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Land Suitability Classification

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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.



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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 .



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Objective

- To understand soil quality under fruit growing soils.
- To know the soil site suitability for fruit orchards .



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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)



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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 severe 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.



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

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

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



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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



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Storie index values of suitability class as follows

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