

Deforestation in Pakistans An inevitable set back to

**Climate and economy** 

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Revitalizing the health of our forests is in our best interest, as it helps to create new jobs, mitigate climate change and to safeguard biodiversity

~ Ministry of Climate Change



#### **Learning Outcomes**

- What is **Deforestation**?
- Deforestation vs Forest Degradation
- Causes of Deforestation in Pakistan & globally
- Causes of Forest Degradation
- Consequences of Deforestation & Forest Degradation
- Provincial Stats for Deforestation
- Provincial Stats for Forest Degradation
- Deforestation and global warming (CO2 emissions)
- Economic Hazards of Deforestation in Pakistan
- How can we improve the situation
- Role of **OHEC** regarding climate change
- What we demand from International community (

#### **Deforestation?**

- Deforestation means decreasing forest numbers owing to human interventions across the globe for purposes such as agricultural croplands, urbanization, or mining activities.
- According to National FREL/ FRL Submission (2020) Deforestation is defined as "the direct human induced conversion of forest to non-forest (UNFCCC) or the permanent reduction of the tree canopy cover below the minimum 10% threshold" (FAO, 2015). A minimum mapping unit of 0.5 ha has been applied for the deforestation mapping (MoCC, 2020).
- This trend has increased exponentially since 1960s with an annual rate of deforestation to be around 1.3 million km2 per decade
- In 2010, Pakistan had 648kha of tree cover, extending over 0.74% of its land area. In 2021, it lost 63.2ha of tree cover.

#### **Trend of Deforestation in Pakistan**

3.5%

3%

2.5%

2%

1.5%

0.5%

2015

Between 2000 and 2013, the total tree cover loss in Pakistan was 10,022.4 hectares while the gain in tree cover was only 847.3 rectares 27874 Sind Punjab Khyber Pakhtunkhwa Balochista 13693 Jammu and Kashmir 577 0 20,000 acres 40,000 acres 60,000 acres 80,000 acres 100,000 acres Forest land converted to non-forest uses in Pakistan's various regions between 1947 and 2010 According to the United Nations, a country should have at least 25 per cent of its total land under forest cover. Currently, Pakistan's total forest cover is only 1.9 per cent of its total land

area of 79.6095 million hectares. In 1947, the country had a forest cover of 33 per cent

#### **Deforestation in Pakistan**



#### **Deforestation** vs Forest Degradation

#### Deforestation

- "The direct human induced conversion of forest to non-forest (UNFCCC) or the permanent reduction of the tree canopy cover below the minimum 10% threshold" (FAO, 2015). A minimum mapping unit of 0.5 ha has been applied for the deforestation mapping (MoCC, 2020).
- The key factor of deforestation is Illegal Logging, Urbanization, Desertification of Land, Mining, Forest Fires, Paper are other reasons
- Emission Factors for deforestation were developed by converting the carbon stock density value (C t/ha) of each forest type to CO2 equivalent using an expansion factor of 3.67

#### Forest Degradation

- Human induced long-term losses within forest persisting of at least four years or more due to changes in canopy cover i.e., open (11-30%), sparse (31-50%), medium (51-70%), dense (>70%) resulting in reduction in forest carbon stock and not qualifying as deforestation"
- The key factor of Forest Degradation is **Climate Change**, higher temperatures and unpredictable weather patterns, pest infestation, and disease comprise other reasons.
- Emission factors for forest degradation were developed by determining the carbon density values (C t/ha) of different forest strata and the difference between these values when one forest stratum is degraded into a lower stratum.

#### **Causes of Deforestation**

#### In Pakistan

- Clearing of land
- Urbanization
- Building of Roads
- Industrialization
- Overgrazing
- Poverty
- Lack of awareness
- According to survey under Red Plus Program, the Azad Jammu and Kashmir has the highest forest cover at 36.9%, followed by KPK (20.3%), <u>Islamabad</u> (22.6%) and <u>Federally</u> <u>Administered Tribal Areas</u> (19.5%) and the total <u>forest cover</u> of Pakistan is 5.7%.

#### Globally

- Agriculture is the Number 1 Cause of Deforestation (~80%)
- New Constructions (~15%)
- Urbanization (~5%)
- Forest fires
- Diseases that affect trees.
- Parasites.
- Extreme weather such as hurricanes or floods.
- According to the Food and Agriculture Organization of the United Nations (FAO) <u>Global Forest</u> <u>Resources Assessment 2020</u>, 420 million hectares of forest have been lost worldwide since 1990 due to deforestation.

#### **Causes of Forest Degradation**

Climate change
Illegal Logging
Forest Fires
Pests and Diseases
Air Pollution
Forest Fragmentation
Land Pollution
Soil Erosion and Sedimentation

#### **Consequences of Deforestation & Forest Degradation**

- Climate Change
- Endangering Biodiversity
- Desertification
- Soil Erosion
- Fewer Crops
- Flooding
- Increased Greenhouse gases

## Stats for Deforestation ~ Islamabad (2016-2020)

Forest type	Forest-	Forest-	Forest-	Forest-	Forest-	Total
	Cropland	Grassland	wetland	Settlement	Other	deforestation
	(ha)	(ha)	(ha)	(ha)	land (ha)	(ha)
Subtropical broad leaved (Scrub)	0	96	9	125	218	448

## Provincial Stats for Deforestation ~ Punjab (2016-2020)

• The total area of deforestation (excluding Irrigated Plantations) in Punjab was determined as 6,655 ha

Forest type	Total defores tation (ha)
Moist-Temperate Forests	0
Subtropical Chirr Pine Forests	125
Subtropical broad leaved (Scrub)	2438
Tropical Thorn Forests	2139
Riverine	1953



## Provincial Stats for Deforestation ~ Sindh (2016-2020)

• The total area of deforestation was determined as 26,976 ha with an average annual deforestation rate of 6,744 ha.

Forest type	Grand Total (ha)
Subtropical broad leaved (Scrub)	943
Tropical Thorn Forests	1,324
Riverine Forests	24,036
Mangrove Forests	672



## Provincial Stats for Deforestation ~ Baluchistan (2016-2020)

• The total area of deforestation was determined as 1,045 ha with an average annual deforestation rate of 261 ha.

Forest type	Total deforestation (ha)
Dry temperate Chilgoza Forests	6.12
Dry temperate Juniper Forests	263.79
Subtropical broad leaved (Scrub)	283.14
Tropical Thorn Forests	444.51
Mangrove Forests	47.97



#### Provincial Stats for Deforestation ~ KPK (2016-2020)

• The total area of deforestation was 7,832 ha with annual deforestation rate was calculated as 1958 ha.

Forest type	Total deforestation (ha)
Sub-Alpine Forests	522
Dry-Temperate Forests	3,254
Dry temperate Juniper and Chilgoza Forests	25
Moist-Temperate Forests	835
Subtropical Chirr Pine Forests	2,058



## Stats for Deforestation ~ AJK (2016-2020)

• The total area of deforestation was determined as 612 ha with annual deforestation rate as 153 ha

Forest type	Total deforestation (ha)
Sub-Alpine Forests	78.84
Dry-Temperate Forests	102.33
Moist-Temperate Forests	124.92
Subtropical Chirr Pine Forests	149.49



## Stats for Deforestation ~ GB (2016-2020)

• Total area of deforestation (including Farm Plantations) was 461 ha with annual rate as 115 ha

Forest type	Total deforestation (ha)	
Sub-Alpine Forests	143	
Dry-Temperate Forests	318	
Farm Plantations	24	



## Stats for Deforestation ~ A relative comparison (2016-2020)



Provincial Comparison

#### Stats for Forest Degradation ~ ICT & Punjab (2016-2020)

• The total area under forest degradation in Punjab was estimated to be 74,441 ha.

Forest Type	Punjab	ICT
Moist Temperate	476	
Sub-tropical Chirr Pine	21,771	
Subtropical broad leaved (Scrub)	44,054	2148
Tropical Thorn	4,180	
Riverine	3,961	



### Provincial Stats for Forest Degradation ~ Sindh (2016-2020)

• The total area under forest degradation in Sindh was estimated to be 15,712 ha

Forest Type	Total degradation (ha)
Subtropical broad leaved (Scrub)	8
Tropical Thorn Forests	3,495
Riverine Forests	8,315
Mangrove Forests	3,893



## Provincial Stats for Forest Degradation ~ Baluchistan (2016-2020)

• The total area under forest degradation in Baluchistan was estimated to be 109,908 ha

Forest type	Total (ha)
Dry temperate Chilgoza Forests	5,515
Dry temperate Juniper Forests	50,232
Subtropical broad leaved (Scrub)	49,607
Tropical Thorn Forests	4,178
M angrove Forests	377
Total	109,908



#### Provincial Stats for Forest Degradation ~ KPK (2016-2020)

• The total area under forest degradation in KP was estimated to be 342,969 ha.

	Total Forest Degradation
Forest Type	
Sub-Alpine	2,471
Dry Temperate	145,740
Dry temperate Juniper and Chilgoza Forests	137
M oist Temperate	90,850
Sub-tropical Pine	86,187
Subtropical broad leaved (Scrub)	17,562
Tropical Thorn	22



## Stats for Forest Degradation ~ AJK (2016-2020)

• The total area under forest degradation in AJK was estimated to be 35,202 ha.

Forest Type	Total degradation during 2016-2020 ha)
	Area (ha)
Sub-Alpine	640
Dry Temperate	2096
Moist Temperate	16602
Sub-tropical Pine	9558



## Stats for Forest Degradation ~ GB (2016-2020)

• The total area under forest degradation (including Farm Plantations) in GB was estimated to be 53,395 ha.

Forest type	Total
Sub-Alpine Forests	15,596
Dry-Temperate Forests	34,854
Farm Plantations	2,945
Total	53,395



## Stats for Forest Degradation ~ A relative comparison (2016-2020)



Provincial Comparison

#### • Emissions from Deforestation (ICT)

• Ongoing deforestation is a pressing, global environmental issue with direct impacts on climate change, carbon emissions, and biodiversity.

Forest type	Total Deforestation (ha)	Total Emission (Mt CO2e)
Subtropical broad leaved (Scrub)	448	0.0151

• Emissions from Deforestation (Punjab), determined to be 0.163 (Mt CO2e)



Emission Stats for Punjab

• Emissions from Deforestation (Sindh), determined to be 0.427 (Mt CO2e)



Emission Stats for Sindh

• Emissions from Deforestation (Baluchistan), determined to be 0.051 (Mt CO2e)



Emission Stats for Baluchistan

• Emissions from Deforestation (KPK), determined to be 1.212 (Mt CO2e)



Emission Stats for KPK

• Emissions from Deforestation (AJK), determined to be 0.08 (Mt CO2e)



Emission Stats for AJK

• Emissions from Deforestation (GB), determined to be 0.077 (Mt CO2e)



Emission Stats for GB

Data Courtesy by Ministry of Climate Change, Pakistan

# Stats for CO2 Emission~ A relative comparison (2016-2020)

Comparison of Emmision



#### Economic Hazards of Deforestation in Pakistan

- The Forestry Sector Master Plan has estimated that the country is suffering an annual loss of 2.3 billion rupees as a result of flooding, erosion of fertile soil from upland watersheds and siltation of reservoirs and irrigation system all which is somehow related to scanty forest areas in country.
- It is an undisputable truism that the dependence of millions of people on forests leads to degradation and deforestation, there are several benefits accruing from such loss (in the aspect of livelihoods, income and employment) for the sustenance of indigenous people.
- According to the World Bank (2004), it is estimated that approximately 60 million indigenous people are almost wholly dependent on forests while 350 million people depend on forests for a high degree for subsistence and income, and about 1.2 billion people rely on Agri-forestry farming systems
- The destruction of the tropical forest ecosystem in general and of rain forests in particular not only
  impacts on the environment in tropical countries but incurs changes in the world climate by
  aggravating the greenhouse effect. In addition to having effects on the global climate, rain forest
  ecosystems feature a variety of unknown biological species all impacted negatively by deforestation.

#### How can we improve the situation?

- Any effort to protect forests will need to include local communities and support farmers, who depend on agriculture for their livelihoods, so proper **awareness** is needed regarding importance of forests and alternative ways to avoid deforestation.
- Focus on High Carbon Stock Approach a methodology that distinguishes forest areas for protection from degraded lands with low-carbon and biodiversity values that can be earmarked for agricultural development, and one that underpins numerous corporate commitments to ending deforestation in commodity supply chains.
- Strong government commitments to reducing greenhouse gas emissions, and the power of global agricultural supply chains can combine to reduce deforestation, and improve agricultural productivity and livelihoods within a distinct political geography.
   Climate Saviour Innovative Projects must be encouraged and grants be approved for such projects.

#### Role of OHEC

- OHEC is working in collaboration with Ministry of Climate Change, Pakistan for Organizing pre workshop series on "Pakistan's Environment & It's sustainability in view of recent research work" to be held in Karachi.
- Working together with Ministry of Climate Change, Pakistan, we aim to organize Plantation Drive in different areas of the country with an estimate of 5000+plants.
- Ambassador "Go Green Movement Pakistan"
- Working on "Photovoltaic Powered safe water plant" for long term clean water provision especially in far off and flood areas.
- OHEC is also working on Rehabilitation of Flood victims. Our work regarding flood (- a consequence of Global warming) can be viewed on our official website @ www.orghec.com

#### What we demand from International Community

- Every six seconds, an area of rainforest the size of a football pitch is cleared. If the World continues at the current rate, there will be no rainforests left in 100 years' time. So we must intensify and accelerate our efforts to save the climate.
- When stakeholders work together to deploy resources in coordination and at scale, extraordinary change is possible.
- We demand the International community to broaden the community of action to engage the financial sector, support new approaches to sustainable land-use at the jurisdictional level, new strategies to prevent forest degradation and deforestation, and promote climate friendly recyclable products.

## THANK YOU