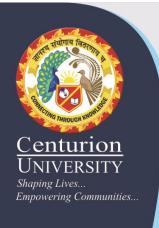


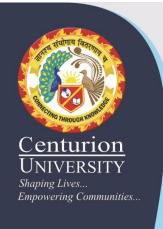
## Land Suitability Classification

Dr. Arunabha Pal



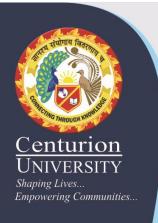
# What do you mean by soil suitability?

- Soil suitability is the fitness of given type of land for defined use.
- Soil suitability analysis is a method of land evaluation, which measures the degree of appropriateness of land for a certain use.



#### **Significance of Soil Site Suitability**

- To classify and determine the soil profile type with in the study area.
- Assess the soil suitability classes within the study area.
- Assess the good quality agriculture soil classes with in the study area.
- Provide preliminary assessment of strategic cropping land
- Assess suitability of top soil for rehabilitation including identification of unfavourable materials.
- Provide soil management recommendation for top soil.
- The execution and interpretation of basic surveys of climate, soils, vegetation and others aspects of soil in terms of requirements of alternative forms of soil use.
- Identifying the most suitable location for specific agriculture use.



# **Objective**

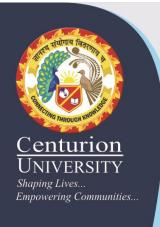
• To understand soil quality under fruit growing soils.

• To know the soil site suitability for fruit orchards.



# **Methods of Soil Site Suitability**

- Actual limitation method (Sys et al .1971)
- Optimum yield basis (FAO 1983)
- Storie index (1976)
- Productivity index (Requier et al. 1970)
- Soil irrigability classification (USBR 1953)
- USDA land capability classification(1961)



#### Suitability classes based on limitation

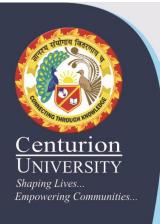
Suitability class	Degree of limitation
S1 (Highly suitable)	Land unit with nil. or up to 5 slight limitation.
S2 (Moderately suitable)	Land units with more than 5 slight limitation and / or no more than two severe limitation
S3 (Marginally suitable)	Land unit with more than 4 moderate limitation or/ and no more than two sever limitations.
N1 (Currently not suitable)	Land unit with more than 2 severe limitation that can be corrected.
N2 (Unsuitable)	Land units having very severe limitation that cannot be corrected.



# Suitability classes based on optimum yield basis (FAO, 1983)

This was based on optimum yield level of suitability classes as fallows.

- S1 > 80% of optimum yield
- S2 40 to 80% of optimum yield
- S3 20 to 40% of optimum yield
- N <20% of optimum yield



### Storie method (Storie 1976)

This method is based on soil characteristics that govern the land potential utilization and productive capacity.

SI = A\*B\*C\*X\*Y

SI: Storie index

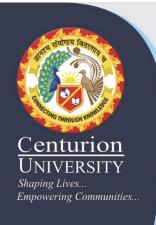
A - General characteristics of soil profile

B - Texture of surface soil

C - Slope

X - Miscellaneous factor

Y - Average annual rainfall



#### Storie index values of suitability class as fallows

- Very poor (10-19)
- Poor (20-39)
- Fair (40-59)
- Good (60-79)
- Excellent (80-100)