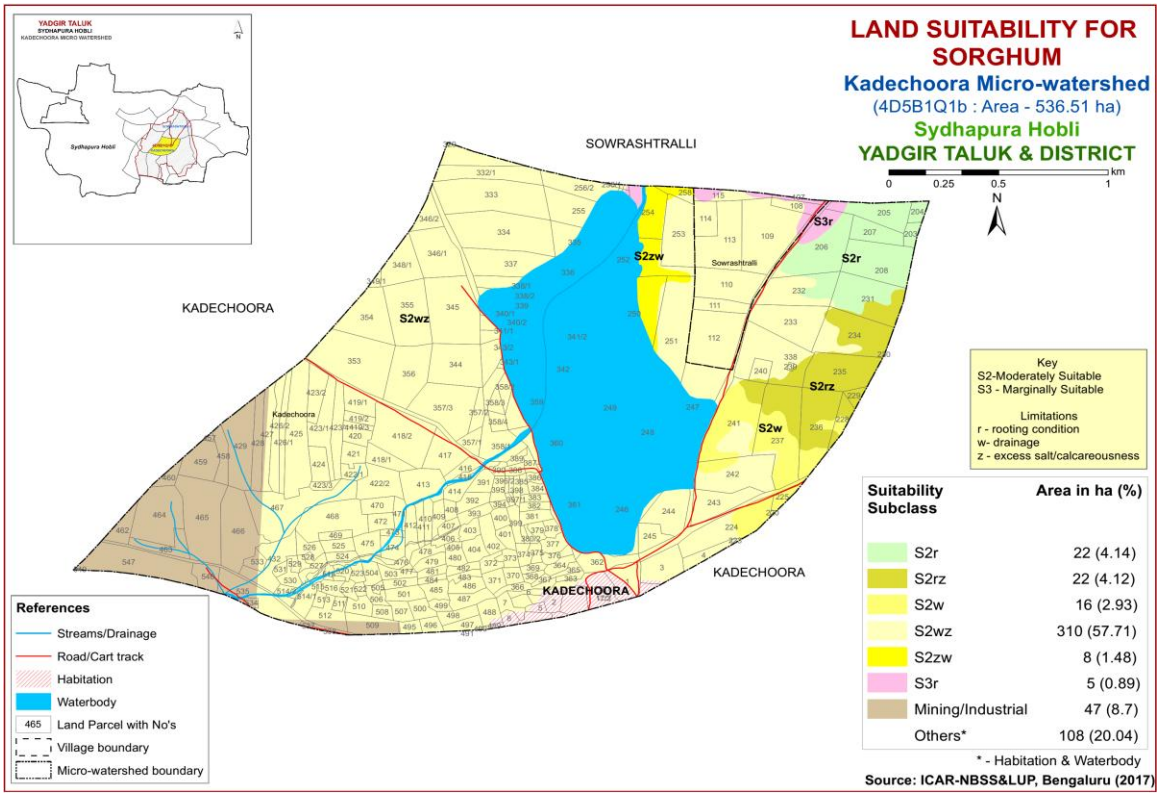


Fig. 7.1 Land Suitability map of Sorghum

7.2 Land Suitability for Maize (*Zea mays*)

Maize is one of the most important food crop grown in an area of 13.37 lakh ha in all the districts of the state. The crop requirements for growing maize (Table 7.3) were matched with the soil-site characteristics (Table 7.1) and a land suitability map for growing maize was generated. The area extent and their geographical distribution of different suitability subclasses in the microwatershed is given in Figure 7.2.

Table 7.3 Crop suitability criteria for Maize

Crop requirement		Rating			
Soil –site characteristics	**Unit**	**Highly suitable(S1)**	**Moderately suitable(S2)**	**Marginally suitable (S3)**	**Not suitable (N)**
Slope	%	<3	3.5	5-8	
LGP	Days	>100	100-80	60-80	
Soil drainage	class	Well drained	Mod.to imperfectly	Poorly/excessively	V.poorly
Soil reaction	pH	5.5-7.5	7.6-8.5	8.6-9.0	
Surface soil texture	Class	l, cl, scl, sil	sl, sicl, sic	c (s-s), ls	s,fragmental
Soil depth	Cm	>75	50-75	25-50	<25
Gravel content	%vol.	<15	15-35	35-50	>50
Salinity (EC)	dSm^{-1}	<1.0	1.0-2.0	2.0-4.0	
Sodicity (ESP)	%	<10	10-15	>15	

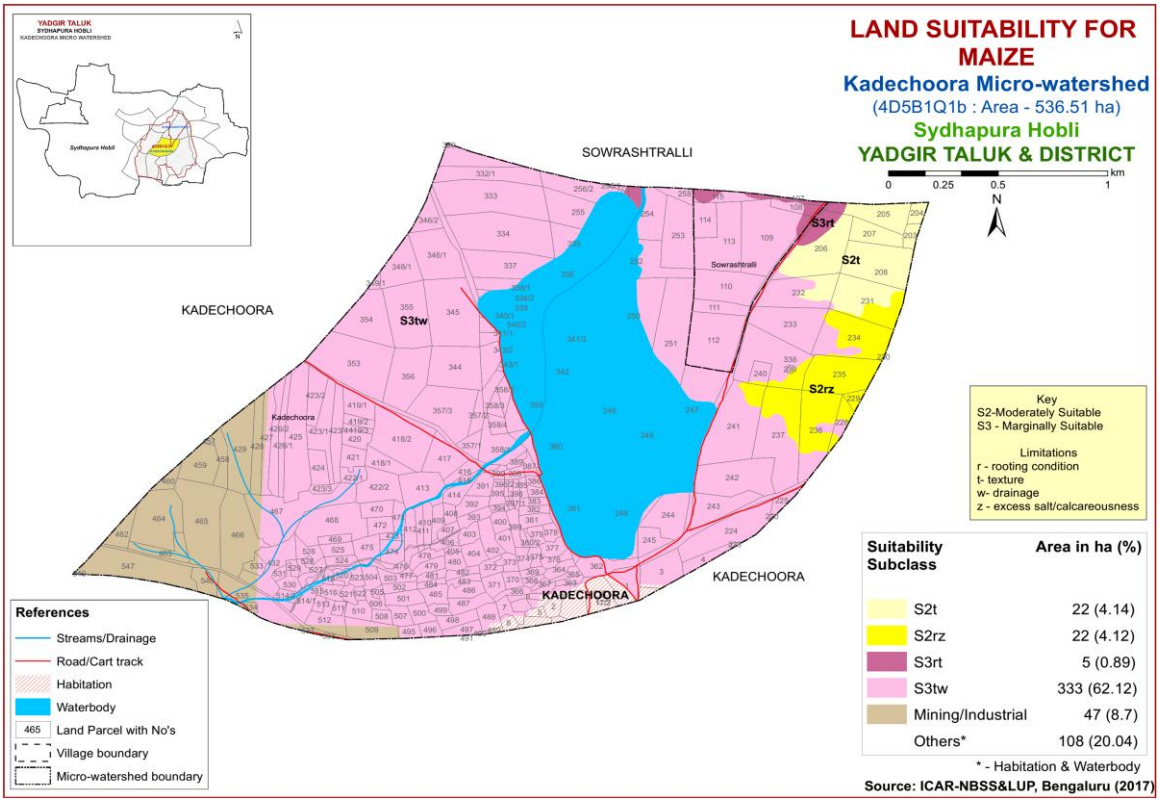


Fig. 7.2 Land Suitability map of Maize

In Kadechoora microwatershed, there are no lands that are highly (Class S1) suitable for growing maize. The moderately suitable (Class S2) lands cover an area of

about 44 ha (8%) and occur in the eastern and southeastern part of the microwatershed. They have minor limitations of calcareousness, texture and rooting depth. The marginally suitable (Class S3) lands cover major area of about 338 ha (63%) and occur in all parts of the microwatershed. They have moderate limitations of texture, drainage and rooting depth.

7.3 Land Suitability for Red gram (*Cajanus cajan*)

Red gram is one of the major pulse crop grown in an area of 7.28 lakh ha mainly in northern Karnataka in Bijapur, Kalaburgi, Raichur, Bidar, Belgaum, Dharwad and Bellary districts. The crop requirements for growing red gram (Table 7.4) were matched with the soil-site characteristics (Table 7.1) of the soils of the microwatershed and a land suitability map for growing red gram was generated. The area extent and their geographic distribution of different suitability subclasses in the microwatershed is given in Figure 7.3.

In Kadechoora microwatershed, there are no lands that are highly (Class S1) suitable for growing redgram. Major area of about 333 ha (62%) is moderately suitable (Class S2) for red gram and is distributed in all parts of the microwatershed. They have minor limitations of texture, rooting depth and drainage. An area of about 49 ha (9%) is marginally suitable (Class S3) for growing red gram and are distributed in the eastern and southeastern part of the microwatershed. They have moderate limitations of rooting depth, texture and calcareousness.

Table 7.4 Crop suitability criteria for Red gram

Crop requirement		**Rating**			
Soil–site characteristics	**Unit**	**Highly suitable (S1)**	**Moderately Suitable (S2)**	**Marginally suitable (S3)**	**Not suitable (N)**
Slope	%	<3	3-5	5-10	>10
LGP	Days	>210	180-210	150-180	<150
Soil drainage	class	Well drained	Mod. to well drained	Imperfectly drained	Poorly drained
Soil reaction	pH	6.5-7.5	5.0-6.5,7.6-8.0	8.0-9.0	>9.0
Surface soil texture	Class	l,scl,sil,cl,sl	sicl, sic, c(m)	ls	s,fragmental
Soil depth	Cm	>100	85-100	40-85	<40
Gravel content	% vol.	<20	20-35	35-60	>60
Salinity (EC)	dSm^{-1}	<1.0	1.0-2.0	>2.0	
Sodicity (ESP)	%	<10	10-15	>15	

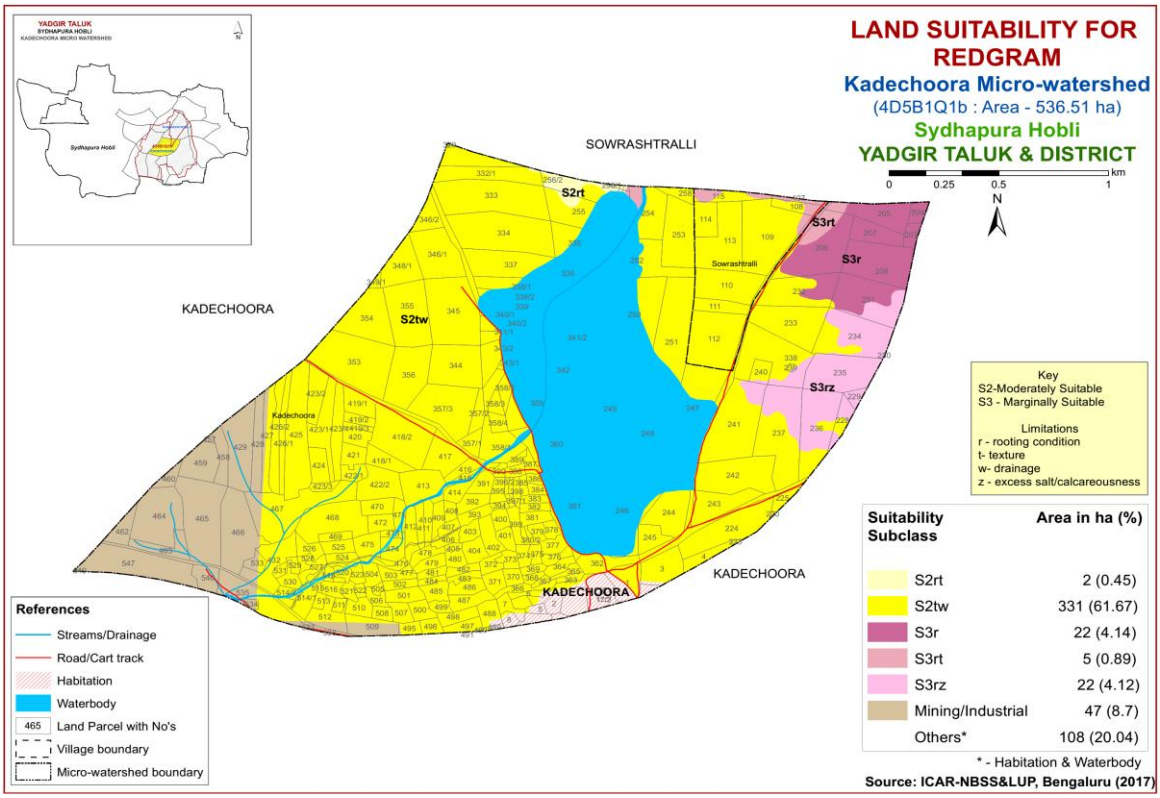


Fig. 7.3 Land Suitability map of Red gram

7.4 Land Suitability for Bajra (*Pennisetum glaucum)*

Bajra is one of the most important millet crop grown in an area of 2.34 lakh ha in the northern districts of Karnataka state. The crop requirements for growing bajra were matched with the soil-site characteristics and a land suitability map for growing bajra was generated. The area extent and their geographical distribution of different suitability subclasses in the microwatershed is given in Figure 7.4.

In Kadechoora microwatershed, there are no lands that are highly (Class S1) suitable for growing bajra. Major area of about 377 ha (70%) is moderately suitable (Class S2) for growing bajra and are distributed in all parts of the microwatershed. They have minor limitations of drainage, texture, calcareousness and rooting depth. Marginally suitable lands (Class S3) occupy a very small area of about 5 ha (1%) and are distributed in the northeastern part of the microwatershed. They have moderate limitations of rooting depth and texture.

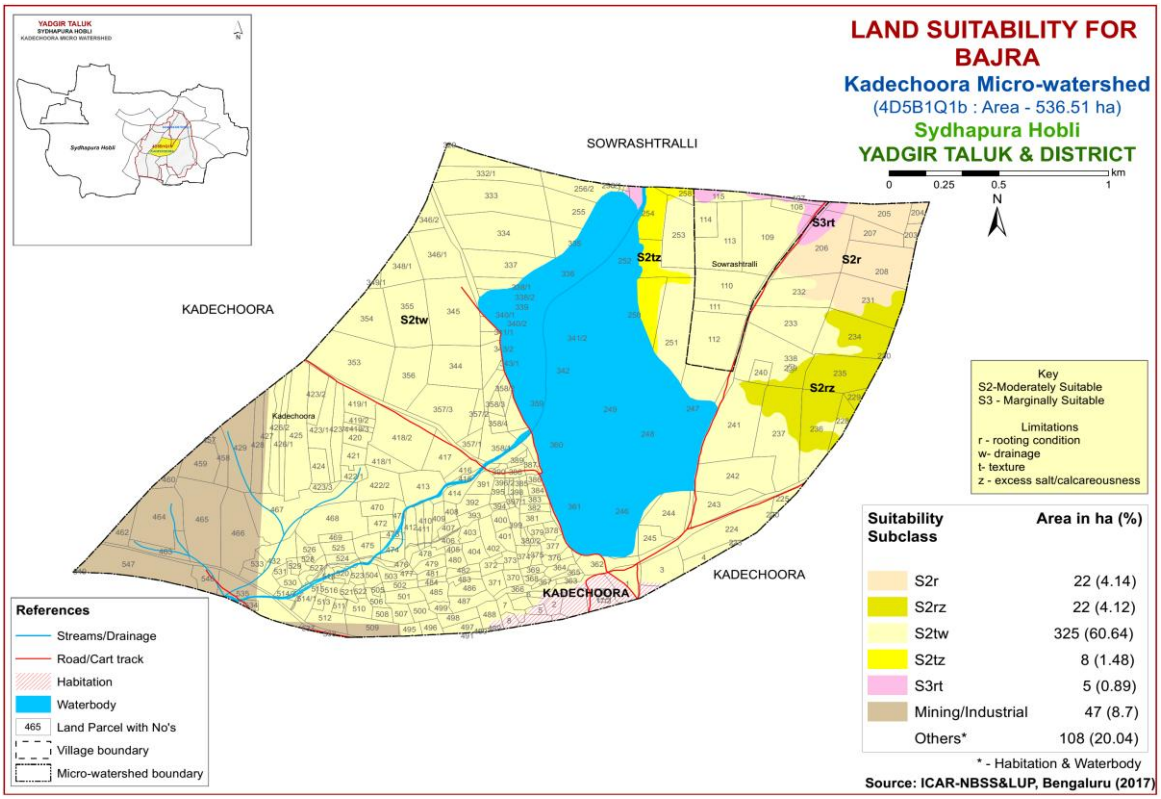


Fig. 7.4 Land Suitability map of Bajra

7.5 Land suitability for Groundnut (*Arachis hypogaea*)

Groundnut is one of the most important oilseed crop grown in an area of 6.54 lakh ha in almost all the districts of the State. The crop requirements for growing groundnut (Table 7.5) were matched with the soil-site characteristics (Table 7.1) of soils of the microwatershed and a land suitability map for growing groundnut was generated. The area extent and their geographical distribution of different suitability subclasses in the microwatershed is given in Figure 7.5.

Table 7.5 Land suitability criteria for Groundnut

Crop requirement		Rating			
Soil –site characteristics	**Unit**	**Highly suitable(S1)**	**Moderately suitable(S2)**	**Marginally suitable(S3)**	**Not suitable(N)**
Slope	%	<3	3-5	5-10	>10
LGP	Days	100-125	90-105	75-90	
Soil drainage	class	Well drained	Mod. Well rained	imperfectly drained	Poorly drained
Soil reaction	pH	6.0-8.0	8.1-8.5, 5.5-5.9	>8.5, <5.5	
Sub Surface soil texture	Class	l, cl, sil, scl, sicl	sc, sic, c, sl	s, ls, c (>60%)	
Soil depth	Cm	>75	50-75	25-50	<25
Gravel content	%vol.	<35	35-50	>50	
$CaCO_3$ in root zone	%	low	Medium	high	
Salinity (EC)	dsm^{-1}	<2.0	2.0-4.0	4.0-8.0	
Sodicity (ESP)	%	<5	5-10	>10	

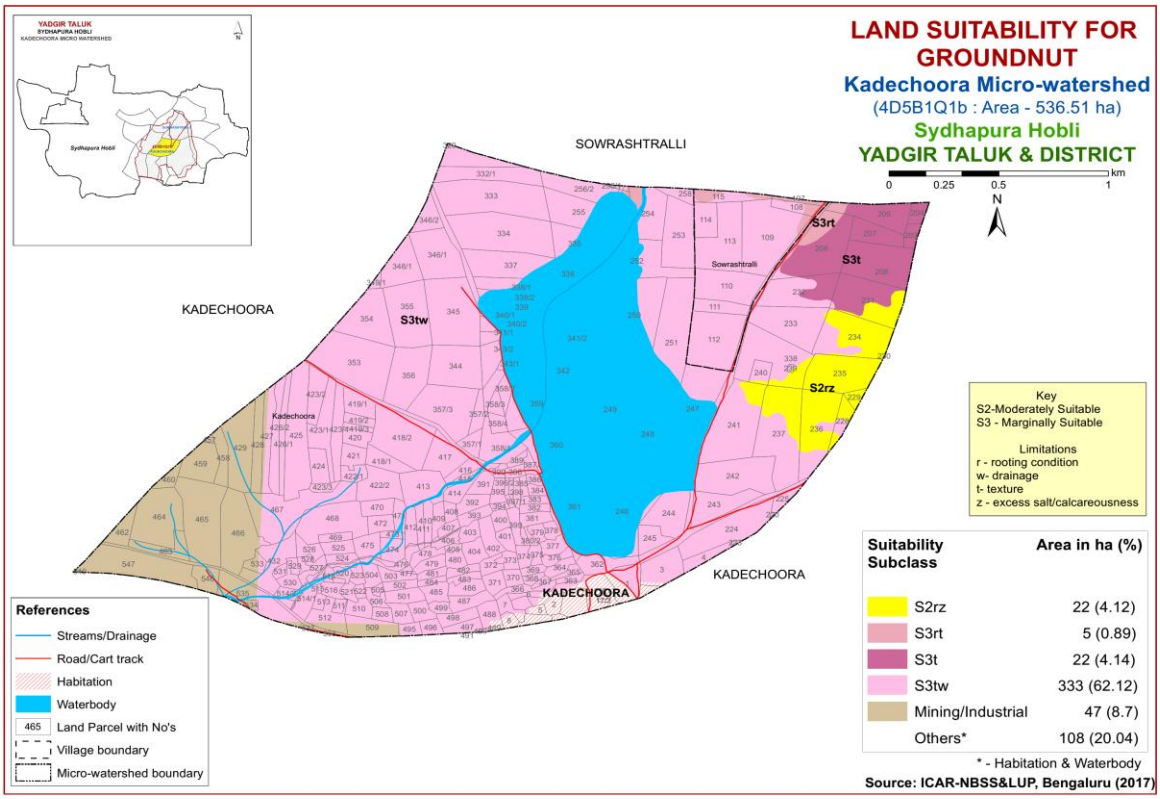


Fig. 7.5 Land Suitability map of Groundnut

In Kadechoora microwatershed, there are no lands that are highly (Class S1) suitable for growing groundnut. The moderately suitable (Class S2) lands cover an area of about 22 ha (4%) and occur in the southeastern part of the microwatershed. They have minor limitations of calcareousness and rooting depth. The marginally suitable (Class S3) lands cover a major area of about 360 ha (67%) and occur in all parts of the microwatershed. They have moderate limitations of texture, drainage and rooting depth.

7.6 Land Suitability for Sunflower (*Helianthus annus*)

Sunflower is one of the most important oilseed crop grown in an area of 3.56 lakh ha in the State in all the districts. The crop requirements for growing sunflower (Table 7.6) were matched with the soil-site characteristics (Table 7.1) and a land suitability map for growing sunflower was generated. The area extent and their geographical distribution of different suitability subclasses in the microwatershed is given in Figure 7.6.

In Kadechoora microwatershed, there are no lands that are highly (Class S1) suitable for growing sunflower. Major area of about 334 ha (62%) is moderately suitable (Class S2) for sunflower and is distributed in all parts of the microwatershed. They have minor limitations of rooting depth, calcareousness and drainage. An area of about 44 ha (8%) is marginally suitable (Class S3) for growing sunflower and are distributed in the eastern and southeastern part of the microwatershed. They have moderate limitations of rooting depth and calcareousness. An area of about 5 ha (1%) is not suitable (Class N)

for growing sunflower and are distributed in the eastern part of the microwatershed. They have severe limitations of rooting depth.

Table 7.6 Crop suitability criteria for Sunflower

Crop requirement		Rating			
Soil –site characteristics	**Unit**	**Highly suitable(S1)**	**Moderately suitable(S2)**	**Marginally suitable(S3)**	**Not suitable(N)**
Slope	%	<3	3-5	5-10	>10
LGP	Days	>90	80-90	70-80	<70
Soil drainage	class	Well drained	Mod.Well drained	imperfectly drained	Poorly drained
Soil reaction	pH	6.5-8.0	8.1-8.5,5.5-6.4	8.6-9.0;4.5-5.4	>9.0,<4.5
Surface soil texture	Class	l, cl, sil, sc	scl, sic, c,	c (>60%), sl	ls, s
Soil depth	Cm	>100	75-100	50-75	<50
Gravel content	%vol.	<15	15-35	35-60	>60
Salinity (EC)	dSm^{-1}	<1.0	1.0-2.0	>2.0	
Sodicity (ESP)	%	<10	10-15	>15	

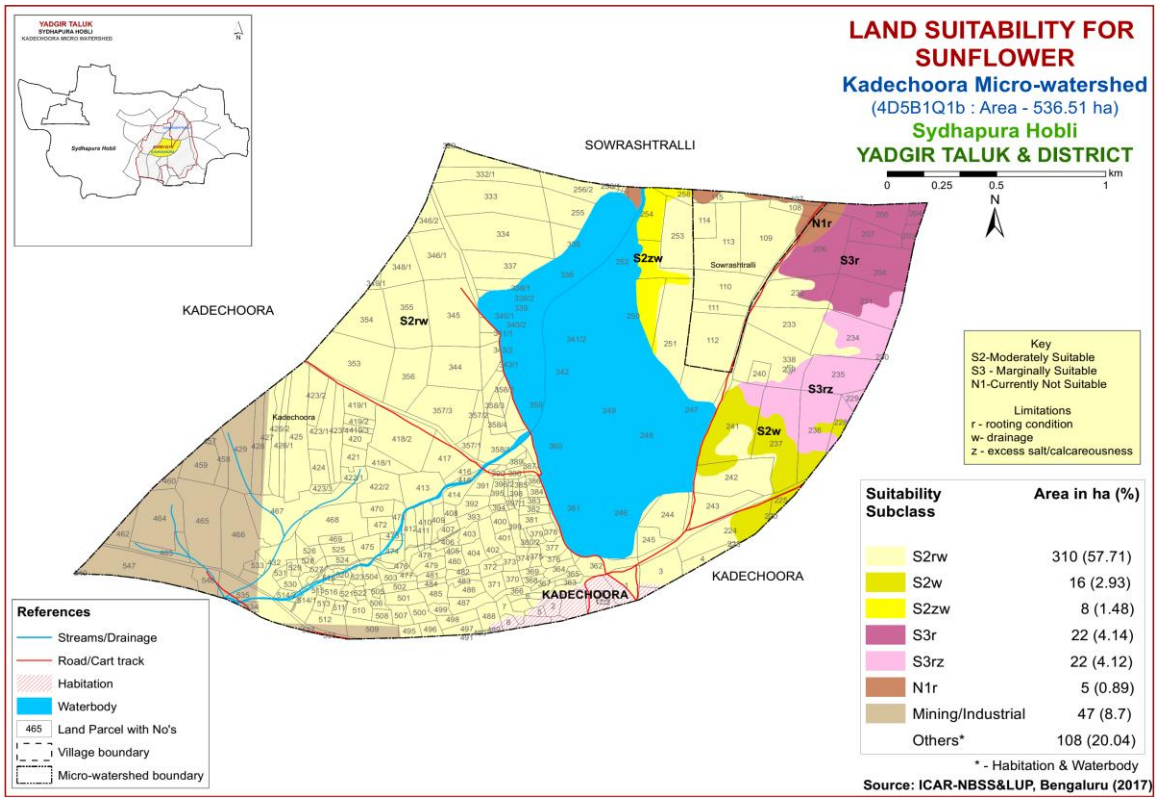


Fig. 7.6 Land Suitability map of Sunflower

7.7 Land Suitability for Cotton (*Gossypium hirsutum*)

Cotton is the most important fibre crop grown in the state in about 8.75 lakh ha area in Raichur, Dharwad, Belgaum, Kalaburgi, Bijapur, Bidar, Bellary, Chitradurga and Chamarajnagar districts. The crop requirements for growing cotton (Table 7.7) were matched with the soil-site characteristics (Table 7.1) and a land suitability map for

growing cotton was generated. The area extent and their geographical distribution of different suitability subclasses in the microwatershed is given in Figure 7.7.

Table 7.7 Crop suitability criteria for Cotton

Crop requirement		Rating			
Soil–site characteristics	**Unit**	**Highly suitable (S1)**	**Moderately suitable(S2)**	**Marginally suitable(S3)**	**Not suitable(N)**
Slope	%	1-2	2-3	3-5	>5
LGP	Days	180-240	120-180	<120	
Soil drainage	class	Well to mod. well	imperfectly drained	Poor somewhat excessive	Stagnant/ excessive
Soil reaction	pH	6.5-7.5	7.6-8.0	8.1-9.0	>9.0 >6.5
Surface soil texture	Class	sic, c	sicl, cl	si, sil, sc, scl, l	sl, s,ls
Soil depth	Cm	100-150	60-100	30-60	<30
Gravel content	% vol.	<5	5-10	10-15	15-35
$CaCO_3$ in root zone	%	<3	3-5	5-10	10-20
Salinity (EC)	dSm^{-1}	2-4	4.0-8.0	8.0-12	>12
Sodicity (ESP)	%	5-10	10-20	20-30	>30

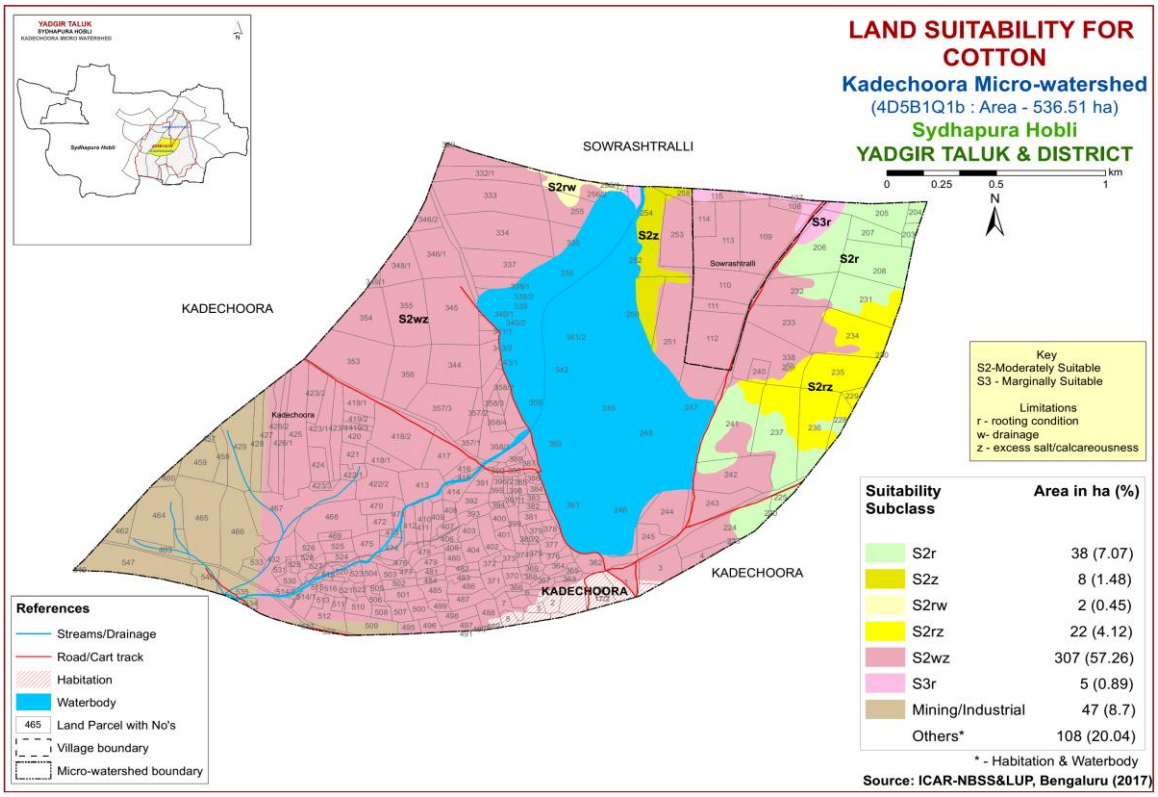


Fig. 7.7 Land Suitability map of Cotton

In Kadechoora microwatershed, there are no lands that are highly (Class S1) suitable for growing cotton. Major area of about 377 ha (70%) is moderately suitable (Class S2) for growing cotton and are distributed in all parts of the microwatershed. They have minor limitations of drainage, calcareousness and rooting depth. Marginally suitable lands (Class S3) occupy very small area of about 5 ha (1%) and are distributed in

the northeastern part of the microwatershed. They have moderate limitation of rooting depth.

7.8 Land Suitability for Bengal gram (*Cicer aerativum*)

Bengal gram is one of the most important pulse crop grown in about 9.39 lakh ha area in Bijapur, Raichur, Kalaburgi, Dharwad, Belgaum and Bellary districts. The crop requirements for growing Bengal gram (Table 7.8) were matched with the soil-site characteristics (Table 7.1) and a land suitability map for growing Bengal gram was generated. The area extent and their geographical distribution of different suitability subclasses in the microwatershed is given in Figure 7.8.

A small area of about 16 ha (35) is highly (Class S1) suitable for growing bengal gram and are distributed in the southeastern part of the microwatershed. Major area of about 362 ha (67%) is moderately suitable (Class S2) for growing bengalgram and are distributed in all parts of the microwatershed. They have minor limitations of drainage, calcareousness and rooting depth. Marginally suitable lands (Class S3) occupy very small area of about 5 ha (1%) and are distributed in the northeastern part of the microwatershed. They have moderate limitations of rooting depth.

Table 7.8 Crop suitability criteria for Bengal gram

Crop requirement		**Rating**			
Soil –site characteristics	**Unit**	**Highly suitable(S1)**	**Moderately suitable (S2)**	**Marginally suitable (S3)**	**Not suitable(N)**
Slope	%	<3	3-5	5-10	>10
LGP	Days	>100	90-100	70-90	<70
Soil drainage	class	Well drained	Mod. to well drained; imper.drained	Poorly drained; excessively drained	Very Poorly drained
Soil reaction	pH	6.0-7.5	5.5-5.7, 7.6-8.0	8.1-9.0;4.5-5.4	>9.0
Surface soil texture	Class	l,scl, sil, cl,	sicl, sic, c	sl, c >60%	
Soil depth	Cm	>75	51-75	25-50	<25
Gravel content	% vol.	<15	15-35	>35	
Salinity (ECe)	dsm^{-1}	<1.0	1.0-2.0	>2.0	
Sodicity (ESP)	%	<10	10-15	>15	

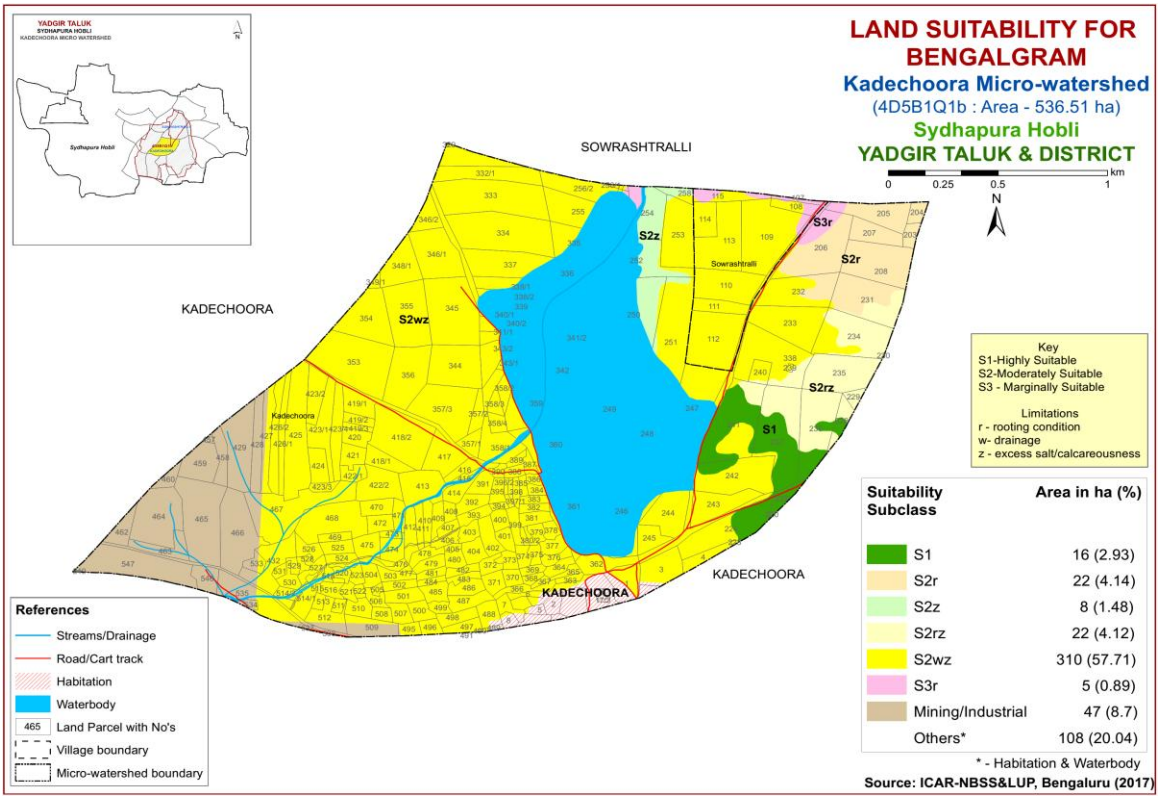


Fig. 7.8 Land Suitability map of Bengal gram

7.9 Land Suitability for Chilli (*Capsicum annuum)*

Chilli is the most important fruit and spice crop grown in about 0.42 lakh ha in Karnataka state. The crop requirements for growing chilli (Table 7.9) were matched with the soil-site characteristics (Table 7.1) and a land suitability map for growing chilli was generated. The area extent and their geographical distribution of different suitability subclasses in the microwatershed is given in Figure 7.9.

Table 7.9 Crop suitability criteria for Chilli

Crop requirement		**Rating**			
Soil –site characteristics	**Unit**	**Highly suitable (S1)**	**Moderately suitable (S2)**	**Marginally suitable (S3)**	**Not suitable(N)**
Mean temp.in growing season	^{0}c	20-30	30-35, 13-15	35-40, 10-12	>40,<10
Slope	%	<3	3-5	5-10	>10
LGP	Days	>150	120-150	90-120	<90
Soil drainage	class	Well drained	Moderately drained	Imp./ poor drained/ excessively	V.poorly drained
Soil reaction	pH	6.5-7.8, 6.0-7.0	7.8-8.4	8.4-9.0, 5.0-5.9	>9.0
Surface soil texture	Class	scl, cl, sil	sl, sc, sic, c(m/k)	c (ss), ls, s	
Soil depth	Cm	>75	50-75	25-50	<25
Gravel content	%vol.	<15	15-35	35-60	>60
Salinity (ECe)	dsm^{-1}	<1.0	1.0-2.0	2.0-4.0	<4
Sodicity (ESP)	%	<5	5-10	10-15	

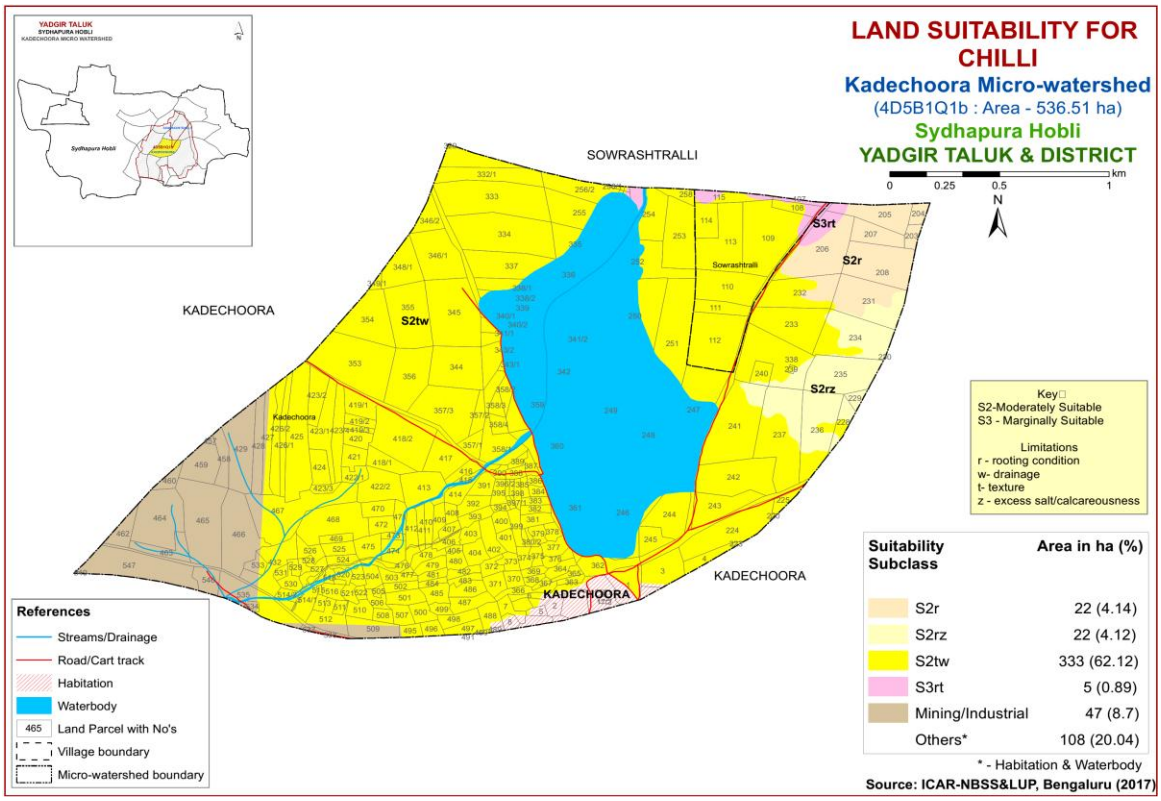


Fig 7.9 Land Suitability map of Chilli

In Kadechoora microwatershed, there are no lands that are highly (Class S1) suitable for growing chilli. Major area of about 377 ha (70%) is moderately suitable (Class S2) for growing chilli and are distributed in all parts of the microwatershed. They have minor limitations of drainage, texture, calcareousness and rooting depth. Marginally suitable lands (Class S3) occupy very small area of about 5 ha (1%) and are distributed in the northeastern part of the microwatershed. They have moderate limitation of rooting depth and texture.

7.10 Land Suitability for Tomato *(Lycopersicon esculentum)*

Tomato is one of the most important fruit crop grown in about 0.61 lakh ha covering almost all the district of the state. The crop requirements for growing tomato (Table 7.10) were matched with the soil-site characteristics (Table 7.1) and a land suitability map for growing tomato was generated. The area extent and their geographical distribution of different suitability subclasses in the microwatershed is given in Figure 7.10.

In Kadechoora microwatershed, there are no lands that are highly (Class S1) suitable for growing tomato. The moderately suitable (Class S2) lands cover an area of about 44 ha (8%) and occur in the eastern and southeastern part of the microwatershed. They have minor limitations of calcareousness and rooting depth. The marginally suitable (Class S3) lands cover a major area of about 338 ha (63%) and occur in all parts of the microwatershed. They have moderate limitations of texture, drainage and rooting depth.

Table 7.10 Crop suitability criteria for Tomato

Crop requirement			Rating			
Soil –site characteristics		**Unit**	**Highly suitable(S1)**	**Moderately suitable(S2)**	**Marginally suitable(S3)**	**Not suitable(N)**
climate	Temperature in growing season	^{0}c	25-28	29-32 , 20-24	15-19 33-36	<15, >36
Soil moisture	Growing period	Days	>150	120-150	90-120	
Soil aeration	Soil drainage	class	Well drained	Moderately well drained	Poorly drained	V. poorly drained
Nutrient availability	Texture	Class	l, sl, cl, scl	sic,sicl,sc,c(m/k)	c (ss), ls	s
	pH	1:2.5	6.0-7.3	5.5-6.0 7.3-8.4	8.4-9.0	>9.0
	$CaCO_3$ in root zone	%	Non calcareous	Slightly calcareous	Strongly calcareous	
Rooting conditions	Soil depth	Cm	>75	50-75	25-50	<25
	Gravel content	%vol.	<15	15-35	>35	
Soil toxicity	Salinity	ds/m	Non saline	slight	strongly	
	Sodicity(ESP)	%	<10	10-15	>15	-
Erosion	Slope	%	1-3	3-5	5-10	>10

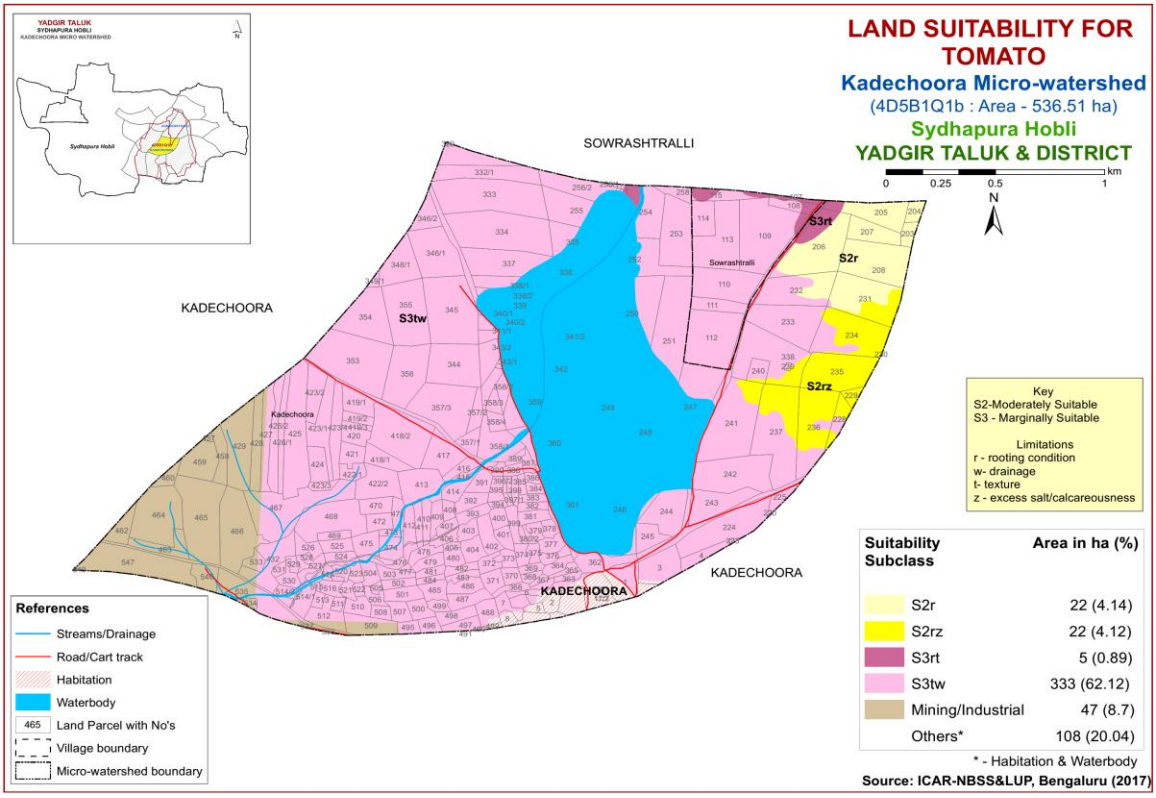


Fig 7.10 Land Suitability map of Tomato

7.11 Land Suitability for Drumstick (*Moringa oleifera*)

Drumstick is one of the most important vegetable crop grown in about 2403 ha in the state. The crop requirements for growing drumstick (Table 7.11) were matched with the soil-site characteristics (Table 7.1) and a land suitability map for growing drumstick

was generated. The area extent and their geographical distribution of different suitability subclasses in the microwatershed is given in Figure 7.11.

In Kadechoora microwatershed, there are no lands that are highly (Class S1) suitable for growing drumstick. Major area of about 333 ha (62%) is moderately suitable (Class S2) for drumstick and is distributed in all parts of the microwatershed. They have minor limitations of rooting depth, texture and drainage. An area of about 44 ha (8%) is marginally suitable (Class S3) for growing drumstick and are distributed in the eastern and southeastern part of the microwatershed. They have moderate limitations of rooting depth and calcareousness. An area of about 5 ha (1%) is not suitable (Class N) for growing drumstick and are distributed in the eastern part of the microwatershed. They have severe limitations of rooting depth and texture.

Table 7.11 Crop suitability criteria for Drumstick

Crop requirement			Rating			
Soil –site characteristics		Unit	Highly suitable(S1)	Moderately suitable(S2)	Marginally suitable(S3)	Not suitable(N)
Soil aeration	Soil drainage	Class	Well drained	Moderately well drained	Poorly drained	V. Poorly drained
Nutrient availability	Texture	Class	sc,scl,cl,c(red)	sl, c (black)	ls	s
	pH	1:2.5	5.5-6.5	5-5.5, 6.5-7.3	7.8-8.4	>8.4
Rooting conditions	Soil depth	cm	>100	75-100	50-75	<50
	Gravel content	%vol.	0-35	35-60	60-80	>80
Erosion	Slope	%	0-3	3-10	-	>10

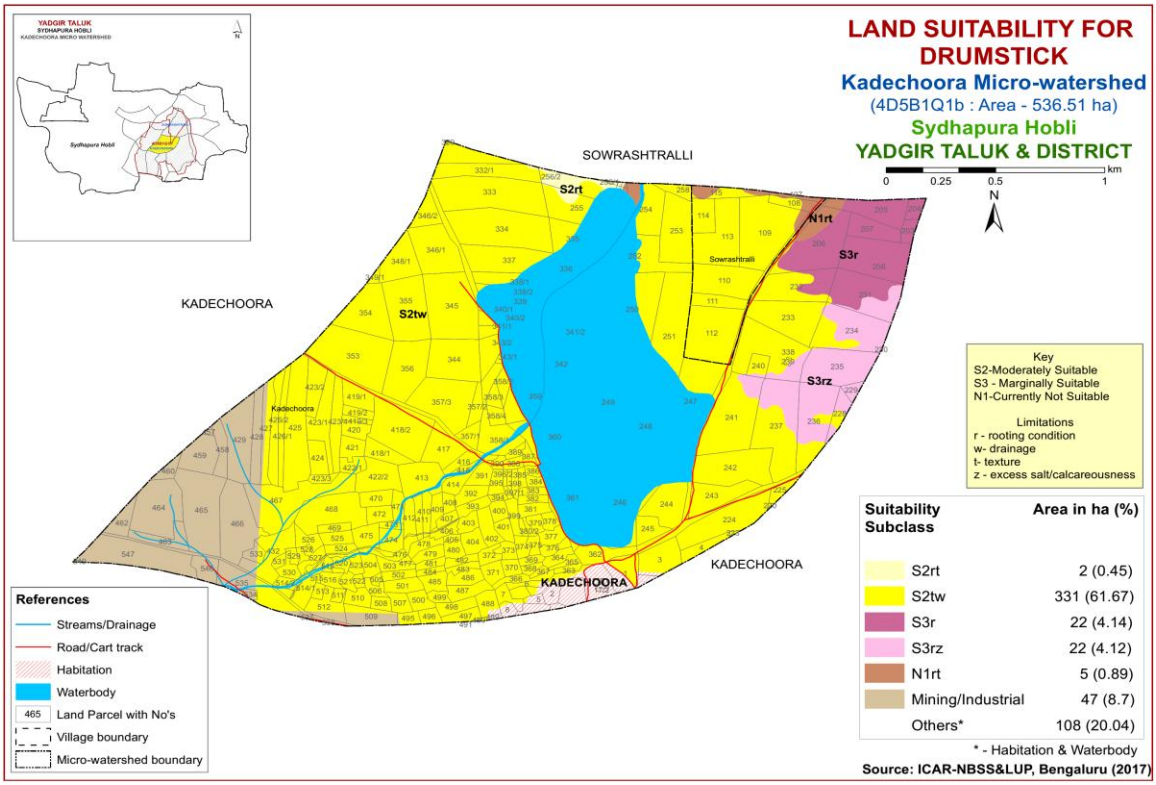


Fig 7.11 Land Suitability map of Drumstick

7.12 Land Suitability for Mulberry (*Morus nigra*)

Mulberry is the important leaf crop grown for rearing silk worms in about 1,66,000 ha area in all the districts of the state. The crop requirements for growing mulberry (Table 7.12) were matched with the soil-site characteristics (Table 7.1) and a land suitability map for growing mulberry was generated. The area extent and their geographical distribution of different suitability subclasses in the microwatershed is given in Figure 7.12.

Table 7.12 Crop suitability criteria for Mulberry

Crop requirement			Rating			
Soil –site characteristics		Unit	Highly suitable(S1)	Moderately suitable(S2)	Marginally suitable(S3)	Not suitable(N)
Soil aeration	Soil drainage	Class	Well drained	Moderately well drained	Poorly drained	V. Poorly drained
Nutrient availability	Texture	Class	sc, cl, scl	c (red)	c (black),sl,ls	-
	pH	1:2.5				
Rooting conditions	Soil depth	Cm	>100	75-100	50-75	<50
	Gravel content	% vol.	0-35	35-60	60-80	>80
Erosion	Slope	%	0-3	3-5	5-10	>10

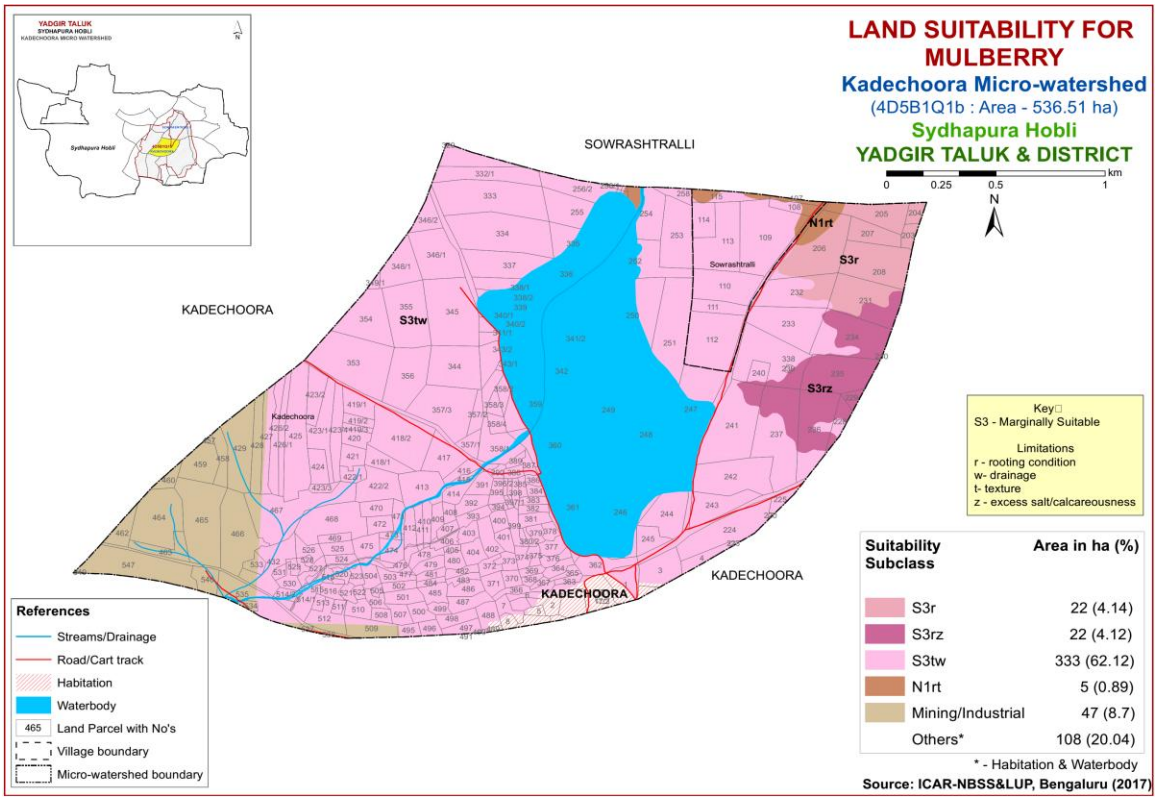


Fig 7.12 Land Suitability map of Mulberry

In Kadechoora microwatershed, there are no highly (Class S1) and moderately (Class S2) suitable lands available for growing mulberry. Major area of about 377 ha (70%) is marginally suitable (Class S3) for growing mulberry and are distributed in all

parts of the microwatershed. They have moderate limitations of drainage, texture, calcareousness and rooting depth. Not suitable lands (Class N) occupy very small area of about 5 ha (1%) and are distributed in the northeastern part of the microwatershed. They have severe limitations of rooting depth and texture.

7.13 Land Suitability for Mango (*Mangifera indica*)

Mango is one of the most important fruit crop grown in about 173080 ha in all the districts of the State. The crop requirements for growing mango (Table 7.13) were matched with the soil-site characteristics (Table 7.1) and a land suitability map for growing mango was generated. The area extent and their geographical distribution of different suitability subclasses in the microwatershed is given in Figure 7.13.

No highly (Class S1) and moderately (Class S2) suitable lands are available for growing mango in the Kadechoora microwatershed. Major area of about 333 ha (62%) is marginally suitable (Class S3) for growing mango and are distributed in all parts of the microwatershed. They have moderate limitations of texture, drainage, calcareousness and rooting depth. Not suitable lands (Class N) occupy an area of about 49 ha (9%) and are distributed in the eastern and southeastern part of the microwatershed. They have severe limitations of rooting depth and calcareousness.

Table 7.13 Crop suitability criteria for Mango

Crop requirement			**Rating**			
soil-site characteristics		**Unit**	**Highly suitable(S1)**	**Moderately suitable (S2)**	**Marginally suitable (S3)**	**Not suitable(N)**
Climate	Temp in growing season	^{0}C	28-32	24-27 33-35	36-40	20-24
	Min. temp. before flowering	^{0}C	10-15	15-22	>22	
Soil moisture	Growing period	Days	>180	150-180	120-150	<120
Soil aeration	Soil drainage	class	Well drained	Mod. To imperf.drained	Poor drained	V. poorly drained
	Water table	M	>3	2.50-3.0	2.5-1.5	<1.5
Nutrient availability	Texture	Class	sc, l, sil, cl	sl, sc, sic, l, c	c (<60%)	c (>60%),
	pH	1:2.5	5.5-7.5	7.6-8.55.0-5.4	8.6-9.0 4.0-4.9	>9.0 <4.0
	OC	%	High	medium	low	
	$CaCO_3$ in root zone	%	Non calcareous	<5	5-10	>10
Rooting conditions	Soil depth	cm	>200	125-200	75-125	<75
	Gravel content	% vol.	Non gravelly	<15	15-35	>35
Soil toxicity	Salinity	dS/m	Non saline	<2.0	2.0-3.0	>3.0
	Sodicity	%	Non sodic	<10	10-15	>15
Erosion	Slope	%	<3	3-5	5-10	

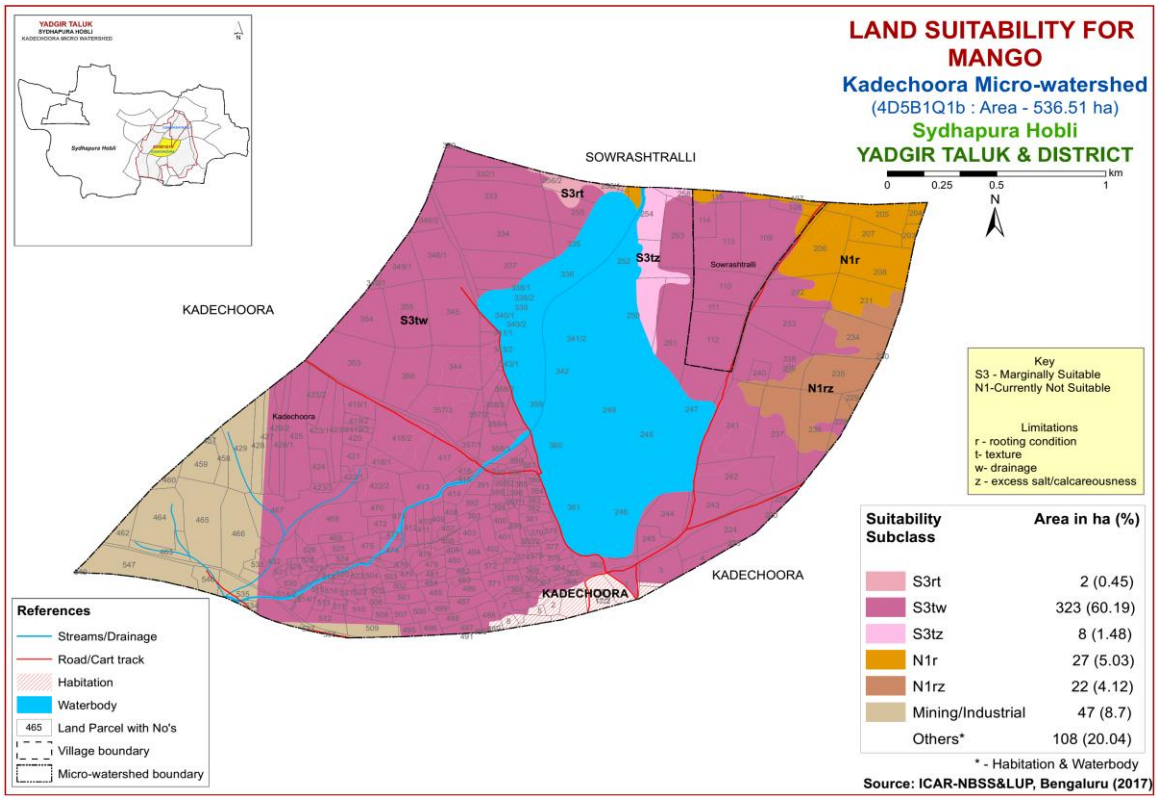


Fig. 7.13 Land Suitability map of Mango

7.14 Land Suitability for Sapota (*Manilkara zapota*)

Sapota is one of the most important fruit crop grown in about 29373 ha in almost all the districts of the state. The crop requirements for growing sapota (Table 7.14) were matched with the soil-site characteristics (Table 7.1) and a land suitability map for growing sapota was generated. The area extent and their geographical distribution of different suitability subclasses in the microwatershed is given in Figure 7.14.

No highly (Class S1) and moderately (Class S2) suitable lands are available for growing sapota in the Kadechoora microwatershed. Major area of about 377 ha (70%) is marginally suitable (Class S3) for growing sapota and are distributed in all parts of the microwatershed. They have moderate limitations of texture, drainage, calcareousness and rooting depth. Not suitable lands (Class N) occupy an area of about 5 ha (1%) and are distributed in the northeastern part of the microwatershed. They have severe limitation of rooting depth.

Table 7.14 Crop suitability criteria for Sapota

Crop requirement			Rating			
Soil –site characteristics		**Unit**	**Highly suitable(S1)**	**Moderately suitable(S2)**	**Marginally suitable (S3)**	**Not suitable(N)**
Climate	Temperature in growing season	^{0} C	28-32	33-36 24-27	37-42 20-23	>42 <18
Soil moisture	Growing period	Days	>150	120-150	90-120	<120
Soil aeration	Soil drainage	class	Well drained	Moderately well drained	Imperfectly drained	Poorly drained
Nutrient availability	Texture	Class	scl,l,cl,sil	sl, sicl, sc	c (<60%)	ls,s,c(>60%)
	pH	1:2.5	6.0-7.5	7.6-8.0,5.0-5.9	8.1-9.0,4.5-4.9	>9.0, <4.5
	$CaCO_3$ in root zone	%	Non calcareous	<10	10-15	>15
Rooting conditions	Soil depth	cm	>150	75-150	50-75	<50
	Gravel content	% vol.	Non gravelly	<15	15-35	<35
Soil toxicity	Salinity	dS/m	Non saline	Up to 1.0	1.0-2.0	2.0-4.0
	Sodicity	%	Non sodic	10-15	15-25	>25
Erosion	Slope	%	<3	3-5	5-10	>10

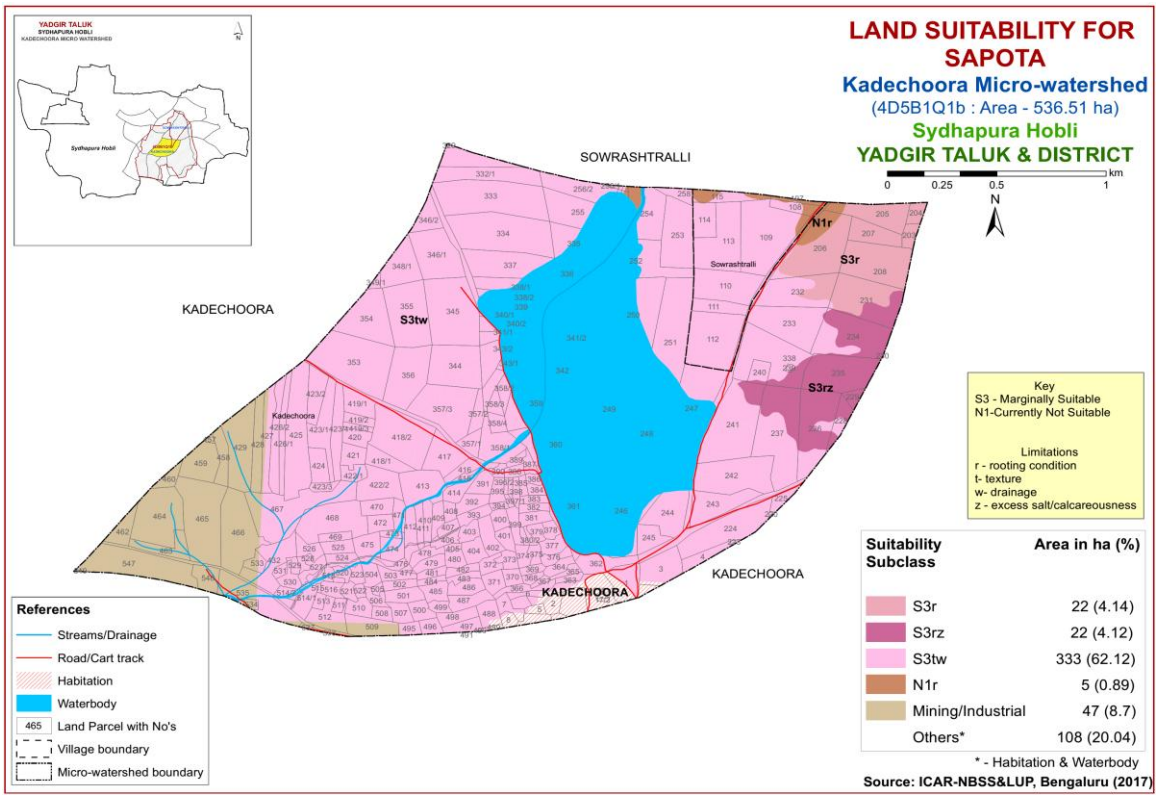


Fig. 7.14 Land Suitability map of Sapota

7.15 Land Suitability for Guava (*Psidium guajava*)

Guava is one of the most important fruit crop grown in about 6558 ha in the State of Raichur, Dharwad, Belgaum, Kalaburgi, Bijapur, Bidar, Bellary, Chitradurga, Bangalore, Kolar, Chikkaballapur and Chamarajnagar districts. The crop requirements for growing guava (Table 7.15) were matched with the soil-site characteristics (Table 7.1) and a land suitability map for growing guava was generated. The area extent and their geographical distribution of different suitability subclasses in the microwatershed is given in Figure 7.15.

No highly (Class S1) and moderately (Class S2) suitable lands are available for growing guava in the Kadechoora microwatershed. Major area of about 377 ha (70%) is marginally suitable (Class S3) for growing guava and are distributed in all parts of the microwatershed. They have moderate limitations of texture, drainage, calcareousness and rooting depth. Not suitable lands (Class N) occupy an area of about 5 ha (1%) and are distributed in the northeastern part of the microwatershed. They have severe limitations of rooting depth and texture.

Table 7.15 Crop suitability criteria for Guava

Crop requirement			**Rating**			
Soil –site characteristics		**Unit**	**Highly suitable (S1)**	**Moderately Suitable (S2)**	**Marginally suitable(S3)**	**Not suitable(N)**
Climate	Temperature in growing season	^{0}C	28-32	33-36 24-27	37-42 20-23	
Soil moisture	Growing period	Days	>150	120-150	90-120	<90
Soil aeration	Soil drainage	class	Well drained	Mod. to imperfectly	poor	Very poor
Nutrient availability	Texture	Class	scl, l, cl, sil	sl,sicl,sic.,sc,c	c (<60%)	c (>60%)
	pH	1:2.5	6.0-7.5	7.6-8.0:5.0-5.9	8.1-8.5:4.5-4.9	>8.5:<4.5
	$CaCO_3$ in root zone	%	Non calcareous	<10	10-15	>15
Rooting conditions	Soil depth	cm	>100	75-100	50-75	<50
	Gravel content	%vol.	<15	15-35	>35	
Soil toxicity	Salinity	dS/m	<2.0	2.0-4.0	4.0-6.0	
	Sodicity	%	Non sodic	10-15	15-25	>25
Erosion	Slope	%	<3	3-5	5-10	>10

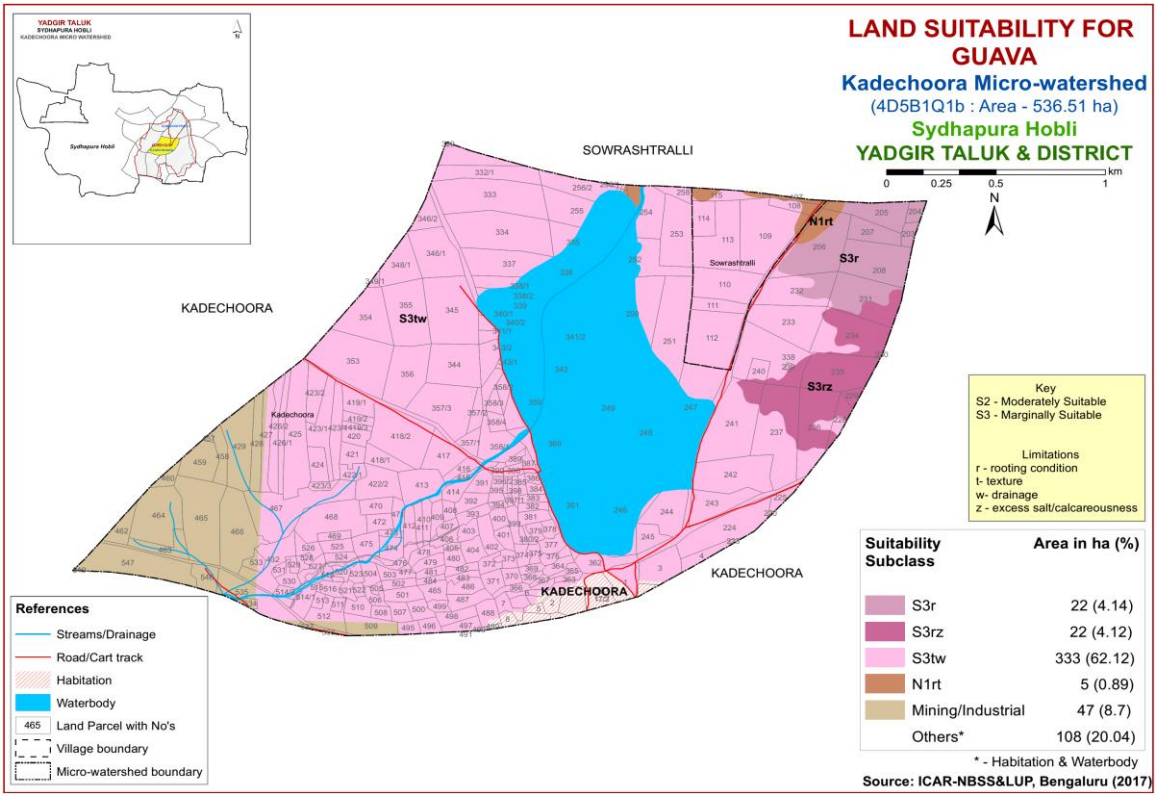


Fig 7.15 Land Suitability map of Guava

7.16 Land Suitability for Pomegranate (*Punica granatum*)

Pomegranate is one of the most important fruit crop commercially grown in about 18488 ha in Karnataka in an area of about 0.16 lakh ha mainly in Bijapur, Bagalkot, Koppal, Gadag and Chitradurga districts. The crop requirements for growing pomegranate (Table 7.16) were matched with the soil-site characteristics (Table 7.1) and a land suitability map for growing pomegranate was generated. The area extent and their geographical distribution of different suitability subclasses in the microwatershed is given in Figure 7.16.

In Kadechoora microwatershed, there are no lands that are highly (Class S1) suitable for growing pomegranate. Major area of about 333 ha (62%) is moderately suitable (Class S2) for pomegranate and is distributed in all parts of the microwatershed. They have minor limitations of rooting depth, texture and drainage. An area of about 44 ha (8%) is marginally suitable (Class S3) for growing pomegranate and are distributed in the eastern and southeastern part of the microwatershed. They have moderate limitations of rooting depth and calcareousness. An area of about 5 ha (1%) is not suitable (Class N) for growing pomegranate and are distributed in the eastern part of the microwatershed. They have severe limitation of rooting depth.

Table 7.16 Crop suitability criteria for Pomegranate

Crop requirement			Rating			
Soil –site characteristics		Unit	Highly suitable(S1)	Moderately Suitable(S2)	Marginally suitable(S3)	Not suitable(N)
Climate	Temperature in growing season		30-34	35-38,25-29	39-40 15-24	
Soil moisture	Growing period	Days	>150	120-150	90-120	<90
Soil aeration	Soil drainage	class	Well drained	imperfectly drained		
Nutrient availability	Texture	Class	sl, scl, l, cl	c, sic, sicl	cl, s, ls	
	pH	1:2.5	5.5-7.5	7.6-8.5	8.6-9.0	
Rooting conditions	Soil depth	Cm	>100	75-100	50-75	<50
	Gravel content	% vol.	nil	15-35	>35	
Soil toxicity	Salinity	ds/m	Nil	<9	>9	<50
	Sodicity	%	nil			
Erosion	Slope	%	<3	3-5	5-10	

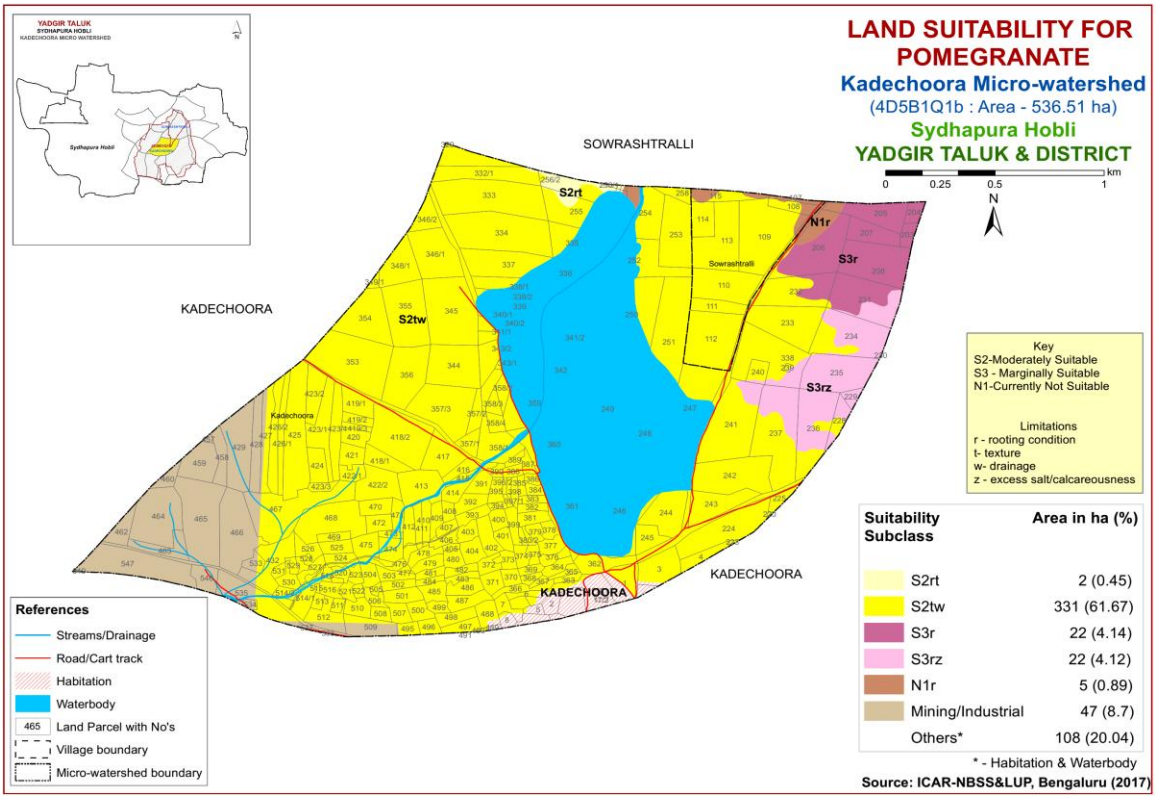


Fig 7.16 Land Suitability map of Pomegranate

7.17 Land Suitability for Jackfruit (*Artocarpus heterophyllus*)

Jackfruit is one of the most important fruit crop grown in 5368 ha in almost all the districts of the state. The crop requirements for growing jackfruit (Table 7.17) were matched with the soil-site characteristics (Table 7.1) and a land suitability map for

growing jackfruit was generated. The area extent and their geographical distribution of different suitability subclasses in the microwatershed is given in Figure 7.17.

No highly (Class S1) and moderately (Class S2) suitable lands are available for growing jackfruit in the Kadechoora microwatershed. Major area of about 377 ha (70%) is marginally suitable (Class S3) for growing jackfruit and are distributed in all parts of the microwatershed. They have moderate limitations of texture, drainage, calcareousness and rooting depth. Not suitable lands (Class N) occupy an area of about 5 ha (1%) and are distributed in the northeastern part of the microwatershed. They have severe limitations of rooting depth and texture.

Table 7.17 Crop suitability criteria for Jackfruit

Crop requirement			Rating			
Soil –site characteristics		Unit	Highly suitable(S1)	Moderately suitable(S2)	Marginally suitable(S3)	Not suitable(N)
Soil aeration	Soil drainage	class	well	Mod. well	Poorly	Poorly
Nutrient availability	Texture	Class	scl,cl,sc,c(red)	-	sl, ls, c(black)	-
	pH	1:2.5	5.5-7.3	5.0-5.5,7.3-7.8	7.8-8.4	>8.4
Rooting conditions	Soil depth	Cm	>100	75-100	50-75	<50
	Gravel content	% vol.	<15	15-35	35-60	>60
Erosion	Slope	%	0-3	3-5	>5	-

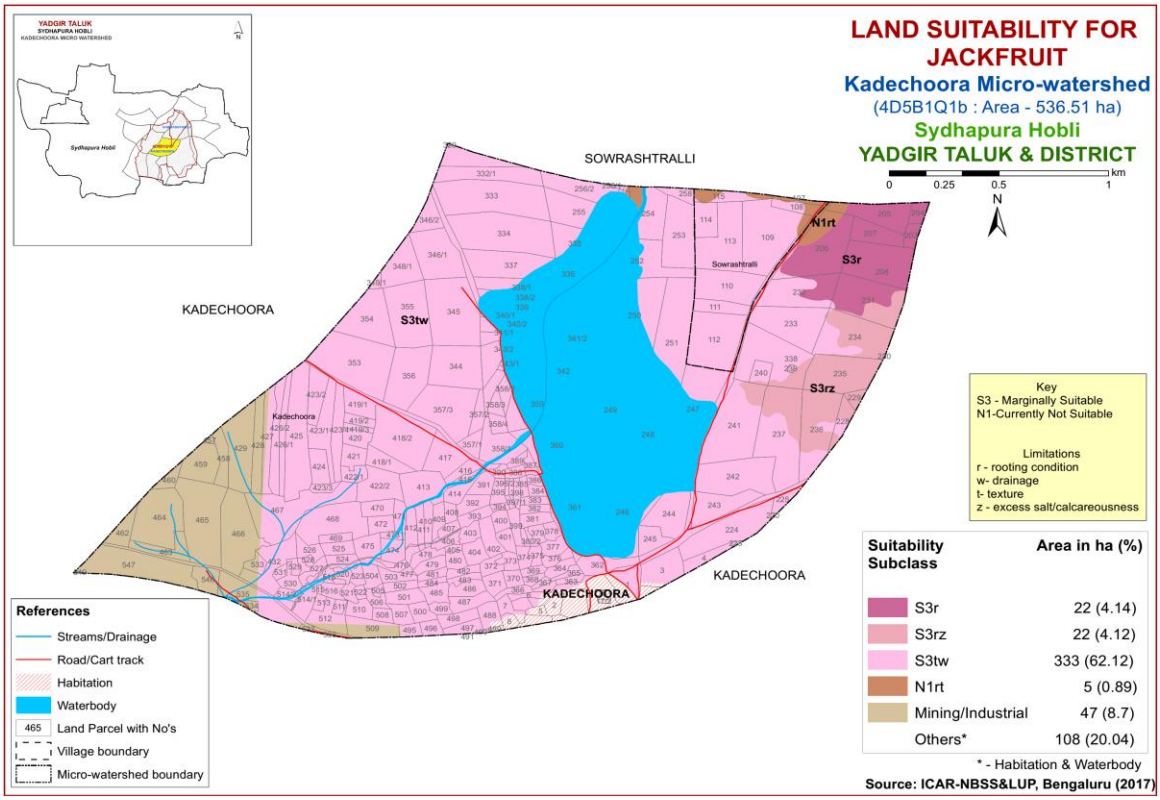


Fig 7.17 Land Suitability map of Jackfruit

7.18 Land Suitability for Jamun (*Syzygium cumini*)

Jamun is one of the most important fruit crop grown in almost all the districts of the state. The crop requirements for growing jamun (Table 7.18) were matched with the soil-site characteristics (Table 7.1) and a land suitability map for growing jamun was generated. The area extent and their geographical distribution of different suitability subclasses in the microwatershed is given in Figure 7.18.

Table 7.18 Crop suitability criteria for Jamun

Crop requirement			Rating			
Soil –site characteristics		Unit	Highly suitable(S1)	Moderately Suitable(S2)	Marginally suitable(S3)	Not suitable(N)
Soil aeration	Soil drainage	Class	Well	Mod. well	Poorly	V.Poorly
Nutrient availability	Texture	Class	scl,cl,sc,c(red)	sl, c (black)	ls	-
	pH	1:2.5	6.0-7.8	5.0-6.0	7.8-8.4	>8.4
Rooting conditions	Soil depth	Cm	>150	100-150	50-100	<50
	Gravel content	% vol.	<15	15-35	35-60	>60
Erosion	Slope	%	0-3	3-5	5-10	>10

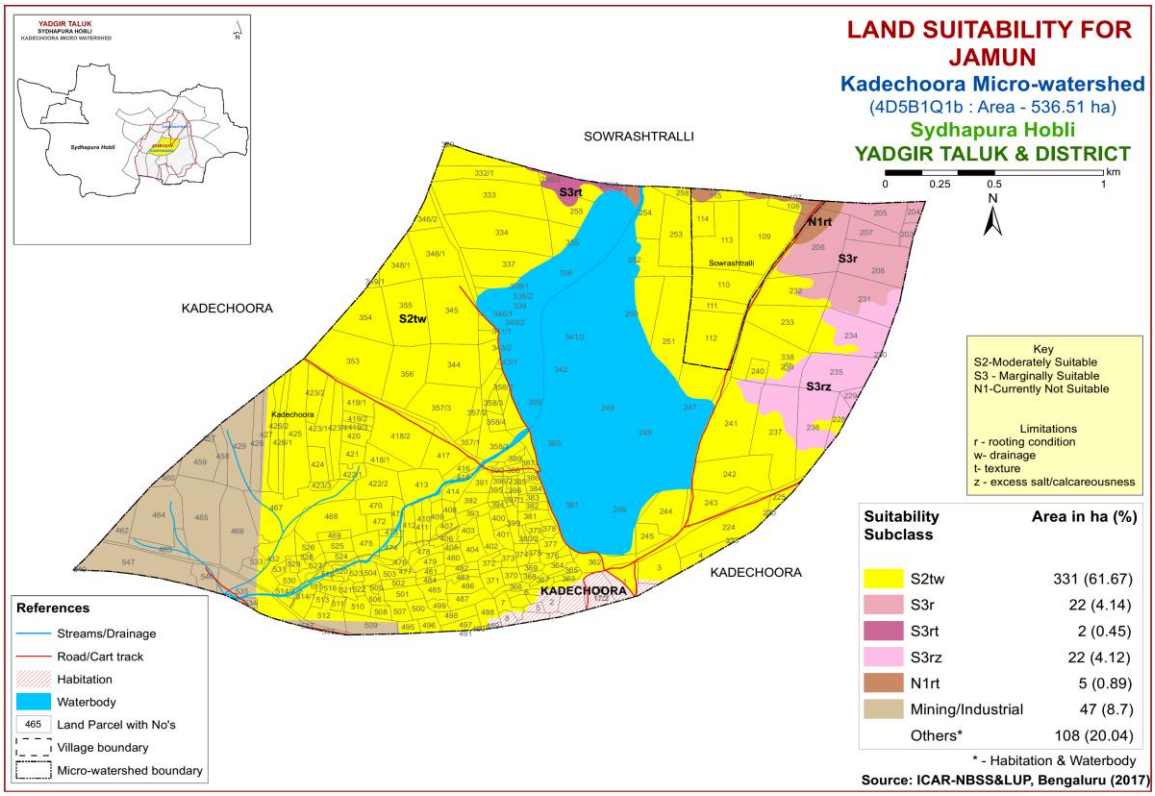


Fig 7.18 Land Suitability map of Jamun

In Kadechoora microwatershed, there are no lands that are highly (Class S1) suitable for growing jamun. Major area of about 331 ha (62%) is moderately suitable (Class S2) for jamun and is distributed in all parts of the microwatershed. They have

minor limitations of texture and drainage. An area of about 46 ha (9%) is marginally suitable (Class S3) for growing jamun and are distributed in the eastern and southeastern part of the microwatershed. They have moderate limitations of rooting depth, texture and calcareousness. An area of about 5 ha (1%) is not suitable (Class N) for growing jamun and are distributed in the northeastern part of the microwatershed. They have severe limitation of rooting depth and texture.

7.19 Land Suitability for Musambi (*Citrus limetta*)

Musambi is one of the most important fruit crop grown in an area of 5446 ha in almost all the districts of the state. The crop requirements for growing musambi were matched with the soil-site characteristics and a land suitability map for growing musambi was generated. The area extent and their geographical distribution of different suitability subclasses in the microwatershed is given in Figure 7.19.

In Kadechoora microwatershed, there are no lands that are highly (Class S1) suitable for growing musambi. Major area of about 333 ha (62%) is moderately suitable (Class S2) for musambi and is distributed in all parts of the microwatershed. They have minor limitations of rooting depth, calcareousness and drainage. An area of about 44 ha (8%) is marginally suitable (Class S3) for growing musambi and are distributed in the eastern and southeastern part of the microwatershed. They have moderate limitations of rooting depth and calcareousness. An area of about 5 ha (1%) is not suitable (Class N) for growing musambi and are distributed in the eastern part of the microwatershed. They have severe limitation of rooting depth.

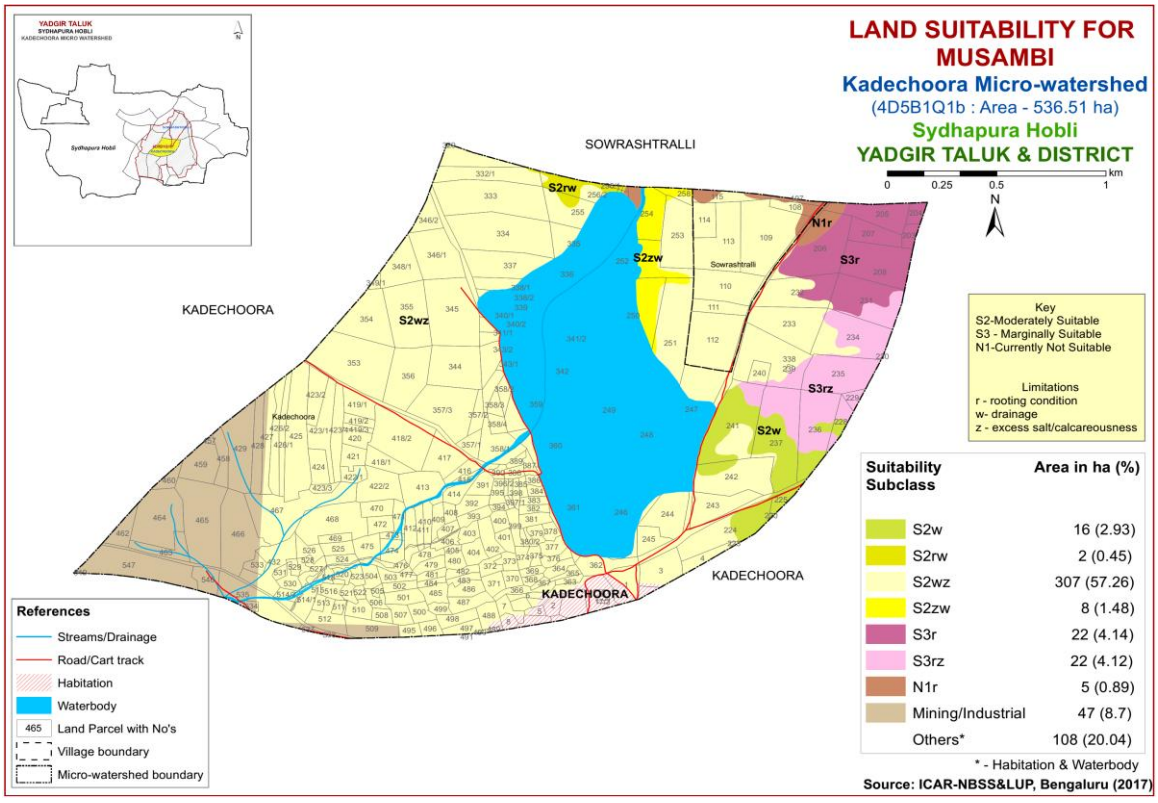


Fig 7.19 Land Suitability map of Musambi

7.20 Land Suitability for Lime (*Citrus sp*)

Lime is one of the most important fruit crop grown in 11752 ha in almost all the districts of the state. The crop requirements for growing lime (Table 7.19) were matched with the soil-site characteristics (Table 7.1) and a land suitability map for growing lime was generated. The area extent and their geographic distribution of different suitability subclasses in the microwatershed is given in Figure 7.20.

In Kadechoora microwatershed, there are no lands that are highly (Class S1) suitable for growing lime. Major area of about 333 ha (62%) is moderately suitable (Class S2) for lime and is distributed in all parts of the microwatershed. They have minor limitations of rooting depth, calcareousness and drainage. An area of about 44 ha (8%) is marginally suitable (Class S3) for growing lime and are distributed in the eastern and southeastern part of the microwatershed. They have moderate limitations of rooting depth and calcareousness. An area of about 5 ha (1%) is not suitable (Class N) for growing lime and are distributed in the eastern part of the microwatershed. They have severe limitation of rooting depth.

Table 7.19 Crop suitability criteria for Lime

Crop requirement			**Rating**			
Soil–site characteristics		**Unit**	**Highly suitable(S1)**	**Moderately suitable(S2)**	**Marginally suitable(S3)**	**Not suitable(N)**
Climate	Temp in growing season	^{0}C	28-30	31-35 24-27	36-40 20-23	>40 <20
Soil moisture	Growing period	Days	240-265	180-240	150-180	<150
Soil aeration	Soil drainage	class	Well drained	Mod.to imperf. drained	poorly	Very poorly
Nutrient availability	Texture	Class	scl,l,sicl, cl,s	sc, sc, c	c (>70%)	s, ls
	pH	1:2.5	6.0-7.5	5.5-6.4/ 7.6-8.0	4.0-5.4 8.1-8.5	<4.0,>8.5
	$CaCO_3$ in root zone	%	Non calcareous	Upto 5	5-10	>10
Rooting condition	Soil depth	cm	>150	100-150	50-100	<50
	Gravel content	% vol.	Non gravelly	15-35	35-55	>55
Soil toxicity	Salinity	dS/m	Non saline	Upto 1.0	1.0-2.5	>2.5
	Sodicity	%	Non sodic	5-10	10-15	>15
Erosion	Slope	%	<3	3-5	5-10	

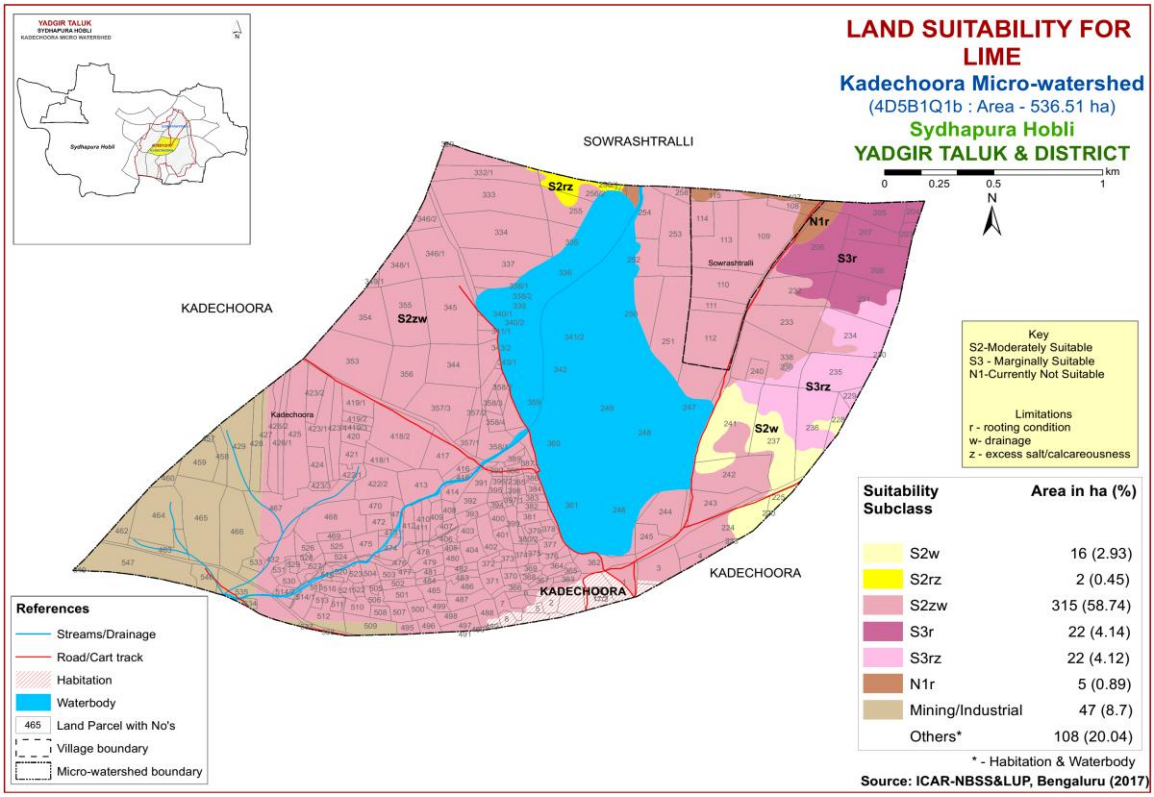


Fig 7.20 Land Suitability map of Lime

7.21 Land Suitability for Cashew (*Anacardium occidentale)*

Cashew is the most important plantation nut crop grown in an area of about 70552 ha in almost all the districts. The crop requirements for growing Cashew (Table 7.20) were matched with the soil-site characteristics (Table 7.1) and a land suitability map for growing Cashew was generated. The area extent and their geographic distribution of different suitability subclasses in the microwatershed is given in Figure 7.21.

Major area of about 382 ha (70%) is not suitable (Class N) for growing cashew and occur in all parts of the microwatershed. They have very severe limitations of rooting depth, texture, drainage and calcareousness.

Table 7.20 Crop suitability criteria for Cashew

Crop requirement			Rating			
Soil –site characteristics		**Unit**	**Highly suitable(S1)**	**Moderately Suitable(S2)**	**Marginally suitable(S3)**	**Not suitable(N)**
Soil aeration	Soil drainage	Class	Well drained	Mod. well drained	Poorly drained	V. Poorly drainage
Nutrient availability	Texture	Class				
	pH	1:2.5	5.5-6.5	5.0-5.5 ,6.5-7.3	7.3-7.8	>7.8
Rooting conditions	Soil depth	Cm	>100	75-100	50-75	<50
	Gravel content	%vol.	<15	15-35	35-60	>60
Erosion	Slope	%	0-3	3-10	>10	

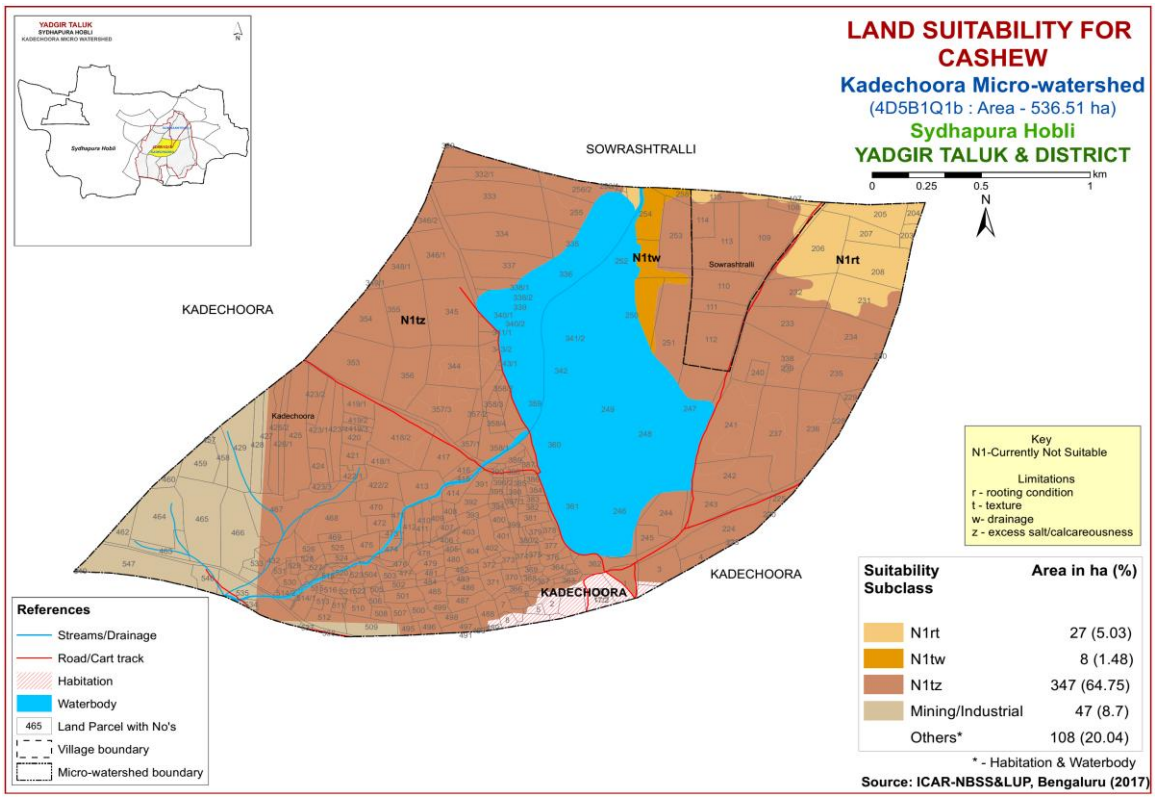


Fig 7.21 Land Suitability map of Cashew

7.22 Land Suitability for Custard Apple (*Annona reticulata*)

Custard apple is one of the most important fruit crop grown in 1426 ha in almost all the districts of the state. The crop requirements for growing custard apple (Table 7.21) were matched with the soil-site characteristics (Table 7.1) and a land suitability map for growing custard apple was generated. The area extent and their geographic distribution of different suitability subclasses in the microwatershed is given in Figure 7.22.

Table 7.21 Crop suitability criteria for Custard Apple

Crop requirement			Rating			
Soil –site characteristics		**Unit**	**Highly suitable (S1)**	**Moderately Suitable(S2)**	**Marginally suitable(S3)**	**Not suitable(N)**
Soil aeration	Soil drainage	Class	Well drained	Mod. well drained	Poorly drained	V. Poorly drained
Nutrient availability	Texture	Class	scl, cl, sc, c (red), c (black)	-	sl, ls	-
	pH	1:2.5	6.0-7.3	7.3-8.4	5.0-5.5,8.4-9.0	>9.0
Rooting conditions	Soil depth	cm	>75	50-75	25-50	<25
	Gravel content	% vol.	<15-35	35-60	60-80	-
Erosion	Slope	%	0-3	3-5	>5	

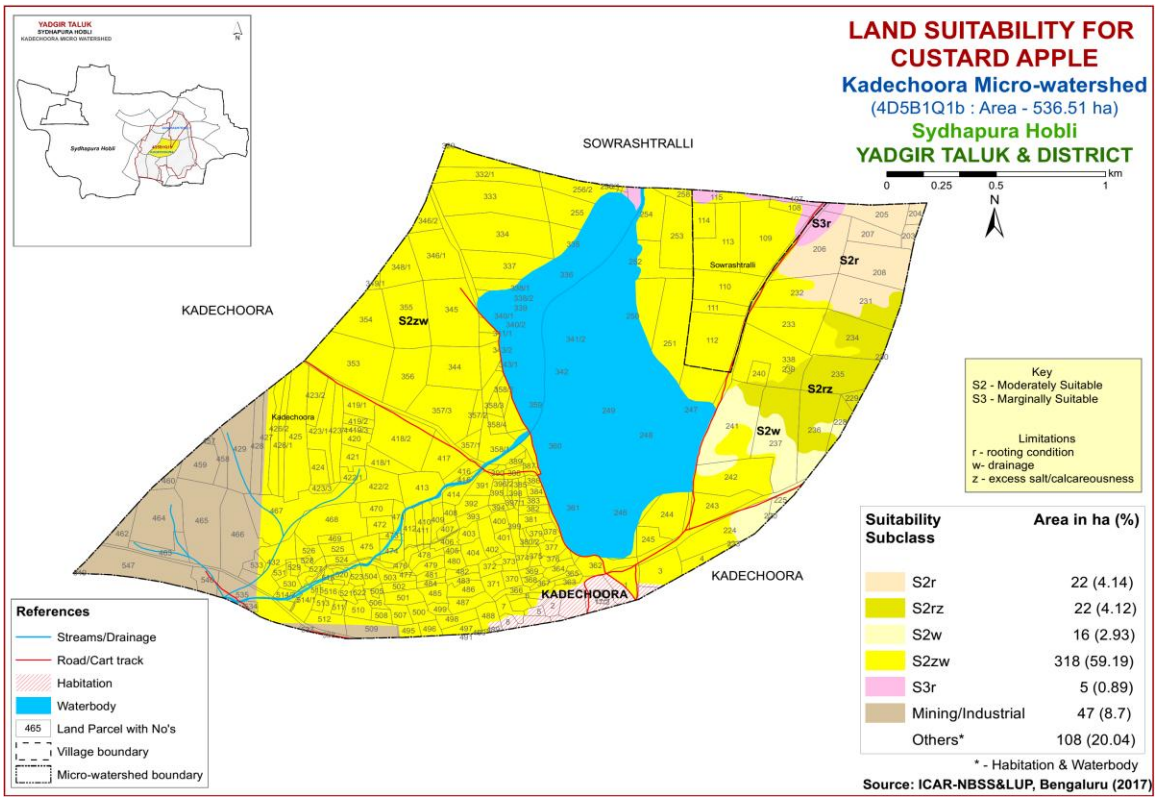


Fig 7.22 Land Suitability map of Custard Apple

In Kadechoora microwatershed, there are no lands that are highly (Class S1) suitable for growing custard apple. Major area of about 378 ha (70%) is moderately suitable (Class S2) for growing custard apple and are distributed in all parts of the microwatershed. They have minor limitations of drainage, calcareousness and rooting depth. Marginally suitable lands (Class S3) occupy a very small area of about 5 ha (1%) and are distributed in the northeastern part of the microwatershed. They have moderate limitation of rooting depth.

7.23 Land Suitability for Amla (*Phyllanthus emblica*)

Amla is one of the most important medicinal fruit crop grown in 151 ha in almost all the districts of the state. The crop requirements for growing amla (Table 7.22) were matched with the soil-site characteristics (Table 7.1) and a land suitability map for growing amla was generated. The area extent and their geographical distribution of different suitability subclasses in the microwatershed is given in Figure 7.23.

In Kadechoora microwatershed, there are no lands that are highly (Class S1) suitable for growing amla. Major area of about 377 ha (70%) is moderately suitable (Class S2) for growing amla and are distributed in all parts of the microwatershed. They have minor limitations of drainage, texture, calcareousness and rooting depth. Marginally suitable lands (Class S3) occupy a very small area of about 5 ha (1%) and are distributed in the northeastern part of the microwatershed. They have moderate limitations of rooting depth and texture.

Table 7.22 Crop suitability criteria for Amla

Crop requirement			Rating			
Soil –site characteristics		Unit	Highly suitable(S1)	Moderately suitable(S2)	Marginally suitable(S3)	Not suitable(N)
Soil aeration	Soil drainage	Class	Well drained	Mod. well drained	Poorly drained	V. Poorly drained
Nutrient availability	Texture	Class	scl,cl,sc,c(red)	c (black)	ls, sl	-
	pH	1:2.5	5.5-7.3	5.0-5.5	7.8-8.4	>8.4
Rooting conditions	Soil depth	cm	>75	50-75	25-50	<25
	Gravel content	% vol.	<15-35	35-60	60-80	
Erosion	Slope	%	0-3	3-5	5-10	>10

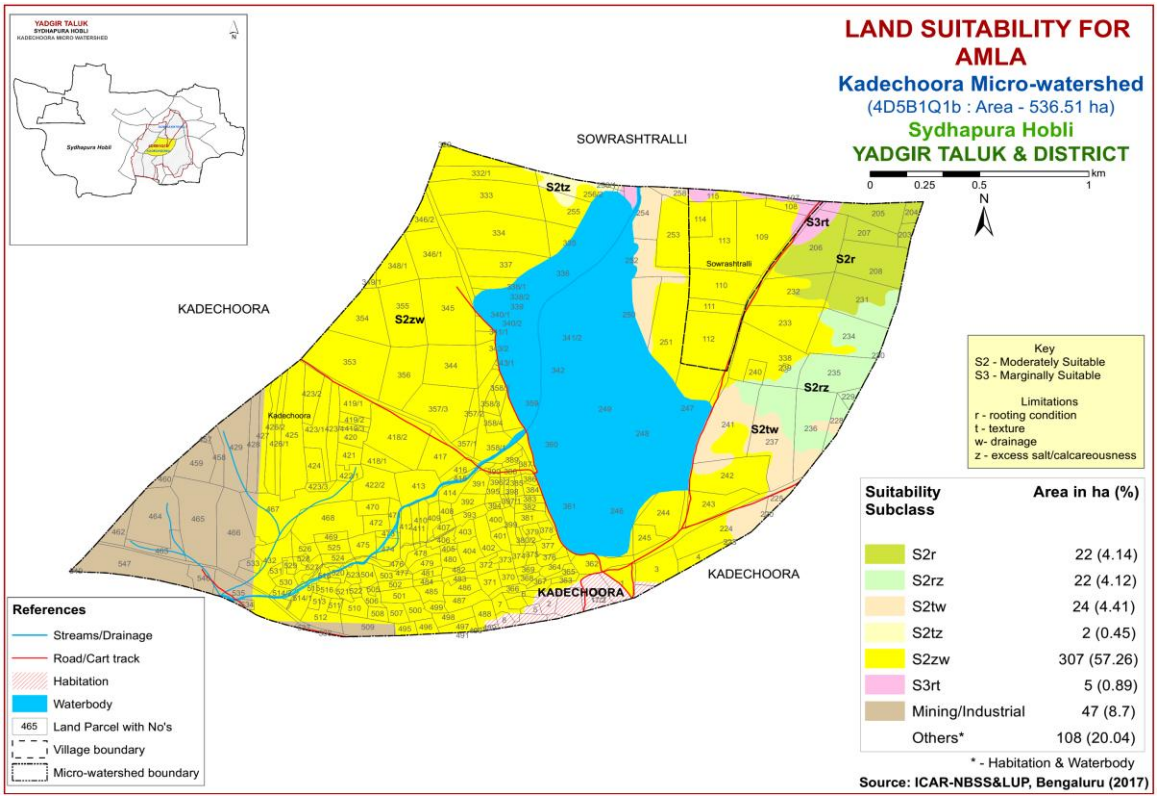


Fig 7.23 Land Suitability map of Amla

7.24 Land Suitability for Tamarind (*Tamarindus indica*)

Tamarind is one of the most important spice crop raised in 14897 ha in all the districts of the state. The crop requirements for growing tamarind (Table 7.23) were matched with the soil-site characteristics (Table 7.1) and a land suitability map for growing tamarind was generated. The area extent and their geographic distribution of different suitability subclasses in the microwatershed is given in Figure 7.24.

No highly (Class S1) and moderately (Class S2) suitable lands are available for growing tamarind in the Kadechoora microwatershed. Major area of about 333 ha (62%) is marginally suitable (Class S3) for growing tamarind and are distributed in all parts of the microwatershed. They have moderate limitations of texture, drainage and rooting

depth. Not suitable lands (Class N) occupy an area of about 49 ha (9%) and are distributed in the eastern and southeastern part of the microwatershed. They have severe limitations of rooting depth, texture and calcareousness.

Table 7.23 Crop suitability criteria for Tamarind

Crop requirement			Rating			
Soil –site characteristics		Unit	Highly suitable(S1)	Moderately Suitable(S2)	Marginally suitable(S3)	Not suitable(N)
Soil aeration	Soil drainage	Class	Well drained	Mod. well drained	Poorly drained	V.Poorly drained
Nutrient availability	Texture	Class	sclcl,sc,c(red)	sl, c (black)	ls	-
	pH	1:2.5	6.0-7.3	5.0-6.0,7.3-7.8	7.8-8.4	>8.4
Rooting conditions	Soil depth	Cm	>150	100-150	75-100	<50
	Gravel content	% vol.	<15	15-35	35-60	60-80
Erosion	Slope	%	0-3	3-5	5-10	>10

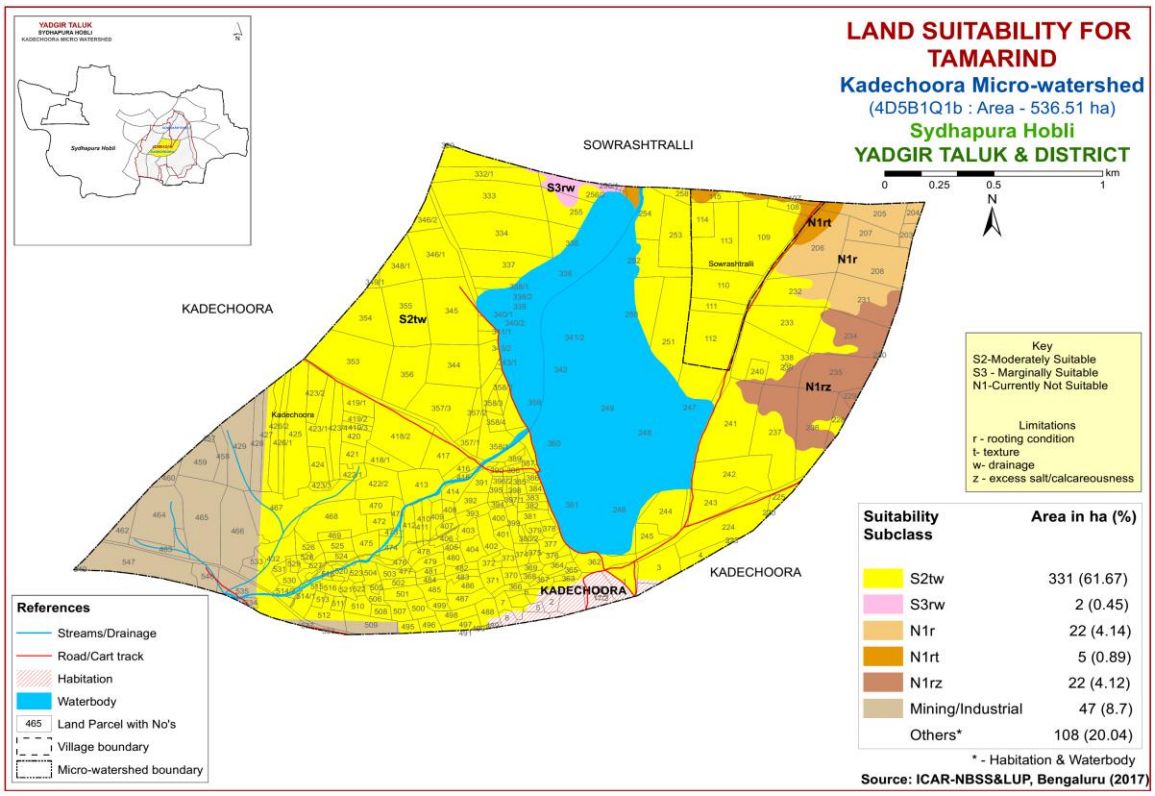


Fig 7.24 Land Suitability map of Tamarind

7.25 Land suitability for Marigold (*Tagetes sps.)*

Marigold is one of the most important flower crop grown in an area of 9108 ha in almost all the districts of the State. The crop requirements for growing marigold (Table 7.24) were matched with the soil-site characteristics (Table 7.1) and a land suitability map for growing marigold was generated. The area extent and their geographical distribution of different suitability subclasses in the microwatershed is given in Figure 7.25.

Table 7.24 Land suitability criteria for Marigold

Crop requirement			Rating			
Soil –site characteristics		**Unit**	**Highly suitable(S1)**	**Moderately Suitable(S2)**	**Marginally Suitable(S3)**	**Not Suitable(N)**
Climate	Temperature in growing season		18-23	17-15,24-35	35-40,10-14	>40,<10
Soil aeration	Soil drainage	class	Well drained	Moderately well drained	Imperfectly drained	Poorly drained
Nutrient availability	Texture	Class	l ,sl, scl, cl, sil	sicl, sc,sic, c	c	ls, s
	pH	1:2.5	7.0-7.5	5.5-5.9,7.6-8.5	<5, >8.5	-
	$CaCO_3$ in root zone	%	Non calcareous	Slightly calcareous	Strongly calcareous	-
Rooting conditions	Soil depth	Cm	>75	50-75	25-50	<25
	Gravel content	% vol.	<15	15-35	>35	-
Soil toxicity	Salinity	ds/m	Non saline	Slightly	Strongly	-
	Sodicity(ESP)	%	<10	10-15	>15	-
Erosion	Slope	%	1-3	3-5	5-10	-

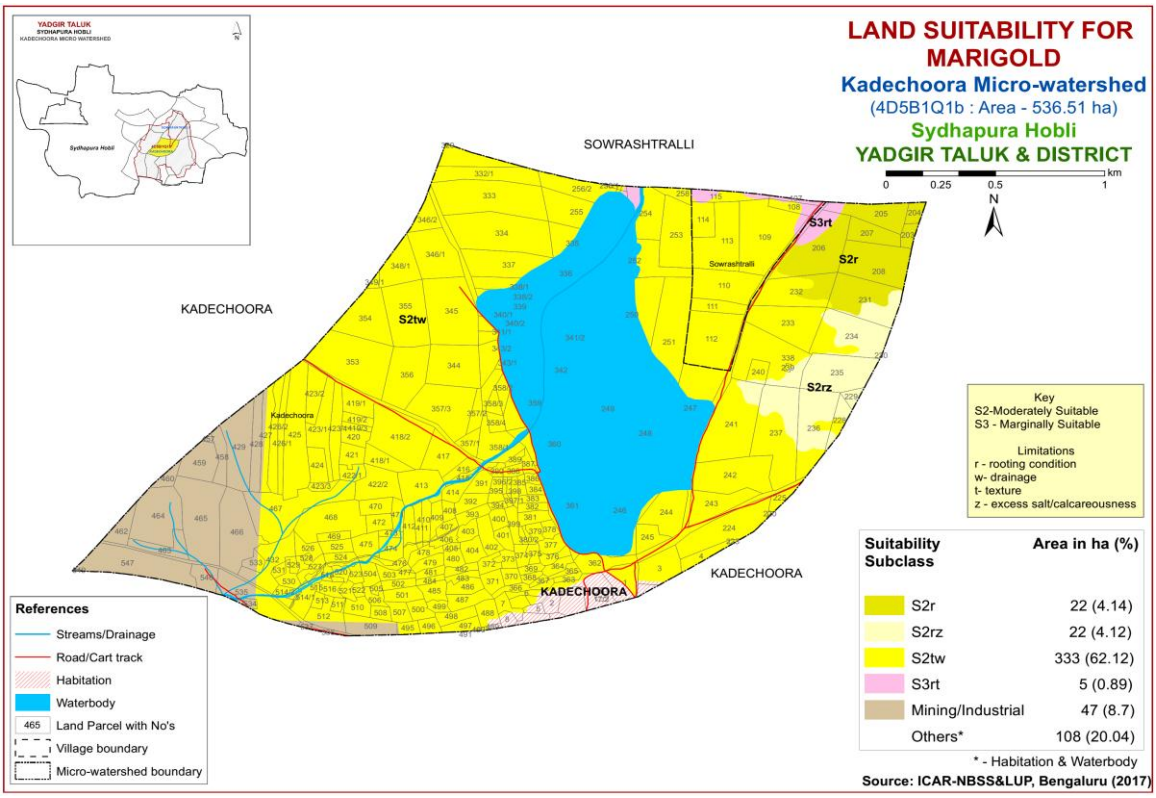


Fig. 7.25 Land Suitability map of Marigold

In Kadechoora microwatershed, there are no lands that are highly (Class S1) suitable for growing marigold. Major area of about 377 ha (70%) is moderately suitable (Class S2) for growing marigold and are distributed in all parts of the microwatershed. They have minor limitations of drainage, texture, calcareousness and rooting depth. Marginally suitable lands (Class S3) occupy a very small area of about 5 ha (1%) and are

distributed in the northeastern part of the microwatershed. They have moderate limitations of rooting depth and texture.

7.26 Land suitability for Chrysanthemum (*Dendranthema grandiflora*)

Chrysanthemum is one of the most important flower crop grown in an area of 4978 ha in almost all the districts of the State. The crop requirements for growing chrysanthemum (Table 7.25) were matched with the soil-site characteristics (Table 7.1) and a land suitability map for growing chrysanthemum was generated. The area extent and their geographical distribution of different suitability subclasses in the microwatershed is given in Figure 7.26.

In Kadechoora microwatershed, there are no lands that are highly (Class S1) suitable for growing chrysanthemum. Major area of about 377 ha (70%) is moderately suitable (Class S2) for growing chrysanthemum and are distributed in all parts of the microwatershed. They have minor limitations of drainage, texture, calcareousness and rooting depth. Marginally suitable lands (Class S3) occupy a very small area of about 5 ha (1%) and are distributed in the northeastern part of the microwatershed. They have moderate limitations of rooting depth and texture.

Table 7.25 Land suitability criteria for Chrysanthemum

Crop requirement			**Rating**			
Soil –site characteristics		**Unit**	**Highly suitable(S1)**	**Moderately Suitable(S2)**	**Marginally suitable(S3)**	**Not suitable(N)**
Climate	Temperature in growing season		18-23	17-15, 24-35	35-40,10-14	>40, <10
Soil aeration	Soil drainage	class	Well drained	Moderately well drained	Imperfectly drained	Poorly drained
Nutrient availability	Texture	Class	l ,sl,scl,cl, sil	sicl, sc, sic,c	c	ls, s
	pH	1:2.5	7.0-7.5	5.5-5.9, 7.6-8.5	<5 >8.5	
	$CaCO_3$ in root zone	%	Non calcareous	Slightly calcareous	Strongly calcareous	
Rooting conditions	Soil depth	Cm	>75	50-75	25-50	<25
	Gravel content	%vol.	<15	15-35	>35	
Soil toxicity	Salinity	ds/m	Non saline	slightly	strongly	
	Sodicity(ESP)	%	<10	10-15	>15	-
Erosion	Slope	%	1-3	3-5	5-10	

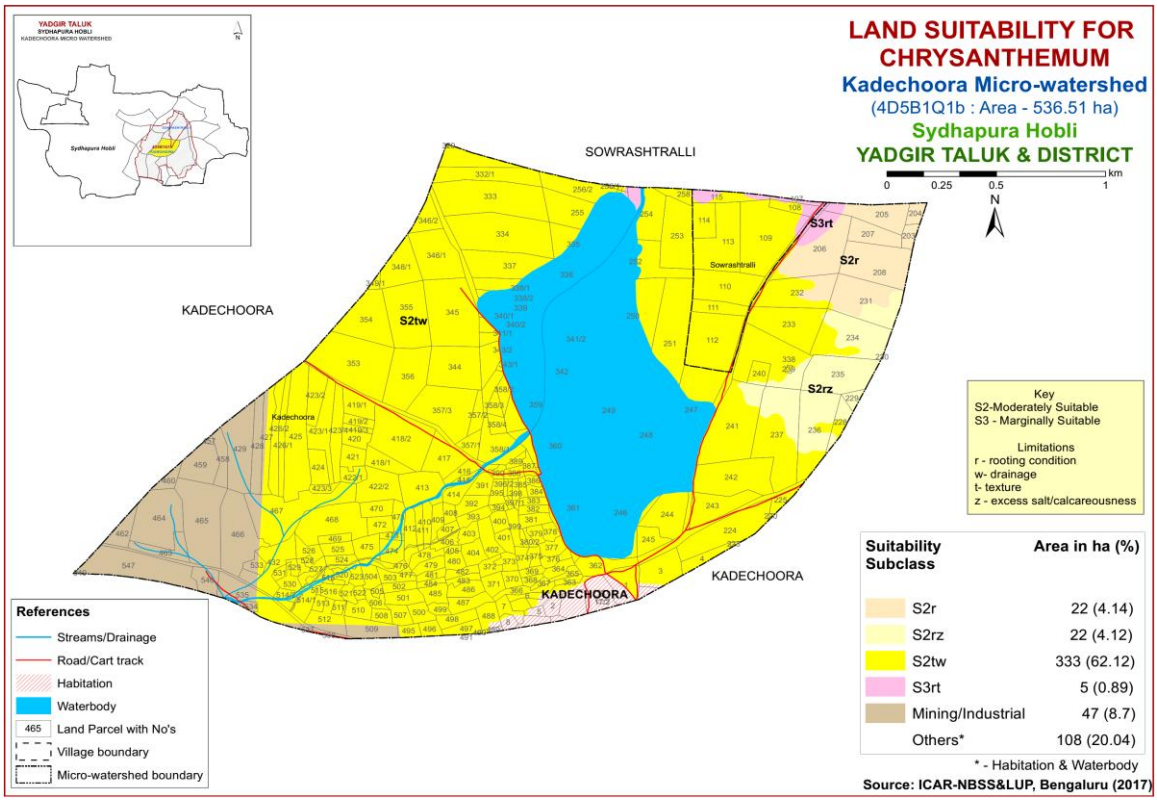


Fig. 7.26 Land Suitability map of Chrysanthemum

7.27 Land Management Units (LMU)

The 9 soil map units identified in Kadechoora microwatershed have been grouped into four Land Management Units (LMU) for the purpose of preparing a Proposed Crop Plan. Land Management Units are grouped based on the similarities in respect of the type of soil, the depth of the soil, the surface soil texture, gravel content, AWC, slope, erosion etc. and a Land Management Units map (Fig.7.27) has been generated. These Land Management Units are expected to behave similarly for a given level of management.

The map units that have been grouped into four Land Management Units along with brief description of soil and site characteristics are given below.

LMU NO.	Soil Map Unit number	Soil Map Units	Soil and site characteristics
1	100, 116	VKSmB1, KDHiB2	Moderately deep to deep, lowland black clay soils with 1-3% slopes and slightly to moderate erosion
2	79, 91, 95, 52	RHNmB2,SWRmB2 HGNmB2, ANRbB3	Moderately deep to very deep black clay soils with 1-3% slopes and moderate to severe erosion
3	16, 20	HLGcB2, JNKcB2	Moderately shallow, black sandy clay to sandy clay loam soils with 1-3% slopes and moderate erosion
4	5	BDLiB2	Shallow, black clay soils with 1-3% slopes and moderate erosion

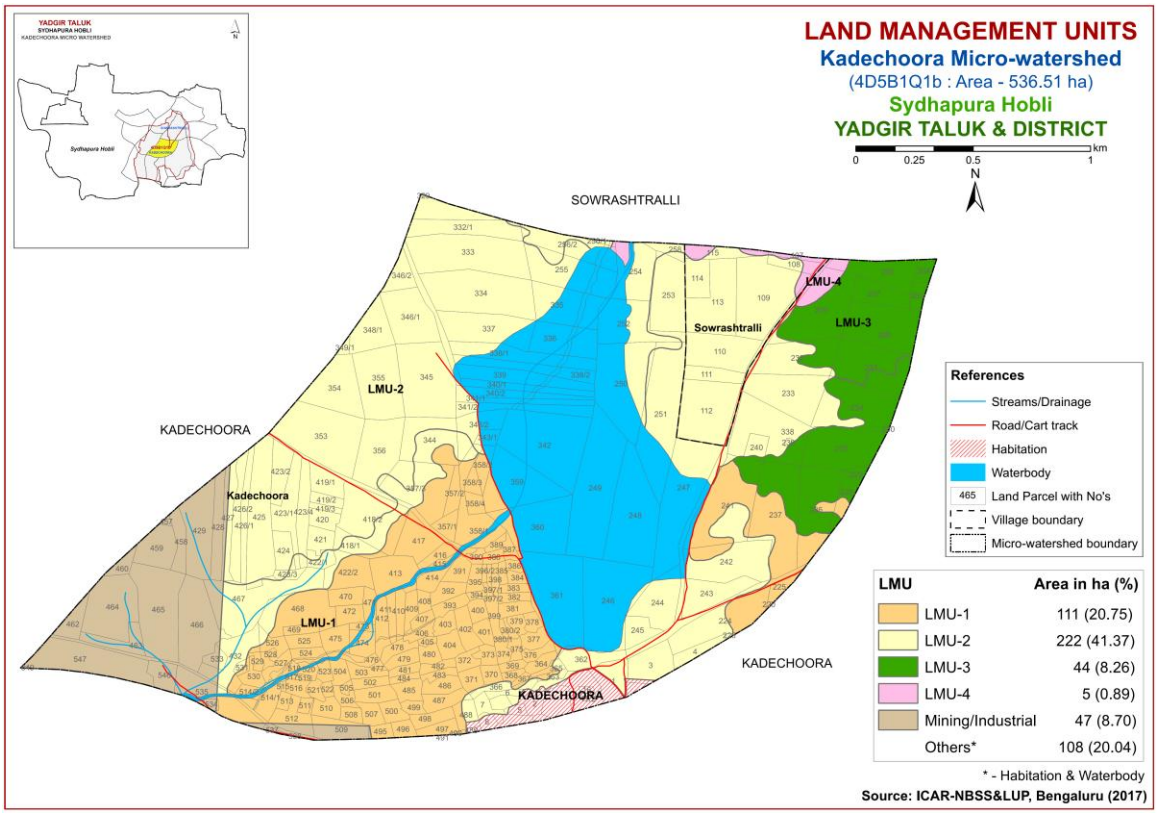


Fig. 7.27 Land Management Units Map of Kadechoora microwatershed

7.28 Proposed Crop Plan for Kadechoora Microwatershed

After assessing the land suitability for the 26 crops, a proposed crop plan has been prepared for the 4 identified LMUs by considering only the highly (Class S1) and moderately (Class S2) suitable lands for each of the 26 crops. The resultant proposed crop plan is presented in Table 7.26.

Table 7.26 Proposed Crop Plan for Kadachoora Micro-watershed

Proposed LMU	Soil Map Units	Survey Number	Field Crops	Horticulture Crops	Suitable Interventions
1	100.VKSmB1 116.KDHiB2 (Moderately deep to deep, lowland black clay soils)	**Kadechoora:**220,225,237,241,357/1,357/2,358/1,358/2,358/3,358/4,364,365,367,368,369,370,371,372,373,374,375,376,377,378,379,380/1,380/2,381,382,383,384,385,386,387,388,389,390,391,392,393,394,395,396/1,396/2,397/1,397/2,398,399,400,401,402,403,404,405,406,407,408,409,410,411,412,413,414,415,416,417,422/2,468,469,470,471,472,473,474,475,476,477,478,479,480,481,482,483,484,485,486,487,490,491,495,496,497,498,499,500,501,502,503,504,505,506,507,508,510,511,512,513,514/1,514/2,515,516,517,518,519,520,521,522,523,524,525,526,527,528,529, 530	Sunflower, Cotton, Bengal gram, Bajra	**Fruit crops:** Pomegranate, Tamarind, Jamun, , Lime, Musambi, Amla, Custard apple **Vegetables:** Drumstick, Chilli, Coriander **Flowers:** Marigold, Chrysanthemum	Application of FYM, Biofertilizers and micronutrients, drip irrigation, Mulching, suitable soil and water conservation practices
2	79.RHNmB2 91. SWRmB2 95.HGNmB2 52. ANRbB3 (Moderately deep to very deep black clay soils)	**Kadechoora:**223,224,232,233,239,240,242,243,244,245,251,253,254,255,256/1,256/2,258,3,329,332/1,333,334,337,338,344,345,346/1,346/2,348/1,349/1,353,354,355,356, 357/3,362,363,366,4,418/1,418/2,419/1,419/2,419/3,420,421,422/1,423/1,423/2,423/3,423/4,424,425,426/1,426/2,427,432,467,488,531,6,7 **Sowrashtralli:**108,109,110,111,112,113,114	Sunflower, Sorghum, Cotton, Bengal gram, Safflower, Linseed, Bajra	**Fruit crops:** Pomegranate, Tamarind, Jamun, Lime, Musambi, Amla, Custard apple, **Vegetables:** Drumstick, Chilli, Coriander **Flowers:** Marigold, Chrysanthemum	Application of FYM, Biofertilizers and micronutrients, drip irrigation, Mulching, suitable soil and water conservation practices
3	16. HLGcB2	**Kadechoora:**203,204,205,206,207,208,	Maize,	**Fruit crops:**, Amla, Custard	Application of FYM,

	20. JNKcB2 (Moderately shallow, black sandy clay to sandy clay loam soils)	228,229,230,231,234,235,236	Sorghum, Groundnut, Bengal gram, Bajra	apple, **Vegetables:** Tomato, Chilli, Coriander **Flowers:** Marigold, Chrysanthemum	Biofertilizers and micronutrients, drip irrigation, Mulching, suitable soil and water conservation practices
4	5.BDLiB2 (Shallow, black clay soils)	**Sowrashtralli:** 107,115	Bengal gram, Horsegram, Coriander	**Agri-Silvi-Pasture:** Custard apple, Amla**,** Hybrid Napier, *Styloxanthes hamata,* Glyricidia, *Styloxanthes scabra*	Use of short duration varieties, sowing across the slope, drip irrigation and mulching is recommended.

Chapter 8

SOIL HEALTH MANAGEMENT

8.1 Soil Health

Soil is fundamental to crop production. Without soil, no food could be produced nor would livestock be fed on a large scale. Because it is finite and fragile, soil is a precious resource that requires special care from its users.

Soil health or the capacity of the soil to function is critical to human survival. Soil health has been defined as: "the capacity of the soil to function as a living system without adverse effect on the ecosystem". Healthy soils maintain a diverse community of soil organisms that help to form beneficial symbiotic associations with plant roots, recycle essential plant nutrients, improve soil structure with positive repercussions for soil, water and nutrient holding capacity and ultimately improve crop production and also contribute to mitigating climate change by maintaining or increasing its carbon content.

Functional interactions of soil biota with organic and inorganic components, air and water determine a soil's potential to store and release nutrients and water to plants and to promote and sustain plant growth. Thus, maintaining soil health is vital to crop production and conserve soil resource base for sustaining agriculture.

The most important characteristics of a healthy soil are

- Good soil tilth
- Sufficient soil depth
- Good water storage and good drainage
- Adequate supply, but not excess of nutrients
- Large population of beneficial organisms
- Small proportion of plant pathogens and insect pests
- Low weed pressure
- Free of chemicals and toxins that may harm the crop
- Resistance to degradation
- Resilience when unfavourable conditions occur

Characteristics of Kadechoora Microwatershed

- The soil phases with sizeable area identified in the microwatershed belonged to the soil series of HGN (134 ha), VKS (96 ha), SWR (78 ha), HLG (22 ha), JNK (22 ha), KDH (16 ha), BDL (5 ha), ANR (8 ha) and RHN (2 ha).
- As per land capability classification, nearly 71 per cent area comes under arable land category (Class II and III) and 29 per cent area belongs to nonarable land category. The major limitations identified in the arable lands were soil, wetness and erosion.
- On the basis of soil reaction, about 216 ha (40%) area is moderately alkaline (pH 7.8-8.4) followed by strongly alkaline (pH 8.4-9.0) soils in 114 ha (21%). An area

of about 39 ha (7%) is slightly alkaline (pH 7.3-7.8) in reaction. An area of about 14 ha (3%) is very strongly alkaline (pH >9.0) in reaction. Thus, all the soils in the microwatershed are alkaline in reaction.

Soil Health Management

The following actions are required to improve the current land husbandry practices that provide a sound basis for the successful adoption of sustainable crop production system.

Alkaline soils

(Slightly alkaline to moderately alkaline soils)

1. Regular addition of organic manure, green manuring, green leaf manuring, crop residue incorporation and mulching needs to be taken up to improve the soil organic matter status.
2. Application of biofertilizers (Azospirullum, Azatobacter, Rhizobium).
3. Application of 25% extra N and P (125 % RDN&P).
4. Application of $ZnSO_4$ – 12.5 kg/ha (once in three years).
5. Application of Boron – 5kg/ha (once in three years).

Neutral soils

1. Regular addition of organic manure, green manuring, green leaf manuring, crop residue incorporation and mulching needs to be taken up to improve the soil organic matter status.
2. Application of biofertilizers, (Azospirullum, Azotobacter, Rhizobium).
3. Application of 100 per cent RDF.
4. Need based micronutrient applications.

   Besides the above recommendations, the best transfer of technology options are also to be adopted.

Soil Degradation

Soil erosion is one of the major factor affecting the soil health in the microwatershed. Out of total area of 536 ha in the microwatershed, major area of 287 ha is suffering from either moderate or severe erosion. These areas need immediate soil and water conservation and other land husbandry practices for restoring soil health.

Dissemination of Information and Communication of Benefits

Any large scale implementation of soil health management requires that supporting information is made available widely, particularly through channels familiar to farmers and extension workers. Given the very high priority attached to soil health especially by the Central Government on issuing Soil-Health Cards to all the farmers, media outlets like Regional, State and National Newspapers, Radio and Dooradarshan programs in local languages but also modern information and communication

technologies such as Cellular phones and the Internet, which can be much more effective in reaching the younger farmers.

Inputs for Net Planning (Saturation Plan) and Interventions needed

Net planning (Saturation Plan) in IWMP is focusing on preparation of

1. Soil and Water Conservation Treatment Plan for each plot or farm.
2. Productivity enhancement measures/ interventions for existing crops/livestock/other farm enterprises.
3. Diversification of farming mainly with perennial horticultural crops and livestock.
4. Improving livelihood opportunities and income generating activities.

   In this connection, how various outputs of Sujala-III are of use in addressing these objectives of Net Planning (Saturation Plan) are briefly presented below.

- **Soil Depth:** The depth of a soil decides the amount of moisture and nutrients it can hold, what crops can be taken up or not, depending on the rooting depth and the length of growing period available for raising any crop. Deeper the soil, better for a wide variety of crops. If sufficient depth is not available for growing deep rooted crops either choose medium or short duration crops or deeper planting pits need to be opened and additional good quality soil brought from outside has to be filled into the planting pits.
- **Surface soil texture:** Lighter soil texture in the top soil means, better rain water infiltration, less run-off and soil moisture conservation, less capillary rise and less evaporation losses. Lighter surface textured soils are amenable to good soil tilth and are highly suitable for crops like groundnut, root vegetables (carrot, raddish, potato etc) but not ideal for crops that need stagnant water like lowland paddy. Heavy textured soils are poor in water infiltration and percolation. They are prone for sheet erosion; such soils can be improved by sand mulching. The technology that is developed by the AICRP-Dryland Agriculture, Vijayapura, Karnataka may be adopted.
- **Gravelliness:** More gravel content is favorable for run-off harvesting but poor in soil moisture storage and nutrient availability. It is a significant parameter that decides the kind of crop to be raised.
- **Land Capability Classification:** The land capability map shows the areas suitable and not suitable for agriculture and the major constraints in each of the plot/survey number. Hence, one can decide what kind of enterprise is possible in each of these units. In general, erosion and soil are the major constraints in Kadechoora microwatershed.
- **Organic Carbon:** In about 183 ha (34%) area, the OC content is medium (0.5-0.75%), about 102 ha (19%) area it is high (>0.75%) and in about 97 ha (18 %) area is low (<0.5 %). The areas that are low and medium in OC needs to be further improved by applying farmyard manure and rotating crops with cereals and legumes or mixed cropping.

- **Promoting green manuring:** Growing of green manuring crops cost Rs. 1250/ha (green manuring seeds) and about Rs. 2000/ha towards cultivation that totals to Rs. 3250/- per ha. On the other hand, application of organic manure @ 10 tons/ha costs Rs. 5000/ha. The practice needs to be continued for 2-3 years or more. Nitrogen fertilizer needs to be supplemented by 25% in addition to the recommended level in 280 ha area where OC is less than 0.5-0.75%. For example, for rainfed maize, recommended level is 50 kg N per ha and an additional 12 kg /ha needs to be applied for all the crops grown in these plots.
- **Available Phosphorus**: In 154 ha (29%) area, the available phosphorus is low, an area of about 201 ha (37%) it is medium and an area of about 27 ha (5%) is high in available phosphorus in the microwatershed. Hence for all the crops, 25% additional P-needs to be applied, where it is low or medium in available phosphorus.
- **Available Potassium:** Available potassium is medium in 40 ha (7%) area of the microwatershed. Hence, in all these plots, for all crops, additional 25 % potassium may be applied. It is high in 342 ha (64%) area of the microwatershed.
- **Available Sulphur:** Available sulphur is a very critical nutrient for oilseed crops. It is low in 288 ha (54%) area of the microwatershed and medium in 87 ha (16%).These areas need to be applied with magnesium sulphate or gypsum or Factamphos (p) fertilizer (13% sulphur) for 2-3 years for the deficiency to be corrected. High in small area of about 7 ha (1%) in the microwatershed.
- **Available Boron:** It is low in 68 ha (13%) area of the microwatershed and medium in 198 ha (37%). For all these areas, sodium borate @ 10 kg/ha needs to be applied. High in area of about 116 ha (22%) in the microwatershed.
- **Available iron:** It is deficient in 156 ha (29%) area and it is sufficient in 227 ha (42%) area in the microwatershed. To manage iron deficiency, iron sulphate @ 25 ka/ha needs to be applied.
- **Available Zinc:** It is deficient in 370 ha (69%) area and it is sufficient in 12 ha (2%) area in the microwatershed. Application of zinc sulphate @25kg/ha is to be applied.

Soil alkalinity: The microwatershed has 383 ha area with soils that are alkaline in reaction. These areas need application of gypsum and wherever calcium is in excess, iron pyrites and element sulphur can be recommended. Management practices like treating repeatedly with good quality water to drain out the calcareousness and, provision of subsurface drainage and growing of salt tolerant crops like Casuarina, Acasia, Neem, Ber etc., are recommended.

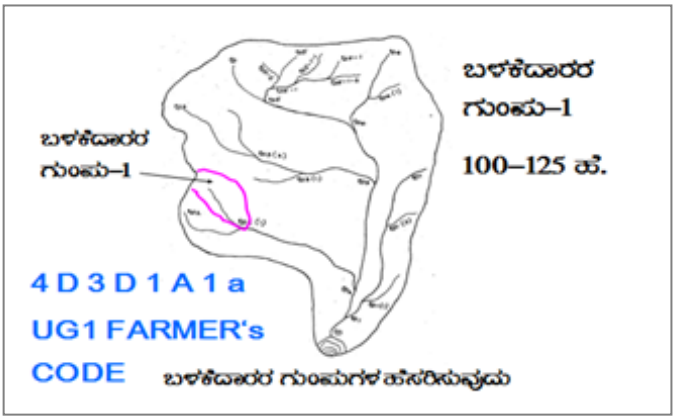
Land Suitability for various crops: Areas that are highly, moderately and marginally suitable for growing various crops are indicated. Along with the suitability, various constraints that are limiting the productivity are also indicated. For example, in case of cotton, gravel content, rooting depth and salinity/alkalinity are the major constraints in various plots. With suitable management interventions, the productivity can be enhanced. In order to increase water holding capacity of light textured soils, growing of green manure crops and application of organic manure is recommended.

Chapter 9

SOIL AND WATER CONSERVATION TREATMENT PLAN

For preparing soil and water conservation treatment plan for Kadechoora microwatershed, the land resource inventory database generated under Sujala-III project has been transformed as information through series of interpretative (thematic) maps using soil phase map as a base. The various thematic maps (1:7920 scale) generated were

- Soil depth
- Surface soil texture
- Available water capacity
- Soil slope
- Soil gravelliness
- Land capability
- Present land use and land cover
- Crop suitability maps
- Rainfall map
- Hydrology
- Water Resources
- Socio-economic data
- Contour plan with existing features- network of waterways, pothissa boundaries, cut up/ minor terraces etc.
- Cadastral map (1:7920 scale)
- Satellite imagery (1:7920 scale)



Apart from these, Hand Level/ Hydro Marker/ Dumpy Level/ Total Station and Kathedars' List needs to be collected.

Steps for Survey and Preparation of Treatment Plan

The boundaries of Land User Groups' and Survey No. boundaries are traced in the field.

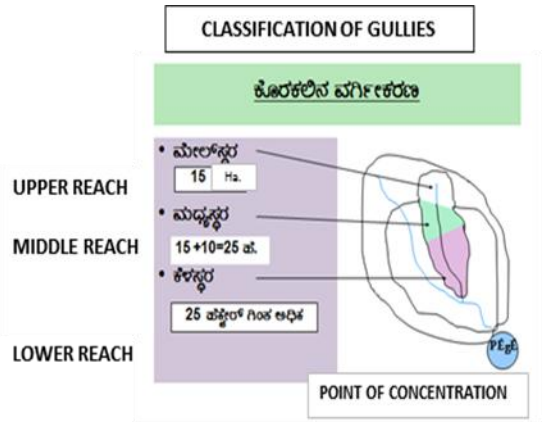
- Naming of user groups and farmers
- Identification of arable and non arable lands
- Identification of drainage lines and gullies
- Identification of non treatable areas
- Identification of priority areas in the arable lands
- Treatment plan for arable lands
- Location of water harvesting and recharge structures

9.1 Treatment Plan

The treatment plan recommended for arable lands is briefly described below

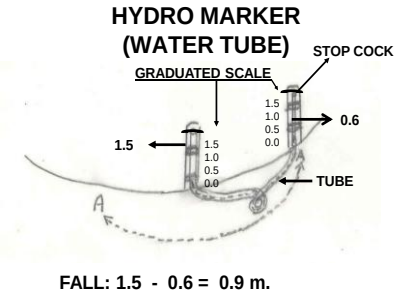
9.1.1 Arable Land Treatment

A. BUNDING

Steps for Survey and Preparation of Treatment Plan		USER GROUP-1
• Cadastral map (1:7920 scale) is enlarged to a scale of 1:2500 scale • Existing network of waterways, pothissa boundaries, grass belts, natural drainage lines/ watercourse, cut ups/ terraces are marked on the cadastral map to the scale • Drainage lines are demarcated into		
Small gullies	(up to 5 ha catchment)	
Medium gullies	(5-15 ha catchment)	
Ravines	(15-25 ha catchment) and	
Halla/Nala	(more than 25ha catchment)	

Measurement of Land Slope

Land slope is estimated or determined by the study and interpretation of contours or by measurement in the field using simple instruments like Hand Level or Hydromarker.



Vertical and Horizontal intervals between bunds as recommended by the Watershed Development Department.

Slope percentage	Vertical interval (m)	Corresponding Horizontal Distance (m)
2 - 3%	0.6	24
3 - 4%	0.9	21
4 - 5%	0.9	21
5 - 6%	1.2	21
6 - 7%	1.2	21

Note: (i) The above intervals are maximum.

(ii) Considering the slope class and erosion status (A1… A=0-1 % slope, 1= slight erosion) the intervals have to be decided.

Bund length recording: Considering the contour plan and the existing grass belts/partitions, the bunds are aligned and lengths are measured.

Section of the Bund

Bund section is decided considering the soil texture class and gravelliness class ($bg_{0...}$ b=loamy sand, g_0 = <15% gravel). The recommended Sections for different soils are given below.

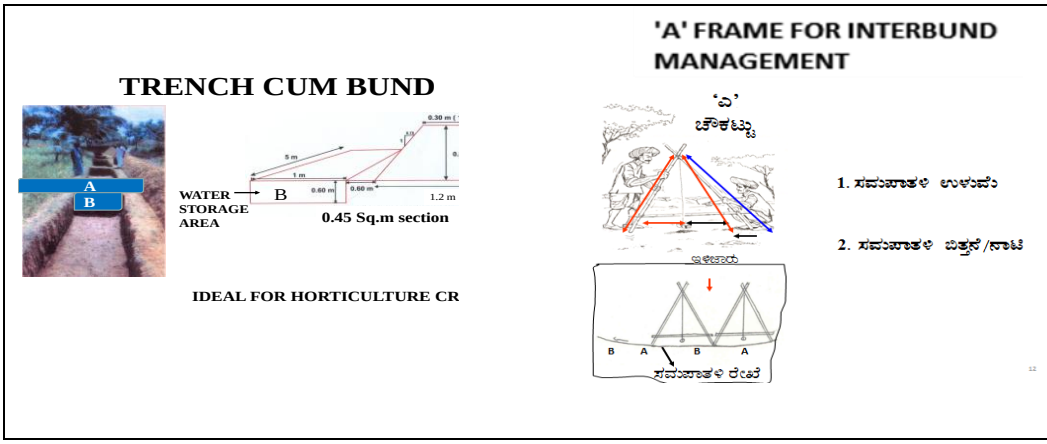
Recommended Bund Section

Top width (m)	Base width (m)	Height (m)	Side slope (Z:1;H:V)	Cross section (sq m)	Soil Texture	Remarks
0.3	0.9	0.3	01:01	0.18	Sandy loam	Vegetative bund
0.3	1.2	0.3	1.5:1	0.225	Sandy clay	
0.3	1.2	0.5	0.9:1	0.375	Red gravelly soil	
0.3	1.2	0.6	0.75:1	0.45		
0.3	1.5	0.6	01:01	0.54	Red sandy loam	
0.3	2.1	0.6	1.5:1	0.72	Very shallow black clayey soils	
0.45	2	0.75	01:01	0.92		
0.45	2.4	0.75	1.3:1	1.07	Shallow black clayey soils	
0.6	3.1	0.7	1.78:1	1.29	Medium black clayey soils	
0.5	3	0.85	1.47:1	1.49		

Formation of Trench cum Bund

Dimensions of the Borrow Pits/Trenches to be excavated (machinery are decided considering the Bund Section).

Details of Borrow Pit dimensions are given below:



Size of Borrow Pits/ Trench recommended for Trench cum Bund (by machinery)

Bund section	Bund length	Earth quantity	Pit				Berm (pit to pit)	Soil depth class
m^2	m	m^3	L(m)	W(m)	D(m)	QUANTITY (m^3)	m	
0.375	6	2.25	5.85	0.85	0.45	2.24	0.15	Shallow
0.45	6	2.7	5.4	1.2	0.43	2.79	0.6	Shallow
0.45	6	2.7	5	0.85	0.65	2.76	1	Moderately Shallow
0.54	5.6	3.02	5.5	0.85	0.7	3.27	0.1	Moderately shallow
0.54	5.5	2.97	5	1.2	0.5	3	0.5	Shallow
0.72	6.2	4.46	6	1.2	0.7	5.04	0.2	Moderately shallow
0.72	5.2	3.74	5.1	0.85	0.9	3.9	0.1	Moderately deep

B. Water Ways

- Existing waterways are marked on the cadastral map (1:7920 scale) and their dimensions are recorded.
- Considering the contour plan of the MWS, additional waterways/ modernization of the existing ones can be thought of.
- The design details are given in the Manual.

C. Farm Ponds

Waterways and the catchment area will give an indication on the size of the Farm Pond. Location of the pond can be decided based on the contour plan/ field condition and farmers' need/desire.

D. Diversion Channel

Existing EPT/ CPT are marked on the cadastral map. Looking to the need, these can be modernized or fresh diversion channel can be proposed and runoff from this can be stored in *Gokatte*/ Recharge ponds.

9.1.2 Non-Arable Land Treatment

Depending on the gravelliness and crops preferred by the farmers, the concerned authorities can decide appropriate treatment plan. The recommended treatments may be Contour Trench, Staggered Trench, Crescent Bund, Boulder Bund or Pebble Bund are formed in the field.

9.1.3 Treatment of Natural Water Course/ Drainage Lines

a) The cadastral map has to be updated as regards the network of drainage lines (gullies/ *nalas/ hallas*) and existing structures are marked to the scale and storage capacity of the existing water bodies are documented.

b) The drainage line will be demarcated into Upper Reach, Middle Reach and Lower Reach.
c) Considering the Catchment, *Nala* bed and bank conditions, suitable structures are decided.
d) Number of storage structures (Check dam/ *Nala* bund/ Percolation tank) will be decided considering the commitments and available runoff in water budgeting and quality of water in the wells and site suitability.
e) Detailed Levelling Survey using Dumpy Level / Total Station is carried out to arrive at the site-specific designs as shown in the Manual.
f) The location of ground water recharge structures are decided by examining the lineaments and fracture zones from geological maps.
g) Rainfall intensity data of the nearest Rain Gauge Station is considered for Hydrologic Designs.
h) Silt load to the Storage/Recharge structures is reduced by providing vegetative, boulder and earthen checks in the natural water course. Location and design details are given in the Manual.

9.2 Recommended Soil and Water Conservation Measures

The appropriate conservation structures best suited for each of the land parcel/ survey number (Appendix-I) are selected based on the slope per cent, severity of erosion, amount of rainfall, land use and soil type. The different kinds of conservation structures recommended are:

1. Graded / Strengthening of Bunds
2. Trench cum Bunds (TCB)
3. Trench cum Bunds / Strengthening
4. Crescent Bunds

A map (Fig. 9.1) showing soil and water conservation plan with different kinds of conservation structures recommended has been prepared, which shows the spatial distribution and extent of area. Entire area requires graded bunding /strengthening of field bunds.

The conservation plan prepared may be presented to all the stakeholders including farmers and after including their suggestions, the conservation plan for the microwatershed may be finalised in a participatory approach.

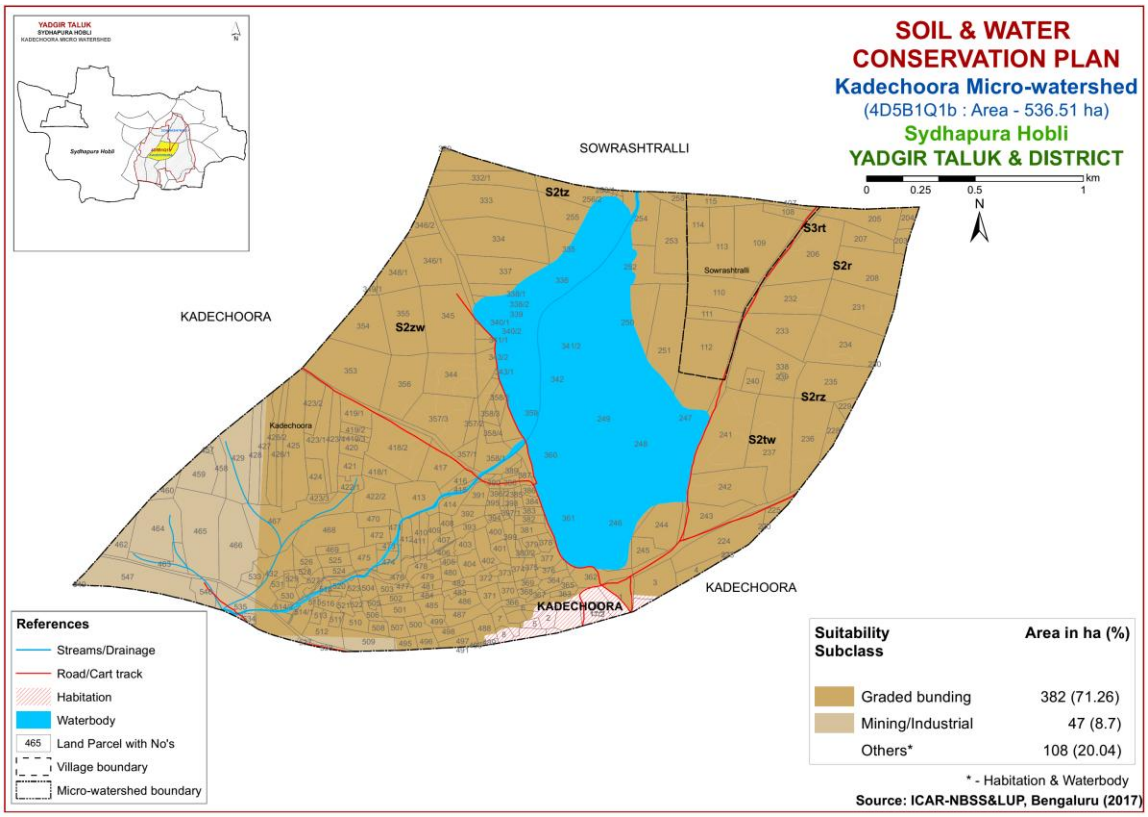


Fig. 9.1 Soil and Water Conservation Plan map of Kadechoora Microwatershed

9.3 Greening of Microwatershed

As part of the greening programme in the watersheds, it is envisaged to plant a variety of horticultural and other tree plants that are edible, economical and produce lot of biomass which helps to restore the ecological balance in the watersheds. The lands that are suitable for greening programme are non-arable lands (land capability classes V, VI, VII and VIII) and also the lands that are not suitable or marginally suitable and field bunds for growing annual and perennial crops. The method of planting these trees is given below.

It is recommended to open pits during the 1st week of March along the contour and heap the dug out soil on the lower side of the slope in order to harness the flowing water and facilitate weathering of soil in the pit. Exposure of soil in the pit also prevents spread of pests and diseases due to scorching sun rays. The pits should be filled with mixture of soil and organic manure during the second week of April and keep ready with sufficiently tall seedlings produced either in poly bags or in root trainer nurseries so that planting can be done during the 2nd or 3rd week of April depending on the rainfall.

The tree species suitable for the area considering rainfall, temperature and adaptability is listed below; waterlogged areas are recommended to be planted with species like Nerale (*Sizyzium cumini*) and Bamboo. Dry areas are to be planted with species like Honge, Bevu, Seetaphal *etc*.

Dry Deciduous Species			Temp (°C)	Rainfall (mm)
1.	Bevu	*Azadiracta indica*	21–32	400 –1,200
2.	Tapasi	*Holoptelia integrifolia*	20-30	500 - 1000
3.	Seetaphal	*Anona Squamosa*	20-40	400 - 1000
4.	Honge	*Pongamia pinnata*	20 -50	500– 2,500
5.	Kamara	*Hardwikia binata*	25 -35	400 - 1000
6.	Bage	*Albezzia lebbek*	20 - 45	500 - 1000
7.	Ficus	*Ficus bengalensis*	20 - 50	500–2,500
8.	Sisso	*Dalbargia Sissoo*	20 - 50	500 -2000
9.	Ailanthus	*Ailanthus excelsa*	20 - 50	500 - 1000
10.	Hale	*Wrightia tinctoria*	25 - 45	500 - 1000
11.	Uded	*Steriospermum chelanoides*	25 - 45	500 -2000
12.	Dhupa	*Boswella Serrata*	20 - 40	500 - 2000
13.	Nelli	*Emblica Officinalis*	20 - 50	500 -1500
14.	Honne	*Pterocarpus marsupium*	20 - 40	500 - 2000
Moist Deciduous Species			**Temp (°C)**	**Rainfall (mm)**
15.	Teak	*Tectona grandis*	20 - 50	500-5000
16.	Nandi	*Legarstroemia lanceolata*	20 - 40	500 - 4000
17.	Honne	*Pterocarpus marsupium*	20 - 40	500 - 3000
18.	Mathi	*Terminalia alata*	20 -50	500 - 2000
19.	Shivane	*Gmelina arboria*	20 -50	500 -2000
20.	Kindal	*T.Paniculata*	20 - 40	500 - 1500
21.	Beete	*Dalbargia latifolia*	20 - 40	500 - 1500
22.	Tare	*T. belerica*	20 - 40	500 - 2000
23.	Bamboo	*Bambusa arundinasia*	20 - 40	500 - 2500
24.	Bamboo	*Dendrocalamus strictus*	20 – 40	500 – 2500
25.	Muthuga	*Butea monosperma*	20 - 40	400 - 1500
26.	Hippe	*Madhuca latifolia*	20 - 40	500 - 2000
27.	Sandal	*Santalum album*	20 - 50	400 - 1000
28.	Nelli	*Emblica officinalis*	20 - 40	500 - 2000
29.	Nerale	*Sizyzium cumini*	20 - 40	500 - 2000
30.	Dhaman	*Grevia tilifolia*	20 - 40	500 - 2000
31.	Kaval	*Careya arborea*	20 - 40	500 - 2000
32.	Harada	*Terminalia chebula*	20 - 40	500 - 2000

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Appendix I

Kadechoora Microwatershed

Soil Phase Information

Village	Survey No.	Total Area (ha)	Soil Phase	LMU	Soil Depth	Surface Soil Texture	Soil Gravelliness	Available Water Capacity	Slope	Soil Erosion	Current Land Use	WELLS	Land Capability	Conservation Plan
Kadechoora	1	3.54	Habitation	Others	Others	Others	Others	Others	Others	Others	Habitation	Not Available	Others	Others
Kadechoora	2	0.95	Habitation	Others	Others	Others	Others	Others	Others	Others	Habitation	Not Available	Others	Others
Kadechoora	3	2.75	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Redgram (Rg)	Not Available	IIes	Graded bunding
Kadechoora	4	1.5	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Cotton (Ct)	Not Available	IIes	Graded bunding
Kadechoora	5	0.36	Habitation	Others	Others	Others	Others	Others	Others	Others	Habitation	Not Available	Others	Others
Kadechoora	6	0.47	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Paddy (Pd)	Not Available	IIes	Graded bunding
Kadechoora	7	0.77	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Not Available (NA)	Not Available	IIes	Graded bunding
Kadechoora	8	0.47	Habitation	Others	Others	Others	Others	Others	Others	Others	Habitation	Not Available	Others	Others
Kadechoora	16	0.18	Habitation	Others	Others	Others	Others	Others	Others	Others	Habitation	Not Available	Others	Others
Kadechoora	17/1	0.09	Habitation	Others	Others	Others	Others	Others	Others	Others	Habitation	Not Available	Others	Others
Kadechoora	17/2	0.11	Habitation	Others	Others	Others	Others	Others	Others	Others	Habitation	Not Available	Others	Others
Kadechoora	203	0.7	JNKcB2	LMU-3	Moderately shallow (50-75 cm)	Sandy loam	Non gravelly (<15%)	Low (51-100 mm/m)	Very gently sloping (1-3%)	Moderate	Cotton+Redgram (Ct+Rg)	Not Available	IIes	Graded bunding
Kadechoora	204	0.71	JNKcB2	LMU-3	Moderately shallow (50-75 cm)	Sandy loam	Non gravelly (<15%)	Low (51-100 mm/m)	Very gently sloping (1-3%)	Moderate	Cotton+Redgram (Ct+Rg)	Not Available	IIes	Graded bunding
Kadechoora	205	3.2	JNKcB2	LMU-3	Moderately shallow (50-75 cm)	Sandy loam	Non gravelly (<15%)	Low (51-100 mm/m)	Very gently sloping (1-3%)	Moderate	Not Available (NA)	Not Available	IIes	Graded bunding
Kadechoora	206	6.85	JNKcB2	LMU-3	Moderately shallow (50-75 cm)	Sandy loam	Non gravelly (<15%)	Low (51-100 mm/m)	Very gently sloping (1-3%)	Moderate	Cotton+Jowar+Redgram (Ct+Jw+Rg)	1 Bore well	IIes	Graded bunding
Kadechoora	207	2.11	JNKcB2	LMU-3	Moderately shallow (50-75 cm)	Sandy loam	Non gravelly (<15%)	Low (51-100 mm/m)	Very gently sloping (1-3%)	Moderate	Redgram (Rg)	Not Available	IIes	Graded bunding
Kadechoora	208	5.43	JNKcB2	LMU-3	Moderately shallow (50-75 cm)	Sandy loam	Non gravelly (<15%)	Low (51-100 mm/m)	Very gently sloping (1-3%)	Moderate	Redgram (Rg)	Not Available	IIes	Graded bunding
Kadechoora	220	0.05	KDHiB2	LMU-1	Moderately deep (75-100 cm)	Sandy clay	Non gravelly (<15%)	Low (51-100 mm/m)	Very gently sloping (1-3%)	Moderate	Jowar (Jw)	Not Available	IIew	Graded bunding
Kadechoora	223	0.06	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Redgram (Rg)	Not Available	IIes	Graded bunding
Kadechoora	224	5.07	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Redgram (Rg)	Not Available	IIes	Graded bunding
Kadechoora	225	0.71	KDHiB2	LMU-1	Moderately deep (75-100 cm)	Sandy clay	Non gravelly (<15%)	Low (51-100 mm/m)	Very gently sloping (1-3%)	Moderate	Cotton (Ct)	Not Available	IIew	Graded bunding
Kadechoora	228	1.22	HLGcB2	LMU-3	Moderately shallow (50-75 cm)	Sandy loam	Non gravelly (<15%)	Low (51-100 mm/m)	Very gently sloping (1-3%)	Moderate	Jowar+Paddy (Jw+Pd)	Not Available	IIes	Graded bunding

Village	Survey No.	Total Area (ha)	Soil Phase	LMU	Soil Depth	Surface Soil Texture	Soil Gravelliness	Available Water Capacity	Slope	Soil Erosion	Current Land Use	WELLS	Land Capability	Conservation Plan
Kadechoora	229	0.53	HLGcB2	LMU-3	Moderately shallow (50-75 cm)	Sandy loam	Non gravelly (<15%)	Low (51-100 mm/m)	Very gently sloping (1-3%)	Moderate	Cotton+Groundnut+ Paddy (Ct+Gn+Pd)	Not Available	IIes	Graded bunding
Kadechoora	230	0.02	HLGcB2	LMU-3	Moderately shallow (50-75 cm)	Sandy loam	Non gravelly (<15%)	Low (51-100 mm/m)	Very gently sloping (1-3%)	Moderate	Cotton+Fallow land (Ct+Fl)	Not Available	IIes	Graded bunding
Kadechoora	231	5.75	JNKcB2	LMU-3	Moderately shallow (50-75 cm)	Sandy loam	Non gravelly (<15%)	Low (51-100 mm/m)	Very gently sloping (1-3%)	Moderate	Redgram (Rg)	Not Available	IIes	Graded bunding
Kadechoora	232	4.74	SWRmB2	LMU-2	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Jowar (Jw)	Not Available	IIes	Graded bunding
Kadechoora	233	5.06	SWRmB2	LMU-2	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Cotton+Redgram (Ct+Rg)	Not Available	IIes	Graded bunding
Kadechoora	234	6	HLGcB2	LMU-3	Moderately shallow (50-75 cm)	Sandy loam	Non gravelly (<15%)	Low (51-100 mm/m)	Very gently sloping (1-3%)	Moderate	Groundnut+Paddy (Gn+Pd)	1 Bore well	IIes	Graded bunding
Kadechoora	235	5.08	HLGcB2	LMU-3	Moderately shallow (50-75 cm)	Sandy loam	Non gravelly (<15%)	Low (51-100 mm/m)	Very gently sloping (1-3%)	Moderate	Redgram (Rg)	Not Available	IIes	Graded bunding
Kadechoora	236	5.69	HLGcB2	LMU-3	Moderately shallow (50-75 cm)	Sandy loam	Non gravelly (<15%)	Low (51-100 mm/m)	Very gently sloping (1-3%)	Moderate	Redgram (Rg)	Not Available	IIes	Graded bunding
Kadechoora	237	7.94	KDHiB2	LMU-1	Moderately deep (75-100 cm)	Sandy clay	Non gravelly (<15%)	Low (51-100 mm/m)	Very gently sloping (1-3%)	Moderate	Jowar (Jw)	Not Available	IIew	Graded bunding
Kadechoora	239	0.09	SWRmB2	LMU-2	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Not Available (NA)	Not Available	IIes	Graded bunding
Kadechoora	240	0.93	SWRmB2	LMU-2	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Not Available (NA)	Not Available	IIes	Graded bunding
Kadechoora	241	8.11	KDHiB2	LMU-1	Moderately deep (75-100 cm)	Sandy clay	Non gravelly (<15%)	Low (51-100 mm/m)	Very gently sloping (1-3%)	Moderate	Redgram (Rg)	Not Available	IIew	Graded bunding
Kadechoora	242	5.61	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Cotton+Scrub land (Ct+Sl)	Not Available	IIes	Graded bunding
Kadechoora	243	3.01	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Cotton (Ct)	Not Available	IIes	Graded bunding
Kadechoora	244	3.59	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Not Available (NA)	Not Available	IIes	Graded bunding
Kadechoora	245	1.39	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Not Available (NA)	Not Available	IIes	Graded bunding
Kadechoora	246	8.55	Waterbody	Others	Others	Others	Others	Others	Others	Others	Waterbody	Not Available	Others	Others
Kadechoora	247	8.22	Waterbody	Others	Others	Others	Others	Others	Others	Others	Waterbody	Not Available	Others	Others
Kadechoora	248	8.23	Waterbody	Others	Others	Others	Others	Others	Others	Others	Waterbody	Not Available	Others	Others
Kadechoora	249	10.02	Waterbody	Others	Others	Others	Others	Others	Others	Others	Waterbody	Not Available	Others	Others
Kadechoora	250	7.95	Waterbody	Others	Others	Others	Others	Others	Others	Others	Waterbody	Not Available	Others	Others
Kadechoora	251	8.85	SWRmB2	LMU-2	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Waterbody	Not Available	IIes	Graded bunding
Kadechoora	252	4.75	Waterbody	Others	Others	Others	Others	Others	Others	Others	Cotton (Ct)	Not Available	Others	Others
Kadechoora	253	4.5	SWRmB2	LMU-2	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Current fallow (Cf)	Not Available	IIes	Graded bunding

Village	Survey No.	Total Area (ha)	Soil Phase	LMU	Soil Depth	Surface Soil Texture	Soil Gravelliness	Available Water Capacity	Slope	Soil Erosion	Current Land Use	WELLS	Land Capability	Conservation Plan
Kadechoora	254	3.99	ANRbB3	LMU-2	Deep (100-150 cm)	Loamy sand	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Severe	Banana (Ba)	Not Available	IIIes	Graded bunding
Kadechoora	255	4.9	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Cotton+Jowar (Ct+Jw)	Not Available	IIes	Graded bunding
Kadechoora	256/1	0.14	RHNmB2	LMU-2	Moderately deep (75-100 cm)	Clay	Non gravelly (<15%)	Medium (101-150 mm/m)	Very gently sloping (1-3%)	Moderate	Not Available (NA)	Not Available	IIes	Graded bunding
Kadechoora	256/2	3.34	RHNmB2	LMU-2	Moderately deep (75-100 cm)	Clay	Non gravelly (<15%)	Medium (101-150 mm/m)	Very gently sloping (1-3%)	Moderate	Redgram (Rg)	Not Available	IIes	Graded bunding
Kadechoora	258	0.76	ANRbB3	LMU-2	Deep (100-150 cm)	Loamy sand	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Severe	Not Available (NA)	Not Available	IIIes	Graded bunding
Kadechoora	329	0.02	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Jowar (Jw)	Not Available	IIes	Graded bunding
Kadechoora	332/1	5.32	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Cotton (Ct)	Not Available	IIes	Graded bunding
Kadechoora	333	7.76	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Redgram (Rg)	Not Available	IIes	Graded bunding
Kadechoora	334	7.84	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Cotton+Jowar+Redgram (Ct+Jw+Rg)	Not Available	IIes	Graded bunding
Kadechoora	335	4.09	Waterbody	Others	Others	Others	Others	Others	Others	Others	Redgram (Rg)	Not Available	Others	Others
Kadechoora	336	3.38	Waterbody	Others	Others	Others	Others	Others	Others	Others	Redgram (Rg)	Not Available	Others	Others
Kadechoora	337	4.89	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Redgram (Rg)	Not Available	IIes	Graded bunding
Kadechoora	338	6.23	SWRmB2	LMU-2	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Redgram (Rg)	Not Available	IIes	Graded bunding
Kadechoora	338/1	3.4	Waterbody	Others	Others	Others	Others	Others	Others	Others	Sunflower (Sf)	Not Available	Others	Others
Kadechoora	338/2	2.36	Waterbody	Others	Others	Others	Others	Others	Others	Others	Not Available (NA)	Not Available	Others	Others
Kadechoora	339	2.92	Waterbody	Others	Others	Others	Others	Others	Others	Others	Not Available (NA)	Not Available	Others	Others
Kadechoora	340/1	1.6	Waterbody	Others	Others	Others	Others	Others	Others	Others	Not Available (NA)	Not Available	Others	Others
Kadechoora	340/2	1.5	Waterbody	Others	Others	Others	Others	Others	Others	Others	Not Available (NA)	Not Available	Others	Others
Kadechoora	341/1	1.53	Waterbody	Others	Others	Others	Others	Others	Others	Others	Not Available (NA)	Not Available	Others	Others
Kadechoora	341/2	2.14	Waterbody	Others	Others	Others	Others	Others	Others	Others	Not Available (NA)	Not Available	Others	Others
Kadechoora	342	9	Waterbody	Others	Others	Others	Others	Others	Others	Others	Waterbody	Not Available	Others	Others
Kadechoora	343/1	0.62	Waterbody	Others	Others	Others	Others	Others	Others	Others	Not Available (NA)	Not Available	Others	Others
Kadechoora	343/2	2.35	Waterbody	Others	Others	Others	Others	Others	Others	Others	Cotton (Ct)	Not Available	Others	Others
Kadechoora	344	4.57	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Redgram (Rg)	Not Available	IIes	Graded bunding

Village	Survey No.	Total Area (ha)	Soil Phase	LMU	Soil Depth	Surface Soil Texture	Soil Gravelliness	Available Water Capacity	Slope	Soil Erosion	Current Land Use	WELLS	Land Capability	Conservation Plan
Kadechoora	345	7.03	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Cotton (Ct)	Not Available	IIes	Graded bunding
Kadechoora	346/1	4.38	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Redgram (Rg)	Not Available	IIes	Graded bunding
Kadechoora	346/2	1.38	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Redgram (Rg)	Not Available	IIes	Graded bunding
Kadechoora	348/1	2.8	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Redgram (Rg)	Not Available	IIes	Graded bunding
Kadechoora	349/1	0.25	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Redgram (Rg)	Not Available	IIes	Graded bunding
Kadechoora	353	7.78	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Cotton (Ct)	Not Available	IIes	Graded bunding
Kadechoora	354	4.44	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Redgram (Rg)	Not Available	IIes	Graded bunding
Kadechoora	355	5.42	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Redgram (Rg)	Not Available	IIes	Graded bunding
Kadechoora	356	4.69	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Jowar (Jw)	Not Available	IIes	Graded bunding
Kadechoora	357/1	0.87	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Not Available (NA)	Not Available	IIws	Graded bunding
Kadechoora	357/2	0.89	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Not Available (NA)	Not Available	IIws	Graded bunding
Kadechoora	357/3	5.43	SWRmB2	LMU-2	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Cotton (Ct)	Not Available	IIes	Graded bunding
Kadechoora	358/1	3.58	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	358/2	0.95	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Not Available (NA)	Not Available	IIws	Graded bunding
Kadechoora	358/3	0.59	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Not Available (NA)	Not Available	IIws	Graded bunding
Kadechoora	358/4	0.65	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Cotton (Ct)	Not Available	IIws	Graded bunding
Kadechoora	359	5.62	Waterbody	Others	Others	Others	Others	Others	Others	Others	Waterbody	Not Available	Others	Others
Kadechoora	360	5.98	Waterbody	Others	Others	Others	Others	Others	Others	Others	Waterbody	Not Available	Others	Others
Kadechoora	361	8.27	Waterbody	Others	Others	Others	Others	Others	Others	Others	Waterbody	Not Available	Others	Others
Kadechoora	362	1.93	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Not Available (NA)	Not Available	IIes	Graded bunding
Kadechoora	363	0.37	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Not Available (NA)	Not Available	IIes	Graded bunding
Kadechoora	364	0.7	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	365	0.42	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	366	0.87	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Paddy (Pd)	Not Available	IIes	Graded bunding

Village	Survey No.	Total Area (ha)	Soil Phase	LMU	Soil Depth	Surface Soil Texture	Soil Gravelliness	Available Water Capacity	Slope	Soil Erosion	Current Land Use	WELLS	Land Capability	Conservation Plan
Kadechoora	367	0.24	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	368	0.37	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	369	0.44	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	370	0.64	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	371	0.88	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	372	0.72	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	373	0.67	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	374	0.64	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	375	0.47	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	376	0.63	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	377	0.87	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	378	0.53	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	379	0.53	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	380/1	0.2	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	380/2	0.23	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	381	0.84	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	382	0.54	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	383	0.51	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	384	0.45	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	385	0.34	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	386	0.37	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	387	0.49	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	388	0.48	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	389	0.35	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding

Village	Survey No.	Total Area (ha)	Soil Phase	LMU	Soil Depth	Surface Soil Texture	Soil Gravelliness	Available Water Capacity	Slope	Soil Erosion	Current Land Use	WELLS	Land Capability	Conservation Plan
Kadechoora	390	0.37	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	391	0.95	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	392	1.02	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	393	0.82	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	394	0.27	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	395	0.71	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	396/1	0.15	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	396/2	0.16	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	397/1	0.14	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	397/2	0.06	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	398	0.4	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	399	0.8	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	400	0.7	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	401	0.7	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	402	1.27	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	403	0.76	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	404	1.07	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	405	0.25	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	406	0.63	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	407	0.49	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	408	0.5	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	409	0.76	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	410	0.79	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	411	0.69	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding

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Kadechoora	412	1.22	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	413	2.97	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Sunflower (Sf)	Not Available	IIws	Graded bunding
Kadechoora	414	1.02	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	415	0.39	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Not Available (NA)	Not Available	IIws	Graded bunding
Kadechoora	416	0.83	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Not Available (NA)	Not Available	IIws	Graded bunding
Kadechoora	417	2.45	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Redgram (Rg)	Not Available	IIws	Graded bunding
Kadechoora	418/1	1.45	SWRmB2	LMU-2	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Redgram (Rg)	Not Available	IIes	Graded bunding
Kadechoora	418/2	5.76	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Cotton+Redgram (Ct+Rg)	Not Available	IIes	Graded bunding
Kadechoora	419/1	1.5	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Not Available (NA)	Not Available	IIes	Graded bunding
Kadechoora	419/2	0.64	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Jowar (Jw)	Not Available	IIes	Graded bunding
Kadechoora	419/3	0.34	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Not Available (NA)	Not Available	IIes	Graded bunding
Kadechoora	420	0.97	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Cotton (Ct)	Not Available	IIes	Graded bunding
Kadechoora	421	1.1	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Cotton (Ct)	Not Available	IIes	Graded bunding
Kadechoora	422/1	0.83	SWRmB2	LMU-2	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Not Available (NA)	Not Available	IIes	Graded bunding
Kadechoora	422/2	2.68	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Jowar (Jw)	Not Available	IIws	Graded bunding
Kadechoora	423/1	2.73	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Redgram (Rg)	Not Available	IIes	Graded bunding
Kadechoora	423/2	1.82	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Cotton (Ct)	Not Available	IIes	Graded bunding
Kadechoora	423/3	0.5	SWRmB2	LMU-2	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Not Available (NA)	Not Available	IIes	Graded bunding
Kadechoora	423/4	2.03	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Redgram (Rg)	Not Available	IIes	Graded bunding
Kadechoora	424	1.33	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Not Available (NA)	Not Available	IIes	Graded bunding
Kadechoora	425	6.13	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Cotton+Redgram (Ct+Rg)	Not Available	IIes	Graded bunding
Kadechoora	426/1	2.04	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Cotton+Redgram (Ct+Rg)	Not Available	IIes	Graded bunding
Kadechoora	426/2	1.56	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Not Available (NA)	Not Available	IIes	Graded bunding
Kadechoora	427	2.09	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Redgram (Rg)	Not Available	IIes	Graded bunding

Village	Survey No.	Total Area (ha)	Soil Phase	LMU	Soil Depth	Surface Soil Texture	Soil Gravelliness	Available Water Capacity	Slope	Soil Erosion	Current Land Use	WELLS	Land Capability	Conservation Plan
Kadechoora	428	2	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	429	4.51	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	432	3	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	457	0.13	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	458	1.35	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	459	2.55	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	460	0.72	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	462	1.26	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	463	1.63	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	464	5.31	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	465	6.85	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	466	5.42	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	467	6.61	SWRmB2	LMU-2	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Not Available (NA)	Not Available	IIes	Graded bunding
Kadechoora	468	4.53	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Redgram (Rg)	Not Available	IIws	Graded bunding
Kadechoora	469	0.59	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Redgram (Rg)	Not Available	IIws	Graded bunding
Kadechoora	470	1.11	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Jowar (Jw)	Not Available	IIws	Graded bunding
Kadechoora	471	0.8	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Not Available (NA)	Not Available	IIws	Graded bunding
Kadechoora	472	0.94	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Jowar (Jw)	Not Available	IIws	Graded bunding
Kadechoora	473	0.37	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Not Available (NA)	Not Available	IIws	Graded bunding
Kadechoora	474	1.17	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Not Available (NA)	Not Available	IIws	Graded bunding
Kadechoora	475	1.5	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Scrub land (Sl)	Not Available	IIws	Graded bunding
Kadechoora	476	0.45	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Not Available (NA)	Not Available	IIws	Graded bunding
Kadechoora	477	0.16	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Not Available (NA)	Not Available	IIws	Graded bunding
Kadechoora	478	0.78	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	479	0.79	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	480	0.71	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	481	0.53	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Not Available (NA)	Not Available	IIws	Graded bunding
Kadechoora	482	0.57	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy (Pd)	Not Available	IIws	Graded bunding
Kadechoora	483	0.52	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Not Available (NA)	Not Available	IIws	Graded bunding
Kadechoora	484	0.38	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Not Available (NA)	Not Available	IIws	Graded bunding

Village	Survey No.	Total Area (ha)	Soil Phase	LMU	Soil Depth	Surface Soil Texture	Soil Gravelliness	Available Water Capacity	Slope	Soil Erosion	Current Land Use	WELLS	Land Capability	Conservation Plan
Kadechoora	485	1	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Redgram (Rg)	Not Available	IIws	Graded bunding
Kadechoora	486	1.08	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Not Available (NA)	Not Available	IIws	Graded bunding
Kadechoora	487	1.23	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Paddy+Redgram (Pd+Rg)	Not Available	IIws	Graded bunding
Kadechoora	488	1.11	HGNmB2	LMU-2	Very deep (>150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Paddy (Pd)	Not Available	IIes	Graded bunding
Kadechoora	489	0.17	Habitation	Others	Others	Others	Others	Others	Others	Others	Not Available (NA)	Not Available	Others	Others
Kadechoora	490	0.04	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Redgram (Rg)	Not Available	IIws	Graded bunding
Kadechoora	491	0	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Cotton (Ct)	Not Available	IIws	Graded bunding
Kadechoora	495	0.6	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Groundnut (Gn)	Not Available	IIws	Graded bunding
Kadechoora	496	0.66	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Groundnut (Gn)	Not Available	IIws	Graded bunding
Kadechoora	497	0.86	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Groundnut (Gn)	Not Available	IIws	Graded bunding
Kadechoora	498	1.02	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Groundnut (Gn)	Not Available	IIws	Graded bunding
Kadechoora	499	0.51	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Redgram (Rg)	Not Available	IIws	Graded bunding
Kadechoora	500	0.88	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Redgram (Rg)	Not Available	IIws	Graded bunding
Kadechoora	501	1.1	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Redgram (Rg)	Not Available	IIws	Graded bunding
Kadechoora	502	0.67	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Redgram (Rg)	Not Available	IIws	Graded bunding
Kadechoora	503	0.78	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Scrub land (Sl)	Not Available	IIws	Graded bunding
Kadechoora	504	0.81	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Scrub land (Sl)	Not Available	IIws	Graded bunding
Kadechoora	505	0.24	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Scrub land (Sl)	Not Available	IIws	Graded bunding
Kadechoora	506	0.58	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Scrub land (Sl)	Not Available	IIws	Graded bunding
Kadechoora	507	0.85	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Groundnut (Gn)	Not Available	IIws	Graded bunding
Kadechoora	508	0.57	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Redgram (Rg)	Not Available	IIws	Graded bunding
Kadechoora	509	1.95	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	510	0.92	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Scrub land (Sl)	Not Available	IIws	Graded bunding
Kadechoora	511	0.34	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Scrub land (Sl)	Not Available	IIws	Graded bunding
Kadechoora	512	1.82	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly	Very high	Very gently	Slight	Redgram (Rg)	Not	IIws	Graded

Village	Survey No.	Total Area (ha)	Soil Phase	LMU	Soil Depth	Surface Soil Texture	Soil Gravelliness	Available Water Capacity	Slope	Soil Erosion	Current Land Use	WELLS	Land Capability	Conservation Plan
							(<15%)	(>200 mm/m)	sloping (1-3%)			Available		bunding
Kadechoora	513	0.37	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Scrub land (Sl)	Not Available	IIws	Graded bunding
Kadechoora	514/1	1.51	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Scrub land (Sl)	Not Available	IIws	Graded bunding
Kadechoora	514/2	0.5	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Scrub land (Sl)	Not Available	IIws	Graded bunding
Kadechoora	515	0.09	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Scrub land (Sl)	Not Available	IIws	Graded bunding
Kadechoora	516	0.65	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Scrub land (Sl)	Not Available	IIws	Graded bunding
Kadechoora	517	0.09	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Scrub land (Sl)	Not Available	IIws	Graded bunding
Kadechoora	518	0.21	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Not Available (NA)	Not Available	IIws	Graded bunding
Kadechoora	519	0.13	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Scrub land (Sl)	Not Available	IIws	Graded bunding
Kadechoora	520	0.47	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Scrub land (Sl)	Not Available	IIws	Graded bunding
Kadechoora	521	0.5	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Scrub land (Sl)	Not Available	IIws	Graded bunding
Kadechoora	522	0.31	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Scrub land (Sl)	Not Available	IIws	Graded bunding
Kadechoora	523	0.52	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Scrub land (Sl)	Not Available	IIws	Graded bunding
Kadechoora	524	0.81	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Scrub land (Sl)	Not Available	IIws	Graded bunding
Kadechoora	525	0.88	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Scrub land (Sl)	Not Available	IIws	Graded bunding
Kadechoora	526	0.89	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Not Available (NA)	Not Available	IIws	Graded bunding
Kadechoora	527	0.79	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Scrub land (Sl)	Not Available	IIws	Graded bunding
Kadechoora	528	0.26	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Not Available (NA)	Not Available	IIws	Graded bunding
Kadechoora	529	0.32	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Not Available (NA)	Not Available	IIws	Graded bunding
Kadechoora	530	0.74	VKSmB1	LMU-1	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Slight	Scrub land (Sl)	Not Available	IIws	Graded bunding
Kadechoora	531	0.34	SWRmB2	LMU-2	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Scrub land (Sl)	Not Available	IIes	Graded bunding
Kadechoora	533	0.64	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	534	0.27	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	535	3.48	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	537	0.13	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	538	0.06	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	546	1.26	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	547	5.83	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I

Village	Survey No.	Total Area (ha)	Soil Phase	LMU	Soil Depth	Surface Soil Texture	Soil Gravelliness	Available Water Capacity	Slope	Soil Erosion	Current Land Use	WELLS	Land Capability	Conservation Plan
Kadechoora	549	0.02	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	552	0.01	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Sowrashtralli	107	0.38	BDLiB2	LMU-4	Shallow (25-50 cm)	Sandy clay	Non gravelly (<15%)	Very low (<50 mm/m)	Very gently sloping (1-3%)	Moderate	Jowar (Jw)	Not Available	IIIes	Graded bunding
Sowrashtralli	108	0.99	SWRmB2	LMU-2	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Redgram (Rg)	Not Available	IIes	Graded bunding
Sowrashtralli	109	7.43	SWRmB2	LMU-2	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Cotton (Ct)	Not Available	IIes	Graded bunding
Sowrashtralli	110	4.22	SWRmB2	LMU-2	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Redgram (Rg)	Not Available	IIes	Graded bunding
Sowrashtralli	111	1.43	SWRmB2	LMU-2	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Redgram (Rg)	Not Available	IIes	Graded bunding
Sowrashtralli	112	5.97	SWRmB2	LMU-2	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Cotton+Redgram (Ct+Rg)	Not Available	IIes	Graded bunding
Sowrashtralli	113	5.19	SWRmB2	LMU-2	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Jowar (Jw)	Not Available	IIes	Graded bunding
Sowrashtralli	114	1.74	SWRmB2	LMU-2	Deep (100-150 cm)	Clay	Non gravelly (<15%)	Very high (>200 mm/m)	Very gently sloping (1-3%)	Moderate	Jowar (Jw)	Not Available	IIes	Graded bunding
Sowrashtralli	115	1.6	BDLiB2	LMU-4	Shallow (25-50 cm)	Sandy clay	Non gravelly (<15%)	Very low (<50 mm/m)	Very gently sloping (1-3%)	Moderate	Paddy+Redgram +Jowar (Pd+Rg+Jw)	Not Available	IIIes	Graded bunding

Note: M/I-

Appendix II

Kadechoora Microwatershed

Soil Fertility Information

Village	Survey No.	Soil Reaction	Salinity	Organic Carbon	Available Phosphorus	Available Potassium	Available Sulphur	Available Boron	Available Iron	Available Manganese	Available Copper	Available Zinc
Kadechoora	1	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	2	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	3	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Sufficient (> 0.6 ppm)
Kadechoora	4	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Sufficient (> 0.6 ppm)
Kadechoora	5	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	6	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	7	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	8	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	16	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	17/1	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	17/2	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	203	Slightly alkaline (pH 7.3 – 7.8)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	Medium (145 - 337 kg/ha)	Low (<10 ppm)	High (> 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	204	Slightly alkaline (pH 7.3 – 7.8)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	Medium (145 - 337 kg/ha)	Low (<10 ppm)	High (> 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	205	Slightly alkaline (pH 7.3 – 7.8)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	Medium (145 - 337 kg/ha)	Medium (10 - 20 ppm)	High (> 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	206	Slightly alkaline (pH 7.3 – 7.8)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	High (> 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	207	Slightly alkaline (pH 7.3 – 7.8)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	Medium (145 - 337 kg/ha)	Medium (10 - 20 ppm)	High (> 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	208	Slightly alkaline (pH 7.3 – 7.8)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	Medium (145 - 337 kg/ha)	Low (<10 ppm)	High (> 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	220	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	Medium (0.5 - 1.0 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	223	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Sufficient (> 0.6 ppm)
Kadechoora	224	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	225	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	Medium (0.5 - 1.0 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	228	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Low (< 0.5 %)	Medium (23 - 57 kg/ha)	Medium (145 - 337 kg/ha)	Medium (10 - 20 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	229	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Low (< 0.5 %)	Medium (23 - 57 kg/ha)	Medium (145 - 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	230	Slightly alkaline (pH 7.3 – 7.8)	Non saline (<2 dsm)	Low (< 0.5 %)	Medium (23 - 57 kg/ha)	Medium (145 - 337 kg/ha)	Low (<10 ppm)	High (> 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	231	Slightly alkaline (pH 7.3 – 7.8)	Non saline (<2 dsm)	Low (< 0.5 %)	Medium (23 - 57 kg/ha)	Medium (145 - 337 kg/ha)	Low (<10 ppm)	High (> 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	232	Slightly alkaline (pH 7.3 – 7.8)	Non saline (<2 dsm)	Low (< 0.5 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	High (> 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)

Village	Survey No.	Soil Reaction	Salinity	Organic Carbon	Available Phosphorus	Available Potassium	Available Sulphur	Available Boron	Available Iron	Available Manganese	Available Copper	Available Zinc
Kadechoora	233	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Low (< 0.5 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	234	Slightly alkaline (pH 7.3 – 7.8)	Non saline (<2 dsm)	Low (< 0.5 %)	Medium (23 - 57 kg/ha)	Medium (145 - 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	235	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Low (< 0.5 %)	Medium (23 - 57 kg/ha)	Medium (145 - 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	236	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Low (< 0.5 %)	Medium (23 - 57 kg/ha)	Medium (145 - 337 kg/ha)	Medium (10 - 20 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	237	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	Medium (0.5 - 1.0 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	239	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Low (< 0.5 %)	Low (< 23 kg/ha)	Medium (145 - 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	240	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Low (< 0.5 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	241	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	242	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	243	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	244	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	245	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Sufficient (> 0.6 ppm)
Kadechoora	246	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	247	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	248	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	249	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	250	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	251	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	252	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	253	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	High (> 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	254	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	High (> 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	255	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	High (> 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	256/1	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	High (> 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	256/2	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	High (> 1.0 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	258	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	High (> 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	329	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	Low (< 23 kg/ha)	Medium (145 - 337 kg/ha)	Low (<10 ppm)	High (> 1.0 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	332/1	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	High (>0.75 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	High (> 1.0 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	333	Moderately alkaline	Non saline	High (>0.75	Medium (23	High (> 337	Low (<10	High (> 1.0	Deficient (<	Sufficient (>	Sufficient	Deficient

Village	Survey No.	Soil Reaction	Salinity	Organic Carbon	Available Phosphorus	Available Potassium	Available Sulphur	Available Boron	Available Iron	Available Manganese	Available Copper	Available Zinc
		(pH 7.8 – 8.4)	(<2 dsm)	%)	- 57 kg/ha)	kg/ha)	ppm)	ppm)	4.5 ppm)	1.0 ppm)	(> 0.2ppm)	(< 0.6 ppm)
Kadechoora	334	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	High (> 1.0 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	335	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	336	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	337	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	High (> 1.0 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	338	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Low (< 0.5 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	338/1	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	338/2	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	339	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	340/1	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	340/2	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	341/1	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	341/2	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	342	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	343/1	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	343/2	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	344	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Low (< 0.5 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	345	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Low (< 0.5 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	346/1	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	High (> 1.0 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	346/2	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	High (> 1.0 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	348/1	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	High (> 1.0 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	349/1	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	High (> 1.0 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	353	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Low (< 0.5 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	354	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Low (< 0.5 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	355	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Low (< 0.5 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	356	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Low (< 0.5 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	357/1	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	357/2	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Low (< 0.5 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	357/3	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Low (< 0.5 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	358/1	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	358/2	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Low (< 0.5 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)

Village	Survey No.	Soil Reaction	Salinity	Organic Carbon	Available Phosphorus	Available Potassium	Available Sulphur	Available Boron	Available Iron	Available Manganese	Available Copper	Available Zinc
Kadechoora	358/3	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Low (< 0.5 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	358/4	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Low (< 0.5 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	359	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	360	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	361	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	362	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Sufficient (> 0.6 ppm)
Kadechoora	363	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Sufficient (> 0.6 ppm)
Kadechoora	364	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	365	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Sufficient (> 0.6 ppm)
Kadechoora	366	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	367	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	368	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	369	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	370	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	371	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	372	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	373	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	374	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	375	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	376	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	377	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	378	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	379	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	380/1	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	380/2	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	381	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)

Village	Survey No.	Soil Reaction	Salinity	Organic Carbon	Available Phosphorus	Available Potassium	Available Sulphur	Available Boron	Available Iron	Available Manganese	Available Copper	Available Zinc
Kadechoora	382	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	383	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	384	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	385	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	386	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	387	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	388	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	389	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	390	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	391	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	392	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	393	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	394	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	395	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	396/1	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	396/2	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	397/1	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	397/2	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	398	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	399	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	400	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	401	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	402	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	High (> 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	403	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	404	Moderately alkaline	Non saline	High (>0.75	Medium (23	High (> 337	Low (<10	Low (< 0.5	Sufficient (>	Sufficient (>	Sufficient	Deficient

Village	Survey No.	Soil Reaction	Salinity	Organic Carbon	Available Phosphorus	Available Potassium	Available Sulphur	Available Boron	Available Iron	Available Manganese	Available Copper	Available Zinc
		(pH 7.8 – 8.4)	(<2 dsm)	%)	- 57 kg/ha)	kg/ha)	ppm)	ppm)	4.5 ppm)	1.0 ppm)	(> 0.2ppm)	(< 0.6 ppm)
Kadechoora	405	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	406	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	407	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	408	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	409	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	410	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	411	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	412	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	413	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	414	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	415	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	416	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	417	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	418/1	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	High (> 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	418/2	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	419/1	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	419/2	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	419/3	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	420	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	421	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	422/1	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	High (> 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	422/2	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	High (> 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	423/1	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	423/2	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)

Village	Survey No.	Soil Reaction	Salinity	Organic Carbon	Available Phosphorus	Available Potassium	Available Sulphur	Available Boron	Available Iron	Available Manganese	Available Copper	Available Zinc
Kadechoora	423/3	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	423/4	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	424	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	425	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	426/1	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	426/2	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	427	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	428	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	429	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	432	Very strongly alkaline (pH > 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	457	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	458	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	459	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	460	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	462	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	463	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	464	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	465	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	466	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	467	Very strongly alkaline (pH > 9.0)	Non saline (<2 dsm)	High (>0.75 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	468	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	High (> 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	469	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	470	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	High (> 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	471	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	High (> 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	472	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	High (> 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	473	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	474	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	475	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	476	Strongly alkaline (pH	Non saline	Medium (0.5	Medium (23	High (> 337	Low (<10	Medium (0.5	Sufficient (>	Sufficient (>	Sufficient	Deficient

Village	Survey No.	Soil Reaction	Salinity	Organic Carbon	Available Phosphorus	Available Potassium	Available Sulphur	Available Boron	Available Iron	Available Manganese	Available Copper	Available Zinc
		8.4 – 9.0)	(<2 dsm)	- 0.75 %)	- 57 kg/ha)	kg/ha)	ppm)	- 1.0 ppm)	4.5 ppm)	1.0 ppm)	(> 0.2ppm)	(< 0.6 ppm)
Kadechoora	477	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	478	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	479	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	480	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	481	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	482	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	483	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	484	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	485	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	486	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	487	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	488	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	489	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	490	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	491	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	495	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	496	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	497	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	498	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	499	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	500	Moderately alkaline (pH 7.8 – 8.4)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	501	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	502	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	503	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	504	Strongly alkaline (pH	Non saline	Low (< 0.5	Medium (23	High (> 337	Low (<10	Medium (0.5	Sufficient (>	Sufficient (>	Sufficient	Deficient

Village	Survey No.	Soil Reaction	Salinity	Organic Carbon	Available Phosphorus	Available Potassium	Available Sulphur	Available Boron	Available Iron	Available Manganese	Available Copper	Available Zinc
		8.4 – 9.0)	(<2 dsm)	%)	- 57 kg/ha)	kg/ha)	ppm)	- 1.0 ppm)	4.5 ppm)	1.0 ppm)	(> 0.2ppm)	(< 0.6 ppm)
Kadechoora	505	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Low (< 0.5 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	506	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Low (< 0.5 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	507	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	508	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Low (< 0.5 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	509	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	510	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Low (< 0.5 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	511	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Low (< 0.5 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	512	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Low (< 0.5 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	513	Very strongly alkaline (pH > 9.0)	Non saline (<2 dsm)	Low (< 0.5 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	514/1	Very strongly alkaline (pH > 9.0)	Non saline (<2 dsm)	Low (< 0.5 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	514/2	Very strongly alkaline (pH > 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	515	Very strongly alkaline (pH > 9.0)	Non saline (<2 dsm)	Low (< 0.5 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	516	Very strongly alkaline (pH > 9.0)	Non saline (<2 dsm)	Low (< 0.5 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	517	Very strongly alkaline (pH > 9.0)	Non saline (<2 dsm)	Low (< 0.5 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	518	Very strongly alkaline (pH > 9.0)	Non saline (<2 dsm)	Low (< 0.5 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	519	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Low (< 0.5 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	520	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Low (< 0.5 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	521	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Low (< 0.5 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	522	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Low (< 0.5 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	523	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Low (< 0.5 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	524	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	525	Strongly alkaline (pH 8.4 – 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	526	Very strongly alkaline (pH > 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	527	Very strongly alkaline (pH > 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	528	Very strongly alkaline	Non saline	Medium (0.5	Low (< 23	High (> 337	Low (<10	Low (< 0.5	Sufficient (>	Sufficient (>	Sufficient	Deficient

Village	Survey No.	Soil Reaction	Salinity	Organic Carbon	Available Phosphorus	Available Potassium	Available Sulphur	Available Boron	Available Iron	Available Manganese	Available Copper	Available Zinc
		(pH > 9.0)	(<2 dsm)	- 0.75 %)	kg/ha)	kg/ha)	ppm)	ppm)	4.5 ppm)	1.0 ppm)	(> 0.2ppm)	(< 0.6 ppm)
Kadechoora	529	Very strongly alkaline (pH > 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	530	Very strongly alkaline (pH > 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	531	Very strongly alkaline (pH > 9.0)	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Low (< 0.5 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Kadechoora	533	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	534	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	535	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	537	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	538	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	546	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	547	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	549	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	552	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Sowrashtralli	107	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	High (> 20 ppm)	High (> 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Sowrashtralli	108	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (0.5 - 0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	High (> 20 ppm)	High (> 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Sowrashtralli	109	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (0.5 - 0.75 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	High (> 20 ppm)	High (> 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Sowrashtralli	110	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (0.5 - 0.75 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	High (> 1.0 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Sowrashtralli	111	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (0.5 - 0.75 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Sowrashtralli	112	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (0.5 - 0.75 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Low (<10 ppm)	Medium (0.5 - 1.0 ppm)	Deficient (< 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Sowrashtralli	113	Non saline (<2 dsm)	Medium (0.5 - 0.75 %)	Medium (0.5 - 0.75 %)	Low (< 23 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	High (> 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Sowrashtralli	114	Non saline (<2 dsm)	High (>0.75 %)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	Medium (10 - 20 ppm)	High (> 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)
Sowrashtralli	115	Non saline (<2 dsm)	High (>0.75 %)	High (>0.75 %)	Medium (23 - 57 kg/ha)	High (> 337 kg/ha)	High (> 20 ppm)	High (> 1.0 ppm)	Sufficient (> 4.5 ppm)	Sufficient (> 1.0 ppm)	Sufficient (> 0.2ppm)	Deficient (< 0.6 ppm)

Note: M/I- Mining/Industrial

Appendix III

Kadechoora Microwatershed

Soil Suitability Information

Village	Survey No.	Mango	Maize	Sapota	Sorgham	Guava	Cotton	Tamarind	Lime	Bengalgram	Sunflower	Redgram	Amla	Jackfruit	Custard apple	Cashew	Jamun	Musambi	Groundnut	Chilly	Tomato	Marigold	Chrysanthemum	Pomegranate	Bajra	Drumstick	Mulbery
Kadechoora	1	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	2	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	3	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	4	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	5	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	6	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	7	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	8	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	16	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	17/1	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	17/2	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	203	N1r	S2t	S3r	S2r	S3r	S2r	N1r	S3r	S2r	S3r	S3r	S2r	S3r	S2r	N1rt	S3r	S3r	S3t	S2r	S2r	S2r	S2r	S3r	S2r	S3r	S3r
Kadechoora	204	N1r	S2t	S3r	S2r	S3r	S2r	N1r	S3r	S2r	S3r	S3r	S2r	S3r	S2r	N1rt	S3r	S3r	S3t	S2r	S2r	S2r	S2r	S3r	S2r	S3r	S3r
Kadechoora	205	N1r	S2t	S3r	S2r	S3r	S2r	N1r	S3r	S2r	S3r	S3r	S2r	S3r	S2r	N1rt	S3r	S3r	S3t	S2r	S2r	S2r	S2r	S3r	S2r	S3r	S3r
Kadechoora	206	N1r	S2t	S3r	S2r	S3r	S2r	N1r	S3r	S2r	S3r	S3r	S2r	S3r	S2r	N1rt	S3r	S3r	S3t	S2r	S2r	S2r	S2r	S3r	S2r	S3r	S3r
Kadechoora	207	N1r	S2t	S3r	S2r	S3r	S2r	N1r	S3r	S2r	S3r	S3r	S2r	S3r	S2r	N1rt	S3r	S3r	S3t	S2r	S2r	S2r	S2r	S3r	S2r	S3r	S3r
Kadechoora	208	N1r	S2t	S3r	S2r	S3r	S2r	N1r	S3r	S2r	S3r	S3r	S2r	S3r	S2r	N1rt	S3r	S3r	S3t	S2r	S2r	S2r	S2r	S3r	S2r	S3r	S3r
Kadechoora	220	S3tw	S3tw	S3tw	S2w	S3tw	S2r	S2tw	S2w	S1	S2w	S2tw	S2tw	S3tw	S2w	N1tz	S2tw	S2w	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	223	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	224	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	225	S3tw	S3tw	S3tw	S2w	S3tw	S2r	S2tw	S2w	S1	S2w	S2tw	S2tw	S3tw	S2w	N1tz	S2tw	S2w	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	228	N1rz	S2rz	S3rz	S2rz	S3rz	S2rz	N1rz	S3rz	S2rz	S3rz	S3rz	S2rz	S3rz	S2rz	N1tz	S3rz	S3rz	S2rz	S2rz	S2rz	S2rz	S2rz	S3rz	S2rz	S3rz	S3rz
Kadechoora	229	N1rz	S2rz	S3rz	S2rz	S3rz	S2rz	N1rz	S3rz	S2rz	S3rz	S3rz	S2rz	S3rz	S2rz	N1tz	S3rz	S3rz	S2rz	S2rz	S2rz	S2rz	S2rz	S3rz	S2rz	S3rz	S3rz
Kadechoora	230	N1rz	S2rz	S3rz	S2rz	S3rz	S2rz	N1rz	S3rz	S2rz	S3rz	S3rz	S2rz	S3rz	S2rz	N1tz	S3rz	S3rz	S2rz	S2rz	S2rz	S2rz	S2rz	S3rz	S2rz	S3rz	S3rz
Kadechoora	231	N1r	S2t	S3r	S2r	S3r	S2r	N1r	S3r	S2r	S3r	S3r	S2r	S3r	S2r	N1rt	S3r	S3r	S3t	S2r	S2r	S2r	S2r	S3r	S2r	S3r	S3r
Kadechoora	232	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	233	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	234	N1rz	S2rz	S3rz	S2rz	S3rz	S2rz	N1rz	S3rz	S2rz	S3rz	S3rz	S2rz	S3rz	S2rz	N1tz	S3rz	S3rz	S2rz	S2rz	S2rz	S2rz	S2rz	S3rz	S2rz	S3rz	S3rz
Kadechoora	235	N1rz	S2rz	S3rz	S2rz	S3rz	S2rz	N1rz	S3rz	S2rz	S3rz	S3rz	S2rz	S3rz	S2rz	N1tz	S3rz	S3rz	S2rz	S2rz	S2rz	S2rz	S2rz	S3rz	S2rz	S3rz	S3rz
Kadechoora	236	N1rz	S2rz	S3rz	S2rz	S3rz	S2rz	N1rz	S3rz	S2rz	S3rz	S3rz	S2rz	S3rz	S2rz	N1tz	S3rz	S3rz	S2rz	S2rz	S2rz	S2rz	S2rz	S3rz	S2rz	S3rz	S3rz
Kadechoora	237	S3tw	S3tw	S3tw	S2w	S3tw	S2r	S2tw	S2w	S1	S2w	S2tw	S2tw	S3tw	S2w	N1tz	S2tw	S2w	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	239	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	240	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	241	S3tw	S3tw	S3tw	S2w	S3tw	S2r	S2tw	S2w	S1	S2w	S2tw	S2tw	S3tw	S2w	N1tz	S2tw	S2w	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	242	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	243	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	244	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	245	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw

Village	Survey No.	Mango	Maize	Sapota	Sorgham	Guava	Cotton	Tamarind	Lime	Bengalgram	Sunflower	Redgram	Amla	Jackfruit	Custard apple	Cashew	Jamun	Musambi	Groundnut	Chilly	Tomato	Marigold	Chrysanthemum	Pomegranate	Bajra	Drumstick	Mulberry
Kadechoora	246	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	247	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	248	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	249	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	250	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	251	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	252	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	253	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	254	S3tz	S3tw	S3tw	S2zw	S3tw	S2z	S2tw	S2zw	S2z	S2zw	S2tw	S2tw	S3tw	S2zw	N1tw	S2tw	S2zw	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tz	S2tw	S3tw
Kadechoora	255	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	256/1	S3rt	S3tw	S3tw	S2wz	S3tw	S2rw	S3rw	S2rz	S2wz	S2rw	S2rt	S2tz	S3tw	S2zw	N1tz	S3rt	S2rw	S3tw	S2tw	S3tw	S2tw	S2tw	S2rt	S2tw	S2rt	S3tw
Kadechoora	256/2	S3rt	S3tw	S3tw	S2wz	S3tw	S2rw	S3rw	S2rz	S2wz	S2rw	S2rt	S2tz	S3tw	S2zw	N1tz	S3rt	S2rw	S3tw	S2tw	S3tw	S2tw	S2tw	S2rt	S2tw	S2rt	S3tw
Kadechoora	258	S3tz	S3tw	S3tw	S2zw	S3tw	S2z	S2tw	S2zw	S2z	S2zw	S2tw	S2tw	S3tw	S2zw	N1tw	S2tw	S2zw	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tz	S2tw	S3tw
Kadechoora	329	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	332/1	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	333	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	334	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	335	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	336	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	337	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	338	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	338/1	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	338/2	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	339	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	340/1	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	340/2	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	341/1	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	341/2	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	342	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	343/1	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	343/2	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	344	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	345	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	346/1	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	346/2	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	348/1	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	349/1	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	353	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	354	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	355	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	356	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	357/1	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw

Village	Survey No.	Mango	Maize	Sapota	Sorgham	Guava	Cotton	Tamarind	Lime	Bengalgram	Sunflower	Redgram	Amla	Jackfruit	Custard apple	Cashew	Jamun	Musambi	Groundnut	Chilly	Tomato	Marigold	Chrysanthemum	Pomegranate	Bajra	Drumstick	Mulbery
Kadechoora	357/2	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	357/3	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	358/1	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	358/2	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	358/3	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	358/4	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	359	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	360	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	361	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	362	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	363	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	364	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	365	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	366	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	367	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	368	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	369	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	370	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	371	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	372	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	373	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	374	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	375	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	376	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	377	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	378	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	379	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	380/1	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	380/2	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	381	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	382	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	383	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	384	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	385	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	386	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	387	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	388	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	389	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	390	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	391	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	392	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	393	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw

Village	Survey No.	Mango	Maize	Sapota	Sorgham	Guava	Cotton	Tamarind	Lime	Bengalgram	Sunflower	Redgram	Amla	Jackfruit	Custard apple	Cashew	Jamun	Musambi	Groundnut	Chilly	Tomato	Marigold	Chrysanthemum	Pomegranate	Bajra	Drumstick	Mulbery
Kadechoora	394	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	395	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	396/1	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	396/2	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	397/1	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	397/2	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	398	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	399	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	400	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	401	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	402	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	403	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	404	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	405	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	406	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	407	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	408	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	409	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	410	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	411	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	412	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	413	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	414	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	415	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	416	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	417	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	418/1	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	418/2	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	419/1	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	419/2	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	419/3	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	420	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	421	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	422/1	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	422/2	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	423/1	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	423/2	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	423/3	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	423/4	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	424	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	425	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	426/1	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw

Village	Survey No.	Mango	Maize	Sapota	Sorgham	Guava	Cotton	Tamarind	Lime	Bengalgram	Sunflower	Redgram	Amla	Jackfruit	Custard apple	Cashew	Jamun	Musambi	Groundnut	Chilly	Tomato	Marigold	Chrysanthemum	Pomegranate	Bajra	Drumstick	Mulbery
Kadechoora	426/2	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	427	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	428	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	429	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	432	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	457	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	458	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	459	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	460	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	462	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	463	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	464	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	465	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	466	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	467	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	468	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	469	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	470	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	471	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	472	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	473	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	474	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	475	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	476	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	477	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	478	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	479	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	480	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	481	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	482	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	483	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	484	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	485	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	486	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	487	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	488	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	489	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others	Others
Kadechoora	490	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	491	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	495	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	496	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	497	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw

Village	Survey No.	Mango	Maize	Sapota	Sorgham	Guava	Cotton	Tamarind	Lime	Bengalgram	Sunflower	Redgram	Amla	Jackfruit	Custard apple	Cashew	Jamun	Musambi	Groundnut	Chilly	Tomato	Marigold	Chrysanthemum	Pomegranate	Bajra	Drumstick	Mulbery
Kadechoora	498	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	499	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	500	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	501	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	502	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	503	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	504	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	505	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	506	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	507	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	508	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	509	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	510	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	511	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	512	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	513	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	514/1	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	514/2	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	515	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	516	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	517	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	518	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	519	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	520	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	521	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	522	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	523	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	524	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	525	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	526	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	527	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	528	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	529	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	530	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	531	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Kadechoora	533	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	534	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	535	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	537	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	538	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	546	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	547	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I

Village	Survey No.	Mango	Maize	Sapota	Sorgham	Guava	Cotton	Tamarind	Lime	Bengalgram	Sunflower	Redgram	Amla	Jackfruit	Custard apple	Cashew	Jamun	Musambi	Groundnut	Chilly	Tomato	Marigold	Chrysanthemum	Pomegranate	Bajra	Drumstick	Mulbery
Kadechoora	549	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Kadechoora	552	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I	M/I
Sowrashtralli	107	N1r	S3rt	N1r	S3r	N1rt	S3r	N1rt	N1r	S3r	N1r	S3rt	S3rt	N1rt	S3r	N1rt	N1rt	N1r	S3rt	S3rt	S3rt	S3rt	S3rt	N1r	S3rt	N1rt	N1rt
Sowrashtralli	108	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Sowrashtralli	109	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Sowrashtralli	110	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Sowrashtralli	111	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Sowrashtralli	112	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Sowrashtralli	113	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Sowrashtralli	114	S3tw	S3tw	S3tw	S2wz	S3tw	S2wz	S2tw	S2zw	S2wz	S2rw	S2tw	S2zw	S3tw	S2zw	N1tz	S2tw	S2wz	S3tw	S2tw	S3tw	S2tw	S2tw	S2tw	S2tw	S2tw	S3tw
Sowrashtralli	115	N1r	S3rt	N1r	S3r	N1rt	S3r	N1rt	N1r	S3r	N1r	S3rt	S3rt	N1rt	S3r	N1rt	N1rt	N1r	S3rt	S3rt	S3rt	S3rt	S3rt	N1r	S3rt	N1rt	N1rt

Note: M/I- Mining/Industrial

PART-B

SOCIO-ECONOMIC STATUS OF FARM HOUSEHOLDS

CONTENTS

LIST OF TABLES

Chapter 1

FINDINGS OF THE SOCIO-ECONOMIC SURVEY

- *The survey was conducted in Kadechur is located at North latitude 16^0 32' 18.441" and 16^0 31' 7.07" and East longitude 77^0 20' 40.809" and 77^0 18' 25.451" covering an area of about 536.24 ha coming unde Kadechoora and Sowrashtralli villages of Yadagiri taluk.*
- *Socio-economic analysis of Kadechur micro watersheds of Kadechur sub-watershed, Yadgiri taluk & District indicated that, out of the total sample of 39 farmers were sampled in Kadechur micro-watershed among households surveyed 7 (17.95%) were marginal, 20 (51.28%) were small, 4 (10.26 %) were semi medium and 2 (5.13 %) were medium farmers. 6 landless farmers were also interviewed for the survey.*
- *The population characteristics of households indicated that, there were 109 (57.07%) men and 82 (42.93 %) were women. The average population of landless was 3.5, marginal farmers were 4.9, small farmers were 5.4, semi medium farmers were 4 and medium farmers were 6.5.*
- *Majority of the respondents (47.12%) were in the age group of 16-35 years.*
- *Education level of the sample households indicated that, there were 49.74 per cent illiterates, 41.88 per cent pre university education and 6.81 per cent attained graduation.*
- *About, 69.23 per cent of household heads practicing agriculture and 17.95 per cent of the household heads were engaged as agricultural labourers.*
- *Agriculture was the major occupation for 45.03 per cent of the household members.*
- *In the study area, 74.36 per cent of the households possess katcha house and 17.95 per cent possess pucca house.*
- *The durable assets owned by the households showed that, 84.62 per cent possess TV, 15.38 per cent possess mixer grinder, 97.44 per cent possess mobile phones and 15.38 per cent possess motor cycles.*
- *Farm implements owned by the households indicated that, 20.51 per cent of the households possess plough, 5.13 per cent possess tractor, 20.51 per cent possess bullock cart and 7.69 per cent possess sprayer.*
- *Regarding livestock possession by the households, 5.13 per cent possess local cow.*
- *The average labour availability in the study area showed that, own labour men available in the micro watershed was 13.03, women available in the micro watershed was 1.51, hired labour (men) available was 1.80 and hired labour (women) available was 8.80.*
- *Further, 5.13 per cent of the households opined that hired labour was inadequate during the agricultural season.*

- *Out of the total land holding of the sample respondents 90.14 per cent (52.64 ha) of the area is under dry condition and the remaining 9.86 per cent area is irrigated land.*
- *There were 3.00 live bore wells and 1.00 dry bore wells among the sampled households.*
- *Bore well was the major source of irrigation for 7.69 per cent of the households.*
- *The major crops grown by sample farmers are Red gram, Groundnut, Cotton, Jowar and cropping intensity was recorded as 100.00 per cent.*
- *Out of the sample households 100.00 percent possessed bank account and 5.13 per cent of them have savings in the account.*
- *About 56.41 per cent of the respondents borrowed credit from various sources.*
- *Among the credit borrowed by households, 20.83 per cent have borrowed loan from commercial banks and 41.67 per cent from co-operative/Grameena bank.*
- *Majority of the respondents (86.67%) have borrowed loan for agriculture purpose.*
- *Regarding the opinion on institutional sources of credit, 25.00 per cent of the households opined that credit helped to perform timely agricultural operations, while, only 75.00 per cent respondents opined that loan amount was adequate to fulfil their requirement.*
- *The per hectare cost of cultivation for Red gram, Groundnut, Cotton and Jowar was Rs.31283.52, 33327.81, 36058.22 and 25644.97 with benefit cost ratio of 1:1.42, 1: 3.50, 1: 1.40 and1: 0.56 respectively.*
- *Further, 17.95 per cent of the households opined that dry fodder was adequate.*
- *The average annual gross income of the farmers was Rs. 131225.64 in micro-watershed, of which Rs. 88994.87 comes from agriculture.*
- *Sampled households have grown 15 horticulture trees and 21 forestry trees together in the fields and back yards.*
- *About 2.56 per cent of the households shown interest to cultivate horticultural crops.*
- *Households have an average investment capacity of Rs. 3482.05 for land development.*
- *Source of funds for additional investment is concerned, 38.46 per cent depends on own funds and 5.13 per cent depends on bank loan for land development activities.*
- *Regarding marketing channels, 35.90 per cent of the households have sold agricultural produce to the local/village merchants, while, 38.46 per cent have sold in regulated markets.*
- *Further, 66.67 per cent of the households have used tractor for the transport of agriculture commodity.*
- *Majority of the farmers (79.49%) have experienced soil and water erosion problems in the watershed and 82.05 per cent of the households were interested towards soil testing.*

- *Fire was the major source of fuel for domestic use for 89.74 per cent of the households and 12.82 per cent households has LPG connection.*
- *Piped supply was the major source for drinking water for 97.44 per cent of the households.*
- *Electricity was the major source of light for 100.00 per cent of the households.*
- *In the study area, 38.46 per cent of the households possess toilet facility.*
- *Regarding possession of PDS card, 97.44 per cent of the households possessed BPL card and 2.56 per cent of the household's were not having ration cards.*
- *Households opined that, the requirement of cereals (64.10%), pulses (69.23%) and oilseeds (38.46%) are adequate for consumption.*
- *Farming constraints experienced by households in the micro watersheds were lower fertility status of the soil (79.49%) wild animal menace on farm field (79.49%), frequent incidence of pest and diseases (43.59%), inadequacy of irrigation water (69.23%), high cost of fertilizers and plant protection chemicals (82.05%), high rate of interest on credit (82.05%), low price for the agricultural commodities (76.92%), lack of marketing facilities in the area (53.85%), inadequate extension services (28.21%), lack of transport for safe transport of the agricultural produce to the market (71.79%) and Less rainfall (5.13%).*

Chapter 2

INTRODUCTION

Soil and water are the two precious natural resources which are essential for crop production and existence of life on earth. Rainfed agriculture is under severe stress due to various constraints related to agriculture like uneven and erratic distribution of rainfall, indiscriminate use of fertilizers, chemicals and pesticides, adoption of improper land management practices, soil erosion, decline in soil fertility, decline in ground water resources leading to low crop productivity. The area under rainfed agriculture has to be managed effectively using the best available practices to enhance the production of food, fodder and fuel. This is possible if the land resources are characterized at each parcel of land through detailed land resource inventory using the best available techniques of remote sensing, GPS and GIS. The watershed development programs are aimed at the sustainable distribution of its resources and the process of creating and implementing plans, programs, and projects to sustain and enhance watershed functions that affect the plant, animal and human communities within a watershed boundary.

World Bank funded KWDP II, SUJALA III project was implemented in with Broad objective of demonstrating more effective watershed management through greater integration of programmes related to rain-fed agriculture, innovative and science based approaches and strengthen institutional capacities and If successful, it is expected that the systems and tools could be mainstreamed into the overall IWMP in the State of Karnataka and in time, throughout other IWMP operations in India. With this background the socio-economic survey has been carried out with following specific objectives:

1. To understand the demographic features of the households in the micro-watershed
2. To understand the extent of family labour available and additional employment opportunities available within the village.
3. To know the status of assets of households in the micro-watershed for suggesting possible improvements.
4. To study the cropping pattern, cropped area and productivity levels of different households in micro-watershed.
5. To determine the type and extent of livestock owned by different categories of HHs
6. Availability of fodder and level of livestock management.

Scope and importance of survey

Survey helps in identification of different socio-economic and resource use-patterns of farmers at the Micro watershed. Household survey provides demographic features, labor force, and levels of education; land ownership and asset position (including livestock and other household assets) of surveyed households; and cropping patterns, input intensities, and average crop yields from farmers' fields. It also discusses crop utilization and the degree of commercialization of production in the areas; farmers' access to and utilization of credit from formal and informal sources; and the level of adoption and use of soil, water, and pest management technologies.

Chapter 3

METHODOLOGY

The description of the methods, components selected for the survey and procedures followed in conducting the baseline survey are furnished under the following heads.

1. Description of the study area

Yadgir District is one of the 30 districts of Karnataka state in southern India. This district was carved out from the erstwhile Gulbarga district as the 30th district of Karnataka on 10 April 2010. Yadgir town is the administrative headquarters of the district. The district comprises of 3 taluks namely, Shahapur, Yadgiri and Shorapur (There are 16 hoblies, 117 Gram Panchayats, 4 Municipalities,8 Towns/ Urban agglomeration and 487 inhabited & 32 un-inhabited villages The district occupies an area of 5,160.88 km².

Yadgir district is the second smallest district in the state, area wise is very rich in cultural traditions. The vast stretch of fertile black soil of the district is known for bumper red gram and jowar crops. The district is a "Daal bowl" of the state. The district is also known for cluster of cement industries and a distinct stone popularly known as "Malakheda Stone". Two main rivers, Krishna and Bhima, and a few tributaries flow in this region. Krishna and Bhima Rivers drain the district. They constitute the two major river basins of the district. Kagna and Amarja are the two sub - basins of Bhima River, which occur within the geographical area of the district

According to the 2011 census Yadgir district has a population of 1, 172,985, roughly equal to the nation of Timor-Lesteor the US state of Rhode Island. This gives it a ranking of 404th in India (out of a total of 640). The district has a population density of 224 inhabitants per square kilometre (580/sq mi). Its population growth rate over the decade 2001-2011 was 22.67%. Yadgir has a sex ratio of 984 females for every 1000 males, and a literacy rate of 52.36%.

2. Locale of the survey and description of the micro-watershed and

The study was conducted in Kadechur micro-watershed (Kadechur sub-watershed, Yadgiri taluk & District) is located at North latitude 16^0 32’ 18.441" and 16^0 31' 7.07" and East longitude 77^0 20’ 40.809" and 77^0 18’ 25.451”covering an area of about 536.24 ha bounded by unde Kadechoora and Sowrashtralli Villages.

3. Selection of the respondents for the study

The micro-watershed is marked with 320 square meters grids. One farmer from every alternate grid in the micro-watershed was selected for the study and interviewed for socio-economic data. Totally 39 households were interviewed for the survey.

4. The parameters considered for socio-economic survey of households

Two forms of data were collected from the micro-watershed which includes primary data from the farm households and secondary data about the villages under the micro-watershed jurisdiction.

The following parameters were considered for the primary data collection about the socio-economic data of the households, (1) Demographic information, (2) Farm and durable assets owned by households, (3) Livestock possession, (4) Labour availability, (5) Level of migration in the village, Land holding, (7) Cropping pattern, (8) Source of irrigation, (9) Borrowing status, (10) Cost of cultivation of major crops, (11) Economics of subsidiary activities, (12) Fodder availability, (13) Family annual income from different sources, (14) Horticulture and forestry species grown, (15) Additional investment capacity, (16) Marketing practices, (17) Status of soil and water conservation structure, (18) Access to basic needs and (19) Constraints and suggestion.

The following parameters were considered for the secondary data regarding the villages under the micro-watershed jurisdiction, (1) Number of villages in each micro-watershed jurisdiction, (2) Village wise number of households, (3) Geographical area of the villages, (4) Cultivable are a including rainfed and irrigated, (5) Number and type of house in each village, (6) Human and livestock population, (7) Facilities in the village such as roads, transport facility for conveyance, drinking water supply, street light and (8) Community based organizations in the villages.

5. Development of interview schedule and data collection

Taking into the consideration the objectives of the survey, an interview schedule was prepared after thorough consultation with the experts in the field of social sciences. A comprehensive interview schedule covering all the major parameters for measuring the socio-economic situation was developed.

6. Tools used to analyze the data

The statistical components such as frequency and percentage were used to analyze the data.

Abbreviations used in the report

LL=Landless
MF=Marginal Farmers
SF=Small farmers
SMF=Semi medium farmers
MDF=Medium farmers
LF=Large Farmers

Chapter 4

FINDINGS OF THE SURVEY

This chapter deals with systematic presentation of results of the survey. Keeping in view the objectives, the salient features of the survey are presented under the following headings.

Households sampled for socio-economic survey: The data on households sampled for socio economic survey in Kadechur Micro watershed is presented in Table 1 and it indicated that 39 farmers were sampled in Kadechur micro-watershed among households surveyed 7 (17.95%) were marginal, 20 (51.28%) were small, 4 (10.26 %) were semi medium and 2 (5.13 %) were medium farmers. 6 landless farmers were also interviewed for the survey.

Table 1. Households sampled for socio economic survey in Kadechur micro-watershed

Sl.No.	Particulars	LL (6)		MF (7)		SF (20)		SMF (4)		MDF (2)		All (39)	
		N	%	N	%	N	%	N	%	N	%	N	%
1	Farmers	6	15.4	7	18	20	51.3	4	10.3	2	5.13	39	100

Population characteristics: The population characteristics of households sampled for socio-economic survey in Kadechur Micro watershed is presented in Table 2. The data indicated that, there were 109 (57.07%) men and 82 (42.93%) were women. The average population of landless was 3.5, marginal farmers were 4.9, small farmers were 5.4, semi medium farmers were 4 and medium farmers were 6.5.

Table 2. Population characteristics in Kadechur micro-watershed

Sl.No.	Particulars	LL (21)		MF (34)		SF (107)		SMF (16)		MDF (13)		All (191)	
		N	%	N	%	N	%	N	%	N	%	N	%
1	Men	12	57.1	19	56	62	58	8	50	8	61.5	109	57.1
2	Women	9	42.9	15	44	45	42	8	50	5	38.5	82	42.9
3	Other	0	0	0	0	0	0	0	0	0	0	0	0
Total		21	100	34	100	107	100	16	100	13	100	191	100
Average		3.5		4.9		5.4		4.0		6.5		4.9	

Age wise classification of population: The age wise classification of household members in Kadechur Micro watershed is presented in Table 3. The indicated that, 45 (23.56%) of population were 0-15 years of age, 90 (47.12%) were 16-35 years of age, 49(25.65%) were 36-60 years of age and 7 (3.66 %) were above 61 years of age.

Table 3: Age wise classification of members of the household in Kadechur micro-watershed

Sl.No.	Particulars	LL (21)		MF (34)		SF (107)		SMF (16)		MDF (13)		All (191)	
		N	%	N	%	N	%	N	%	N	%	N	%
1	0-15 years of age	7	33.3	10	29.4	21	19.6	4	25	3	23	45	23.56
2	16-35 years of age	12	57.1	16	47.1	47	43.9	7	43.75	8	62	90	47.12
3	36-60 years of age	2	9.52	7	20.6	35	32.7	5	31.25	0	0	49	25.65
4	> 61 years	0	0	1	2.94	4	3.74	0	0	2	15	7	3.66
Total		21	100	34	100	107	100	16	100	13	100	191	100

Education level of household members: Education level of household members in Kadechur Micro watershed is presented in Table 4. The results indicated that, there were 49.74 per cent of illiterates, 0.00 per cent of functional literate, 14.66 per cent of them had primary school education, 3.14 per cent middle school education, and 11.52 per cent high school education, 6.28 per cent of them had PUC education, 1.05 per cent of them had Diploma, 6.81 per cent attained graduation, and 4.71 them had other education.

Table 4. Education level of members of the household in Kadechur micro-watershed

Sl.No.	Particulars	LL (21)		MF (34)		SF (107)		SMF (16)		MDF (13)		All (191)	
		N	%	N	%	N	%	N	%	N	%	N	%
1	Illiterate	8	38.1	18	52.9	57	53.3	6	37.5	6	46.15	95	49.7
2	Primary School	4	19.1	9	26.5	12	11.2	2	12.5	1	7.69	28	14.7
3	Middle School	1	4.76	0	0	4	3.74	0	0	1	7.69	6	3.14
4	High School	2	9.52	4	11.8	13	12.2	0	0	3	23.08	22	11.5
5	PUC	0	0	1	2.94	7	6.54	3	18.8	1	7.69	12	6.28
6	Diploma	0	0	0	0	1	0.93	1	6.25	0	0	2	1.05
7	ITI	2	9.52	0	0	2	1.87	0	0	0	0	4	2.09
8	Degree	2	9.52	1	2.94	9	8.41	1	6.25	0	0	13	6.81
9	Others	2	9.52	1	2.94	2	1.87	3	18.8	1	7.69	9	4.71
Total		21	100	34	100	107	100	16	100	13	100	191	100

Occupation of head of households: The data regarding the occupation of the household heads in Kadechur Micro watershed is presented in Table 5. The results indicate that, 69.23 per cent of households heads were practicing agriculture, 17.95 per cent of the household heads were agricultural Labour and housewife (5.13%).

Table 5: Occupation of heads of households in Kadechur micro-watershed

Sl.No.	Particulars	LL (6)		MF (7)		SF (20)		SMF (4)		MDF (2)		All (39)	
		N	%	N	%	N	%	N	%	N	%	N	%
1	Agriculture	2	33	6	86	14	70	3	75	2	100	27	69.23
2	Agricultural Labour	3	50	0	0	4	20	0	0	0	0	7	17.95
3	General Labour	1	17	0	0	0	0	0	0	0	0	1	2.56
4	Government Service	0	0	0	0	1	5	0	0	0	0	1	2.56
5	Private Service	0	0	0	0	0	0	1	25	0	0	1	2.56
6	Housewife	0	0	1	14	1	5	0	0	0	0	2	5.13
Total		6	100	7	100	20	100	4	100	2	100	39	100

Occupation of the members of the household: The data regarding the occupation of the household members in Kadechur Micro watershed is presented in Table 6. The results indicate that, agriculture was the major occupation for 45.03 per cent of the household members, 6.81 per cent were agricultural labour, 1.57 per cent were general labour1.05 per cent were working in government sector, 26.18 per cent were working in pursuing education, 13.61 per cent were involved as housewife and 4.71 per cent were children.

Institutional Participation of household members: The data regarding the institutional participation of the household members in Kadechur Micro watershed is presented in

Table 7. The results show that, out of the total family members in the households 1.05 per cent of them were participating in raitha sangha.

Table 6: Occupation of members of the household in Kadechur micro-watershed

Sl.No.	Particulars	LL (21)		MF (34)		SF (107)		SMF (16)		MDF (13)		All (191)	
		N	%	N	%	N	%	N	%	N	%	N	%
1	Agriculture	5	23.8	17	50	56	52.34	3	18.75	5	38	86	45
2	Agricultural Labour	4	19.1	2	5.88	7	6.54	0	0	0	0	13	6.81
3	General Labour	3	14.3	0	0	0	0	0	0	0	0	3	1.57
4	Government Service	0	0	0	0	1	0.93	1	6.25	0	0	2	1.05
5	Private Service	0	0	0	0	0	0	1	6.25	0	0	1	0.52
6	Student	5	23.8	9	26.5	31	28.97	3	18.75	2	15	50	26.2
7	Others	0	0	0	0	1	0.93	0	0	0	0	1	0.52
8	Housewife	2	9.52	5	14.7	9	8.41	5	31.25	5	38	26	13.6
9	Children	2	9.52	1	2.94	2	1.87	3	18.75	1	7.7	9	4.71
Total		21	100	34	100	107	100	16	100	13	100	191	100

Table 7: Institutional Participation of household member in Kadechur micro-watershed

Sl.No.	Particulars	LL (21)		MF (34)		SF (107)		SMF (16)		MDF (13)		All (191)	
		N	%	N	%	N	%	N	%	N	%	N	%
1	Raitha Sangha	1	4.8	0	0	1	0.93	0	0	0	0	2	1.05
2	No Participation	20	95	34	100	106	99.1	16	100	13	100	189	99
Total		21	100	34	100	107	100	16	100	13	100	191	100

Type of house owned: The data regarding the type of house owned by the households in Kadechur Micro watershed is presented in Table 8. The results indicate that, 7.69 percent possess thatched house, 74.36 per cent of the households possess katcha house and 17.95 per cent possess pacca house.

Table 8. Type of house owned by households in Kadechur micro-watershed

Sl.No.	Particulars	LL (6)		MF (7)		SF (20)		SMF (4)		MDF (2)		All (39)	
		N	%	N	%	N	%	N	%	N	%	N	%
1	Thatched	0	0	3	43	0	0	0	0	0	0	3	7.69
2	Katcha	6	100	2	29	16	80	3	75	2	100	29	74.36
3	Pucca/RCC	0	0	2	29	4	20	1	25	0	0	7	17.95
Total		6	100	7	100	20	100	4	100	2	100	39	100

Durable assets owned by the households: The data regarding the Durable Assets owned by the households in Kadechur Micro watershed is presented in Table 9. The results shows that, 84.62 per cent possess TV, 15.38 per cent possess mixer grinder, 2.56 per cent possess refrigerator, 15.38 per cent possess motor cycle, 97.44 per cent possess mobile phones.

Average value of durable assets: The data regarding the average value of durable assets owned by the households in Kadechur Micro watershed is presented in Table 10. The result shows that, the average value of television was Rs.7757.00, mixer grinder was

Rs.1316.00, refrigerator was 7000.00, motor cycle was Rs. 35833.00, mobile phone was Rs.2650.00.

Table 9. Durable assets owned by households in Kadechur micro-watershed

Sl.No.	Particulars	LL (6)		MF (7)		SF (20)		SMF (4)		MDF (2)		All (39)	
		N	%	N	%	N	%	N	%	N	%	N	%
1	Television	6	100	4	57	17	85	4	100	2	100	33	84.62
2	Mixer/Grinder	0	0	0	0	5	25	1	25	0	0	6	15.38
3	Refrigerator	0	0	0	0	0	0	1	25	0	0	1	2.56
4	Motor Cycle	1	17	0	0	4	20	1	25	0	0	6	15.38
5	Auto	0	0	0	0	1	5	0	0	0	0	1	2.56
6	Mobile Phone	6	100	7	100	19	95	4	100	2	100	38	97.44
7	Blank	0	0	0	0	1	5	0	0	0	0	1	2.56

Table 10. Average value of durable assets owned in Kadechur micro-watershed

Average Value (Rs.)

Sl.No.	Particulars	LL (6)	MF (7)	SF (20)	SMF (4)	MDF (2)	All (39)
1	Television	16166	5500	5529	6750	8000	7757
2	Mixer/Grinder	0	0	1280	1500	0	1316
3	Refrigerator	0	0	0	7000	0	7000
4	Motor Cycle	50000	0	35000	25000	0	35833
5	Auto	0	0	300000	0	0	300000
6	Mobile Phone	2571	2222	2243	5000	3000	2650

Farm implements owned: The data regarding the farm implements owned by the households in Kadechur Micro watershed is presented in Table 11. About 20.51 per cent of the households possess Bullock Cart, 20.51 per cent possess plough, 7.69 per cent possess Sprayer, 43.59 per cent possess Weeder, 5.13 per cent possess tractor.

Table 11. Farm implements owned in Kadechur micro-watershed

Sl.No.	Particulars	LL (6)		MF (7)		SF (20)		SMF (4)		MDF (2)		All (39)	
		N	%	N	%	N	%	N	%	N	%	N	%
1	Bullock Cart	0	0	3	42.9	4	20	0	0	1	50	8	20.51
2	Plough	0	0	3	42.9	4	20	0	0	1	50	8	20.51
3	Transplanter/Grinder	0	0	0	0	0	0	1	25	0	0	1	2.56
4	Power Tiller	0	0	0	0	0	0	1	25	0	0	1	2.56
5	Tractor	0	0	0	0	1	5	1	25	0	0	2	5.13
6	Sprayer	0	0	1	14.3	1	5	1	25	0	0	3	7.69
7	Weeder	0	0	6	85.7	9	45	1	25	1	50	17	43.59
8	Harvester	0	0	0	0	0	0	1	25	0	0	1	2.56
9	Blank	6	100	1	14.3	11	55	3	75	1	50	22	56.41

Average value of farm implements: The data regarding the average value of farm Implements owned by the households in Kadechur Micro watershed is presented in Table 12. The results show that the average value of plough was Rs.5187.00, bullock Cart was Rs.18125.00, seed/fertilizer drill was Rs.9333.00, weeder was Rs.143.00, tractor was Rs. 760000.

Table 12. Average value of farm implements in Kadechur micro-watershed

Average Value (Rs.)

Sl.No.	Particulars	LL (6)	MF (7)	SF (20)	SMF (4)	MDF (2)	All (39)
1	Bullock Cart	0	20333	16500	0	18000	18125
2	Plough	0	5500	4500	0	7000	5187
3	Transplanter/Grinder	0	0	0	12000	0	12000
4	Power Tiller	0	0	0	17000	0	17000
5	Tractor	0	0	720000	800000	0	760000
6	Sprayer	0	3000	5000	20000	0	9333
7	Weeder	0	166	106	200	200	143
8	Harvester	0	0	0	10000	0	10000

Livestock possession by the households: The data regarding the Livestock possession by the households in Kadechur Micro watershed is presented in Table 13. The indicate that, 30.77 per cent of the households possess bullocks, 5.13 per cent possess local cow, 0.00 per cent possess buffalo, 5.13 per cent possess crossbred cow.

Table 13. Livestock possession by households in Kadechur micro-watershed

Sl.No.	Particulars	LL (6)		MF (7)		SF (20)		SMF (4)		MDF (2)		All (39)	
		N	%	N	%	N	%	N	%	N	%	N	%
1	Bullock	0	0	4	57	7	35	0	0	1	50	12	30.77
2	Local cow	0	0	2	29	0	0	0	0	0	0	2	5.13
3	Crossbred cow	0	0	0	0	2	10	0	0	0	0	2	5.13
4	blank	5	83	3	43	13	65	4	100	1	50	26	66.67

Average Labour availability: The data regarding the average labour availability in Kadechur Micro watershed is presented in Table 14. The indicated that, own labour men available in the micro watershed was 13.03, women available in the micro watershed was 1.51, hired labour (men) available was 1.80 and hired labour (women) available was 8.80.

Table 14. Average labour availability in Kadechur micro-watershed

Sl.No.	Particulars	LL (6)	MF (7)	SF (20)	SMF (4)	MDF (2)	All (39)
		N	N	N	N	N	N
1	Hired labour Female	0	7.29	13.35	20	29	13.03
2	Own Labour Female	1	1.57	1.6	0.75	2.5	1.51
3	Own labour Male	1	1.71	2.05	0.75	2.5	1.8
4	Hired labour Male	0	4.29	9.6	13.5	16	8.8

Adequacy of hired labour: The data regarding the adequacy of hired labour in Kadechur Micro watershed is presented in Table 15. The results indicate that, 82.05 per cent of the household opined that hired labour was adequate, 5.13 per cent of the household opined that hired labour was Inadequate.

Table 15. Adequacy of hired labour in Kadechur micro-watershed

Sl.No.	Particulars	LL (6)		MF (7)		SF (20)		SMF (4)		MDF (2)		All (39)	
		N	%	N	%	N	%	N	%	N	%	N	%
1	Adequate	0	0	7	100	19	95	4	100	2	100	32	82.1
2	Inadequate	2	33	0	0	0	0	0	0	0	0	2	5.13

Distribution of land (ha): The data regarding the distribution of land (ha) in Kadechur Micro watershed is presented in Table 16. The results indicate that, 47.45 ha (90.14%) of dry land and 5.19 ha (9.86 %) of irrigated land.

Table 16. Distribution of land (ha) in Kadechur micro-watershed

Sl.No.	Particulars	LL (6)		MF (7)		SF (20)		SMF (4)		MDF (2)		All (39)	
		N	%	N	%	N	%	N	%	N	%	N	%
1	Dry	0	0	4.91	100	25	100	9.45	100	8.09	100	47.45	90.14
2	Irrigated	0	0	0	0	5.19	0	0	0	0	0	5.19	9.859
Total		0	100	4.91	100	30.19	100	9.45	100	8.09	100	52.64	100

Average value of land (ha): The data regarding the average land value (Rs./ha) in Kadechur Micro watershed is presented in Table 17. The results show that the average value of dry land was Rs.338941.42 and the average value of irrigated land was Rs.554250.00.

Table 17. Average value of land (ha) in Kadechur micro-watershed

Sl.No.	Particulars	LL (6)	MF (7)	SF (20)	SMF (4)	MDF (2)	All (39)
		N	N	N	N	N	N
1	Dry	0	712108.7	286439.2	454860.8	172900	338941.4
2	Irrigated	0	0	0	554250	0	554250

Status of bore wells: The data regarding the status of bore wells in Kadechur Micro watershed is presented in Table 18. The results indicate that, there were 1 De-functioning bore wells and 3 functioning bore wells among the sampled households in micro watershed.

Table 18. Status of bore wells in Kadechur micro-watershed

Sl.No.	Particulars	LL (6)	MF (7)	SF (20)	SMF (4)	MDF (2)	All (39)
		N	N	N	N	N	N
1	De-functioning	0	0	1	0	0	1
2	Functioning	0	1	2	0	0	3

Source of irrigation: The data regarding the source of irrigation in Kadechur Micro watershed is presented in Table 19. The results show that, bore well for 7.69 per cent of the households.

Table 19. Source of irrigation in Kadechur micro-watershed

Sl.No.	Particulars	LL (6)		MF (7)		SF (20)		SMF (4)		MDF (2)		All (39)	
		N	%	N	%	N	%	N	%	N	%	N	%
1	Bore Well	0	0	1	14.3	2	10	0	0	0	0	3	7.69

Depth of water (Avg. In meters): The data regarding the depth of water in Kadechur Micro watershed is presented in Table 20. The results revealed that, the depth of bore well was 5.52 meter.

Table 20. Depth of water (Avg. In meters) in Kadechur micro-watershed

Sl.No.	Particulars	LL (6)	MF (7)	SF (20)	SMF (4)	MDF (2)	All (39)
		N	N	N	N	N	N
1	Bore Well	0	17.68	4.57	0	0	5.52

Irrigated Area (ha): The data regarding the irrigated area (ha) in Kadechur Micro watershed is presented in Table 21. The results indicate that, the availability of irrigation water was used for kharif crops was 3.64 ha.

Table 21. Irrigated Area (ha) in Kadechur micro-watershed

Sl.No.	Particulars	LL (3)	MF (9)	SF (9)	SMF (11)	MDF (3)	All (35)
1	Kharif	0	0	0	1.21	2.43	3.64
Total		0	0	0	1.21	2.43	3.64

Cropping pattern: The data regarding the cropping pattern in Kadechur Micro watershed is presented in Table 22. The results indicate that, farmers have grown Cotton (23.6 ha), Red gram (12.64 ha), Cotton (11.32 ha), Groundnut (1.76 ha) and Jowar (1.62 ha).

Table 22. Cropping pattern in Kadechur micro-watershed

Sl. No.	**Particulars**	**LL (6)**	**MF (7)**	**SF (20)**	**SMF (4)**	**MDF (2)**	**All (39)**
1	Rabi - Cotton	0	2.16	5.91	7.43	8.1	23.6
2	Kharif - Red gram	0	0.46	10.15	2.02	0	12.64
3	Kharif - Cotton	0	2.27	9.05	0	0	11.32
4	Rabi - Groundnut	0	0	1.76	0	0	1.76
5	Kharif - Groundnut	0	0	1.62	0	0	1.62
6	Rabi - Jowar	0	0	1.62	0	0	1.62
Total		0	4.89	30.11	9.45	8.1	52.55

Cropping intensity: The data regarding the cropping intensity in Kadechur Micro watershed is presented in Table 23. The results indicate that, the cropping intensity was 100.00 per cent.

Table 23. Cropping intensity (%) in Kadechur micro-watershed

Sl.No.	**Particulars**	**LL (6)**	**MF (7)**	**SF (20)**	**SMF (4)**	**MDF (2)**	**All (39)**
1	Cropping Intensity	0	100	100	100	100	100

Possession of bank account and savings: The data regarding the possession of bank account and saving in Kadechur micro-watershed is presented in Table 24. The results indicate that, 100.00 cent of the households posses bank account and 5.13 per cent of them have savings.

Table 24. Possession of Bank account and savings in Kadechur micro-watershed

Sl.No.	**Particulars**	**LL (6)**		**MF (7)**		**SF (20)**		**SMF (4)**		**MDF (2)**		**All (39)**	
		N	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
1	Account	6	100	7	100	20	100	4	100	2	100	39	100
2	Savings	0	0	1	14.29	1	5	0	0	0	0	2	5.13

Borrowing status: The data regarding the borrowing status in Kadechur micro-watershed is presented in Table 25. The results indicate that, 56.41 percent of the sample farmers have borrowed credit from different sources.

Table 25. Borrowing status in Kadechur micro-watershed

Sl.No.	**Particulars**	**LL (6)**		**MF (7)**		**SF (20)**		**SMF (4)**		**MDF (2)**		**All (39)**	
		N	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
1	Credit Availed	4	66.67	2	28.57	10	50	4	100	2	100	22	56.41

Source of credit: The data regarding the source of credit availed by households in Kadechur micro-watershed is presented in Table 26. The results show that, 20.83 per cent have borrowed loan from commercial banks and 4.17 per cent have borrowed loan from Cooperative bank, 41.67 per cent have borrowed loan from Grameena Bank.

Table 26. Source of credit borrowed by households in Kadechur micro-watershed

Sl.No.	**Particulars**	**LL (4)**		**MF (5)**		**SF (9)**		**SMF (4)**		**MDF (2)**		**All (24)**	
		N	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
1	Commercial Bank	0	0	0	0	3	33.3	1	25	1	50	5	20.83
2	Cooperative Bank	0	0	0	0	1	11.1	0	0	0	0	1	4.17
3	Grameena Bank	0	0	2	40	6	66.7	1	25	1	50	10	41.67

Avg. Credit amount: The data regarding the avg. Credit amount in Kadechur micro-watershed is presented in Table 27. The results show that, farmers have borrowed Avg. Credit of Rs.89375.00 from different sources.

Table 27. Avg. Credit amount in Kadechur micro-watershed

Sl.No.	Particulars	LL (4)	MF (5)	SF (9)	SMF (4)	MDF (2)	All (24)
		N	N	N	N	N	N
1	Average Credit	0	17000	147778	157500	50000	89375

Purpose of credit borrowed (institutional Source): The data regarding the purpose of credit borrowed - Institutional Credit in Kadechur micro-watershed is presented in Table 28. The results indicate that, 86.67 per cent of the households have borrowed loan for agriculture, animal husbandry (6.67%).

Table 28. Purpose of credit borrowed (institutional Source) by households in Kadechur micro-watershed

SN	Particulars	LL (0)		MF (2)		SF (10)		SMF (1)		MDF (2)		All (15)	
		N	%	N	%	N	%	N	%	N	%	N	%
1	Agriculture production	0	0	2	100	8	80	1	100	2	100	13	86.7
2	Animal husbandry	0	0	0	0	1	10	0	0	0	0	1	6.67
3	Purchase–agricultural implements/ farm machinery	0	0	0	0	1	10	0	0	0	0	1	6.67

Repayment status of household (institutional Source): The data regarding the repayment status of credit borrowed from institutional Source by households in Kadechur micro watershed is presented in Table 29. The results indicate that, 31.25 per cent of the households have partially paid, 43.75 per cent have unpaid and 18.75 percent have fully paid.

Table 29. Repayment status of household (institutional Source) in Kadechur micro-watershed

Sl.No.	Particulars	LL (0)		MF (2)		SF (10)		SMF (2)		MDF (2)		All (16)	
		N	%	N	%	N	%	N	%	N	%	N	%
1	Partially paid	0	0	0	0	2	20	1	50	2	100	5	31.25
2	Un paid	0	0	2	100	5	50	0	0	0	0	7	43.75
3	Fully paid	0	0	0	0	2	20	1	50	0	0	3	18.75

Opinion regarding institutional sources of credit: The data regarding the opinion on institutional sources of credit in Kadechur micro watershed is presented in Table 30. The results indicate that, 25.00 per cent of the households opined that credit helped to perform timely agricultural operations, 75.00 per cent Loan amount was adequate to fulfil the requirement.

Table 30. Opinion regarding institutional sources of credit in Kadechur micro-watershed

Sl.No.	Particulars	LL (0)		MF (2)		SF (10)		SMF (2)		MDF (2)		All (16)	
		N	%	N	%	N	%	N	%	N	%	N	%
1	Helped to perform timely agricultural operations	0	0	1	50	2	20	0	0	1	50	4	25
2	Loan amount was adequate to fulfil the requirement	0	0	1	50	8	80	2	100	1	50	12	75

Cost of Cultivation of Red gram: The data regarding the cost of cultivation (Rs/ha) of Red gram in Kadechur micro watershed is presented in Table 31.a. The results indicate that, the total cost of cultivation (Rs/ha) for Red gram was Rs. 31283.52. The gross income realized by the farmers was Rs. 44401.25. The net income from Red gram cultivation was Rs.13117.73, thus the benefit cost ratio was found to be 1:1.42.

Table 31(a). Cost of Cultivation of Red gram in Kadechur micro-watershed

Sl.No	Particulars		Units	Phy Units	Value(Rs.)	% to C3
I	**Cost A1**					
1	Hired Human Labour		Man days	41.56	8519.63	27.23
2	Bullock		Pairs/day	0.8	571.51	1.83
3	Tractor		Hours	6.36	4455.17	14.24
4	Machinery		Hours	0	0	0
5	Seed Main Crop (Establishment and Maintenance)		Kgs (Rs.)	11.3	936.88	2.99
6	Seed Inter Crop		Kgs.	0	0	0
7	FYM		Quintal	1.74	4352.23	13.91
8	Fertilizer + micronutrients		Quintal	3.5	3203.77	10.24
9	Pesticides (PPC)		Kgs / liters	1.97	1063.45	3.4
10	Irrigation		Number	0	0	0
13	Depreciation charges			0	3.54	0.01
14	Land revenue and Taxes			0	2.74	0.01
II	**Cost B1**					
16	Interest on working capital				1146.76	3.67
17	**Cost B1 = (Cost A1 + sum of 15 and 16)**				24255.68	77.54
III	**Cost B2**					
18	Rental Value of Land				548.15	1.75
19	**Cost B2 = (Cost B1 + Rental value)**				24803.83	79.29
IV	**Cost C1**					
20	Family Human Labour			15.2	3635.73	11.62
21	**Cost C1 = (Cost B2 + Family Labour)**				28439.56	90.91
V	**Cost C2**					
22	Risk Premium				0	0
23	**Cost C2 = (Cost C1 + Risk Premium)**				28439.56	90.91
VI	**Cost C3**					
24	Managerial Cost				2843.96	9.09
25	**Cost C3 = (Cost C2 + Managerial Cost)**				31283.52	100
VII	**Economics of the Crop**					
a.	Main Product	a) Main Product (q)		8.49	44342.44	
		b) Main Crop Sales Price (Rs.)			5222.22	
	By Product	e) Main Product (q)		0.35	58.82	
		f) Main Crop Sales Price (Rs.)			166.67	
b.	Gross Income (Rs.)				44401.25	
c.	Net Income (Rs.)				13117.73	
d.	Cost per Quintal (Rs./q.)				3684.27	
e.	Benefit Cost Ratio (BC Ratio)				1:1.42	

Cost of Cultivation of Groundnut: The data regarding the cost of cultivation (Rs/ha) of Groundnut in Kadechur micro watershed is presented in Table 31.b. The results indicate that, the total cost of cultivation (Rs/ha) for Groundnut was Rs. 33327.81. The gross income realized by the farmers was Rs. 116101.38. The net income from Groundnut cultivation was Rs.82773.57, thus the benefit cost ratio was found to be 1:3.50.

Table 31(b). Cost of Cultivation of Groundnut in Kadechur micro-watershed

Sl.No	Particulars		Units	Phy Units	Value(Rs.)	% to C3
I	**Cost A1**					
1	Hired Human Labour		Man days	26.89	5495.04	16.49
2	Bullock		Pairs/day	2.06	1694	5.08
3	Tractor		Hours	0.93	648.38	1.95
4	Machinery		Hours	0	0	0
5	Seed Main Crop (Establishment and Maintenance)		Kgs (Rs.)	93.48	7478.29	22.44
6	Seed Inter Crop		Kgs.	0	0	0
7	FYM		Quintal	1.71	4268.43	12.81
8	Fertilizer + micronutrients		Quintal	4.75	3740.29	11.22
9	Pesticides (PPC)		Kgs / liters	1.45	939.62	2.82
10	Irrigation		Number	0	0	0
13	Depreciation charges			0	169.5	0.51
14	Land revenue and Taxes			0	12.35	0.04
II	**Cost B1**					
16	Interest on working capital				1971.2	5.91
17	**Cost B1 = (Cost A1 + sum of 15 and 16)**				26417.09	79.26
III	**Cost B2**					
18	Rental Value of Land				1308.33	3.93
19	**Cost B2 = (Cost B1 + Rental value)**				27725.43	83.19
IV	**Cost C1**					
20	Family Human Labour			10.16	2572.58	7.72
21	**Cost C1 = (Cost B2 + Family Labour)**				30298.01	90.91
V	**Cost C2**					
22	Risk Premium				0	0
23	**Cost C2 = (Cost C1 + Risk Premium)**				30298.01	90.91
VI	**Cost C3**					
24	Managerial Cost				3029.8	9.09
25	**Cost C3 = (Cost C2 + Managerial Cost)**				33327.81	100
VII	**Economics of the Crop**					
a.	Main Product	a) Main Product (q)		22.76	113824.88	
		b) Main Crop Sales Price (Rs.)			5000	
	By Product	e) Main Product (q)		2.28	2276.5	
		f) Main Crop Sales Price (Rs.)			1000	
b.	Gross Income (Rs.)				116101.38	
c.	Net Income (Rs.)				82773.57	
d.	Cost per Quintal (Rs./q.)				1464	
e.	Benefit Cost Ratio (BC Ratio)				1:3.5	

Cost of Cultivation of Cotton: The data regarding the cost of cultivation (Rs/ha) of Cotton in Kadechur micro watershed is presented in Table 31.c. The results indicate, the total cost of cultivation (Rs/ha) for Cotton was Rs.36058.22. The gross income realized by the farmers was Rs. 49292.89. The net income from Cotton cultivation was Rs. 13234.67, thus the benefit cost ratio was found to be 1:1.40.

Table 31(c). Cost of Cultivation of Cotton in Kadechur micro-watershed

Sl.No	Particulars	Units	Phy Units	Value(Rs.)	% to C3
I	**Cost A1**				
1	Hired Human Labour	Man days	35.58	6801.92	18.86
2	Bullock	Pairs/day	2.26	2153.44	5.97
3	Tractor	Hours	2.3	1698.05	4.71
4	Machinery	Hours	0.09	0	0
5	Seed Main Crop (Establishment and Maintenance)	Kgs (Rs.)	4.07	5180.35	14.37
6	Seed Inter Crop	Kgs.	0	0	0
7	FYM	Quintal	1.74	4337.42	12.03
8	Fertilizer + micronutrients	Quintal	5.47	4661.35	12.93
9	Pesticides (PPC)	Kgs / liters	2.03	1027.26	2.85
10	Irrigation	Number	2.47	0	0
11	Repairs		0	166.67	0.46
12	Msc. Charges (Marketing costs etc)		0	0	0
13	Depreciation charges		0	404.03	1.12
14	Land revenue and Taxes		0	0	0
II	**Cost B1**				
16	Interest on working capital			1824.77	5.06
17	**Cost B1 = (Cost A1 + sum of 15 and 16)**			28255.26	78.36
III	**Cost B2**				
18	Rental Value of Land			283.33	0.79
19	**Cost B2 = (Cost B1 + Rental value)**			28538.59	79.15
IV	**Cost C1**				
20	Family Human Labour		17.68	4241.61	11.76
21	**Cost C1 = (Cost B2 + Family Labour)**			32780.2	90.91
V	**Cost C2**				
22	Risk Premium			0	0
23	**Cost C2 = (Cost C1 + Risk Premium)**			32780.2	90.91
VI	**Cost C3**				
24	Managerial Cost			3278.02	9.09
25	**Cost C3 = (Cost C2 + Managerial Cost)**			36058.22	100
VII	**Economics of the Crop**				
a.	Main Product	a) Main Product (q)	10.3	49292.89	
		b) Main Crop Sales Price (Rs.)		4785.71	
b.	Gross Income (Rs.)			49292.89	
c.	Net Income (Rs.)			13234.67	
d.	Cost per Quintal (Rs./q.)			3500.8	
e.	Benefit Cost Ratio (BC Ratio)			1:1.4	

Cost of Cultivation of Jowar: The data regarding the cost of cultivation (Rs/ha) of Jowar in Kadechur micro watershed is presented in Table 31.d. The results indicate that, the total cost of cultivation (Rs/ha) for Jowar was Rs. 25644.97. The gross income realized by the farmers was Rs.14820.00. The net income from Jowar cultivation was Rs. -10824.97, thus the benefit cost ratio was found to be 1:0.56.

Table 31(d). Cost of Cultivation of Jowar in Kadechur micro-watershed

Sl.No	Particulars	Units	Phy Units	Value(Rs.)	% to C3
I	**Cost A1**				
1	Hired Human Labour	Man days	21	4322.5	16.86
2	Bullock	Pairs/day	0	0	0
3	Tractor	Hours	1.85	1296.75	5.06
4	Machinery	Hours	0	0	0
5	Seed Main Crop (Establishment and Maintenance)	Kgs (Rs.)	18.53	1111.5	4.33
6	Seed Inter Crop	Kgs.	0	0	0
7	FYM	Quintal	0	0	0
8	Fertilizer + micronutrients	Quintal	2.47	2964	11.56
9	Pesticides (PPC)	Kgs / liters	0	0	0
10	Irrigation	Number	0	0	0
11	Repairs		0	0	0
12	Msc. Charges (Marketing costs etc)		0	0	0
13	Depreciation charges		0	8956.22	34.92
14	Land revenue and Taxes		0	0	0
II	**Cost B1**				
16	Interest on working capital			489.06	1.91
17	**Cost B1 = (Cost A1 + sum of 15 and 16)**			19140.03	74.63
III	**Cost B2**				
18	Rental Value of Land			283.33	1.1
19	**Cost B2 = (Cost B1 + Rental value)**			19423.36	75.74
IV	**Cost C1**				
20	Family Human Labour		14.2	3890.25	15.17
21	**Cost C1 = (Cost B2 + Family Labour)**			23313.61	90.91
V	**Cost C2**				
22	Risk Premium			0	0
23	**Cost C2 = (Cost C1 + Risk Premium)**			23313.61	90.91
VI	**Cost C3**				
24	Managerial Cost			2331.36	9.09
25	**Cost C3 = (Cost C2 + Managerial Cost)**			25644.97	100
VII	**Economics of the Crop**				
a.	Main Product	a) Main Product (q)	7.41	14820	
		b) Main Crop Sales Price (Rs.)		2000	
b.	Gross Income (Rs.)			14820	
c.	Net Income (Rs.)			-10824.97	
d.	Cost per Quintal (Rs./q.)			3460.86	
e.	Benefit Cost Ratio (BC Ratio)			1:0.56	

Adequacy of fodder: The data regarding the adequacy of fodder in Kadechur Micro watershed is presented in Table 32. The results indicate that, 17.95 per cent of the households opined that dry fodder was adequate and 2.56 per cent of them opined dry fodder was inadequate.

Table 32. Adequacy of fodder in Kadechur micro-watershed

Sl.No.	Particulars	LL (6)		MF (7)		SF (20)		SMF (4)		MDF (2)		All (39)	
		N	%	N	%	N	%	N	%	N	%	N	%
1	Adequate-Dry Fodder	0	0	1	14.29	6	30	0	0	0	0	7	17.95
2	Inadequate-Dry Fodder	0	0	0	0	1	5	0	0	0	0	1	2.56

Average annual gross income: The data regarding the annual gross income in Kadechur Micro watershed is presented in Table 33. The results indicate that, the farmers have annual gross income of Rs. 131225.64 in micro-watershed, of which Rs. 88994.87 is from agriculture itself.

Table 33. Average annual gross income in Kadechur micro-watershed

Sl.No.	Particulars	LL (6)	MF (7)	SF (20)	SMF (4)	MDF (2)	All (39)
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1	Service/salary	0	1428.57	0	75000	0	7948.72
2	Business	0	0	10000	0	0	5128.21
3	Wage	50000	23714.3	21050	32500	60000	29153.9
4	Agriculture	18333.3	41571.4	103990	117500	260000	88994.9
Income(Rs.)		68333.3	66714.3	135040	225000	320000	131226

Average annual Expenditure: The data regarding the average annual expenditure in Kadechur Micro watershed is presented in Table 34. The results indicate that, the farmers have annual gross expenditure of Rs. 716498.05 in micro-watershed, of which Rs. 30948.72 is from agriculture itself.

Table 34. Average annual Expenditure in Kadechur micro-watershed

Sl.No.	Particulars	LL (6)	MF (7)	SF (20)	SMF (4)	MDF (2)	All (39)
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1	Service/salary	0	8000	0	250000	0	6615.38
2	Business	0	0	150000	0	0	3846.15
3	Wage	47500	15000	16090.9	20000	20000	13512.8
4	Agriculture	27000	18857.1	36550	37500	70000	30948.7
Total		74500	41857.1	202641	307500	90000	716498

Horticulture species grown: The data regarding horticulture species grown in Kadechur Micro watershed is presented in Table 35. The results indicate that, the total number of horticultural trees grown (both field and backyard) by the sampled households were clustered apple (12), Mango (3).

Table 35. Horticulture species grown in Kadechur micro-watershed

Sl.No.	Particulars	LL (6)		MF (7)		SF (20)		SMF (4)		MDF (2)		All (39)	
		F	B	F	B	F	B	F	B	F	B	F	B
1	Custard apple	0	0	12	0	0	0	0	0	0	0	12	0
2	Mango	0	0	1	0	2	0	0	0	0	0	3	0

***F= Field B=Back Yard**

Interest towards cultivation of horticulture crops: The data regarding Table (36) indicates that, 2.56 per cent of the households shown interest to cultivate horticultural crops.

Table 36. Interest towards cultivation of horticulture crops in Kadechur micro-watershed

Sl.No.	Particulars	LL (6)		MF (7)		SF (20)		SMF (4)		MDF (2)	All (39)	
		N	%	N	%	N	%	N	%	N	N	%
1	Interested towards cultivation of horticulture crops	0	0	0	0	1	5	0	0	0	1	2.56

Forest species grown: The data regarding forest species grown in Kadechur Micro watershed is presented in Table 37. The results indicate that, households have planted 2 teak trees, 5 neem trees, 1 tamarind trees, 6 acacia trees and 7 banyan trees together in both field and backyard.

Table 37. Forest species grown in Kadechur micro-watershed

Sl.No.	Particulars	LL (6)		MF (7)		SF (20)		SMF (4)		MDF (2)		All (39)	
		F	B	F	B	F	B	F	B	F	B	F	B
1	Teak	0	0	0	0	2	0	0	0	0	0	2	0
2	Neem	0	0	0	0	4	0	0	0	1	0	5	0
3	Tamarind	0	0	0	0	0	0	0	0	1	0	1	0
4	Acacia	0	0	0	0	6	0	0	0	0	0	6	0
5	Banyan	0	0	3	0	2	0	1	0	1	0	7	0

***F= Field B=Back Yard**

Average additional investment capacity: The data regarding average additional investment capacity in Kadechur Micro watershed is presented in Table 38. The results indicate that, households have an average investment capacity of Rs. 3482.05 for land development, Rs.420.51 for adoption of improved livestock breeds, Rs.76.92 for adoption of improved crop production activities.

Table 38. Average additional investment capacity of households in Kadechur micro-watershed

Sl.No.	Particulars	LL (6)	MF (7)	SF (20)	SMF (4)	MDF (2)	All (39)
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1	Land development	0	2000	3590	12500	0	3482.05
2	Improved crop production	0	57.14	800	0	0	420.51
3	Improved livestock management	0	428.57	0	0	0	76.92

Source of funds for additional investment: The data regarding source of funds for additional investment in Kadechur Micro watershed is presented in Table 39. The results indicate that, the sources of finance raised from bank as a loan and from own sources for land development were 5.13.

Table 39. Source of funds for additional investment in Kadechur micro-watershed

Sl.No	Item	Land development		Irrigation facility	
		N	%	N	%
1	Loan from bank	2	5.13	0	0

Marketing of agricultural produce: The data regarding marketing of the agricultural produce in Kadechur Micro watershed is presented in Table 40. The results indicated that, 100.00 percent of output of Cotton was sold in the market with average price of Rs. 5025.00; 75.00 percent of output of Groundnut was sold in the market with average price of Rs. 2500.00; 58.33 percent of output of Jowar was sold in the market with average price of Rs. 2000.00 and 53.70 percent of output of Red gram was sold in the market with average price of Rs. 5222.22.

Table 40. Marketing of agricultural produce in Kadechur micro-watershed

Sl.No	Crops	Output obtained (q)	Output retained (q)	Output sold (q)	Output sold (%)	Avg. Price obtained (Rs/q)
1	Cotton	363	0	363	100	5025
2	Groundnut	40	10	30	75	2500
3	Jowar	12	5	7	58	2000
4	Red gram	108	50	58	54	5222

Marketing channels used for sale of agricultural produce: The data regarding marketing channels used for sale of agricultural produce in Kadechur Micro watershed is presented in Table 41. The results indicated that, 35.90 cent of the households have sold agricultural produce to the local/village merchants, 38.46 per cent of regulated market, 7.69 per cent of cooperative marketing society.

Table 41. Marketing channels used for sale of agricultural produce in Kadechur micro-watershed

Sl. No.	Particulars	LL (6)		MF (7)		SF (20)		SMF (4)		MDF (2)		All (39)	
		N	%	N	%	N	%	N	%	N	%	N	%
1	Local/village Merchant	0	0	3	43	10	50	1	25	0	0	14	35.9
2	Regulated Market	0	0	3	43	7	35	3	75	2	100	15	38.46
3	Cooperative marketing Society	0	0	0	0	3	15	0	0	0	0	3	7.69

Mode of transport of agricultural produce: The data regarding mode of transport of agricultural produce in Kadechur Micro watershed is presented in Table 42. The results indicated that, 66.67 cent of the households have used tractor for the transport of agriculture commodity.

Table 42. Mode of transport of agricultural produce in Kadechur micro-watershed

Sl.No.	Particulars	LL (6)		MF (7)		SF (20)		SMF (4)		MDF (2)		All (39)	
		N	%	N	%	N	%	N	%	N	%	N	%
1	Tractor	0	0	3	43	17	85	4	100	2	100	26	66.67
2	Truck	0	0	2	29	3	15	0	0	0	0	5	12.82

Incidence of soil and water erosion problems: The data regarding incidence of incidence of soil and water erosion problems in Kadechur Micro watershed is presented in Table 43. The results indicate that, 79.49 per cent of the households have experienced soil and water erosion problems.

Table 43. Incidence of soil and water erosion problems in Kadechur micro-watershed

Sl.No.	Particulars	LL (6)		MF (7)		SF (20)		SMF (4)		MDF (2)		All (39)	
		N	%	N	%	N	%	N	%	N	%	N	%
1	Soil and water erosion problems in the farm	0	0	6	86	19	95	4	100	2	100	31	79.49

Interest towards soil testing: The data regarding Interest shown towards soil testing in Kadechur Micro watershed is presented in Table 44. The results indicated that, 82.05 per cent of the households were interested towards soil testing.

Table 44. Interest regarding soil testing in Kadechur micro-watershed

Sl.No.	Particulars	LL (6)		MF (7)		SF (20)		SMF (4)		MDF (2)		All (39)	
		N	%	N	%	N	%	N	%	N	%	N	%
1	Interest in soil test	0	0	6	86	20	100	4	100	2	100	32	82.05

Soil and water conservation practices and structures adopted: The data regarding soil and water conservation practices and structures adopted in Kadechur Micro watershed is presented in Table 45. The results indicated that 86.67 per cent of farmers practicing summer ploughing as soil and water conservation practice.

Table 45. Soil and water conservation practices and structures adopted

Sl.No.	Particulars	LL (6)		MF (7)		SF (20)		SMF (4)		MDF (2)		All (39)	
		N	%	N	%	N	%	N	%	N	%	N	%
1	Field Bunding	0	0	0	0	2	10	0	0	0	0	2	5.13

Status of soil and water conservation structures: The data regarding status soil and water conservation structures adopted in Kadechur Micro watershed is presented in Table 46. The results indicated that, the households have adopted field bunding as a soil and water conservation structures out of which 100.00 per cent was in good condition.

Table 46. Status of soil and water conservation structures

Sl.No	Item	Good	
		N	%
1	Field Bunding	2	100

Agencies involved in the soil and water conservation structures: The data regarding Agencies involved in the soil and water conservation structures adopted in Kadechur Micro watershed is presented in Table 47. The results indicated that, 5.13 per cent of the households have adopted by their own.

Table 47. Agencies involved in the soil and water conservation structures in Kadechur micro-watershed

Sl.No.	Particulars	LL (6)		MF (7)		SF (20)		SMF (4)		MDF (2)		All (39)	
		N	%	N	%	N	%	N	%	N	%	N	%
1	Own	0	0	0	0	2	10	0	0	0	0	2	5.13

Usage pattern of fuel for domestic use: The data on usage pattern of fuel for domestic use in Kadechur Micro watershed is presented in Table 48. The results indicated that, firewood was the major source of fuel for domestic use for 89.74 per cent of the households followed by LPG (12.82%).

Table 48. Usage pattern of fuel for domestic use in Kadechur micro-watershed

Sl.No.	Particulars	LL (6)		MF (7)		SF (20)		SMF (4)		MDF (2)		All (39)	
		N	%	N	%	N	%	N	%	N	%	N	%
1	Fire Wood	5	83.3	7	100	18	90	3	75	2	100	35	89.74

Source of drinking water: The data on source of drinking water in Kadechur Micro watershed is presented in Table 49. The results indicated that, piped waters supply was the major source for drinking water for 97.44 per cent of the households.

Table 49. Source of drinking water in Kadechur micro-watershed

Sl.No.	Particulars	LL (6)		MF (7)		SF (20)		SMF (4)		MDF (2)		All (39)	
		N	%	N	%	N	%	N	%	N	%	N	%
1	Piped supply	6	100	7	100	19	95	4	100	2	100	38	97.44

Source of light: The data on source of light in Kadechur Micro watershed is presented in Table 50. The results indicated that, electricity was the major source of light for 100.00 per cent of the households.

Table 50. Source of light in Kadechur micro-watershed

Sl.No.	Particulars	LL (6)		MF (7)		SF (20)		SMF (4)		MDF (2)		All (39)	
		N	%	N	%	N	%	N	%	N	%	N	%
1	Electricity	6	100	7	100	20	100	4	100	2	100	39	100

Existence of sanitary toilet facility: The data on availability of toilet facility in Kadechur Micro watershed is presented in Table 51. The results indicated that, 38.46 per cent of the households possess toilets.

Table 51. Existence of sanitary toilet facility in Kadechur micro-watershed

Sl.No.	Particulars	LL (6)		MF (7)		SF (20)		SMF (4)		MDF (2)		All (39)	
		N	%	N	%	N	%	N	%	N	%	N	%
1	Sanitary toilet facility	6	100	2	29	4	20	1	25	2	100	15	38.5

Possession of PDS card: The data regarding possession of PDS card in Kadechur Micro watershed is presented in Table 52. The results indicated that, 97.44 per cent of the households possessed BPL card and 2.56 per cent do not possess PDS card.

Table 52. Possession of PDS card in Kadechur micro-watershed

Sl.No.	Particulars	LL (6)		MF (7)		SF (20)		SMF (4)		MDF (2)		All (39)	
		N	%	N	%	N	%	N	%	N	%	N	%
1	BPL	6	100	7	100	19	95	4	100	2	100	38	97.44
2	Not Possessed	0	0	0	0	1	5	0	0	0	0	1	2.56

Participation in NREGA programme: The data regarding Participation in NREGA programme in Kadechur Micro watershed is presented in Table 53. The results indicated that, only 5.13 percent of the households have participated in NREGA programme.

Table 53. Participation in NREGA programme in Kadechur micro-watershed

Sl.No.	Particulars	LL (6)		MF (7)		SF (20)		SMF (4)		MDF (2)		All (39)	
		N	%	N	%	N	%	N	%	N	%	N	%
1	Participation in NREGA programme	0	0	0	0	2	10	0	0	0	0	2	5.13

Adequacy of food items: The results indicated (Table 54) that, the extent of adequacy of food items for cereals, pulses, Oilseeds and vegetables were 64.10, 69.23, 38.46, 43.59 per cent respectively, similarly for Fruits (5.13%), milk (41.03%), Egg (17.95%), and Meat (12.82%).

Inadequacy of food items: The results indicated that (Table 55), the extent of in adequacy of food items for cereals, pulses, Oilseeds and vegetables were 30.77, 25.64, 53.85, 43.59 and 76.92 per cent respectively, similarly for fruits (79.49%), milk (51.28%), egg (69.23%) and meat (76.92%).

Table 54. Adequacy of food items in Kadechur micro-watershed

Sl.No.	Particulars	LL (6)		MF (7)		SF (20)		SMF (4)		MDF (2)		All (39)	
		N	%	N	%	N	%	N	%	N	%	N	%
1	Cereals	1	16.7	5	71.4	13	65	4	100	2	100	25	64.1
2	Pulses	2	33.3	6	85.7	13	65	4	100	2	100	27	69.23
3	Oilseed	0	0	5	71.4	7	35	3	75	0	0	15	38.46
4	Vegetables	0	0	4	57.1	12	60	1	25	0	0	17	43.59
5	Fruits	0	0	0	0	2	10	0	0	0	0	2	5.13
6	Milk	1	16.7	1	14.3	11	55	1	25	2	100	16	41.03
7	Egg	0	0	1	14.3	3	15	1	25	2	100	7	17.95
8	Meat	0	0	1	14.3	2	10	1	25	1	50	5	12.82

Table 55. Inadequacy of food items in Kadechur micro-watershed

Sl.No.	Particulars	LL (6)		MF (7)		SF (20)		SMF (4)		MDF (2)		All (39)	
		N	%	N	%	N	%	N	%	N	%	N	%
1	Cereals	4	66.7	2	28.6	6	30	0	0	0	0	12	30.77
2	Pulses	3	50	1	14.3	6	30	0	0	0	0	10	25.64
3	Oilseed	5	83.3	2	28.6	11	55	1	25	2	100	21	53.85
4	Vegetables	4	66.7	3	42.9	5	25	3	75	2	100	17	43.59
5	Fruits	4	66.7	6	85.7	15	75	4	100	2	100	31	79.49
6	Milk	3	50	6	85.7	8	40	3	75	0	0	20	51.28
7	Egg	4	66.7	6	85.7	14	70	3	75	0	0	27	69.23
8	Meat	4	66.7	6	85.7	16	80	3	75	1	50	30	76.92

Farming constraints: The results indicated that (Table 56), lower fertility status of the soil was the constraint experienced by (79.49 %) per cent of the households, wild animal menace on farm field (79.49%), frequent incidence of pest and diseases (43.59%), inadequacy of irrigation water (69.23%), high cost of fertilizers and plant protection chemicals (82.05%), high rate of interest on credit (82.05%), low price for the agricultural commodities (76.92 %), lack of marketing facilities in the area (53.85%), inadequate extension services (28.21 %), lack of transport for safe transport of the agricultural produce to the market (71.79%), less rainfall (5.13%).

Table 56. Farming constraints experienced in Kadechur micro-watershed

SN	Particulars	LL (6)		MF (7)		SF (20)		SMF (4)		MDF (2)		All (39)	
		N	%	N	%	N	%	N	%	N	%	N	%
1	Lower fertility status of the soil	0	0	7	100	18	90	4	100	2	100	31	79.49
2	Wild animal menace on farm field	0	0	7	100	18	90	4	100	2	100	31	79.49
3	Frequent incidence of pest and diseases	0	0	3	42.86	12	60	1	25	1	50	17	43.59
4	Inadequacy of irrigation water	0	0	6	85.71	16	80	4	100	1	50	27	69.23
5	High cost of Fertilizers and plant protection chemicals	0	0	6	85.71	20	100	4	100	2	100	32	82.05
6	High rate of interest on credit	0	0	7	100	20	100	3	75	2	100	32	82.05
7	Low price for the agricultural commodities	0	0	7	100	18	90	3	75	2	100	30	76.92
8	Lack of marketing facilities in the area	0	0	3	42.86	15	75	1	25	2	100	21	53.85
9	Inadequate extension services	0	0	3	42.86	7	35	1	25	0	0	11	28.21
10	Lack of transport for safe transport of the Agril produce to the market.	0	0	5	71.43	18	90	3	75	2	100	28	71.79
11	Less rainfall	0	0	0	0	2	10	0	0	0	0	2	5.13

Chapter 5

SUMMARY AND IMPLICATIONS

In order to assess the socio-economic condition of the farmers in the watershed 39 households located in the micro watershed were interviewed for the survey. The study was conducted in Kadechur micro-watershed (Kadechur sub-watershed, Yadgiri taluk & District) is located at North latitude 16^0 32’ 18.441" and 16^0 31' 7.07" and East longitude 77^0 20’ 40.809" and 77^0 18’ 25.451”covering an area of about 536.24 ha bounded by unde Kadechoora and Sowrashtralli Villages.

Socio-economic analysis of Kadechur micro watersheds of Kadechur sub-watershed, Yadgiri taluk & District indicated that, out of the total sample of 39 farmers were sampled in Kadechur micro-watershed among households surveyed 7 (17.95%) were marginal, 20 (51.28%) were small, 4 (10.26 %) were semi medium and 2 (5.13 %) were medium farmers. 6 landless farmers were also interviewed for the survey. The population characteristics of households indicated that, there were 109 (57.07%) men and 82 (42.93 %) were women. The average population of landless was 3.5, marginal farmers were 4.9, small farmers were 5.4, semi medium farmers were 4 and medium farmers were 6.5. Majority of the respondents (47.12%) were in the age group of 16-35 years.

Education level of the sample households indicated that, there were 49.74 per cent illiterates, 41.88 per cent pre university education and 6.81 per cent attained graduation. About, 69.23 per cent of household heads practicing agriculture and 17.95 per cent of the household heads were engaged as agricultural labourers.

Agriculture was the major occupation for 45.03 per cent of the household members. In the study area, 74.36 per cent of the households possess katcha house and 17.95 per cent possess pucca house. The durable assets owned by the households showed that, 84.62 per cent possess TV, 15.38 per cent possess mixer grinder, 97.44 per cent possess mobile phones and 15.38 per cent possess motor cycles.

Farm implements owned by the households indicated that, 20.51 per cent of the households possess plough, 5.13 per cent possess tractor, 20.51 per cent possess bullock cart and 7.69 per cent possess sprayer. Regarding livestock possession by the households, 5.13 per cent possess local cow.

The average labour availability in the study area showed that**,** own labour men available in the micro watershed was 13.03, women available in the micro watershed was 1.51, hired labour (men) available was 1.80 and hired labour (women) available was 8.80. Further, 5.13 per cent of the households opined that hired labour was inadequate during the agricultural season.

Out of the total land holding of the sample respondents 90.14 per cent (52.64 ha) of the area is under dry condition and the remaining 9.86 per cent area is irrigated land. There were 3.00 live bore wells and 1.00 dry bore wells among the sampled households. Bore

well was the major source of irrigation for 7.69 per cent of the households. The major crops grown by sample farmers are Red gram, Groundnut, Cotton, Jowar and cropping intensity was recorded as 100.00 per cent.

Out of the sample households 100.00 percent possessed bank account and 5.13 per cent of them have savings in the account. About 56.41 per cent of the respondents borrowed credit from various sources. Among the credit borrowed by households, 20.83 per cent have borrowed loan from commercial banks and 41.67 per cent from co-operative/Grameena bank. Majority of the respondents (86.67%) have borrowed loan for agriculture purpose.

Regarding the opinion on institutional sources of credit, 25.00 per cent of the households opined that credit helped to perform timely agricultural operations, while, only 75.00 per cent respondents opined that loan amount was adequate to fulfil their requirement.

The per hectare cost of cultivation for Red gram, Groundnut, Cotton and Jowar was Rs.31283.52, 33327.81, 36058.22 and 25644.97 with benefit cost ratio of 1:1.42, 1: 3.50, 1: 1.40 and 1: 0.56 respectively. Further, 17.95 per cent of the households opined that dry fodder was adequate.

The average annual gross income of the farmers was Rs. 131225.64 in micro-watershed, of which Rs. 88994.87 comes from agriculture. Sampled households have grown 15 horticulture trees and 21 forestry trees together in the fields and back yards.

About 2.56 per cent of the households shown interest to cultivate horticultural crops. Households have an average investment capacity of Rs. 3482.05 for land development. Source of funds for additional investment is concerned, 38.46 per cent depends on own funds and 5.13 per cent depends on bank loan for land development activities.

Regarding marketing channels, 35.90 per cent of the households have sold agricultural produce to the local/village merchants, while, 38.46 per cent have sold in regulated markets.

Further, 66.67 per cent of the households have used tractor for the transport of agriculture commodity. Majority of the farmers (79.49%) have experienced soil and water erosion problems in the watershed and 82.05 per cent of the households were interested towards soil testing.

Fire was the major source of fuel for domestic use for 89.74 per cent of the households and 12.82 per cent households has LPG connection. Piped supply was the major source for drinking water for 97.44 per cent of the households. Electricity was the major source of light for 100.00 per cent of the households.

In the study area, 38.46 per cent of the households possess toilet facility. Regarding possession of PDS card, 97.44 per cent of the households possessed BPL card and 2.56 per cent of the household's were not having ration cards. Households opined that, the requirement of cereals (64.10%), pulses (69.23%) and oilseeds (38.46%) are adequate for consumption.

Farming constraints experienced by households in the micro watersheds were lower fertility status of the soil (79.49%) wild animal menace on farm field (79.49%), frequent incidence of pest and diseases (43.59%), inadequacy of irrigation water (69.23%), high cost of fertilizers and plant protection chemicals (82.05%), high rate of interest on credit (82.05%), low price for the agricultural commodities (76.92%), lack of marketing facilities in the area (53.85%), inadequate extension services (28.21%), lack of transport for safe transport of the agricultural produce to the market (71.79%), Less rainfall (5.13%).

Implications of the survey

- ✓ Result indicated that, there were 49.74 per cent were illiterate hence, extension methodologies such as demonstration, street play, drama, video shows will be effective in dissemination of the technologies in the micro watershed.
- ✓ The data indicate that, 74.36 per cent of the households possess katcha house. Hence, the development department while implementing the watershed plan should focus on agriculture to enhance the productivity of major crops in the area to increase the income of the farmers.
- ✓ Results indicated that the local institutional participation of the household members in the micro watershed is minimal hence, activities like membership campaign, awareness creation about the benefits of membership in local institutions and strengths of organized groups must be conveyed.
- ✓ Majority of the households in the watershed have experience in use of mobile phones, and television hence, these mass media can be effectively utilized for transfer of technology as well as for information dissemination.
- ✓ The farm machinery/implement possession in the micro watershed was found to be minimum the reasons may lack of knowledge or lack of financial ability which can be addressed through training on use of different farm implements, providing information on different sources of finance for purchase of farm implements.
- ✓ The possession of livestock such as crossbred cow found is less hence, farmers must be made aware of the benefits of crossbred cow in increased milk production.
- ✓ The possession of livestock such as sheep, goat and poultry was found to be low hence, farmers may be informed the role of subsidiary enterprises in enhancing the income and information on financial support for subsidiary activities.
- ✓ The data indicate that, job/work was the reason for all the migrants hence, farmers may be trained on profitable agriculture or self employment such has animal

husbandry, plate making, sheep rearing, goat rearing, rabbit rearing with suitable information on sources of financial support.

- ✓ The results indicate that there was a change in quality of life due to migration hence, the developmental departments should take actions to arrest migration and to improve the quality of the life in rural areas.
- ✓ Households possess 47.45ha (90.14 %) of dry land and 5.19ha (9.86 %) of irrigated land hence, the availability of the dry land agricultural technologies such as short duration crops, high yielding drought resistance crop varieties, drip irrigation technology and subsidy information will be helpful for the farmers to enhance the productivity of land and as well as farmers income.
- ✓ Few of the bore well in micro watershed found non functional hence, farmers may be trained on possibility of bore well rejuvenation.
- ✓ Bore well was major source of irrigation for 7.69 per cent of the households. Hence, in order to increase the area under irrigation as well as to increase the water use efficiency farmers may trained on drip irrigation and provides the information on subsidy for drip irrigation equipment's along with the information on different agencies which provides the financial assistance for drip irrigation.
- ✓ The cropping intensity in the micro watershed was found to be (100.00 %) hence, care must be taken by the implementing agency to bring uncultivated land into cultivation through suitable measures.
- ✓ Many of the household members have borrowed loan from cooperative banks which has higher rate of interest hence, farmers may be sensitized on the different sources of credit with lesser interest rate such SHGs etc.
- ✓ The results indicated the non availability of both green and dry fodder throughout the year hence, fodder development activities can be taken up in the micro watershed.
- ✓ The average annual gross income of the households Rs.88994.87 from agriculture, Rs.5128.21 from business and Rs. 29153.85 from wages and. Agriculture was found to be the major source of income for households hence; the development activities should focus on productivity enhancement, marketing arrangements and agricultural technology dissemination to have a direct impact on the farmers.
- ✓ The cultivation of forest species is found minimal hence, information and production technology related to agro-forestry and integrated farming system.
- ✓ The data indicated that, 79.49 per cent of the households have experienced soil and water erosion problems. Hence, those farmers who reported the soil and water erosion problems may be given attention while implementation of the watershed development plan.
- ✓ The data indicated that, 82.05 per cent of the households have interest in soil testing hence, farmers must be provided with the information on various institutions which are involved in soil testing for the benefit of the farmers.

- ✓ Except summer ploughing the adoption of other soil and water conservation structures is minimum hence, the farmers in the micro watershed should be sensitized on the use of different conservation structures for soil water conservation.
- ✓ Cereals and pulses found be adequate for per cent of the households respectively hence, farm households and the farm women must be trained on importance of balanced nutrition and role of vegetable, milk, egg, meat in balanced diet.
- ✓ Lower fertility status of the soil (79.49%), wild animal menace on farm field (79.49%), frequent incidence of pest and diseases (43.59%), high cost of fertilizers and plant protection chemicals (82.05%), high rate of interest on credit (82.05%), low price for the agricultural commodities (76.92%), lack of marketing facilities in the area (53.85%), inadequate extension services (28.21%), lack of transport for safe transport of the agricultural produce to the market (71.79%) were the major farming constraints experienced hence, these constraints must be addressed immediately for the welfare of the farmers. Awareness to be created among the farmers to approach nearest KVKs/RSKs and other developmental departments for technical and for subsidized inputs and utilize the well established regulated markets, approaching the contract firms, direct markets to avoid the involvement of middlemen.