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Land Suitability Analysis for Sustainable Agricultural Land Use Planning in Bulandshahr District of Uttar Pradesh

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***Abstract*-** Bulandshahr district is characterised by six soil series depending upon their physio-chemical properties. These soil series are Ganga Khadar Soil Series, Manpur Soil Series, Senta Soil Series, Kota Soil Series, Aulera Soil Series and Ajeetpur Soil Series. In Bulandshahr district an attempt has been made to find out the suitability of major crops based on existing climatic and soil-site database. Land suitability is a function of crop requirement and land/soil characteristics. It is a prerequisite for sustainable agricultural practices. It involves evaluation of the factors like climate, terrain, soil etc. Matching the land characteristics with the crop requirements provides suitability index in the form of ranks. It involves the evaluation and grouping of specific areas of land in terms of their suitability for defined agricultural use. The quality of land categories are rated as S1 (highly suitable), S2 (moderately suitable), S3 (marginally suitable) and N1 (not suitable, but potentially suitable; uneconomical for use) that refers to the effects of the individual land qualities on production of the crop (Sehgal, 2000). The crop land-use requirements are matched with the land qualities for each of the soil series in Bulandshahr district and the final land-suitability maps for the major selected crops are made.

***Index Terms*-** land suitability, Bulandshahr, soil series, land use.

I. INTRODUCTION

Land is one of the most important natural resources, and maintaining it in good health, is very much needed for meeting out the increasing demand for food, fibre, fodder and fuel. It assumes greater significance in present situation wherein the scope for further extension of cultivation is very limited. It is necessary to select the judicious crops for cultivation according to the soil suitability, so that maximum profit may be achieved while maintaining the ecological sustainability.

The crop land use planning involves making knowledgeable decisions about land use and the environment. Soil information is a vital component in the planning process, reflecting directly upon land-use suitability (Coleman & Galbraith 2000). The Land suitability is the process of assessing the suitability or ability of a given type of land. Land suitability classification process is the evaluation and grouping of specific areas of land in terms of their suitability for defined agricultural use.

Land suitability analysis is a prerequisite for sustainable agricultural practices. It involves evaluation of the factors like climate, terrain, soil etc. Land suitability is a function of crop requirements and soil/land characteristics. Matching the land characteristics with the crop requirements provides suitability. So, "suitability is a measure of how well the qualities of a land unit match the requirements of a particular form of land use" (FAO, 1976). Land suitability classification aims at evaluating and classifying land units on the basis of specific land and soil features and their limitations.

Soil-site suitability studies provide information on the choice of crops to be grown on best suited soil units for maximizing the crop production per unit of land, labour and inputs. The land suitability for a defined use and the impact of that use on the environment is determined by land conditions and land qualities. The sustainable land use depends on soil resilience that is the balance between soil restorative and soil degradation processes. Ecologically every factor of environment exerts directly or indirectly a specific affect on growth and development of the plants. However, it varies from habitat to habitat and determines the suitability of a plant to any particular environment. For planning and effective utilization of soil resources, the information relating to the soil-site characteristics for cultivation of crops is necessary (Naidu, 2006). In order to follow the principles of sustainable agriculture one has to grow the crops where they suit best and for which first and the foremost requirement is to carry out land suitability analysis (Ahamed et al. 2000).

The natural resources like soil and water and associated climatic features deeply influence the cropping pattern and crop productivity in specified areas. Each plant species requires definite soil and site conditions for its optimum growth. Since the availability of both water and plant nutrients is largely controlled by the physico-chemical properties and micro environment of the soils, therefore, the success and failure of cropping any plant species, in a particular area, is largely determined by these factors (Sehgal, 2000).

Objectives

The main objective of this study is to carry out the land suitability analysis for major crops in Bulandshahr district and to map out the results as well as to find out the deviations in agricultural practices from the optimum suitability of soils at block level in Bulandshahr district.

Study area

Bulandshahr District is a part of the Ganga Yamuna *Doab* lying in western Uttar Pradesh. Its geographical coordinates vary between 28º 04' N and 28º45' N latitudes and 77º 35' E and 78º

30’ E longitudes. It is bounded by the districts of Hapur and Ghaziabad in the north, Aligarh in the south, Amroha and Badaun in the east, and Gautam Budh Nagar in the west. River Ganga forms a natural boundary between Bulandshahr as well as Badaun and Amroha districts. It covers a total area of 3,719 km^2 (Fig. 1.1).

The district is a level plain with variations of some uneven lands on the banks of rivers. The whole of the district being formed of the Gangetic plain. However, the area is covered by alluvium of Quaternary age. The only mineral of any importance in the district is *kankar*. It experiences the sub-humid monsoon climate (Singh, 1971), that is why the district is rich in agricultural land, and produces many crops; fruits and vegetables, generally there are three harvests, the *kharif*, the *rabi* and the *zaid*. The *zaid* is relatively of little significance.

Bulandshahr district is characterised by six soil series depending upon their physio-chemical properties. These soil series are Ganga Khadar Soil Series, Manpur Soil Series, Senta Soil Series, Kota Soil Series, Aulera Soil Series and Ajeetpur Soil Series. A soil series name generally is derived from a town or a landmark in or near the area where the soil series was first recognized (Simonson, 1952). Soil series is a group of soils with similar profiles developed from similar parent materials under comparable climatic and vegetational conditions. The Figure 1.2 shows the soil series map of Bulandshahr district.

Location of Bulandshahr District

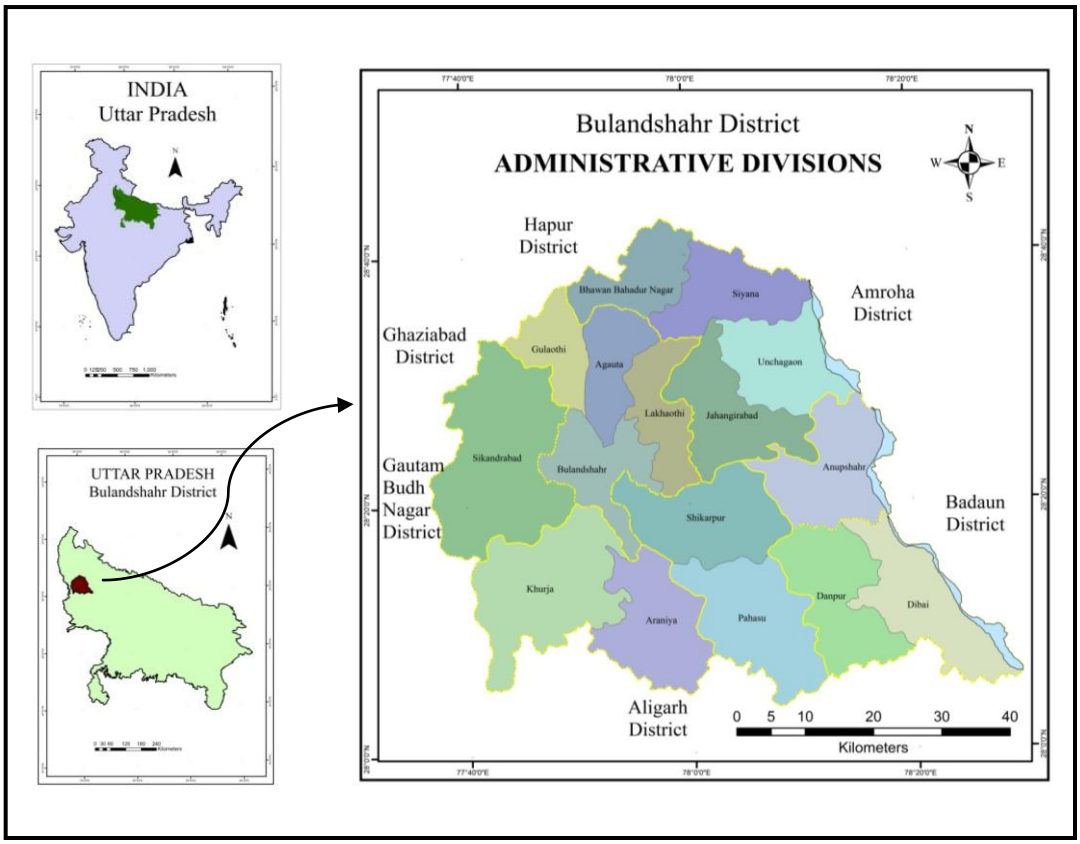

Fig. 1.1

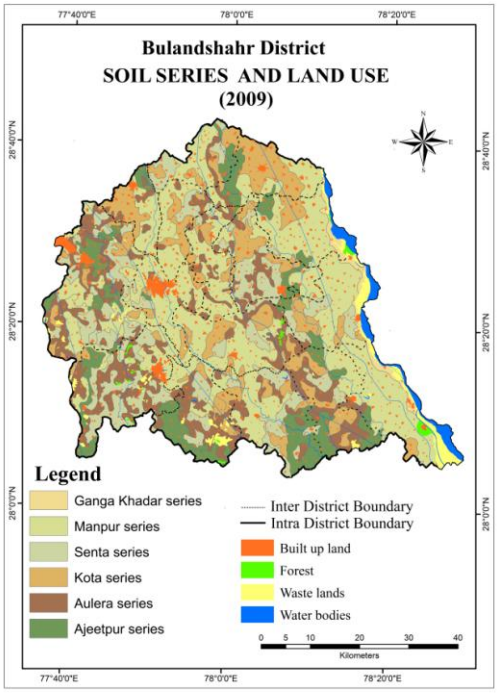

Fig. 1.2

II. Database and Methodology

To carry out the land suitability analysis, the data about the production and acreage of selected crops is taken for the year 2007-08 from district Sankhiyiki Patrika of Bulandshahr district. The soil series data taken from the soil report of National Informatic Centre (NIC). The requirements for each crop were obtained from National Beureou of Soil Survey and Land Use planning (NBSS & LUP) and Indian Council of Agricultural Research (ICAR) publications (Naidu 2006), (Ramesh 2002), Sehgal (1996); the land characteristics were obtained from soil survey reports. The land use land cover map was prepared from the Landsat TM data 2009. The overlay analysis of land use land cover map 2009 and soil series map of all the sixteen blocks of the district Bulandshahr was carried out in GIS environment using Arc GIS 9.3 and finally the soil suitability map of agricultural land was generated. Field survey was done for cross verification for the existing land use pattern in diffrent soil series. Land suitability classification method proposed by FAO (1976) is applied to delineate soil suitability classes. Physical and chemical properties of the land as well as climatic factors are the major determinants for crop suitability of a given land. The physical land properties of the study area are evaluated, including the soil texture, drainage, and soil depth. The slope of the land is also considered. Climate (Temperature and Rainfall) of the study area is also used for crop suitability analysis. The chemical properties of soil like pH (negative log of hydrogen ion concentration), CEC (cation exchange capacity), EC (electrical conductivity) and ESP (exchangeable sodium percentage) are also taken for soil site suitability analysis.

Land suitability index in the form of ranks as a function of crop requirement and land characteristics involving the evaluation and grouping of specific areas of land in terms of their suitability for defined agricultural use are worked out. The flow chart given below (Fig. 1.3) exhibits the land categories of ‘S1’ highly suitable (with slight limitations), ‘S2’ moderately suitable (with moderate limitations), ‘S3’ marginally suitable (with severe limitations), ‘N1’ almost unsuitable (not suitable currently) (FAO 1976).

Soil Suitability Criteria

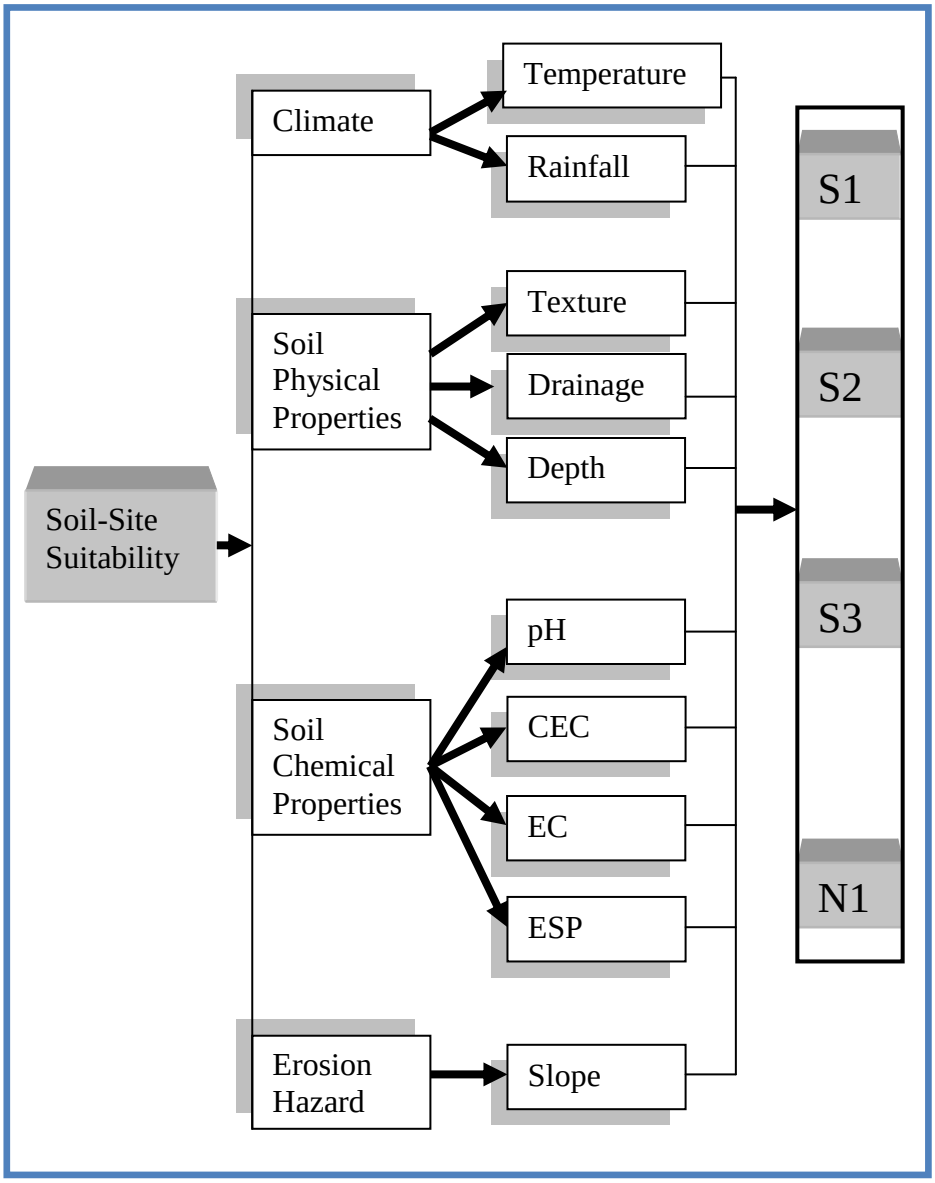

Fig. 1.3

III. RESULTS AND DISCUSSIONS

For the purpose of analysing soil-site suitability, nine major crops viz. Rice, wheat, maize, barley, pearl millet, pulses, mustard, sugarcane and potato were selected. These crops in individual capacity occupy 1% and above and collectively occupy about 82.29 % of net area sown of the district. For the purpose of finding out the suitable crop land use the requirements for each major crop grown were matched with the existing land characteristics.

The quality of each land category was assessed by the ratings S1 (highly suitable), S2 (moderately suitable), S3 (marginally suitable) and N1 (not suitable, but potentially suitable; uneconomical for use) that refer to the effects of the individual land qualities on production of the crop (Sehgal, 2000). The crop land-use requirements and land qualities were matched for each of the soil series and the final land-suitability maps for each selected crop were made.

Rice (*oryza sativa*)

In Bulandshahr district soil suitability classes for rice crop are shown in Figure 1.4. It was found that soil suitability class S2 is spread over an area of about 2700.60 sq.km around 82.89% area of the district and soil suitability class S3 is spread over an area of about 557.63 sq.km around 17.11% area of the district (Table 1.1). The blocks which cover more than the district

average of soil suitability class S2 are the blocks of Siyana, Pahasu, Lakhaothi, Jahangirabad, Gulaothi, Dibai, Bulandshahr, Bhawan Bahadur Nagar, Anupshahr, Agauta and Unchagaon. While the blocks which have the maximum area more than the district average under the soil suitability class S3 are the blocks of Sikandrabad, Shikarpur, Lakhaothi, Khurja, Danpur, and Araniya.

The existing cropping pattern shows that out of 82.40% gross cropped area under the major nine crops, rice covers 12.15% area in the district, though no where in the district the soil are highly suitable (i.e. S1) for rice cultivation. It yields 22.77 quintals/hectares in the district. It also has some variations at block level, the blocks in which rice is cultivated more than the district average are the blocks of Sikandrabad 17.51%, Lakhaothi 15.44%, Bulandshahr 12.71%, Jahangirabad 12.19%, Khurja 14.49%, Araniya 18.15% and Pahasu 15.24%.

Wheat (Triticum Aestivum)

The distribution of soil suitability classes for wheat in Bulandshahr district are shown in Figure 1.5. It shows block wise distribution of soil suitability classes for wheat. It was found that soil suitability class S1 spreads over an area of about 2700.60 sq.kms around 82.89% area of the district and soil suitability class S2 spreads over an area of 38.63 sq.kms around 1.19% area of the district while the soil suitability class S3 spread over an area of about 518.99 sq.kms around 15.93% (Table 1.1). The blocks which cover more than the district average of soil suitability class S1 are Siyana, Pahasu, Lakhaothi, Jahangirabad, Gulaothi, Bulandshahr, Bhawan Bahadur Nagar, Dibai, Anupshahr, Agauta and Unchagaon. The blocks which have the maximum area more than the district average under the soil suitability class S2 are Dibai, Anupshahr and Unchagaon. While the soil suitability class S3 which covers the area more than the district average is found in the blocks of Sikandrabad, Shikarpur, Lakhaothi, Khurja, Danpur and Araniya.

The present cropping pattern of the district reveals that out of 82.40% gross cropped area under the major nine crops wheat is produced on 38.10% area. The average yield of wheat in the district is 37.68 quintal/hectares. Though, area under wheat varies at block level. It covers area more than the district average in the blocks of Sikandrabad 38.51%, Gulaothi 38.24%, Khurja 41.83%, Araniya 41.07%, Pahasu 41.77, Unchagaon 39.02%, Danpur 42.53% and Dibai 39.19%.

Maize (*Zea mays*)

The distribution of soil suitability classes for maize in Bulandshahr district are shown in Figure 1.6. It shows the cultivation of maize in Bulandshahr district. The soil suitability class S1 spreads over an area of about 1068.40 sq.kms which is about 32.79% of the study area. The soil suitability class S2 covers an area of about 1632.20 sq.kms (50.09%) in the district, while soil suitability class S3 covers only 38.63 sq.kms around 1.19% of the study area. Maize also has the soil suitability class N1 and spreads over the area of 518.99 sq.km i.e. about 15.93% area of the district (Table 1.1).

The blocks which have the highest area about 45% suitable for maize production under the soil suitability class S1 are Jahangirabad, Siyana and Bhawan Bahadur Nagar. The soil suitability class S2 has maximum area in the blocks of Bulandshahr, Dibai, Unchagaon and Lakhaothi which has more than 60% area of the blocks. The soil suitability class S3 is found in only four blocks of the district. The soil suitability class N1 more than the district average is found in the blocks of Khurja, Araniya, Danpur, Sikandrabad, Shikarpur and Lakhaothi.

The present cropping pattern of the Bulandshahr district reveals that maize spreads over 11.06% area out of the 82.40% area occupied by the major nine crops of the district. It yields 19.94 quintal/hectares in the district. The area under maize more than the district average is found in the blocks of Shikarpur 14.25%, Jahangirabad 12.81%, Pahasu 14.77%, Unchagaon 12.94%, Danpur 20.02%, Dibai 19.25%, Anupshahr 14.56% (Table 1.2).

Barley (*Hordeum vulgare*)

Soil suitability classes for barley are shown in Figure 1.7. It illustrates the block wise distribution of soil suitability classes for barley. It was found that soil suitability class S1 spreads over an area of about 2700.60 sq.kms (82.89%) of the district. The blocks which cover more than the district average of soil suitability class S1 are Siyana, Pahasu, Lakhaothi, Jahangirabad, Gulaothi, Bulandshahr, Bhawan Bahadur Nagar, Dibai, Anupshahr, Agauta and Unchagaon. The soil suitability class S2 spreads over an area of about 38.63 sq.kms (around 1.19%) of the district. Its spread is only in four blocks of the district namely Dibai, Anupshahr, Unchagaon and Siyana. The S3 spreads over an area of about 518.99 sq.kms (15.93%). The soil suitability class S3 covering area more than the district average is found in the blocks of Sikandrabad, Shikarpur, Lakhaothi, Khurja, Danpur and Araniya. The existing cropping pattern of the district shows that barley covers only 1.62% area, out of the 82.40% area under major nine crops cultivated in the district. It yields 34.38 quintals/hectares in the district. The blocks which cover area more than the district average under barley are Lakhaothi 1.67%, Shikarpur 1.98%, Khurja 1.96%, Araniya 2.15%, Pahasu 1.76%, Danpur 2.26% and Dibai 1.97% (Table 1.2).

Pearl Millet or Bajra (*Pennisetum typhoides*)

The soil suitability classes for pearl millet are shown in Figure 1.8. It is found that for the cultivation of pearl millet in Bulandshahr district, soil suitability class S1 covers 82.89% area of the district which spreads over about 2700.60 sq. kms. The blocks which cover more than the district average of soil suitability class S1 are the blocks of Siyana, Pahasu, Lakhaothi, Jahangirabad, Gulaothi, Dibai, Anupshahr, Bulandshahr, Bhawan Bahadur Nagar, Agauta and Unchagaon. While soil suitability class S3 covers about 17.11% area of the district and spread over about 557.63 sq.kms. The spread of S3 above the district average is found in the blocks of Sikandrabad, Khurja, Lakhaothi, Danpur, and Araniya.

The existing cropping pattern of the district shows that out of 82.40% cropped area under the selected major nine crops pearl millet covers only 1.53% area. Its yield is 16.30 quintal/hectares. The blocks which cover area more than the district average are Sikandrabad 2.27%, Khurja 3.32%, Araniya 3.96%, Pahasu 4.23% and Dibai 2.18% (Table 1.2).

Pulses

The soil suitability for all pulses like *urad, moong, masur, pea* and *arhar* is more or less same. Their existing area under individual pulses in the district is very low i.e. below 1%, that's why all of them are clubbed under the category of pulses. However, in the study area maximum acreage is occupied by *Arhar* or pigeon pea. In Bulandshahr district soil suitability classes for pulses are shown in Figure 1.9. It was found that soil suitability class S1 covers 72.18% area of the district which spreads over about 2351.68 sq.kms covering all the blocks of the district. It covers more than 80% area in the blocks of Siyana, Shikarpur, Lakhaothi, Gulaothi, Dibai, Anupshahr, Unchagaon Bulandshahr, Bhawan Bahadur Nagar and Agauta. The soil suitability class S2 covers 10.71% area of the district covering about 348.92 sq.kms spreading over all the blocks of the district except the Agauta block. The soil suitability class S3 covers only 1.19% area of the district and spreads over four blocks of the district covering about 38.63 sq.kms. While the soil suitability class N1 covers 15.93% area of the district that spreads over all the blocks of the district except Unchagaon block covering about 518.99 sq.kms.

The existing cropping pattern under pulses reveals that out of 82.40% cropped area of the district under major nine crops pulses covers only 3.58% of the area. The blocks which cover area more than the district average are Sikandrabad 3.63%, Gulaothi 3.62%, Shikarpur 4.33%, Khurja 5.96%, Araniya 4.95%, Pahasu 4.49% and Danpur 3.75% (Table 1.2).

Mustard (*Brassica juncea*)

The distribution of soil suitability classes for Mustard in Bulandshahr district are shown in Figure 1.10. It is found that Soil suitability class S1 covers 82.89% area of the district which spreads over about 2700.60 sq.kms found in almost all the blocks of the district. The soil suitability class S2 is found only in four blocks of the district namely Siyana, Unchagaon, Anupshahr and Dibai covering 1.19% area of the district (38.63sq.kms). The soil suitability class N1 covers 15.93% area of the district (518.99sq.kms). It is found in all the blocks of the district except the Unchagaon.

The existing cropping pattern shows that out of 82.40% cropped area under the major nine crops mustard occupy only 1.58% area. Its yield is 11.10 quintals/hectares. Its acerage more than the district average is found in the blocks of Khurja 1.81%, Araniya 3.24%, Pahasu 2.29%, Danpur 2.04% and Dibai 2.50% (Table-1.2).

Sugarcane (Saccharum officinarum)

The soil suitability class for Sugarcane in Bulandshahr district are shown in Figure 1.11. The Table 1.1 and Figure 1.11 reveal the distribution of soil suitability class for sugarcane. It was found that soil suitability class S1 covers only about 32.79% area of the district occupying 1068.40 sq.kms spreading over all the blocks of the district. The soil suitability class S2 covers 51.28% area of the district spreading over 1670.83 sq.kms over all the blocks of the district. While the soil suitability class S3 covers 15.93% area of the district covering 518.99 sq.kms and is found in all the blocks except Unchagaon.

The existing sugarcane cropping shows that it is spread over 11.36% area out of the total 82.40% area under the nine major crops. It yields 587.55 quintal/hectares. The presence of sugarcane more than the district average is found in the blocks of Bhawan Bahadur Nagar 30.50%, Siyana 21.44%, Agauta 21.35%, Gulaothi 19.96%, Anupshahr 19.16%, Unchagaon 15.35%, Jahangirabad 12.79% and Lakhaothi 12.02%.

Potato (Solanum tuberosum)

The distribution of soil suitability class for potato in shown by Table 1.1 and Figure 1.12. It is found that Soil suitability class S1 covers 82.89% area of the district which spreads over 2700.60 sq.kms and is found in almost all the blocks of the district. The soil suitability class S3 is found only in four blocks of the district covering only 1.19% area of the district which spreads over 38.63 sq.kms, these blocks are Siyana, Dibai, Anupshahr and Unchagaon. The soil suitability class N1 covers 15.93% area of the district that spreads over 518.99 sq.kms. Except the Unchagaon it found in all the blocks of the district (Table 1.1).

The existing cropping pattern of the district reveals that potato covers only 1.43% area out of the total cropped area of the district under the major nine crops. It yields 173.57 quintals/hectares. Its presence more than the district average is found in the blocks of Jahangirabad 4.14%, Unchagaon 2.02%, Agauta 1.80%, Shikarpur 1.74% and Bulandshahr 1.46% (Table 1.2).

IV. Conclusion and Suggestions

The soil-site suitability for major crops in Bulandshahr district represents that soil suitability class S1 (highly suitable) covers 82.89% area for wheat, millet, barley, mustard and potato. However the existing cropping pattern (Table 1.2) shows that Bulandshahr district covers only 44.26% area for the cultivation of wheat (38.10%), barley (1.62%), millet (1.53%), mustard (1.58%), and potato (1.43%). Similarly for the cultivation of pulses 72.18% of the area of the district exhibits the same soil category 'S1' while pulses presently are cultivated only on 3.58% area. For maize and sugarcane cultivation 'S1' category of soil is found over 32.79% area of the district while presently they are cultivated only on 22.42% area with a break up for Maize (11.06%) and sugarcane (11.36%). The rice crop is moderately suitable and is cultivated over 12.15% area of the district.

Hence, in the study area more land should be devoted to highly suitable crops like pulse, mustard, barley, millet and potato. The share of these crops in the district is very low.

The block wise study reveals that in almost all the blocks of the district Bulandshahr rice is moderately suitable and comes under S2 soil suitability class should be replaced by other more suitable crops like pulses, mustard, barley, potato and millet, presently the presence of these crops in the block is very less. This change in the cropping pattern would help enhancing not only the sustainable carrying capacity of the land but would also help in the conservation of rural land resources as well as their development.

Beside this in the blocks of Unchagaon, Dibai, Lakhaothi and Bulandshahr the actual area under maize and sugarcane cultivation is higher than the area for their suitability. Thus, the additional area under maize and sugarcane cultivation in the blocks of Unchagaon (13.64%), Dibai (22.72%), Lakhaothi (1.62%) and Bulandshahr (1.92%) should be devoted to highly suitable crops like pulses, mustard, barley, potato and millets presently their share in these blocks is very low.

Bulandshahr District
Soil Suitability

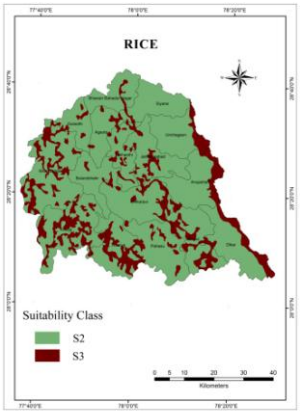

Fig. 1.4

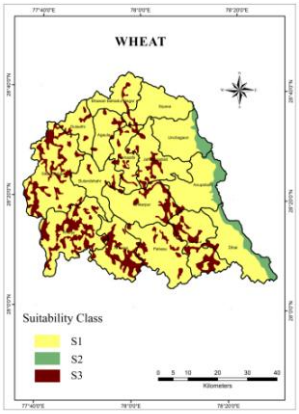

Fig. 1.5

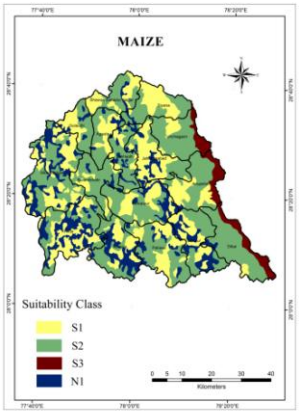

Fig. 1.6

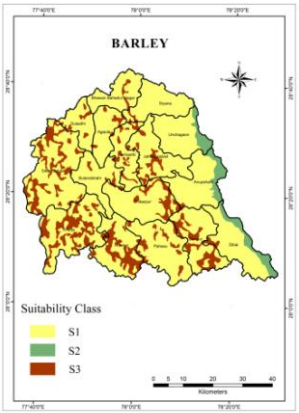

Fig. 1.7

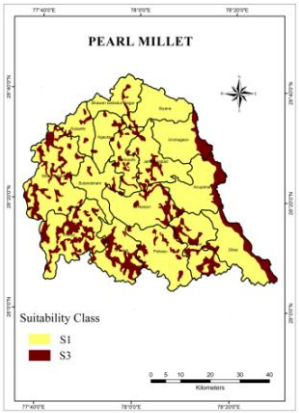

Fig. 1.8

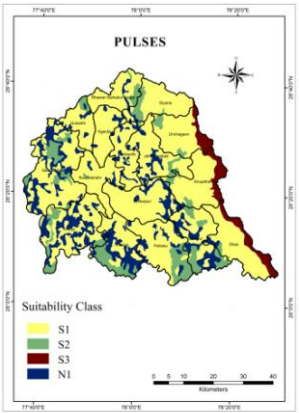

Fig. 1.9

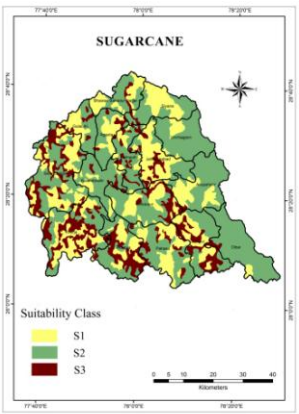

Fig. 1.10

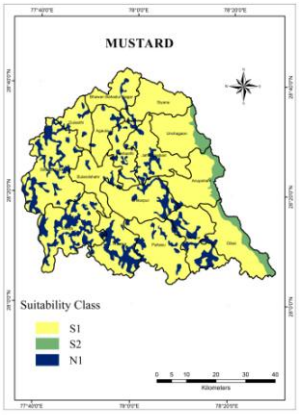

Fig. 1.11

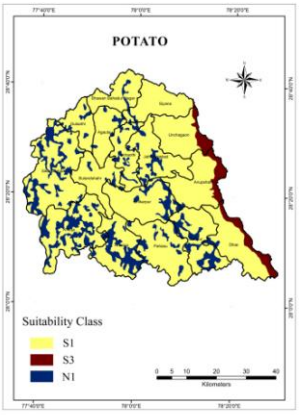

Fig. 1.12

Table – 1.1
Bulandshahr District
Soil Suitability classes for selected crops

		RICE		**WHEAT, BARLEY,**			**MAIZE**				**PEARL MILLET**	
		S2	**S3**	**S1**	**S2**	**S3**	**S1**	**S2**	**S3**	**N1**	**S1**	**S3**
S.No.	**Blocks**	**%**	**%**	**%**	**%**	**%**	%	%	%	%	%	%
1	Siyana	96.80	3.20	96.80	0.93	2.27	47.42	49.38	0.93	2.27	96.80	3.20
2	Sikandrabad	73.54	26.46	73.54	0.00	26.46	36.26	37.28	0.00	26.46	73.54	26.46
3	Shikarpur	82.66	17.34	82.66	0.00	17.34	33.07	49.59	0.00	17.34	82.66	17.34
4	Pahasu	87.19	12.81	87.19	0.00	12.81	36.21	50.98	0.00	12.81	87.19	12.81
5	Lakhaoti	82.89	17.11	82.89	0.00	17.11	20.77	62.12	0.00	17.11	82.89	17.11
6	Khurja	67.49	32.51	67.49	0.00	32.51	36.22	31.27	0.00	32.51	67.49	32.51
7	Jahangirabad	84.68	15.32	84.68	0.00	15.32	53.86	30.82	0.00	15.32	84.68	15.32
8	Gulaothi	88.90	11.10	88.90	0.00	11.10	37.88	51.02	0.00	11.10	88.90	11.10
9	Dibai	89.86	10.14	89.86	6.69	3.46	5.65	84.20	6.69	3.46	89.86	10.14
10	Danpur	73.13	26.87	73.13	0.00	26.87	30.82	42.31	0.00	26.87	73.13	26.87
11	Bulandshahr	93.52	6.48	93.52	0.00	6.48	17.77	75.75	0.00	6.48	93.52	6.48
12	Bhawan Bahadur Nagar	94.06	5.94	94.06	0.00	5.94	45.87	48.19	0.00	5.94	94.06	5.94
13	Araniya	69.84	30.16	69.84	0.00	30.16	27.75	42.09	0.00	30.16	69.84	30.16
14	Anupshahr	92.45	7.55	92.45	6.09	1.46	34.05	58.40	6.09	1.46	92.45	7.55
15	Agauta	90.84	9.16	90.84	0.00	9.16	36.08	54.76	0.00	9.16	90.84	9.16
16	Unchagaon	93.03	6.97	93.03	6.97	0.00	14.65	78.38	6.97	0.00	93.03	6.97
	Bulandshahr District	**82.89**	**17.11**	**82.89**	**1.19**	**15.93**	**32.79**	**50.09**	**1.19**	**15.93**	**82.89**	**17.11**

Contd……

Table – 1.1
Bulandshahr District
Soil Suitability classes for selected crops

		PULSES				**MUSTARD**			**SUGARCANE**			**POTATO**		
		S1	**S2**	**S3**	**N1**	**S1**	**S2**	**N1**	**S1**	**S2**	**S3**	S1	S3	N1
S. No.	**Blocks**	%	%	%	%	%	%	%	%	%	%	%	%	%
1	Siyana	83.22	13.57	0.93	2.27	96.8	0.93	2.27	47.42	50.31	2.27	96.8	0.93	2.27
2	Sikandrabad	61.38	12.16	0	26.46	73.54	0	26.46	36.26	37.28	26.46	73.54	0	26.46
3	Shikarpur	82.09	0.57	0	17.34	82.66	0	17.34	33.07	49.59	17.34	82.66	0	17.34
4	Pahasu	66.12	21.07	0	12.81	87.19	0	12.81	36.21	50.98	12.81	87.19	0	12.81
5	Lakhaoti	81.84	1.06	0	17.11	82.89	0	17.11	20.77	62.12	17.11	82.89	0	17.11
6	Khurja	54.52	12.97	0	32.51	67.49	0	32.51	36.22	31.27	32.51	67.49	0	32.51
7	Jahangirabad	78.73	5.96	0	15.32	84.68	0	15.32	53.86	30.82	15.32	84.68	0	15.32
8	Gulaothi	80.23	8.67	0	11.1	88.9	0	11.1	37.88	51.02	11.1	88.9	0	11.1
9	Dibai	87.23	2.63	6.69	3.46	89.86	6.69	3.46	5.65	90.89	3.46	89.86	6.69	3.46
10	Danpur	49.01	24.12	0	26.87	73.13	0	26.87	30.82	42.31	26.87	73.13	0	26.87
11	Bulandshahr	92.94	0.58	0	6.48	93.52	0	6.48	17.77	75.75	6.48	93.52	0	6.48
12	Bhawan Bahadur Nagar	82.84	11.22	0	5.94	94.06	0	5.94	45.87	48.19	5.94	94.06	0	5.94
13	Araniya	46.19	23.65	0	30.16	69.84	0	30.16	27.75	42.09	30.16	69.84	0	30.16
14	Anupshahr	85.55	6.9	6.09	1.46	92.45	6.09	1.46	34.05	64.5	1.46	92.45	6.09	1.46
15	Agauta	90.84	0	0	9.16	90.84	0	9.16	36.08	54.76	9.16	90.84	0	9.16
16	Unchagaon	84.25	8.78	6.97	0	93.03	6.97	0	14.65	85.35	0	93.03	6.97	0
	Bulandshahr District	**72.18**	**10.71**	**1.19**	**15.93**	**82.89**	**1.19**	**15.93**	**32.79**	**51.28**	**15.93**	**82.89**	**1.19**	**15.93**

Table 1.2
Bulandshahr District
Acreage under major crops 2007-08 (%)

Blocks	**Rice**	**Wheat**	**Barley**	**Millet**	**Maize**	**Pulses**	**Mustard**	**Sugarcane**	**Potato**	**Total**
Sikandrabad	17.51	38.51	1.50	2.27	5.37	3.63	1.08	6.59	1.35	**77.81**
Gulaothi	9.67	38.24	1.02	0.05	4.91	3.62	1.16	19.96	1.31	**79.93**
Lakhaothi	15.44	37.23	1.67	0.14	10.59	2.90	1.11	12.02	1.05	**82.16**
Bulandshahr	12.71	35.63	1.46	0.05	10.50	2.99	1.25	9.19	1.46	**75.23**
Shikarpur	11.13	37.79	1.98	0.27	14.25	4.33	1.55	9.54	1.74	**82.59**
Bhawan Bahadur Nagar	6.10	31.09	1.06	0.06	4.94	2.89	0.98	30.50	1.00	**78.62**
Siyana	5.90	34.31	1.10	0.13	8.18	2.67	1.27	21.44	0.89	**75.88**
Jahangirabad	12.19	34.20	1.16	0.05	12.81	2.19	0.82	12.79	4.14	**80.33**
Khurja	14.49	41.83	1.96	3.32	7.47	5.96	1.81	4.74	1.26	**82.85**
Araniya	18.15	41.07	2.15	3.96	7.71	4.95	3.24	5.76	1.03	**88.00**
Pahasu	15.24	41.77	1.76	4.23	14.77	4.49	2.29	5.05	1.07	**90.67**
Unchagaon	4.36	39.02	1.07	0.05	12.94	2.79	0.83	15.35	2.02	**78.43**
Danpur	10.22	42.53	2.26	1.37	20.02	3.75	2.04	6.63	0.85	**89.66**
Dibai	10.40	39.19	1.97	2.18	19.25	2.43	2.50	9.12	0.63	**87.68**
Anupshahr	8.33	35.15	1.55	0.60	14.56	1.89	1.22	19.16	1.01	**83.48**
Agauta	9.15	32.17	1.03	0.02	5.90	2.57	0.95	21.35	1.80	**74.95**
Bulandshahr District	**12.15**	**38.10**	**1.62**	**1.53**	**11.06**	**3.58**	**1.58**	**11.36**	**1.43**	**82.41**

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