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B.A. PART - 2 (ECONOMIC AND RESOURCE GEOGRAPHY : PAPER - 4)

TOPIC : SOIL RESOURCES: AN INTRODUCTION

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Soil is as important as water as a **resource**. It provides nutrients and an anchor to the roots of plants and is therefore essential to their healthy growth and yield of food. It is a complex mixture of organic and mineral content which is constantly being formed by the weathering of rocks.

Soil resources form a fundamental part of the environment. They provide the physical base to support the productivity and cycling of biological resources, provide the source of nutrients and water for agricultural and forestry systems and fulfil a complex buffering role against environmental variability (ranging from dampening diurnal and seasonal change in temperature and water supply to the storage and binding of a range of chemical and biological agents). They are also highly biodiverse. Soils themselves vary greatly – a soil with favourable mix of physical, chemical and biological characteristics will have a much higher potential for productivity in gross terms than one less favoured. A broader ecosystem view

complicates this, however. For example, “poor” soils with low levels of nutrients can have highly diverse flora and fauna with high levels of endemism.

Accounting for soil resources

Soil resources are measured through a series of inventory processes – known collectively as soil survey. Typically, this produces maps of soil types, soil suitability for various purposes, hazards / degradation potential and, in some cases, maps of specific soil properties. Other important and complementary activities for soil resource accounting include site or area based measures of soil loss or erosion processes, simulation modelling which predicts the productivity of soil types for specific climate and land use settings, current and projected land use and remotely sensed changes in net and gross primary productivity. The availability of this suite of measurements varies between and within countries – and they are rarely integrated into an accounting approach. Nonetheless, an accounting approach can be devised which uses these elements.

Characterization of soil resources

Soil resources are a form of environmental asset providing a range of ecosystem services. A key feature of soils is their delivery of supporting services including the formation of and function of the soil itself, nutrient cycling, water cycling, structural support of vegetation and soil biodiversity.

Soil resources are distinguishable from land and associated water areas in physical terms since land is defined through its delineation of space. In monetary terms however, separating the values of these two environmental assets may be very difficult since it is unlikely that the soil resources can be physically removed from a given area except at the margin. Thus by convention, the value of land and soil is combined.

