



Planning of soil resources for the socio-economic development of Sonbhadra district, U. P., India

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Abstract

Social and economic development is a process that aims the welfare of people residing outside the urban areas through 'forward and backward interrelation between the rural and urban areas. The conservation and planning of soil resources are associated with the socio-economic development of any area. Soil is a combination of organic matter, gases, liquids or liquid materials, minerals, and organisms that together support life. The purpose of soil conservation is not only to prevent its erosion, but also to maintain its productivity. The main objective of resource conservation planning is to develop and maintain the standard of human life. By analyzing the soil resources of the study area, it can be concluded that maximum space has been used in some places, while fewer places have been less used. The present research article highlights the role of soil resource for the socio-economic development of the district Sonbhadra.

Moreover, the planning of soil resources and its associated problems has also been discussed.

Keywords: Natural resources, soil resources, socio-economic, development

Introduction

Any matter / object can be defined as resources when it helps in fulfillment of any need or for a particular purpose of man's interest. It is used by humans and its humanize utility is one of the specific properties of the resource. The utility of any source depends on the physical, intellectual and cultural ability according to the circumstances of the time and space, because human accordingly be able to use any existing object or source. Definitely, there is no such type of thing and/ or substance in itself is resource while only its usefulness makes it resource. Commonly, it is understood only by tangible or transmit materials, but many abstractions elements that are fulfill human needs, come under the category of resource.

All the elements or element groups created by nature that are useful for human are called natural resources. Natural resources are the cornerstone for the progress of human civilization in the time and space. One side, where an object or substance used as resource due to its human utility, on the other hand, the man himself also is a resource who generated many resources by using their knowledge, capacity and abilities. In any country or state, more the quantity and diversity of natural resources, the more opportunities for economic and technical progress of that province people. Natural resources of any country are its economic pivot (Singh and Dubey, 2002; Roy and Singh, 2013; Singh et al., 2018) ^[1, 2, 3].

Soil is a combination of organic matter, gases, liquids or liquid materials, minerals, and organisms that together support life. The physical characteristics of soils include its texture, bulk density, structure, porosity, temperature, consistency, color and resistivity etc. The texture of the soil can be determined by its mineral particles relative proportion, said to have the soil separates that are sand, silt and clay. It is necessary to conserve soil for maintaining its maximum utility for long periods. The purpose of soil conservation is not only to prevent its erosion, but also to maintain its productivity. By analyzing the soil resources of the study area, it can be concluded that maximum space has

been used in some places, while fewer places have been less used (Phillips, 2017) ^[4]. The main objective of resource conservation planning is to develop and maintain the standard of human life. In addition to the responsibility of the government, each person should complete his responsibilities by considering himself as a part of the environment. In the study area (Sonbhadra district), attempted to achieve the objective by including these principles in different resource conservation planning.

Objective

The main objective of this study to illustrate the role of soil resources in the planning of the socio-economic development of the study area.

Methodology

The methodology involved in the preparation of the present article is the collection of primary and secondary from various sources. The sources of primary data include interviews/ survey using a questionnaire and schedule. The sources of secondary data include a district statistical magazine of Sonbhadra, census of India, district gazetteer, district census handbook, and some suggestions drawn from different journals.

Location of Study Area

The study area Sonbhadra district was created on 4th March, 1989 by division of the southern region of Mirzapur district. The boundary of the study area is tied to four states - Bihar, Jharkhand, Chhattisgarh and Madhya Pradesh. Study area, district Sonbhadra, situated in the south-eastern part of Uttar Pradesh. Sonbhadra district lies between 23°53' to 25°32' north latitude and 82°72' to 83°73' East longitude in Uttar Pradesh. The population of the study area, according to 2011 census is 18,62,612. Administratively, the study area has been divided into three tehsils Ghorwal, Robertsganj and Dudhi and eight Vikas-khand includes Ghorawal, Robertsganj, Chatra, Nagwa, Chopan, Duddhi, Myorpur and Babhani, respectively.

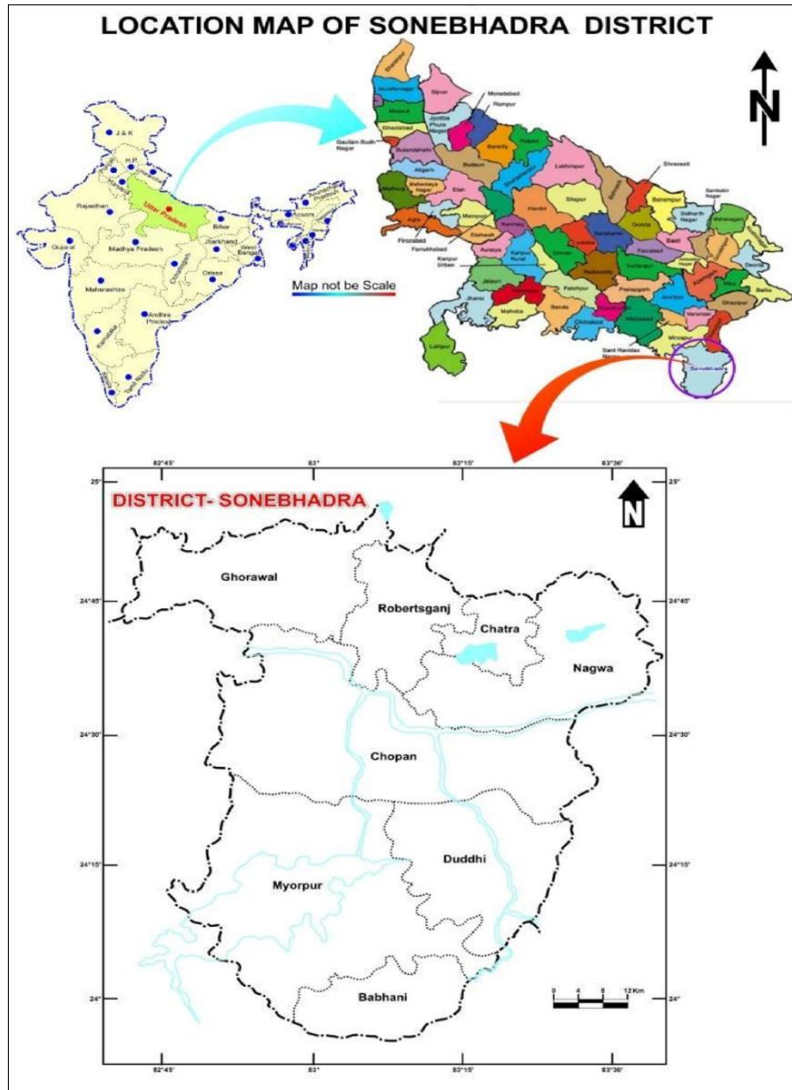


Fig 1: Location map of District Sonbhadra

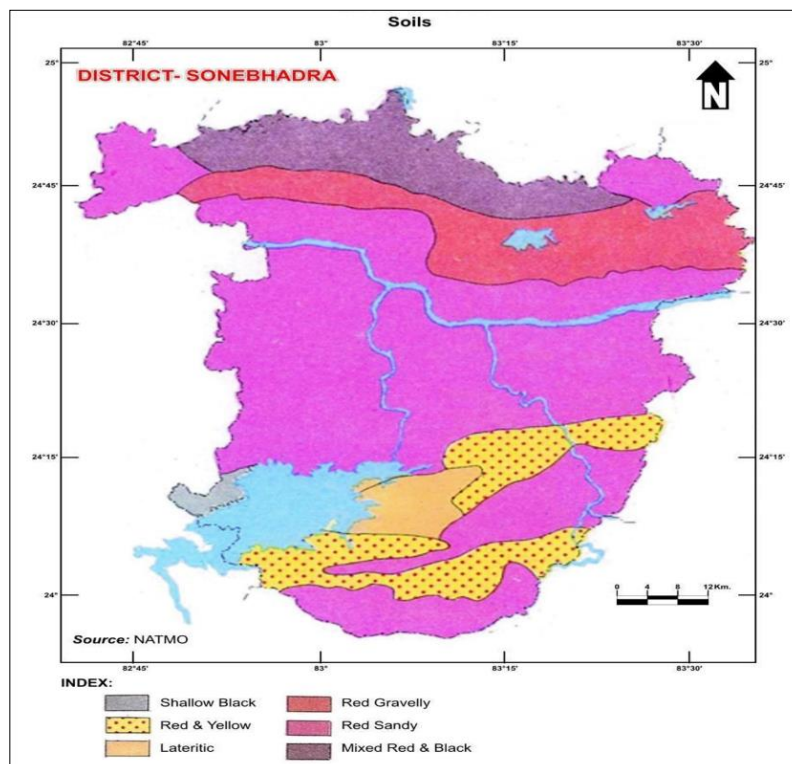


Fig 2: Soil

Soil

Most of the soil in the study area is in residual form. On the basis of original rock (parent rock) the nature of the soil is different kind, which is as follows-

Soil formed from Precambrian crystalline rocks

This soil is red colored sandy loamy soil. This color of the soil is not due to the high amount of iron, but it is due to its wide spread. The soil is low quality and light colored in high hill and highly fertile and deep black in plains and valleys.

Soil made from Vizawar Rock

This soil is more mature due to it being built from ancient rocks. The disintegration of the Vizawar rock is mainly produced in the form of clay soil.

Soil made from Gondwana Rock

The disintegration of the Gondwana rock produces less fertile soil. Usually this soil is sandy.

In the study area, the classification of soil can be presented separately on the basis of tehsil - the soil of Ghorawal and Robertsganj tahsil is built on the plateau structure of the soil. Generally, the soil of this region is less in color, Morang-pebbled and iron-rich. There is a lack of nitrogen and phosphorus. The water holding capacity of soil is normal, but due to its less depth it is dried promptly. In this region, there are soils of the following types of groups, from north to south, respectively:

Belan Group: Matiyar Loam

Vijaygarh Group: Sandy Loam

Son Group: sandy Loam

Loam

fine sandy loam

Paraspaani Group: Sandi Loam

Hathinala Group: thick sand

Jugail Group: White soil

Soil of Duddhi Tahsil

In this land, red, yellow and black soil is commonly found. The soil of this tahsil often lower in quality and less deep. In this tehsil, mainly following groups of the soil is found-

Hathinala Group: Red-Yellow Soil

Duddhi Group: Black, red soil

Singrauli Group: Black Loam (immersed in Rihand reservoir)

Aaudi Group: Red clay (mostly immersed in Rihand reservoir)

Carboniferous group: Peat Soil

Gohada Group: Red, brown soil

Planning of Soil Resources

Soil conservation is necessary for the purpose of achieving its maximum utility for long periods, otherwise the regional balance of the soil and the human will become disorganized. The purpose of soil conservation is not only to prevent its erosion, but to eradicate all the problems of soil and to maintain its production capacity. Therefore, soil can maintain their productivity for thousands of years using soil conservation. By analyzing the soil resources of the study

area, it can be concluded that maximum space has been used in some places, while fewer places have been less used. The study area is an agriculturally rich area and 62% of the population is engaged in agricultural work, due to which the use of soil resources is more important.

First of all, the soil should be tested, by which the knowledge about the nutrients present in the soil can be obtained. Thus, the crops should be selected only on the basis of nutrients nourished in the soil. Depending on the capacity of the soil, the proper crop cycle should be adopted. Therefore, the nutrients found in the soil can be balanced. The loss of soil from land surfaces by erosion is widespread and reduces the productivity of all-natural ecosystems as well as agricultural, forest, and pasture ecosystems. To maintain the quality of soil, organic fertilizers and green manure should be used and proper irrigation system should be there. To control the soil erosion, it is important to stop the soil erosion in order to maintain soil nutrients. For this purpose, the government has established the Land Conservation Department. In the research area, it is needed to plant more trees where soil erosion occurs frequently. Also, many attempts are being made with the help of the Government. In view of the geographical nature of the study area, contour farming, leveling, anti-slope plowing, construction of check dams, should be used in the form of bulk, collation, construction of barrier dam, man-made drains for water supply and soil conservation methods should be used (Pimentel and Burgess, 2013) [5]. Table 1. Represent the distribution of fertilizer (2016).

Table 1: Fertilizer distribution, Block wise (in M. Ton) -2016

S. No.	Vikas-khanda	Nitrogen	Phosphorus	Potas
1	Ghorawal	6119	1212	219
2	Robertsganj	5891	1203	184
3	Chatara	3087	1093	82
4	Nagwa	1246	679	58
5	Chopan	1402	301	47
6	Myorpur	893	229	28
7	Duddhi	1459	335	64
8	Babhani	720	226	44

Other suggestions for planning of soil resources may be following:

1. Deep plowing
2. Embankment
3. Apply contour plowing as per need
4. Planting covering crops
5. Planting protected forests
6. Control of animal grazing
7. Construction of water blockers and dams in rivers and big drains etc.

Conclusion

Social and economic development is a process that aims the welfare of people residing outside the urban areas through 'forward and backward interrelation between the rural and urban areas. The conservation and planning of soil resources for the socio-economic development of the study area has been outlined. Also, it has been analyzed that how can resources be utilized for development. The study area is backward in their socio-economic perspective, while there is abundance of soil resources.

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