

requent phenomena in flood prone areas.

LAND USE CAPABILITY CLASSIFICATION

Land use capability classification indicating the suitability of various kinds of soil for agricultural purpose. The classification system has been developed by soil conservation service. Grouping soils on the basis of erosion hazards and other limitations, so that suitable cropping systems may be planned, is an important step in developing a soil erosion control programme. At the same time, this procedure also provides

the foundation for a sound soil improvement programme which, after all, is the ultimate goal.

The guiding principles for this classification are the limitations imposed on the sustained use of soils by the basic characteristics of soils in combination with climate, landscape, features, erodibility and other natural hazards. The various soil units are grouped into suitable land capability classes. This classification has been developed in the U.S.A. The land capability classification determines the use ceiling for any piece of land and helps to define the conservation problems and possible treatments.

The capability classification is made into three categories, namely: (1) capability classes, (2) capability sub-classes, and (3) capability units.

1. **Capability Classes.** Eight land capability classes are recognised and indicated by Roman numbers. (A) Class I-IV include land suited for cultivation. (B) Class V-VIII land not suited for cultivation and should be maintained under natural vegetation of forests or grasses.

(A) Land Suited for Cultivation

Class I. Soils in Class I are very good. The soils are deep, productive, easily worked, and nearly level. They are not subject to overflow (run-off) damage. However, they are subject to fertility and puddle erosion. Soils of this class have no or only slight risks of damage (Fig. 23.7).

LAND USE	LAND CAPABILITY CLASSES							
	I	II	III	IV	V	VI	VII	VIII
WILD LIFE								
FORESTRY								
LIMITED GRAZING								
MODERATE GRAZING								
INTENSE GRAZING								
LIMITED CULTIVATION								
MODERATE CULTIVATION								
INTENSE CULTIVATION								
VERY INTENSE CULTIVATION								

Fig. 23.7. Land use capability classification.

Management Practices for Class I. Class I soils used for crops, need practices to maintain soil fertility and soil structure. These practices involve use of fertilizers, cover crop, green manure crop and crop rotation.

Class II. Soils of this group are good. They can be cultivated with easily applied practices. They are subject to moderate risk of damage. Soils of this group have gentle slopes, are subject to moderate erosion. They are subject to occasional overflows.

Management. These soils may require special practices such as contour tillage, crop rotation, water-control devices.

Class III. Soils in Class III are subject to severe risks. They are moderately good soils. They can be used regularly for crops, soils in this class have moderately steep slopes, are subject to more severe erosion and are inherently low in fertility.

Management. These soils require cropping systems that produce adequate plant cover. The cover is needed to protect the soil from erosion. It also helps preserve soil structure. In strip cropping, sod crops should be grown instead of cultivated row crops. Complete water-disposal system of terraces and outlets. Practices of contour tillage.

Class IV. Soils of this group have very severe permanent hazards if used for crop land. The soils are fairly good. They are frequently on steep slopes and subject to severe erosion. The soils are shallow or moderately deep, low in fertility.

Management. They should usually be kept in hay or pasture, although a grain crop may be grown once in five or six years. Complete water-disposal system of terraces and outlets, with contour tillage. Stabilize gullies.

(B) Soils not Suited for Cultivation

Class V. Soils in Class V should be kept in permanent vegetation. They should be used for pasture or forestry. Cultivation is not feasible, however, because of wetness, stoniness or other limitations. The land is nearly level. It is subject to only slight erosion by wind or water if properly managed. They have few permanent limitations.

Management. Grazing should be regulated.

Class VI. Soils of this class should be used for grazing and forestry. They have moderate permanent limitations and are unsuitable for cultivation. They are steep or shallow. Class VI land is either steeper or more subject to wind erosion than Class IV. Class VI land is too steep, stony, and wet for cultivation.

Management. Grazing should not be permitted.

Class VII. Soil in Class VII are subject to severe permanent limitations (or hazards). They are fair to poor for grazing or forestry. They are steep, eroded, shallow, droughty or swampy and are unsuitable for cultivation.

Management. Strict management should be applied.

Class VIII. Soils of this class are extremely rough, arid or swampy and are unsuitable for cultivation. They are not suited for forestry or grazing. They should be used for wildlife, recreation or watershed uses.

2. Capability Sub-classes. These are sub-divisions of capability classes made on the basis of four dominating limitations, namely, (i) risk of erosion (*e*) (ii) wetness, drainage or overflow (*w*) (iii) rooting zone limitations (*s*), and (iv) climatic limitations (*c*). Sub-classes are mapped by adding limitation symbol to the capability. Class number e.g., IIe, IIIs etc. Thus, sub-classes are indicative of both degree and kind of limitation. There are no sub-classes in Class I.

3. Capability Units. These are further sub-divisions of capability sub-classes. A capability unit consists of soils which are sufficiently uniform in their characteristics, potentialities and limitations and require fairly similar conservation treatments and management practices.

The land capability classes can change towards better classes, if the existing limitations can be permanently removed or reduced in extent by economically feasible reclamation projects or corrective measures, such as providing irrigation, installing drainage, constructing flood retarding structures or controlling large scale gullies. A further deterioration in existing conditions can similarly shift the capability to a poorer class.