



E-ISSN: 2278-4136
P-ISSN: 2349-8234
JPP 2019; 8(4): 2397-2400
Received: 28-05-2019
Accepted: 30-06-2019

Sonam Rajput

Research Scholar, Department of
Silviculture and Agroforestry,
College of Forestry, Dr. YSP
University, Nauni, Solan,
Himachal Pradesh, India

Vijay Upadhyay

Department of Forestry,
School of Life Sciences, DBRA
University, Agra, Uttar Pradesh,
India

A review: An appraisal of Uttar Pradesh forest**Sonam Rajput and Vijay Upadhyay****Abstract**

The state of Uttar Pradesh with 6.09% of its land area under forest cover of its geographical area required to be maintained under forests as per the National Forest Policy, 1988. Forest are largely found in the northern, northeastern and the southern region of the State. Maximum forest area found in the Son bhadra district and minimum in Bhadoli district. Sal is the major species found in the forests. Tree culture outside forests and specifically on farm land is immensely helping in increasing the tree and forest cover and also in overall rural development by generating employment in plantations and their growing, maintenance, harvesting; generating additional income to the growers from the sale of trees. The main tree species planted by the farming community on their farmland are eucalypts, poplar semal, kadam, shisham etc. which are fast grown and farmers are able to grow agriculture crops in their association. Teak (*Tectona grandis*) is the most important timber tree of India fetching higher prices due to its quality timber. Land degradation is the major problem in this state. The state government estimate over five categories of degradation namely, water erosion, wind erosion, water logging, salinity and nutrient depletion.

Keywords: Forest area, forest cover, plantation, strategies, land degradation

Introduction

The most populated State of the country, Uttar Pradesh has an area of 2, 40, 928 SQ km which is 7.33% of the country's geographical area. The state of Uttar Pradesh (U.P.) with 6.09% of its land area under forest cover of its geographical area required to be maintained under forests as per the National Forest Policy, 1988. Its lies between lat. 23°52' and 30°24'N and long. 77°05' and 84°38'E sharing International border with Nepal. The major rivers of the state are Ganga, Yamuna, Ramganga, Gomti and Ghaghara. The state can be divided into two physiographic zones namely, the Southern hill plateau and the vast alluvial Gangetic plains. State can be divided into three distinct regions are Himalayan region in the North, Gangetic plain in the center and Vindhya hills and plateau in the South (forest cover in Uttar Pradesh an overview) [1]. Three major types of forest in Uttar Pradesh area as:

Tropical Moist Deciduous Forests are found in the moist region of Terai. They grow in regions which record 100 to 150 cm. of rainfall annually, have an average temperature between 26 degree to 27 degree centigrade. And have considerable degree of humidity.

Tropical Dry Deciduous Forests are found in all parts of the plains, and usually in central eastern and western regions. Important trees are Sal, Palas, Amaltas, Bel, fig etc. Neem, Peepal, Sheesham, Mango, Jamun, Babool, Imli (Tamarind) etc. grow along river banks and in other moist regions.

Tropical Thorny Forests are mostly found in south-western parts of the State. Such forests are confined to the areas which have low annual rainfall (50-70 cms), mean annual temperature between 25 degree to 27 degree centigrade and low humidity (less than 47 percent). Widely scattered thorny trees, mainly, Babool, Thorny, legumes and Euphorbias are extensively found here. The diversity of fauna living in water and land in the air are found in the State. Climate of the state is hot and humid with temperatures ranging from 5°C during winter 45°C in summer. Annual rainfall ranges from 1,000 mm to 1,200 mm (www.up.gov.in and www.upforestcorporation.co.in) [2, 3].

Forest resources

Uttar Pradesh is deficient in natural forest resource. The recorded forest area of Uttar Pradesh 14,679 SQ km which is 6.09% of the State's geographical area under forest cover of its geographical area required to be maintained under forests as per the National Forest Policy, 1988.

The main forest types in the state are Tropical Semi Evergreen (0.21%), Tropical Moist Deciduous (19.68%), Tropical Dry Deciduous (50.66%), Tropical Thorn (4.61%) and Littoral And Swamp forests (2.35%).

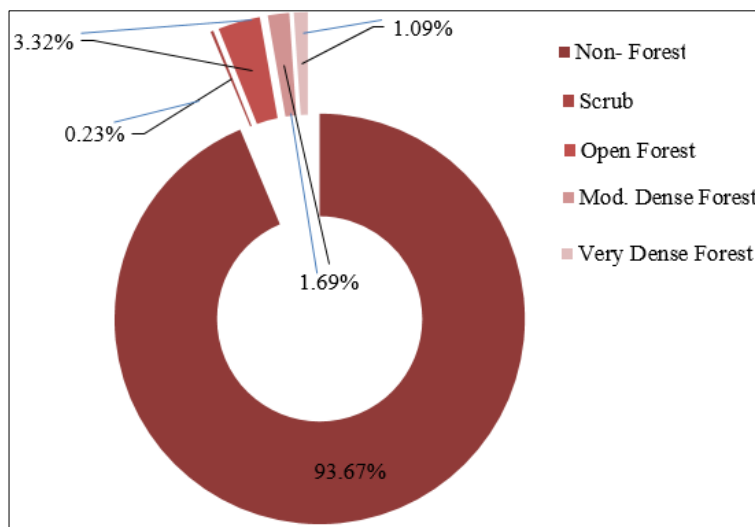
Correspondence**Sonam Rajput**

Research Scholar, Department of
Silviculture and Agroforestry,
College of Forestry, Dr. YSP
University, Nauni, Solan,
Himachal Pradesh, India

These forests are spread over in the Northern, Northeastern and Southern parts of the state. Sal is the major species Found in the forest. Terai region has mostly moist tropical forests of sal. Eastern UP has dry deciduous mixed forest. Eastern and Western UP generally have teak or mixed forest, and the Budelkhand region is covered widely with thorny scrub forests.

Forest cover

The forest cover of the State, based on interpretation of Satellite data pertaining to Oct-Dec 2015, is 14679 SQ km, which is 6.09% of the geographic area. In term of forest canopy density classes, the state has 2,617 SQ km under very dense forest, 4,069 SQ km under moderately dense forest and 7,993 SQ km under open forest.



Source: Forest Survey of India 2017 [4].

Fig 1: Forest cover of Uttar Pradesh

The recorded forest area of the state is 16,582 SQ km which is 6.88% of its geographical area. The Reserved, Protected and Unclassed Forests are 72.79%, 6.98% and 20.23%

respectively of recorded area. The updated green wash which is 13,523 SQ km has been used and analysis of forest cover within and outside this is depicted below.

Table 1: Forest cover within and without green wash

Forest Cover with in Green wash (Area in SQ km)	
Very Dense Forest	2,475
Moderately Dense Forest	3,041
Open Forest	3,737
Total	9,243
Forest Cover outside Green wash	
Very Dense Forest	142
Moderately Dense Forest	1,028
Open Forest	4,266
Total	5,436
Total Forest Cover	14,679
Tree Cover	7,422
Total Forest and Tree Cover	22,121
Of State's Geographical Area	9.18%
Of India's Forest and Tree Cover	2.76%
Per capita Forest and Tree Cover	0.01 ha
Region	Himalayan Gangetic plain Vindhya Hills
Area for land utilization	100%
Forests	6.86%
Culturable wasteland	1.70%
Growing Stock	3.22%
Carbon Stock	1.77%

Source: Forest Survey of India 2017 [4]

In Uttar Pradesh, the maximum forest area was recoded at so bhadra (36.77%) whereas, minimum percentage of minimum forest area was found at Bhadoli (0.3%) according to FSI report (2017).

A change in forest types is projected in the southern part of Chandauli, Chitrakoot and Mirzapur, north-western part of Khetri, Sonbhadra and parts of Pilibhit, Agra and Lalitpur districts.

Strategies for forest development

Social forestry scheme

This is a major scheme funded by State Government for tree plantation. Plantations is carried out on various type of community land, canals, rail, and on land available on road side to ensure the availability of timber, fuel wood, fodder, small forest produce etc., in rural areas of all the districts in the state. This ensures the availability of raw material for

small timber industries for rural people. The scheme is being implemented in the following manner on the basis of financial sources.

Social forestry scheme (General)

This scheme is being implemented in all the districts of the state. Industrial pulp wood plantation scheme implemented till the year 2011-12 has come to an end during the year 2012-13. The committed works of the scheme has been included in the social forestry scheme.

Green belt development scheme

Green belt development has got a priority by the Honorable chief minister. In view of this tree plantations is being carried out from the year 2012-13 through the financing from forest corporation and green belt development scheme has been started in the year 2013-14. This is scheme implemented in the entire state

National afforestation programme

It is the flagship scheme of NAEB, in so much as it provides support, both in physical and capacity building terms, to the Forest Development Agencies (FDAs) which in turn are the main organs to move forward institutionalization of Joint Forest Management.

Uttar Pradesh participatory forest management and poverty alleviation project

It is under implementation in the 20 forest divisions spread over 14 districts of the state of Uttar Pradesh. The project is being funded through a soft loan provided by the Japan International Cooperation Agency, JICA (formerly Japan bank for International Cooperation). It aims at restoring degraded forests, augmenting forest resources and improving livelihood for and empower the local forest dependent communities.

Bamboo mission

The Project objectives are to promote the growth of bamboo sector through an area based regionally differentiated strategy, to increase the coverage of area under bamboo in potential areas, with suitable species to enhance yields, to promote marketing of bamboo etc.

Bundelkhand Package

This project is aimed at intensive management and eco restoration of ravine areas of Bundelkhand. The activities include watershed management in forest land, soil & moisture conservation works, assisted natural regeneration works etc.

Green India Mission

Multiple objectives including improved quality of forest cover, increased forest/ tree cover, improved ecosystem services, increased forest based livelihood income, and enhanced annual carbon sequestration, with bottom-up participatory approach with Gram Sabah/Joint Forest Management Committees (JFMCs) at the helm of planning, decision making and implementation, involvement of local educated youth.

Project Tiger

Activities like strengthening of infrastructure, maintenance of Wildlife Habitat, development of eco-tourism activities etc. are being taken up in areas under the project.

Project Elephant

The activities include protection and conservation of elephant habitat, reducing situations of man animal conflict, controlling wildlife crimes and involving local communities in wildlife conservation through awareness program.

Lion Breeding Programmes, Etawah

The facility is being established in an area of 350 ha of which 50 ha will serve as the Safari and the remaining 300 ha will serve as the buffer.

Integrated Development of Wildlife Habitat

Under this centrally sponsored scheme management and conservation of wildlife sanctuaries of the state are taken up.

National Plan for Conservation of Aquatic Ecosystem

This is also a centrally sponsored scheme in which Ministry of Environment and Forests, Govt. of India releases financial help for conservation and management of identified wetlands of state.

Forest research and expansion

The task of forest research is executed through the forests promoter, saal region (Bareilly), southern region (Kanpur) and vindhya region (Ram Nagar, Varanasi) under the chief forest conservator (Research) Uttar Pradesh, Kanpur. Departmental plantation is necessary to increase the productivity of tree plantations made by farmers on their private land or by other agencies by making them available high quality seedlings. In order to raise high quality seedlings supply of high quality selected seed source is of special importance.

Organizing Forest festivals

This scheme is being implemented by entire state. This increases the awareness towards forests and wild life among the public. Under this scheme tree plantation and up gradation of forest awareness centers is carried out in every district on the occasion of forest festivals. Under this scheme Rs. 20.00 lakhs has been spent during the year 2013-14.

Nursery Management Scheme

In this scheme nurseries of 8 to 12 feet height are being raised for plantations. This scheme is being implemented in the entire state.

Forest settlement Scheme

The scheme has been proposed to survey and demarcation of forest area and to protect it from encroachment. This scheme is proposed to be implemented in Agra, Firozabad, Hamirpur, Mahoba, Banda, Chitrakoot, Hardoi, Khiri, Unnao and Chandauli. Under this scheme the task of bush clearance, construction of RCC pillars, barbed wire fencing along the sensitive borders and generation of Geospatial Database will be done.

Management of wildlife outside the protected area

In Uttar Pradesh, where there is a plethora of wildlife in the protected area, for the purpose of proper and sustained growth of the natural habitat for wildlife, their habitat conservation is of utmost importance and to address the increasing incidence of human-animal conflict development of resources has to be made to make available a space in the whole state in view of the growing biological-pressure. This new scheme has been

launched in the financial year 2013-14 (Source-www.up.gov.in JICA AFP and SAPCC) [2, 5, 6].

Plantation along highways, district, and rural roads

Children Forest Programme

Six core sampling will be planted in single day

UP plans to plant nine core trees

10,000 tree plantation in Gorakhpur city of UP

Green up – Clean UP programme

Causes of forest degradation in Uttar Pradesh

There are various activities, which cause for the deforestation in the state. The direct causes of deforestation are land clearance for agriculture (including shifting cultivation), urbanization, construction of roads, bridges, irrigation dams and canals, different forms of encroachments, overgrazing, excessive fuel wood collection and logging etc. Forest lands are important source of grazing and fodder in the absence of adequate land and a viable policy of the fodder development. However, Groundwater Department, Government of UP has defined waterlogging in the state based on the soil conditions and water level, which is more relevant for measuring the extent of waterlogging in the state. There are four categories of waterlogging area in the state. Firstly, wet lands include marshy land and pond areas, where water level may be above the ground surface or perched waterlogging conditions prevails. Secondly, critical waterlogged areas such areas in clay loam soils within 2.0 meters of groundwater level in post-monsoon month and capillary rise of groundwater reaches the ground surface. Thirdly, semi critical areas fall between 2.0 to 3.0 mbgl level and groundwater capillary rise reaches the root zones of cereals crops in clay loam to sandy loam soils. Fourthly, potential for waterlogging covers between 3.0 to 5.0 mbgl, where excessive surface water irrigation and poor groundwater pumpage in such areas may create waterlogging problems (Government of UP, 2003) [7].

Land degradation occurs through different other indicators. It is not only reflects the wasteland but also some invisible indicators like groundwater depletion and disproportionate use of fertilizer consumption. The purpose is to combine all the possible indicators into one composite index and to identify more severe and less severe districts in the state. The state planning commission estimated nearly 74.48 lakh hectares of land, which is 30.77 percent of the reporting areas are degraded land in the state. On the other hand, NRSA estimated nearly 38.84 lakh hectares, which is 13.19 percent of the geographical area of the state, are degraded.

The overall severity of land degradation at the district level is measured by applying ranking, indexing and principal component analysis. However, the measurement of overall land degradation is based on the construction of index by using six different indicators. The proportion of wasteland to reported area, degraded forest to the reported area, annual rainfall data, percentage use of ground water and disproportionate use of fertilizers etc. are used for constructing the index. Based on the technique, Mirzapur in Eastern region stands on the first followed by Laxmipur in Central and Lalitpur in Bundelkhand region as second and third severe land degraded districts in the state. Moreover, Etawah from western and Unnao from central regions are least affected by land degradation in the state (Sanatan Nayak) [8].

Conclusion

Uttar Pradesh Forest covers an area of 14,679 SQ km which is 6.09% of geographical area of the country. In UP maximum forest area was found in Sonbhadra and minimum forest area in Bhadoli district. Fourteen forest circles are present in Uttar Pradesh. Many strategies applied in Uttar Pradesh for forest development such as social forestry scheme, green belt development and green up for clean-up environment etc. and many scheme organized for the wildlife management. Declination of forest in Uttar Pradesh for the different causes such as cutting the forest for the road and building construction, illicit felling etc. A net increase of 278 SQ km has been observed in the state compared to the previous assessment which can be attributed to plantation activities and conservation efforts.

Acknowledgment

We are thankful to the authors cited in this paper and anonymous reviewers for constructive comments and suggestions.

References

1. <http://www.wealthywaste.com/forest-cover-in-uttar-pradesh-an-overview>
2. www.up.gov.in
3. www.upforestcorporation.co.in
4. Forest Survey of India. India State of Forest 2017. FSI, Dehradun, 2017.
5. Japan International Corporation Agency Assisted Forestry Projects. In India
6. State Action Plan Climate Change of Uttar Pradesh
7. (GOI) Government of India. National Action Plan on Climate Change Council on Climate Change, 2008.
8. Nayak, S. Land Degradation in Uttar Pradesh: Causes, Extent and Intensity. Fellow, Giri Institute of Development Studies, Lucknow.