CHAPTER - I

INTRODUCTION

Recent space explorations have so far failed to locate a new planet - equivalent to the earth capable to accommodating the ever increasing population, failed which the human being has to accommodate within the available land and water resources on the earth for a comfortable living. But 90% of global land which xa high input, high output activity is the modernization of agriculture progress. It becomes necessary to monitor weather any new factor of crops importance have emerged in dynamic multi-component system. New factors emerged alongwith course. Such factors if taken into account continue increase crop yield. If neglected the result is a loss of possible production and lower efficiency of all other input and investments. One such factor of increasing the importance is nutrition particularly nutrient in different order.

Our country is basically agrarian in nature, due to increasing population, Urbanisation and industrialization, total land mass which is after all finite, is under constant pressure, looking at our land use pattern, their is hardly any meet our land growing needs of agriculture produce, there is hardly and any scope for increasing the area under cultivation. Therefore has to aim at increasing productivity per unit of land, per unit of time by raising yields. From earliest time, plants have been closely bound up with human race. The dependence of men on plants for his existence has been of great importance
since the human race being.

Unprecedented population increase has occurred since World War II, mostly in those countries which have low agriculture productivity and low, per capita income. Population growth coupled with rising energy costs and world wide infiltration has taxed the ability of farmers to meet human food requirements. Meeting human food requirements continues to be a major worldwide challenge for the developing nations. Soil play a critical role in meeting human food needs. Unfortunately, attention to the management of soil health has been inadequate. In the present technologically advanced era, it seems futile to emphasize. The importance of soil as a chief natural resource, as development activities cannot even be dreamt of in its absence.

Further, soil is limited and its horizontal augmentation is almost nonexistent. The solution of this buffering problem, therefore, lies in the most judicious exploitation of the potentialities of the native soils. The best utilization of depends upon the knowledge concerning their nature, properties extent and location; knowledge of the soil is the key in establishing soil water-plant relationship for optimization of crop production. Besides, the knowledge of soils of a particular area is inevitable in the sense that diversified developmental activities take their shape on the anvil of soil resources of the area concerned.

Agriculture began when man replaced natural vegetation with plant shown by him. Man exploited the soil as long as it could sustain a crop. Then he abandoned it and moved it to a new place. Settled cultivation is
the other traditional system of farming is the robust and have with stood continued cultivation for countries. Agriculture in the world no doubt began with the shifting or settled cultivation, but it was the adoption of technological development. By the farmer over the years that has brought about the revolution in agriculture.

Soil and water management is an integral part of the total resources mobilization in relation to an environment and the land use, till recently. The major thrust of agriculture research and development in the country was no increasing food production. A knowledge of soil classification is essential for a proper appraisal of productivity and assessment of input requirements, standard soil survey and soil maps assume an important role and help to provide a base research on soil.

Soil genesis is the study of relationship of morphology, pedogenesis, minerology, classification of soils. It deals with weathering factors of soils formation and pedogenic process, it includes details description of soil properties.

It is the study of changes in soil bodies, it is that phase of soil science that deals with factors and processes of soil formation. It includes description and interpretation of soil profiles. Soil bodies and soil pattern on the surface of earth. Taxonomy is the part of classification that is concerned primarily with relationship and it is the systematic distinguishing. Order and name, type of groups within a subject field from basic soil Taxonomy. Many classification may be maid to suit specific purpose such irrigation. Soil
management L.C.C. etc. Taxonomy is a taxonomic group that forms part of the format system of nomenclature. Taxonomy is a class at any taxonomic level of generalization, pedology is a basic discipline of soil science which deals with evaluation and classification of soil for developing optimum land use plants. It is through soil taxonomy that agrotechnology transfer from the research station to the farmer field is possible.

Soil is synonymous with land the mother, supporting and refers to a specific area on the earth surface. It is a broader term then soils. Land is broadly defined as physical environment consisting relief. Soil hydrology, climate and vegetation in so far as they determine that land use. Land is a part of land scape which may be described as the some total of characteristics that destinguishing pattern in contrast to other kinds of areas, anyone kind of soil is said to have a characteristics natural land scape and under different uses, it has one or more characteristics cultural land scape.

Systemic classification of an area serves as basic information for under taking research programme and help* in the transfer technology for a similar zone. Soil taxonomy U.S.D.A. (1978) approach is reasonably precise and systemic. Bulandshahr is a famous District of western U.P. Ganga plain regions low land and upland (recent alluvium) bhur or psamments region are soil association of the district and Narora Power House is situated in place of the Bank of Ganga River. It is one of them in Atomic Energy center. Thus there is urgent need to classify, these soil as per a soil taxonomy U.S.D.A. comprehensive system of soil classification.

Soil taxonomy is a nomanculture of soils into order, sub-orders,
greatgroup, sub-groups, family and series on the basis soil characteristics like as epipedons, sub surface - diagnostic horizons, soil moisture regions, presence of organic carbon, Irens, Calcium, Sulphur, minimum horizons old or pale horizons, alibi horizon, sphagnum glass and taxonomy for district Bulandshahr.

There are seventy districts in the state, Bulandshahr is one of them. The eminentence alluvial plain of the river Ganga is the richest and the most popular portion. There are two types of alluvium old and new, Five zone and catchment area are present in the district. Drainage conditions also create many variation, mostly these soils are poorly drainage conditions have greyish brown colour with mottling calcarius concrevations are present in large area. Soil developed on order alluvium showsome development in profile characteristics.

It is essential that this valuable natural resources is under stood and conserved properly for sustained agriculture production. Land evaluation is the process of asseessment of land performance when used for specific purposes. It involves the excception and interpretation of basic surveys and studies of land forms, climate soil vegetation and other aspects of land in terms of requirements of alternative forms of land use.

Evaluation of land for land use planning is a subsequent steps after soil survey and mapping process. At present most system of land evaluation are interpretative classification land suitability classification and statistical approach for land evaluation qualitative approach.
Land evaluation is the process of assessment of land performance when used for specific purpose. It involves the execution and interpretation of basic surveys and studies on land forms, climate, Soils vegetation and other aspects of land in terms of requirements of alternative forms of land use.

Essentially it is a procedure for comparing land with land use. Our research work at national level also oriented toward fertilizer need of crops giving little attention to the kinds and behaviour of different soils. This present investigation is to highlight the evaluation of different soils and their suitability for alternative land use. The study on soil suitability for land use planning is great practical significance, land evaluation is a practical exploration of pedology to meet the growing demand for developing optimum land use. The different kinds of soil and their behaviour depend largely on the morphology, physico-chemical and biological properties of soils and their use by man.

Soil fertility donates the status of soil with respect to the amount and availability to plant growth. It refers to the nutrient supplying properties of the soils. It deals with the nutrient status or ability of soil to supply nutrient for plant growth under favourable environmental condition of soil. Soil fertility and agriculture production can be maintained by efficient and judicious use of manure's and fertilizers.

Keeping in view the factor enumerated above the present investigation was under taken with the following main aims and objective -
"Studies on soil genesis Land evaluation and nutrient status of some Entisols and Inceptisols of District Bulandshahr."

1. To study survey, genesis, morphology, Physico - chemical properties of District Bulandshahr.

2. To classify different soils as per soil taxonomy.

3. To study land suitability classification for different cropping system.

4. To determine fertility status of soils of surveyed area.