

DRAFT
PUNJAB FOREST POLICY, 2019



GOVERNMENT OF PUNJAB
FORESTRY, WILDLIFE & FISHERIES DEPARTMENT

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PUNJAB FOREST POLICY – 2019

1. PUNJAB

Punjab, the land of five rivers is population wise the largest province of Pakistan. Once known as the granary of east, Punjab is still the lifeline of Pakistan. It is the second largest province by area after Balochistan. It is bordered by Sindh, Balochistan and Khyber Pakhtunkhwa, as well as the regions of Islamabad Capital Territory and the Azad Kashmir. Punjab is Pakistan's most industrialised province with the industrial sector making up 24% of the province's gross domestic product. It is known in Pakistan for its relative prosperity. Punjab is also one of South Asia's most urbanized regions with approximately 40% of people living in urban areas. Its human development index rankings are high relative to the rest of Pakistan.

1.1 Landscape

Punjab's landscape mostly consists of fertile alluvial plains of the Indus River and its four major tributaries in Pakistan, the Jhelum, Chenab, Ravi, and Sutlej rivers which traverse Punjab north to south - the fifth of the "five waters" of Punjab, the Beas River, lies exclusively in the Indian state of Punjab. The landscape is amongst the most heavily irrigated on earth and canals can be found throughout the province. Punjab also includes several mountainous regions, including the Suleman Mountains in the southwest part of the province, the Margala Hills in the north near Islamabad, and the Salt Range which divides the most northerly portion of Punjab, the Potohar Plateau, from the rest of the province. Sparse deserts can be found in southern Punjab near the border with Rajasthan and near the Suleman Range. Punjab also contains part of the Thal and Cholistan deserts.

1.2 Economic Situation

Punjab's economy is mainly agricultural, although industry makes a substantial contribution. The province is playing a leading role in agricultural production. It contributes about 68% to annual food grain production in the country. 51 million acres is cultivated and another 9.05 million acres are lying as cultivable waste in different parts of the province. Cotton and rice are important crops. They are the cash crops that contribute substantially to the national exchequer. Attaining self-sufficiency in agriculture has shifted the focus of the strategies towards small and medium farming, stress on barani areas, farms-to-market roads, electrification for tube-wells and control of water logging and salinity. Punjab is also a mineral rich province with extensive mineral deposits of coal, rock-salt, dolomite, gypsum and silica-sand.

Punjab has the largest economy in Pakistan, contributing most to the national GDP. Its share of Pakistan's GDP was 54.7% in 2000 and 59% as of 2010. It is especially dominant in the service and agriculture sectors of Pakistan's economy. With its contribution ranging from 52.1% to 64.5% in the Service Sector and 56.1% to 61.5% in the Agriculture Sector. It is also major manpower contributor because it has largest pool of professionals and highly skilled (technically trained) manpower in Pakistan.

1.3 Population

According to the 1998 census, the population of the province is 7,25,85,000. The population density is 353 persons per square kilometer as compared to the national figure of 164. It contains several major cities of the country: Lahore, Faisalabad, Rawalpindi, Multan and Gujranwala.

1.4 Land Profile of Punjab

The province of Punjab is one of the major administrative units of Pakistan that occupies an area of 20.630 million ha (Punjab Development Statistics, 2015). Although Punjab constitutes only 25% of the total land area of Pakistan, however, it has significance due to highly productive agricultural land formed by the flood plains of five major rivers of the country. A total of 11.030 million ha (53%) is under cultivation due to the courtesy of irrigational system that extends over 30,646 canal miles. The following are the ecological categories of land use in Punjab: -

Category	Area (sq km)	%age of total area
Arid	1,19,310	58
Semi - Arid	59,678	29
Sub Humid	17,014	8
Other	10,197	5
Total:-	206199	100

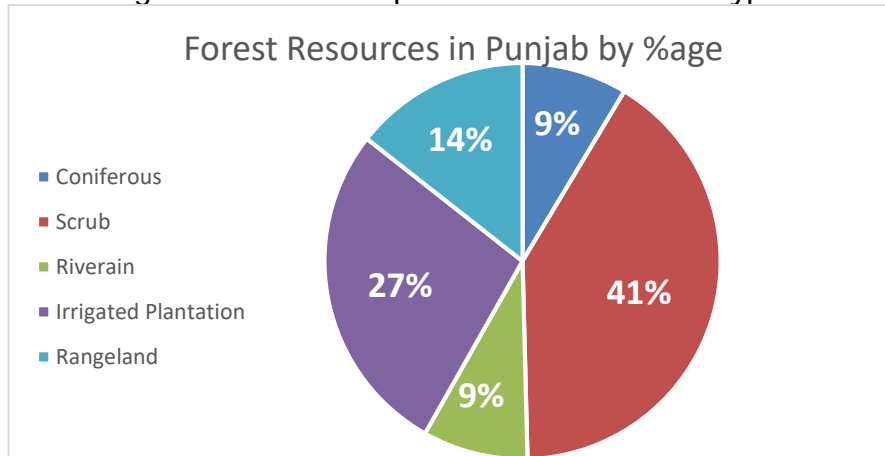
Source: Sustainable Agriculture, NCS Sector Paper by Dr. G.R. Sandhu

2. FOREST RESOURCES OF PUNJAB

Punjab has a diversified landscape with Coniferous Forests upto the elevation of approximately 6,000 feet above the sea level in the north, while in South it has range areas around Cholistan desert. The foothills of Himalaya stretching from Mangla Dam in Jhelum upto Jinnah Barrage in Mianwali traversing districts of Chakwal and Khushab is the famous Salt Range comprising the natural Scrub Forests. The Indus Plain is the canal irrigated tract having several irrigated plantations. Likewise, the either sides of river Jhelum, Chenab, Ravi and Indus have Riverain Forests, locally known as "Belas" located in several districts. The total forest area in Punjab is 1.66 million acres which is almost 3.1% of the total land area of the province. The following table shows the area under each forest type: -

S.No.	Forest Types	Area (Acres)	Percentage
1.	Coniferous Forests	144060	8.6
2.	Scrub Forests	679549	41
3.	Riverain Forests	143548	8.6
4.	Irrigated Plantations	456175	27.4
5.	Range Lands	240172	14.4
Total:		1663504	100

The following is the brief description of different forest types of Punjab.



2.1 Coniferous Forests

The forest are chiefly characterized by the extensive growth of conifer tree species or commonly known as pine trees. These forests are located in Murree, Kahuta and Kotli Sattian tehsils of district Rawalpindi. The total forest area under the coniferous forests in Punjab is 144060 acres. The coniferous forests, based on height from sea level and species composition are divided into two types i.e. sub-tropical Chir Pine forest and Himalayan moist temperate forests. These forests are bounded in the east by river Jhelum, in the North West by province of KPK and in the south by sub-mountainous areas of Rawalpindi and Gujjar Khan tehsils.

In sub-tropical Chir Pine forests *Pinus roxburghii* (Chir) forms practically the entire forest canopy. The individual tree height upto 120 feet with diameter of 2.6 feet are not uncommon. The western limits of the Chir forest are found in an elevation range of 3000 to 5500 feet above the sea level, precipitation is between 630 to 1500 mm/year mostly derived from south-eastern monsoon from July to September. The climatic conditions favour growth of the principal species i.e. *Pinus roxburghii* (Chir) in pure stands. In the upper most wet and cooler locations, *Pinus wallichiana* (Kail) and *Quercus incana* is also grown.

The Himalayan most-temperate forest extends along the whole length of the outer ranges of the Himalayans at an elevation of 4500 to 10,000 feet. Precipitation is between 630 to 1500 mm/year. An appreciable amount of moisture is also received from the westerly disturbances during the winter and spring months in form of snow. The main coniferous species are *Pinus wallichiana*, *Cedrus deodara*, *Picea smithiana* and *Abies pindrow*, including broad leaf species of *Quercus*.

The coniferous forest plays an important role in the watershed areas of dams. The presence of forest checks soil and water erosion and restrict the follow of silt in the water reserviors, thus, reducing the life of dams. In addition to afforestation of blank areas in these forests the department also undertakes various soil conservation measures. Since 1994, there is a complete ban of cutting of green trees from the coniferous forests. As a result, the density of coniferous has increased considerably. The trees which are dead and forests are removed from different parts of the forests and carried to Rawalpindi for subsequent disposal through auction after their conversion by the Timber Extraction Division of the department.

2.2 Scrub Forests

The scrub forests grow in the foothill and lower slopes of Himalaya in Punjab. The main mountain ranges occupied by these forests are Salt Range, Kala Chitta Range and Suleman Range. They are mainly distributed in the districts of Rawalpindi, Chakwal, Jhelum, Attock and a small portion in district Khushab and D.G. Khan. Most of these forests lie between 1500 to 3000 feet above the sea level. The total area of scrub forests in Punjab is 679549 areas.

The forests are dominated with low productive small sized broad leaf and ever green tree species and therefore can be classified as xerophytes forests. The density of forests varies from complete closure under the moist favourable conditions on northern aspects to scattered trees or group on dry sites mostly on southern aspect. However, their importance from the soil and water conservation point of view can hardly be over-emphasized. It is the reason that the Irrigation Department has established several small dams in the area. Scrub forests are characterized by erosion, gullies and deep ravines. Rocks and boulders are common feature with small patches of infertile soil produced due to weathering of sandstone. It is very cold in winter and summers are hot, small amount of precipitation is received in monsoon and winter rainfall.

The main tree species are *Olea cuspidata* (Kahu), *Acacia modesta* (Phulai), *Tecoma undulata* (Lahora), *Butea monosperma* (Dhak), *Pistacia integermia* (Kanjer), *Capparis decidua* (Kanir) and *Dodonea viscosa* (Sanatha).

The department does not undertake any felling of trees in the scrub forests from a period of more than four decades. The area is under severe premise of grazing and collection of firewood by the local inhabitants. Nomadic graziers (Bakarwal) visit these forests annually during winter and stay in these areas for four to five months. These Bakarwals browse their goats and cause damage to the crop due to excessive grazing. Large scale mining activities are also common in and around forests under proper legal cover. These mining activities also have deteriorating effects on the forest health. Roads are constructed for carriage of minerals. The labourers settled in an around forests and engaged in mining activities also uses firewood from the forest area.

2.3 Irrigated Plantations

Irrigated Forest Plantations form one of the most valuable forest estate in the province and their management comes high on the list of the functions of the Forest Department. These are man-made forests and are in shape of blocks of tree plantation in the canal irrigated tract. These plantations were among the world pioneer in the forest practices. The first irrigated plantation of the country started at Changa Manga in 1866. With the development of irrigation system in Punjab, which is largest in the world and colonization in the semi-arid region afforestation by canal irrigation also expanded and today we have about 456175 acres under irrigated plantations in the province in different districts of the Punjab. The individual size of a plantation ranges from 7,000 to 20,000 acres. The primary objective of the establishment of irrigated plantations was to produce coal for the steam engines. It is the reason that all the major irrigated plantations are established along the railway lines. The basic species raised in these plantations was "Shisham" (*Dalbergia sisso*) with a shorter rotation to produce firewood. These plantations now meet about 10% of the total firewood needs of the province.

Before discussing the changes that occurred in the management system over a period of time, it should be appropriate to mention that irrigated plantations have become the primary source of fuelwood production for domestic and commercial purposes. Plantations not only supported the wood based industries, but also provided raw material for various small scale local furniture industries, which flourished around the plantations in the province.

With the increase in population and expanding wood based industries several fast growing and short rotation tree species were introduced in these plantations. These species were raised as monoculture as well as under storey forest of *Dalbergia sisso* (Shisham) areas. The major species introduced include Poplar, Eucalyptus and Mulberry. The introduction of Poplar was to support match and allied industry, while Mulberry Plantations provided raw material to the sports industry. Eucalyptus was raised on marginal land effected by salinity and water logging caused by inefficient management of canal water.

All the major irrigated plantations in Punjab are managed under an approved Management Plans, prepared for a period of 10 to 20 years. The Management Plans had been expired after the notified period of their implementation, while new plans could not be timely prepared due to inadequate trained human resource in the Department. Since 2009, a separate wing was created in the Department not only to prepare new Management Plans for all types of forests but also to conduct monitoring and evaluation of forest activities in the province.

In the newly developed Management Plans, there is a great shift from the previous management practices. Initially, the working circle used to correspond to species and its management. But as per new objectives, certain areas are designated as Environment Working Circle, to be afforested through indigenous tree species. Such working circle shall not be prescribed for main felling in future, rather kept for environmental services. In contrary to earlier practice of monoculture, several indigenous tree species shall be planted for conservation of biodiversity.

At present, the main felling is being discouraged in the prescriptions of the Management Plan, to reduce the existing wide gap between the planted and unplanted areas in the irrigated plantations.

2.4 Riverain Forests

Punjab is land of five rivers. The major alive rivers are Ravi, Chenab, Jehlum and Indus. These forests over an area of 143548 acres are mainly along the above mentioned four rivers in various districts under the administrative control of Forest Department. Few forests along river Ravi falls in Lahore and Sheikhpura district. However, in case of Chenab, there are several riverain forests along both sides of river located in Sialkot, Gujranwala and Gujrat district. But only few forest are present along river Jehlum. Indus is the biggest river which provide irrigation water, besides being a source of hydral power generation. The riverain forests located on the either side of Indus river are not only greater in number, but also constitute larger area. The riverain forests of Indus river are mainly located in Muzaffargarh, D.G. Khan and Layyah district of the province.

The newly developed riverain forests through deposit of soil supports the growth of species like Kana (*Succharum benglense*), (*Saccharum spontaneum*) Pilchi (*Tamarix dioica*), Frash (*Tamarix indica*) and Poplar (*Populus euphratica*). However, besides the natural growth of the above cited species during the succession process, regular afforestation is carried out by raising plantation of Kikar (*Acacia nilotica*) and Shisham (*Dalbergia sisso*). Besides, in area with high water table Eucalyptus (*Eucalyptus camaldulensis*) is also planted in shape of plantation.

The site condition of riverain forests has greatly changed over time, especially for forest located along Ravi and Indus rivers. Due to construction of water reservoirs by the neighboring country at upstream the flow of Ravi river has reduced considerably. The situation was further aggravated by influx of major sewer drains of Lahore in the river, making the water toxic for any vegetation. In addition, the ground water has also lowered considerably, which limited the adoption of "Bela" techniques any more in the area. Indus river is famous of its meandering behavior as it flows from north and drains into Arabian Sea. The major riverain forests located on either side of Indus River in the Southern Punjab have been affected adversely due to change in the river course. At present, these forests are seldom inundated even when the river is at its peak flow. Moreover, the soil deposition over a longer period, without any soil working has made these areas undulating and un-commandable. Hence, the only method of afforestation is with the assistance of ground water which is required to be pumped through tube wells / peter engines and motor from considerable depth. Although, the riverain forests of Chenab especially in district Gujranwala and Gujrat are almost on the bank of river, but the ground water is only available through mechanized pumping.

The pumped irrigation water is applied through flood irrigation as well by hand watering. The later is more efficient techniques, because a lot of water is wasted through flow irrigation as a result of seepage and evaporation from the sandy soil of forests.

On the expiry of previous management plans, the Planning, Monitoring & Evaluation Cell has almost finalized the draft Management Plan for riverain forest located along Ravi, Chenab and Jehlum rivers. The major forest area, under the category situated in Southern Punjab along Indus river have been assigned to South Punjab Forest Company for afforestation through private investment. As in case of irrigated plantations, the management plans of riverain forests also contains the prescription of formulation of environmental working circle. The areas under the working circles shall be planted through the indigenous tree species of local area and shall be kept as such without proposing any felling. The primary reason of avoiding felling in the area is to address the issue of under-stocking because the condition of riverain forests at present does not portray an encouraging situation. Hence, all the future management through the newly developed management plans will focus on extensive afforestation programme, which has a great potential for viable financial investment.

2.5 Range Lands

Rangelands are those areas of the world, which by reason of physical limitations -low and erratic precipitation, rough topography, poor drainage, or cold temperatures are unsuited for cultivation and are source of forage for free-ranging of native and domestic animals, as well as a source of wood products, water, and wildlife. The physical characteristics of the rangeland include low and erratic precipitation, rugged terrain, high mean annual temperature and low humidity. Range management is the science and art of optimizing the returns from rangelands through the manipulation of range ecosystems. The major objectives of the Range Management are to increase the forage production, to reduce the soil erosion and to alleviate poverty among farmer community.

In Punjab the total area under Range Management is spread over 240172 acres in 12 districts of Barani Tract of Pothohar, Thal, foothills of Kohe Suleman Hills called "Pachad" and Cholistan. Detail is as under:-

- I. Pothohar six districts (Gujrat, Mandi Baha-ud-Din, Jhelum, Chakwal, Khushab and Attock)
- II. Thal two districts (Bhakkar and Layyah)
- III. Pachad one district (D.G. Khan) and
- IV. Cholistan three districts (Bahawalpur, Bahawalnagar and Rahim Yar Khan)

The range area of Punjab can be divided into 4 ecosystems. The rangelands following in districts Gujrat, Mandi Bahauddin, Jhelum, Chakwal, Khushab and Attock are included in Pothohar ecosystem while Bhakkar and Layyah Districts fall in Thal ecosystem. Similarly, district D.G Khan covers the Pachad ecosystem while Cholistan ecosystem includes district Bahawalpur, Bahawalnagar and Rahim Yar Khan.

The main trees, shrubs and grasses present in Pothohar ecosystem are *Acacia modesta* (Phulai), *Olea cuspidata* (Kao), *Carrisa spinarum* (Garanda), *Cenchrus ciliaris* (Dhaman), *Cynodon dactylon* (Khabbal). Likewise, in Thal ecosystem the vegetation includes *Prosopis cineraria* (Jand), *Tamarix aphylla* (Frash), *Acacia jacquemontii* (Kikri), *Cenchrus ciliaris* (Dhaman), *Elionurus hirsutus* (Gorkha). Similarly, in Pachad ecosystem *Prosopis cineraria* (Jand), *Zizyphus jujuba* (Ber), *Acacia nilotica* (Kikar) *Cenchrus ciliaris* (Dhaman), *Elionurus hirsutus* (Gorkha) are common. Moreover, *Prosopis cineraria* (Jand), *Salvadora oleoides* (Wan), *Calligonum polygonoides* (Phog), *Cenchrus ciliaris* (Dhaman), *Elionurus hirsutus* (Gorkha) are widely spread in Cholistan ecosystem.

The major interventions carried out in the range areas of the Punjab include anti-erosion works such as small dams, check dams, dykes, water ponds, gully plugging, artificial reseeding, development of new watering points, dry afforestation of forage and shady trees under development and non-development budget.

The rangelands of Punjab provide livelihood to the landless farmers living in the vicinity of these areas. The main source of income of this community is rearing of livestock. For grazing of about 0.5 million camels, buffalos, cows, sheep and goats on rangelands, the Forest Department issues grazing permits on nominal charges. These livestock contribute in improving the meat, milk, hides and wools production, resulting in increase in GDP of the country.

2.6 Linear Plantations

Linear plantation refers to an area where tree plantation is present in shape of straight rows. In addition to the compact forest area, the department also manages linear plantations along provincial highways and canals. In 1961, a notification was issued declaring the right of way along the roads under the administrative control of Highway Department, as protected forest. At present the right of way of 11,680 km of provincial highway is being managed by the Forest Department. In 1994, the canal side plantations present on either side of major canals, branches and distributaries were transferred to forest department by the irrigation department. The total length of canalside plantation with Forest Department is 32,640 km. Likewise, the linear plantation along 2,987 km along rail side is also looked after by the department. The plantation along all types of linear plantation is carried out by the department through its development and non-development budget.

3. PREAMBLE

The Punjab Forest Policy 2019 will provide a course of action to fulfill the desired objectives of forestry sector. The policy and its objective are liable to change and have to be reviewed constantly. The revision of Punjab Forest Policy of 1999 was necessitated owing to recent changes in the policy perspectives at provincial, national and global level. Accordingly, the trends and focus on forestry sector has increased as well as diversified. The Punjab Forest Policy of 2019 capitalizes on the basic policy perspectives provided in the Punjab Forest Policy 1999. Besides inclusion of new challenges and issues related to forestry in the Punjab Forest Policy, 2019, a frame of action plan has been added to achieve the overall objectives. Moreover, the previous policy did not have any time frame, therefore, a period of ten years have been fixed in the Punjab Forest Policy, 2019, after which it shall be reviewed for appropriate changes, if any.

Although Food & Agriculture Organization (FAO) of United Nations (UN) has assessed that Pakistan has one of the highest deforestation rates in the world, however, the recent assessment by the department concludes that the province of Punjab has substantially increased tree cover from 3% to 6.8% over the past 15 years (District Wise Land Cover Atlas of Punjab, 2012-13, GIS Laboratory of Punjab Forest Department) despite the fact that the forest area remained constant. The increase in tree cover was primarily due to promotion of tree plantation on private lands. The existing forest cover is however so meager that it does not justify any commercial harvesting from state forest as it will result in further deforestation and degradation. The trees raised through farm forestry should however be harvested and replanted on sustainable basis to support economic activity at rural level. Despite considerable improvement in tree cover further improvement may be

brought if causes of deforestation and forest degradation are overcome. In consonance with the deliberations of the United Nations Intergovernmental Forum on Forests in 2000, the underlying causes of deforestation and forest degradation in the province are interrelated and are often socio-economic in nature that include: poverty; lack of secure land tenure patterns; inadequate recognition within national laws; inadequate cross-sectoral policies; under valuation of forest products and ecosystem services; lack of participation; absence of a supportive economic climate that facilitates sustainable forest management; illegal trade; limited alternate sources of energy; lack of capacity within Forest Department; policies that encourage the conversion of forest land to other uses.

In a major policy shift The Punjab Forest Policy 2019 emphasizes on avoiding and discouraging commercial exploitation of forest resource on state forestland and enhancing intangible benefits like environmental / ecological, socio-cultural and regulatory functions. It prefers increasing and conserving such resources as biological reserve and ecological assets for providing eco-system services. The forest resource on farmlands continue to be utilized for meeting the local requirements. The policy has been made flexible to cater for the needs and consequences of emerging issues such as Climate Change, international obligations and other cross sectoral requirements. The element of regular and sustainable flow of financial resources to implement the policy directions has been emphasized because forestry is essentially a long term activity. An enabling environment for providing scientific basis for increasing forest cover has been provided by supporting forestry research & extension, and consistent capacity building of available human resource through in-service training.

4. THE FOREST POLICY, 2019

4.1 Goal

Develop, maintain and maximize forest resources in a scientific, environmentally sustainable, ecologically stable, economically viable and socially acceptable manner.

4.2 Objectives

The basic objectives that should govern the Punjab Forest Policy are:

- I. Preserve, conserve, develop and enhance existing forest resource and tree cover in the Province in line with the National Forest Policy.
- II. Improve tree cover on private and farm lands through agroforestry practices supported by an independent extension service within the Department.
- III. Promote Public Private Partnership to encourage investment opportunities in forestry sector, in addition to sponsorship for afforestation through Corporate Social Responsibility.
- IV. Strengthen & diversify the forest research activities to support planning process, integrating the enhancement of in-service training to meet emerging challenges of forestry sector.

- V. Plan activities in compliance to the obligations under various international Multilateral Environmental Agreements, ratified by Pakistan.
- VI. Discourage the commercial exploitation of forest resource and manage them on the basis of sustainable forest management, without jeopardizing the future existence of forest resources of the Province.
- VII. Manage and conserve forest resource as biological reserve and ecological assets for providing multiple eco-system services, with management principle of landscape approach instead of obtaining timber and firewood only.
- VIII. Development of institution within the department to strengthen the discipline of extension, watershed management, range management and protected area management etc.
- IX. Make necessary legislation in form of rules under the Forest Act, 1927 (Amended upto 2016) to address various emerging challenges and streamline the activities provided under the Act *ibid*.

5. POLICY MEASURES

5.1 Resource Preservation, Conservation and Enhancement

Through various administrative, financial, institutional and policy initiatives focus would be made towards conservation, preservation and enhancement of existing forestry resource.

- I. The natural vegetation shall continue to be preserved in Forest Parks, National Parks and other protected areas.
- II. The preservation and propagation of indigenous tree species shall continue to be encouraged through arboretums, seed banks and nursery raising.
- III. The tree and vegetation cover shall be increased on farmlands, marginal and sub-marginal lands. Suitable initiatives shall be provided to encourage large scale afforestation on farmlands and other private land that are fit for plantation through mass awareness.
- IV. Water use efficiency in irrigated plantations to be improved through precise land levelling and rehabilitation of irrigation system and adaptation of modern technologies and planting of suitable tree species with less consumption of water.
- V. Tree cover on existing state forest shall be optimized and all blank forest land afforested through a planned programme on annual basis.
- VI. The resource use shall be regulated according to their capability and carrying capacity and by discouraging felling of green trees.
- VII. The participation of stakeholders in forest resource development and management shall be encouraged and facilitated through local bodies.

- VIII. Facilitate and encourage plantation on waterlogged and saline land with suitable trees, shrubs and other vegetation forms to combat desertification.
- IX. Preventive, adaptive , mitigative and rehabilitative measures shall be adopted in land use planning to address the challenges of climate change.
- X. Intensive watershed management to regulate water resource / yield through improved soil conservation, afforestation and water harvesting measures shall be taken.
- XI. Private investment shall be encouraged in improving forest and vegetation cover through corporate social responsibility and other voluntary mechanisms.
- XII. Mitigation measures relating to forest and vegetation cover shall be made mandatory in Environment Impact Assessments (EIA), in collaboration with the Environment Protection Department.
- XIII. Afforestation of areas with degraded vegetation cover shall be encouraged through private investment under different modes.
- XIV. All military lands in Cantonments and other areas shall be afforested through armed forces.
- XV. Provision of incentive for public for retaining and maintaining minimum number of trees per acre on private lands in natural forests.
- XVI. Regulatory mechanism shall be implemented to regulate the mining activities in state forest areas.

5.2 Environmental and Climate Change Perspective

The focus would be to devise measures to enhance the role of forests in mitigating the impact of environmental degradation and climate change effects.

- I. Access carbon markets by introducing "Reducing Emissions from Deforestation and Forest Degradation (REDD+) mechanism in line with national REDD+ programme.
- II. Undertake adaptation measures against climate change including choice of species, planting season, propagation techniques and irrigation methods etc.
- III. Conduct trials of exotic species change especially suitable for problematic areas and adaptable to climate change effects.
- IV. Conservation and restoration of threatened eco-systems, including desert, mountain, riverain, wetlands, etc. shall be encouraged through integrated management plans (both fauna and flora).
- V. Capacity of forest ecosystem shall be maintained and further developed through development initiatives to promote deliverance of better eco-system services for the public.
- VI. Use of alternate sources of wood shall be encouraged.

5.3 Marketing and Utilization of Forest Resources

The imperative will be to strengthen the existing marketing system of wood being exercised by different stakeholders and support technology to conserve utilization of forest resources.

- I. Assess the requirement of wood by industries including construction, mining and other wood consuming sectors and educate / facilitate tree growers for selection of suitable species to obtain true worth of their produce.
- II. Wood marketing system shall be improved by devising Marketing and Utilization Surveillance and Information System that will facilitate tree growers and Forest Department to obtain true price of their product.
- III. Farm tree volume and weight tables shall be prepared for guidance of farmers to assess the quality and quantity and price of the product.
- IV. Technology to conserve different uses of wood shall be introduced.
- V. Promotion of Non Timber Forest Produce (NTFP) shall be supported.
- VI. Linkage between wood based industry, forestry institutions and private tree growers shall be improved.

5.4 Planning, Monitoring & Evaluation

A data base repository would be developed on the basis of satellite imagery to support planning and monitoring of major forest resource in the province.

- I. The planning, monitoring & evaluation unit shall continue to assist the government in development of different strategies, plan new initiatives and through provincial government maintain linkages with the federal government and international agencies / donors.
- II. The exact areas under different forests shall be determined through GIS and Satellite based images alongwith crop density in each forest.
- III. Forest inventory of the existing resources shall be conducted in the province for sustainable management of forest.
- IV. Forest resource accounting system shall be introduced to manage information on changes in forest quality, health and condition.
- V. The planning, monitoring & evaluation wing of the Forest Department shall efficiently undertake the following: -
 - a. Prepare the development projects in accordance with the priorities of the Department.
 - b. Monitor the development projects during implementation stage and evaluation on completion of the projects.
 - c. Monitor and evaluate the forestry activities annually carried out by the department under non-development budget.

- d. Develop management plan and monitor their implementation through preparation of annual reports. Implementation on the plan will remain in force even when no commercial harvesting is involved since it is integral part of the forestry sector.
 - e. Improve the reporting mechanism of periodic reports received and compiled for submission to the government.
 - f. Maintain a database of all the above activities for future reference.
 - g. Annual Forest Administration Report of the Punjab Forest Department shall be prepared to manage information on changes in forest quantity and condition. The report shall be made available to all concerned.
- VI. The GIS based information shall be utilized for all types of monitoring and evaluation activities.
 - VII. The management plans shall encourage propagation of indigenous vegetation and support species biodiversity by prevent monoculture.
 - VIII. The cross sectoral coordination in managing the vegetation cover shall be encouraged by incorporating it in the management plans.

5.5 Forestry Research

The focus of research would be diverted towards emergent issues related to forestry and its allied disciplines.

- I. The Punjab Forestry Research Institute (PFRI) shall be strengthened through induction of forestry related multi-disciplinary human resource, imparting foreign training of staff and provision of technical / financial resources.
- II. The research projects of PFRI shall be prepared and implemented in consultation with the departmental officials and approved by Research Review Committee based on the current and emerging needs of the forestry sector.
- III. Capacity of PFRI shall be improved to support needs of wood based industry, alternate use of wood, development of participatory forestry mechanisms, vegetation dynamics and forest inventory.
- IV. Mechanism for coordination between the PFRI, field components and academia shall be developed and strengthened with mandatory periodic consultative sessions.
- V. Seed certification regime for quality seed production to improve the crop quality shall be established.
- VI. Dissemination of research results shall be ensured through the extension services of the Department.

5.6 Policy & Legislation

All the policy directives, legislative measures and rules would be developed in line with the emerging issue in synchronization with the international obligations and shall be supported with appropriate measures.

- I. The forest policy shall be reviewed periodically and revised every five years to accommodate the changing demands on resource use and other emerging issues.
- II. All necessary rules shall be prepared in consonance with the Punjab Forest (Amendment) Act, 2016.
- III. Guidelines, procedures, manuals and circulars issued time to time pertaining to the regulatory functions of the department shall be reviewed and revised/ amended on need basis.
- IV. Department shall review the existing legal categories of forest and issue notifications wherever deem necessary.

5.7 Institutional Development

The implementation of policy provisions shall require strengthening of existing institutions and development of ; specialized unit for rangelands and watershed management, non-timber forest produce and improvement of existing facilities of planning wing.

- I. A dedicated unit of Rangeland and Watershed Management shall be established at provincial level to improve vegetation cover in catchment areas, scrub and rangelands.
- II. A specialized unit on non-timber forest produce shall be established to encourage community involvement through participatory forestry and public awareness.
- III. The existing set up of planning, monitoring and evaluation, established within the Punjab Forest Department shall be strengthened through latest equipment, specialized human resource and financial resources.
- IV. The existing GIS laboratory shall be strengthened for effective monitoring, reporting, evaluation and forest resource inventory.

5.8 Multilateral Environmental Agreements

Coordination would be made with the Federal line Ministry, Government of Pakistan towards achieving objectives under various Multilateral Environmental Agreements, ratified by Pakistan.

- I. The Ministry of Climate Change is the focal point of all the Multilateral Environmental Agreement, ratified by Pakistan.
- II. Forestry and allied disciplines are provincial subjects.

- III. Necessary technical & financial assistance shall be sought from the Federal Government in order to achieve the objectives under these Agreements.
- IV. In addition, projects under the provincial development portfolio shall be proposed, focusing towards the objectives of Multilateral Environmental Agreements.
- V. Financial assistance from Federal Government shall be sought to share the cost of projects pertaining to enhancement of tree cover in the province, in line with the Agreements.

5.9 Corporate Social Responsibility

Separate setup would be established for Corporate Social Responsibility for adoption of tree plantation on forest land.

- I. The financial assistance under CSR shall be sought from the private entrepreneur, sponsoring tree plantation on forest land.
- II. Necessary assistance shall be provided to industrial units requiring to plant certain number of trees as an obligation under the Environmental Impact Assessment issued by the concerned department.
- III. Other provincial departments shall be assisted, including deposit work for carrying out tree plantation on provincial state land.

5.10 Strengthen the in-service Training for Capacity Building

Through the Forest Services Academy, in service training programme would be launched for capacity building of officers / officials.

- I. Forest Services Academy has been established at Ghora Gali, Murree for imparting in-service training to officers / officials of the Department, besides certificate and diploma courses to new recruits.
- II. Special training programme shall be developed through the assistance of Academy and related organizations.
- III. Necessary affiliation of Forest Services Academy with Universities offering forestry subject shall be sought.
- IV. Training shall also be offered to the officers of other federating units of the country at Forest Services Academy, Ghora Gali, Murree.
- V. Endowment funds shall be established to cater the financial need of training, as well as foreign short and degree programme for selected officers / officials of the Department.

5.11 Sustainable Forest Management

Efforts would be made towards shifting of forest management system from timber exploitation only towards landscape and eco-system management.

- I. The landscape approach shall be adopted while preparation of forest management plans.
- II. Special emphasize shall be made for high conservation value forests including maintenance of biodiversity.
- III. Consideration shall also be made for various eco-system services being offered by a forest landscape, in the forest management plans.

5.12 Establishment of Protected Areas

High Conservation Value forest landscape would be declared as Protected Areas.

- I. Forest landscape with high conservation value shall be declared as protected area.
- II. Special management structure shall be developed through legislative measures for declared Protected Areas.
- III. Management Plan shall be developed as a guiding tool for the management of protected areas.
- IV. Natural biodiversity (flora & fauna) shall continue to be preserved in the declared protected areas.

5.13 Promotion of Public Private Partnership

Public Private Partnership would be supported towards enhancement of forest resource.

- I. Necessary rules shall be prepared for enhancement of tree cover in the province under PPP Mode.
- II. Rules shall also be prepared for private investment for addition of recreational facilities by the private sector in the forest parks in the province.
- III. Afforestation shall be carried out on state land as a joint venture with the private sector after necessary amendments in the relevant document.

5.14 Combat Deforestation

Felling of green trees shall be discouraged from forest areas.

- I. In pursuance to the stance of Department, revenue targets are not being assigned to Forest Department arbitrarily, by the Finance Department
- II. Felling of green shall be discouraged to meet revenue targets, rather the principle of sustainable forest management shall be followed by fixing its own revenue targets by the Department without jeopardizing the existing forest stock on the state land.
- III. Gap between planted and blank area shall be reduced through deferred felling and enhancing afforestation.

5.15 Social Forestry

Development initiative would be taken to enhance tree cover on private farmland through social forestry projects.

- I. The forest area of Punjab is 3.25%, with limited scope to increase due to land competition for agriculture.
- II. Efforts shall be made to promote social forestry under the mechanism of agro and farm forestry.
- III. Tree cover shall be enhanced on farm lands through project under social forestry, to create awareness and motivate farmers to integrate forestry with agriculture.
- IV. Other government departments shall also be involved for tree plantation in their respective areas of jurisdiction.

5.16 Extension Services

Independent Extension Service would be established to provide technical assistance to private sector for enhancing tree cover on farmlands etc.

- I. The existing financial and human resources provided to Forest Department is only to manage 3.25% of forest area, while no service structure is in place to provide extension service for remaining 96.75% of province including farmlands.
- II. On the analogy of Agriculture Extension Wing of Agriculture Department, efforts shall be made to set-up Extension Service Unit within the Department to deal with private land and agriculture farms in the province.
- III. The extension service shall provide technical assistance to farmers besides raising nursery to provide planting stock to farmers etc.

- IV. Extension service shall also provide information to private sector / farmers regarding supply and demand of tree species, to plant appropriate trees with ensured income from their sale.
- V. The information of various wood based industries and their consumption of specific species shall be shared with farmers.
- VI. Extension service shall also disseminate the research results to both private and public sectors for their consumption.

6. FRAMEWORK OF ACTION PLAN OF FOREST POLICY

Subsequent upon approval of the policy provisions a strategic action plan shall be devised through consultative process keeping into consideration the following framework:

- I. Implementation strategies of Forest Policy shall be developed in terms of short, medium and long term action plans over the next ten years duration.
- II. The framework of action plan will explain the actions to be taken for implementation of policy decisions in shape of different interventions including development projects and administrative decisions.
- III. All forestry management and promotional activities shall be in accordance with the forest policy.
- IV. An annual review shall be conducted by the government and other stakeholders to monitor the implementation of action plan and to consider necessary changes in the plan
- V. A dedicated effort shall be made for institutional set up of specialized disciplines of Range, Watershed Management and Forestry Extension, Corporate Social Responsibility and non timber forests produce.
- VI. The implementation period of the policy shall be ten years, after which it shall be reviewed for modification, if any.

7. FINANCIAL SUPPORT FOR FORESTRY

The objectives of this revised Policy only be achieved with the investment of financial and other resources on a substantial scale. Such investment is indeed fully justified considering the contribution of forests in maintaining essential ecological processes and life support systems and in preserving genetic diversity. Forests should not be looked upon as a source of revenue. Forests are a renewable natural resource that regularly mitigate the effects of climate change. Forests are a national asset to be protected and enhanced for the well-being of the people and the Nation. Hence, necessary financial support to the sector is inevitable to achieve the desired goal, objectives and statements included in the Punjab Forest Policy, 2019. Apart from regular funding to the Forest Department, special mechanism shall be supported for development of a financial pool contributed by different provincial stakeholder departments to achieve the overall objectives of the Policy.