

LAND CAPABILITY

Land capability classification is an interpretative grouping of soils mainly based on the inherent soil characteristics, external land features and environment factors that limit the use of land. Information on first two aspects are provided by standard detailed soil survey. The internal characteristics include the nature of parent material, colour, texture, structure of soil, depth, soil erosion, etc. and the external land features includes the slope, erosion, drainage, etc.

The classification of soil units into capability grouping enables one to get a picture of the hazards of the soil to various factors which cause soil damage, deterioration or lowering in fertility and its potential for production. A soil with a capacity to grow a large variety of crops and giving high yields will naturally qualify to be grouped in a better class. Thus the soils are mainly classified into 8 capability class and of which 6 classes and its associations falls in the project area.

Class	Description
II	Good cultivable land
III	Moderately good cultivable land
IV	Fairly good cultivable land suites for occasional or limited cultivation
VI	Well suited for forest or grazing. Suited for plantation crops which require minimum tillage
VII	Fairly well suited for grazing or forestry
VIII	Land suited only for wild life

These classes based on their limitations have the following sub-class association

c - climate limitation

e - erosion and run- off

s - soil limitations

w - wetness, high water table, flooding, drainage, etc.

Class I land is the best devoid to any limitation for intensive cultivation of all climatically adopted crops. Class II to VII lands has progressively increasing hazards or limitation. The sub classes provides information about the kind of problem involved. Climatic limitation (uneven rainfall distribution and high temperature) being common to the area has not been indicated along with the land capability class.

The table showing the distribution of land capability in the six watersheds are given below:

Table: Distribution of land capability classes in watersheds

Capability	4V10a	4V11a	4V11b	4V25a	4V26a	4V29b	Area (in Ha)
IIw	151.33	8.52	51.26	14.66	41.35	276.51	543.63
IIe						60.74	60.74
IIIw				30.84	150.20	19.63	200.67
IIIe	31.26			27.33	47.84	227.56	333.99
IVe	571.48	8.54	424.50	193.01	518.53	1444.76	3160.82
IVes			60.53			283.19	343.72
Vle				154.41	348.67	234.11	737.19
Vles	784.16	153.99	189.73	5.81	313.18	305.50	1752.37
VIIe					126.21		126.21
VIIes	150.50	3.35		3.54	339.87	103.45	600.71
VIIIes	19.79				1.83	73.58	95.20
River	14.25	1.19		10.48	4.44		30.36
Total	1722.77	175.59	726.02	440.08	1892.12	3029.03	7985.61

Source: Dept of Soil Survey & Soil Conservation, Govt. of Kerala

The major land capability associations are:

II e: The area of 60.74 ha mapped under miscellaneous land type come in this class. These are good cultivable lands with deep to very deep soils occurring on gently sloping lands subject to slight to moderate erosion. Spice trees, areca nut, coconut, betel vine, banana, vegetables etc are the crops suited to the type of land.

II w: The area 543.63 ha comes under this class. These are good cultivable lands with deep to very deep soils occurring on gently sloping lands subject to drainage problem. Excess water is the major limiting factor which limits the choice of crop. Paddy is most suited for the soil.

III e: The area of 333.99 ha comes under the class. These are moderately good cultivable land which are subjected to slight a moderate erosion hazards. The soils are on moderate slopes subject to water erosion on sandy soil subject to wind erosion. These are problem

due to moderate depth and gravelliness. These lands are suited for coconut, arecanut, banana, tapioca, vegetables, etc.

III w: An area of 200.67 mapped under miscellaneous land type comes in this class. These are moderately good cultivable lands. These are good cultivable lands with deep to very deep soils occurring on gently sloping lands subject to slight to modulate erosion. Spice trees, areca nut, coconut, betel vine, banana, vegetables etc are the crops suited to the type of land.

IV e: An area of 3160.82 ha comes under this class. This is the major land capability class mapped in this area. It occurs nearly in 40% of the project area. These are fairly good cultivable lands occurring in strongly sloping to steep lands subject to moderate erosion hazards. These lands are suitable for the cultivation of coconut, banana, pepper, rubber, pineapple, fruit trees, etc.

IV es: An area of 343.72 ha comes under this capability class. These are fairly good cultivable lands having moderately deep gravelly soils. These soils occur an strongly sloping to steep lands subject to moderate erosion hazards and soil limitation. These lands are suitable for the cultivation of coconut, banana, pepper, rubber, pineapple, fruit trees etc.

VI e: An area of 739.19 ha comes under this class. This class comprises of lands having deep soils and occurring an steep lands which are well suited for forestry or plantation crops which require minimum tillage. If possible these lands should be kept under permanent vegetative cover. These lands are suitable for growing rubber, cashew, fruit trees etc with zero tillage. Staggered contour trenching is needed for protecting soil.

VI es: An area of 1752.37 ha comes under this class. This is the second major capability class mapped in the project area and it occurs in nearly 20% of the project area. Thus class comprises of lands having moderately shallow soils occurring on steep lands, which are well suited for forestry or plantation crops, which require minimum tillage. Shallow rooting depth, rockiness etc are the soil limitations If possible these lands should be kept under permanent vegetative cover. These lands are suitable for growing rubber, cashew, fruit trees etc with zero tillage. Staggered contour trenching is needed for protecting soil.

VII e: An area of 126.21 ha comes under this class. These lands have moderately deep to deep soils occurring on very deep steep lands subject to severe erosion. Topography is the major limitation. These lands are non arable lands but due to pressure on land, these

lands are also cultivated to rubber and mixed trees. Permanent vegetative cover is suggested to protect this soil.

VII es: An area of 600.71 ha comes under this class. These soils have moderately shallow such occurring on very deep steep to very steep lands subject to severe erosion. Rockiness, steep slope and moderately shallow depth are the limitation. These lands are non arable lands but due to pressure on land, these lands are also cultivated to rubber and mixed trees. Permanent vegetative cover is suggested to protect this soil.

VIII es: An area of 95.20 ha occurs under the class. These lands are well suited for forestry and grazing. These soils are in steep lands subject to erosion, if soil cover is depleted. Highly erodible gullies and bad lands are the major limitation. Precautions should be taken to maintain maximum cover for erosion control and improve the wild life.