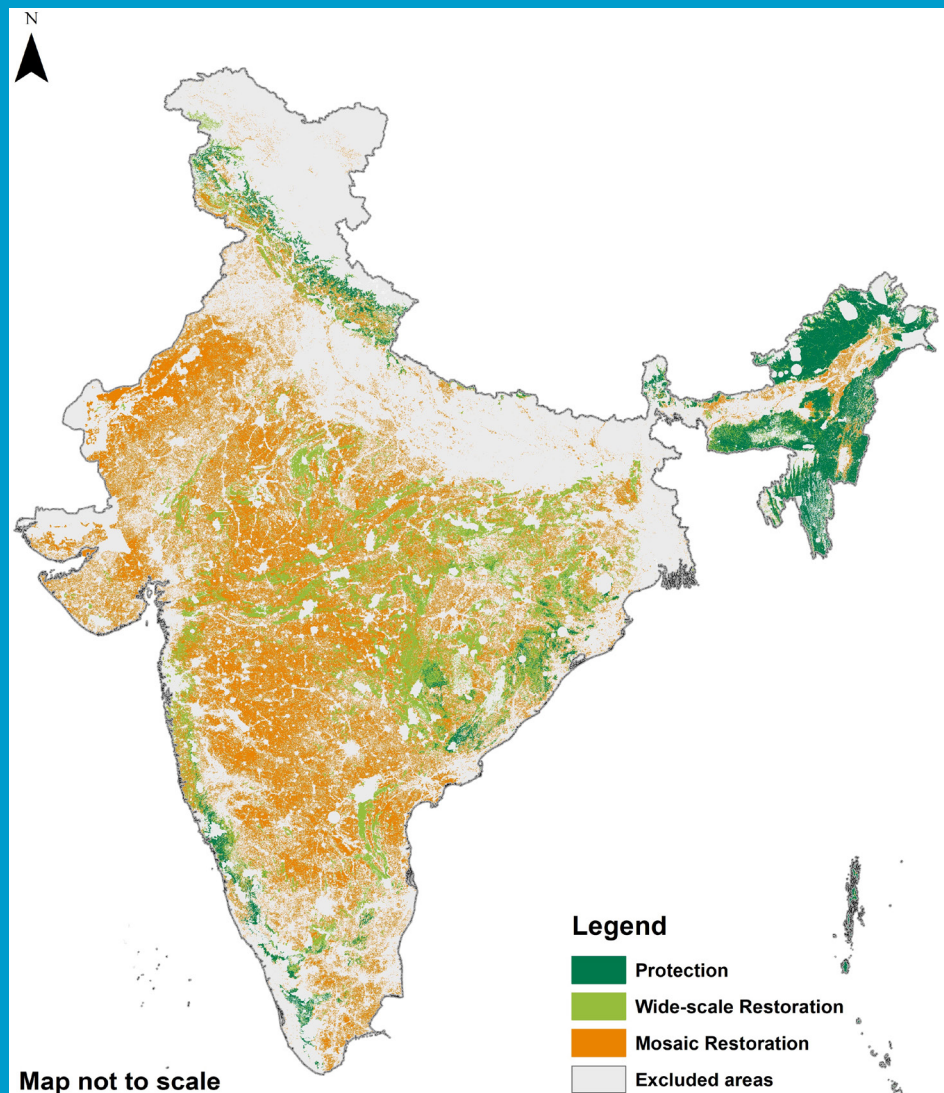




WRI INDIA

RESTORATION OPPORTUNITIES ATLAS: STATE REPORTS

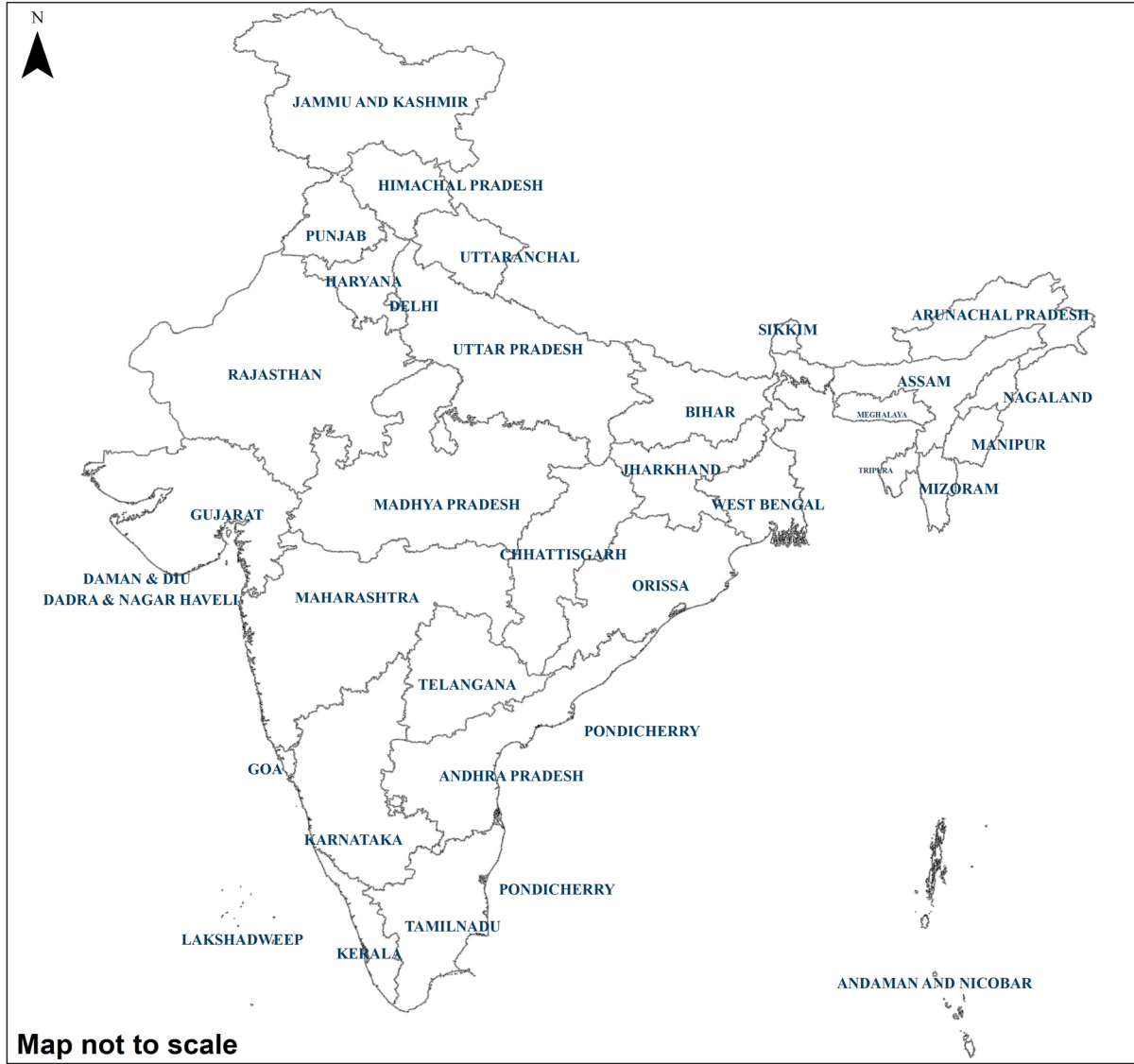


India.restorationatlas.org



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ANDHRA PRADESH

GEOGRAPHIC AREA AND LAND USE

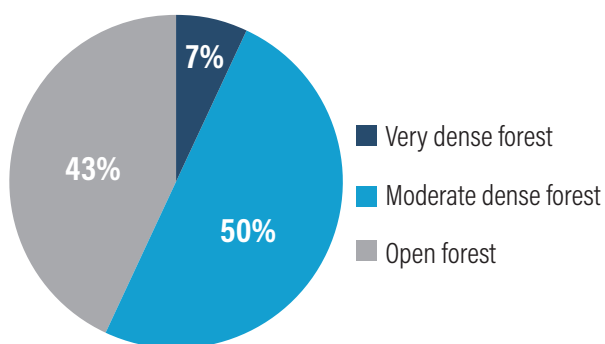
Total Geographic Area: 16 MHa

Land Use	Area (MHa)
Forests	3.49
Not available for land cultivation	3.44
Permanent pastures and other grazing lands	0.21
Land under misc. tree crops and groves	0.16
Culturable wasteland	0.39
Fallow land other than current fallow	0.79
Current Fallow	1.08
Net Sown	6.44

FOREST COVER

Recorded Forest Area: 3.73 MHa

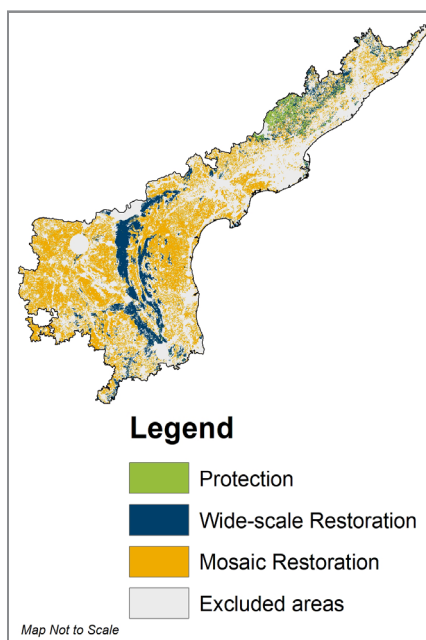
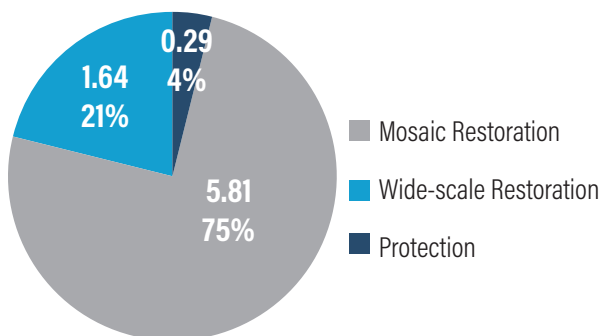
Forest Type	Area (MHa)
Very Dense Forest	0.19
Moderate Dense Forest	1.41
Open Forest	1.21



LANDSCAPE RESTORATION POTENTIAL

Total Area Available for Restoration: 7.75 MHa

Intervention	Area (MHa)
Protection	0.29
Wide-scale Restoration	1.64
Mosaic Restoration	5.81



CARBON SEQUESTRATION POTENTIAL

Andhra Pradesh has the potential to sequester between 157.73 to 252.80 million tons (MT) of additional above ground carbon through improvement of tree cover. This includes:

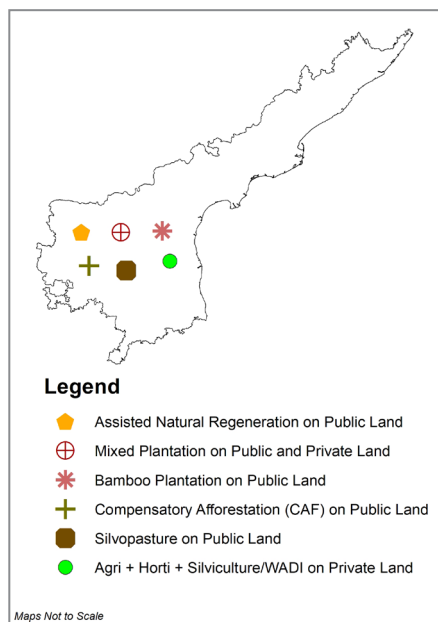
Strategy	Carbon Sequestration Potential (MT of Carbon)
Protection	7.65
Widescale Restoration	93.97
Mosaic Restoration	56.11 - 151.18
Total	157.73 - 252.80

* the lower limit is based on estimates of 20% tree cover in cultivated areas, the upper limit assumes 40% tree cover in cultivated areas.

Notably the above does not include carbon sequestration potential in Andhra Pradesh’s protected areas.

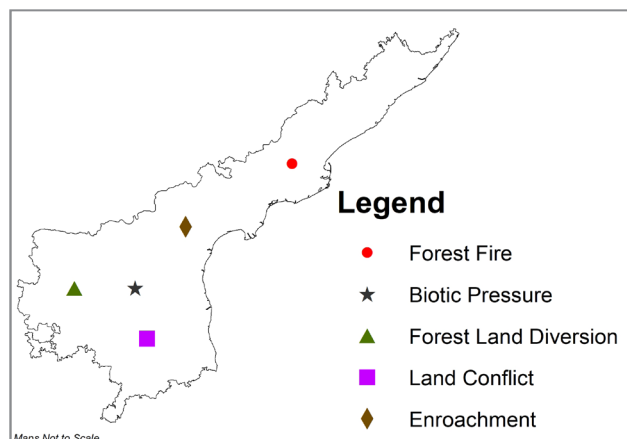
PAST AND ON-GOING INITIATIVES

The study on past and on-going initiatives found that Andhra Pradesh has four projects that involve at least six types of interventions.



These interventions cover 7,060 hectares and have been implemented by government agencies, private sector as well civil society organisations.

RISKS TO IMPROVEMENT IN FOREST AND TREE COVER



There are four major risks that can adversely impact improvements in forest and tree cover in Andhra Pradesh:

- Between 2011-2017, Andhra Pradesh recorded 12,929 incidents of fires.

- Between 2011-2017, Andhra Pradesh diverted nearly 49,063.9968 hectares of forest land. This is nearly 1.74 % of Andhra Pradesh’s total forest area.
- According to the Land Conflict Watch, 4 conflicts between state agencies and communities were reported in Andhra Pradesh in 2015. These conflicts are related to land acquisition for development (1), tenure and resource rights (1) and others (2).
- Biotic pressure including open grazing and collection of fuel-wood.

TENURE AND RESOURCE RIGHTS

5 districts in Andhra Pradesh are partially covered under the Panchayat (Extension to Scheduled Areas) Act of 1996. Nearly 24 percent of Andhra Pradesh’s forests are covered by joint forest management committees, covering 143,8000 households. The potential for CFR in Andhra Pradesh is 2.49 Mha.

FINANCE FLOWS

Between 2011-16, INR 669.130.3 crore was allocated to Andhra Pradesh under different programs and schemes, for improvements in forest and tree cover.

Programme	Amount (INR crore)
Budgetary Allocation	638.18
Compensatory Afforestation Fund (CAF)	540.17
Thirteenth Finance Commission	59.65
NABARD	95.46
Bilateral and Multilateral funders	35.69
Allocations under MGNREGA	5,357.83
State’s share in CAF	3,668.39

In 2018, Andhra Pradesh’s share of the Compensatory Afforestation Fund, which was created to compensate the ecosystems services lost as a result of forest land diversion, was INR 3,668.39 crore.

ARUNACHAL PRADESH

GEOGRAPHIC AREA AND LAND USE

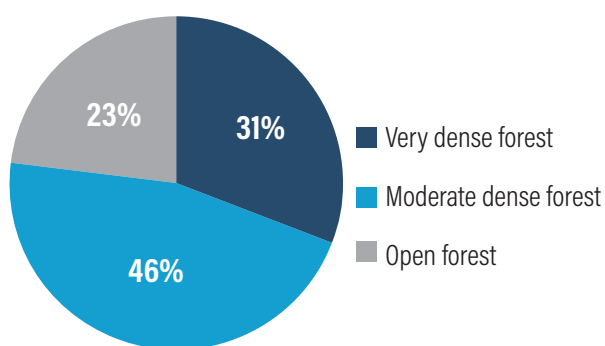
Total geographic area: 8.37 MHa

Land Use	Area (MHa)
Forests	6.73
Not available for land cultivation	0.06
Permanent pastures and other grazing lands	0.01
Land under misc. tree crops and groves	0.04
Culturable wasteland	0.06
Fallow land other than current fallow	0.07
Current Fallow	0.04
Net Sown	0.23

FOREST COVER

Recorded Forest Area: 5.14 MHa

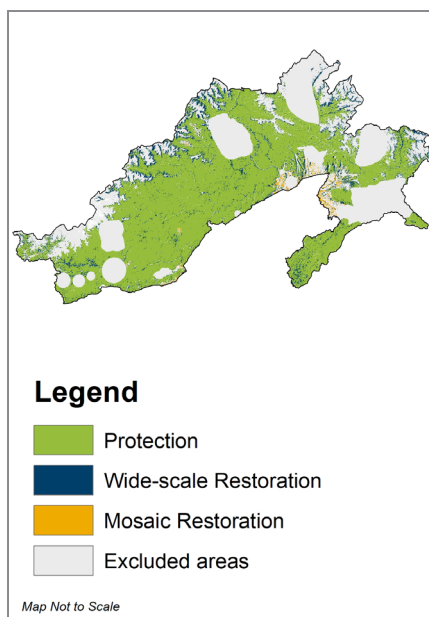
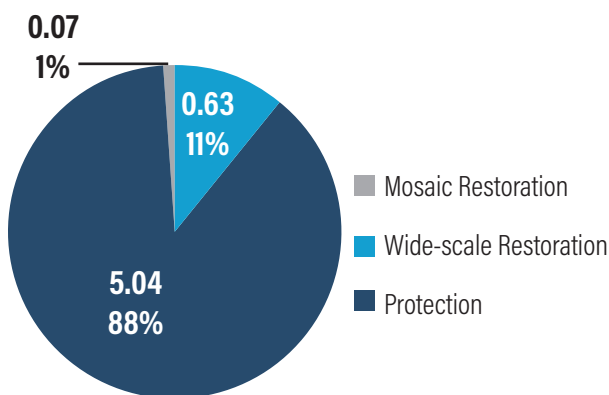
Forest Type	Area (MHa)
Very Dense Forest	2.07
Moderate Dense Forest	3.09
Open Forest	1.52



LANDSCAPE RESTORATION POTENTIAL

Total Area Available for Restoration: 5.74 MHa

Intervention	Area (MHa)
Protection	5.04
Wide-scale Restoration	0.63
Mosaic Restoration	0.07



CARBON SEQUESTRATION POTENTIAL

Arunachal Pradesh has the potential to sequester between 138.10 to 139.45 million tons (MT) of additional above ground carbon through improvement of tree cover. This includes:

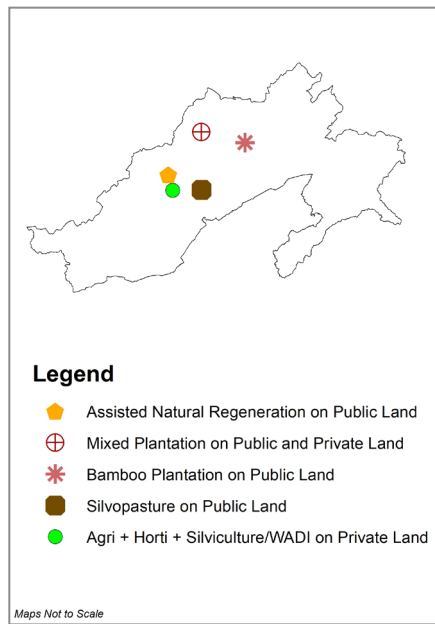
Strategy	Carbon Sequestration Potential (MT of Carbon)
Protection	99.77
Widescale Restoration	37.68
Mosaic Restoration	0.64-2.00
Total	138.10 - 139.45

* the lower limit is based on estimates of 20% tree cover in cultivated areas, the upper limit assumes 40% tree cover in cultivated areas.

Notably the above does not include carbon sequestration potential in Arunachal Pradesh’s protected areas.

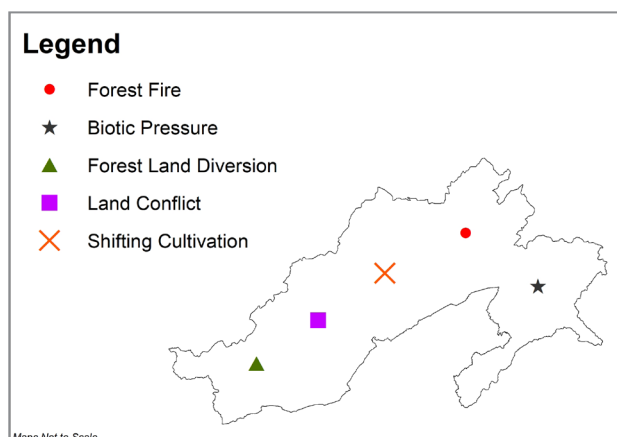
PAST AND ON-GOING INITIATIVES

The study on past and on-going initiatives found that Arunachal Pradesh has 2 projects that involve at least five types of interventions.



These interventions cover 100 hectares and have been implemented by government agencies, private sector as well civil society organisations.

RISKS TO IMPROVEMENT IN FOREST AND TREE COVER



There are four major risks that can adversely impact improvements in forest and tree cover in Arunachal Pradesh:

- Between 2011-2017, Andhra Pradesh recorded 3,465 incidents of fires.
- Between 2011-2017, Arunachal Pradesh diverted nearly 317,281.774 hectares of forest land. This is nearly 4.73 % of Arunachal Pradesh’s total forest area.
- According to the Land Conflict Watch, 1 conflict between state agencies and communities were reported in Arunachal Pradesh in 2015. The conflict is related to acquisition for development.
- Biotic pressure including open grazing and collection of fuel-wood.

TENURE AND RESOURCE RIGHTS

No data available for the number of districts in Arunachal Pradesh partially covered under the Panchayat (Extension to Scheduled Areas) Act of 1996. Nearly 2 percent of Arunachal Pradesh’s forests are covered by joint forest management committees, covering 33,048 households. The potential for CFR in Arunachal is 1.53 MHa.

FINANCE FLOWS

Between 2011-16, INR 62,027.1 crore was allocated to Arunachal Pradesh under different programs and schemes, for improvements in forest and tree cover.

Programme	Amount (INR crore)
Budgetary Allocation	193.10
Compensatory Afforestation Fund (CAF)	112.21
Thirteenth Finance Commission	257.05
NABARD	2.03
Bilateral and Multilateral funders	0.00
Allocations under MGNREGA	55.88
State’s share in CAF	2,452.23

In 2018, Arunachal Pradesh’s share of the Compensatory

GEOGRAPHIC AREA AND LAND USE

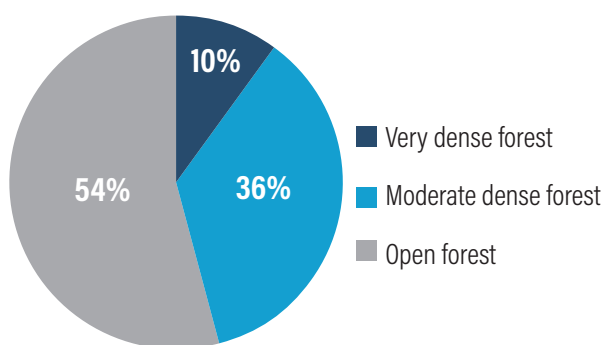
Total Geographic Area: 7.84 MHa

Land Use	Area (MHa)
Forests	1.85
Not available for land cultivation	2.46
Permanent pastures and other grazing lands	0.17
Land under misc. tree crops and groves	0.22
Culturable wasteland	0.14
Fallow land other than current fallow	0.09
Current Fallow	0.09
Net Sown	2.82

FOREST COVER

Recorded Forest Area: 2.68 MHa

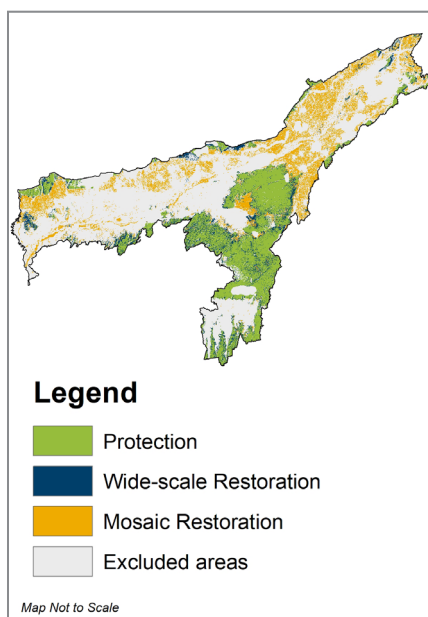
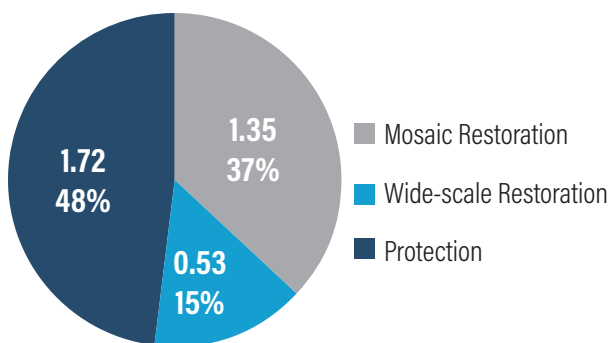
Forest Type	Area (MHa)
Very Dense Forest	0.28
Moderate Dense Forest	1.02
Open Forest	1.51



LANDSCAPE RESTORATION POTENTIAL

Total Area Available for Restoration: 3.60 MHa

Intervention	Area (MHa)
Protection	1.72
Wide-scale Restoration	0.53
Mosaic Restoration	1.35



CARBON SEQUESTRATION POTENTIAL

Assam has the potential to sequester between 63.41 to 75.65 million tons (MT) of additional above ground carbon through improvement of tree cover. This includes:

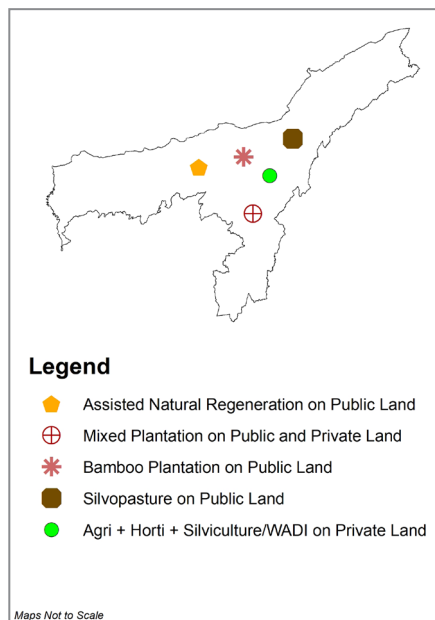
Strategy	Carbon Sequestration Potential (MT of Carbon)
Protection	33.38
Widescale Restoration	23.32
Mosaic Restoration	6.71 - 18.95
Total	63.41 - 75.65

* the lower limit is based on estimates of 20% tree cover in cultivated areas, the upper limit assumes 40% tree cover in cultivated areas.

Notably the above does not include carbon sequestration potential in Assam's protected areas.

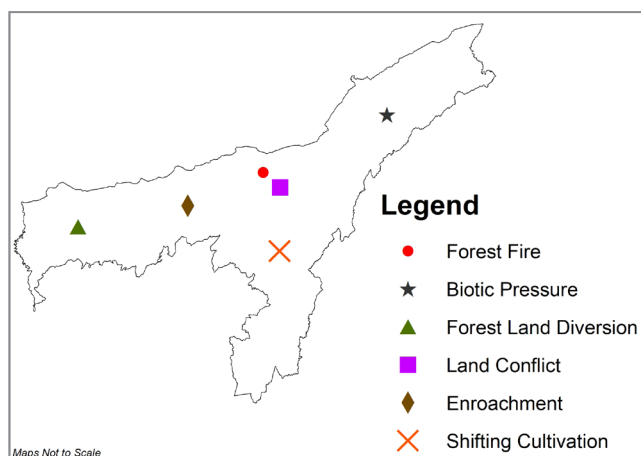
PAST AND ON-GOING INITIATIVES

The study on past and on-going initiatives found that Assam has 5 projects that involve at least five types of interventions.



These interventions cover 1886 hectares and have been implemented by government agencies, private sector as well civil society organisations.

RISKS TO IMPROVEMENT IN FOREST AND TREE COVER



There are four major risks that can adversely impact improvements in forest and tree cover in Assam:

- Between 2011-2017, Assam recorded 12,946 incidents of fires.

- Between 2011-2017, Assam diverted nearly 4,187.214 hectares of forest land. This is nearly 0.14% of Assam's total forest area.
- According to the Land Conflict Watch, 1 conflict between state agencies and communities was reported in Assam. The conflict is related to land acquisition for development (1).
- Biotic pressure including open grazing and collection of fuel-wood.

TENURE AND RESOURCE RIGHTS

No data available for the number of districts in Assam partially covered under the Panchayat (Extension to Scheduled Areas) Act of 1996. Nearly 2 percent of Assam's forests are covered by joint forest management committees, covering 294,834 households. The potential for CFR in Assam is 0.22 Mha.

FINANCE FLOWS

Between 2011-16, INR 131,557.8 crore was allocated to Assam under different programs and schemes, for improvements in forest and tree cover.

Programme	Amount (INR crore)
Budgetary Allocation	265.36
Compensatory Afforestation Fund (CAF)	28.06
Thirteenth Finance Commission	1715
NABARD	3.08
Bilateral and Multilateral funders	52.61
Allocations under MGNREGA	949.32
State's share in CAF	757.65

In 2018, Assam's share of the Compensatory Afforestation Fund, which was created to compensate the ecosystems services lost as a result of forest land diversion, was INR 757.65 crore.

BIHAR

GEOGRAPHIC AREA AND LAND USE

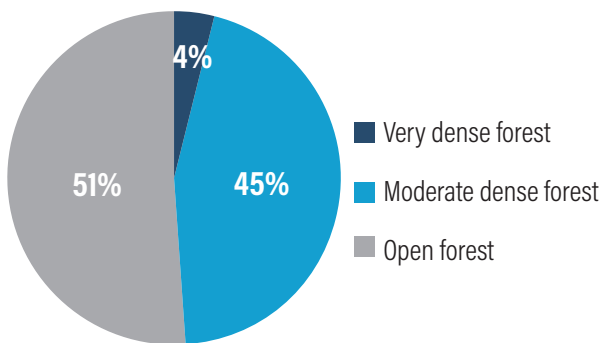
Total Geographic Area: 9.42 MHa

Land Use	Area (MHa)
Forests	0.62
Not available for land cultivation	2.14
Permanent pastures and other grazing lands	0.02
Land under misc. tree crops and groves	0.25
Culturable wasteland	0.05
Fallow land other than current fallow	0.12
Current Fallow	0.91
Net Sown	5.25

FOREST COVER

Recorded Forest Area: 0.69 MHa

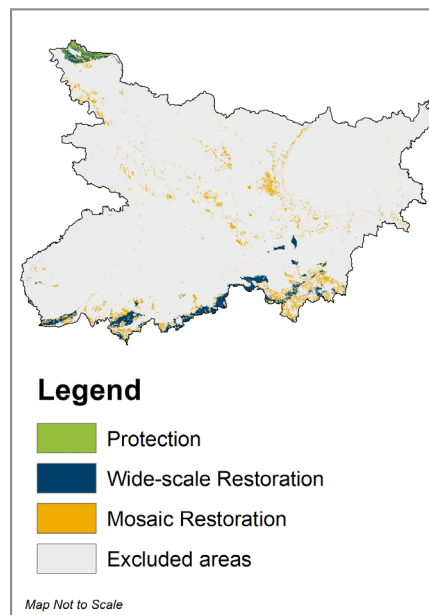
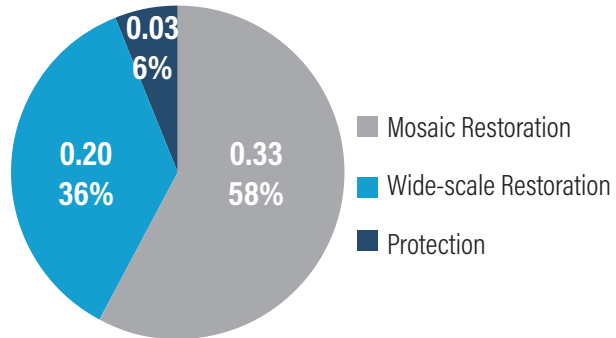
Forest Type	Area (MHa)
Very Dense Forest	0.03
Moderate Dense Forest	0.33
Open Forest	0.37



LANDSCAPE RESTORATION POTENTIAL

Total Area Available for Restoration: 0.56 MHa

Intervention	Area (MHa)
Protection	0.03
Wide-scale Restoration	0.20
Mosaic Restoration	0.33



CARBON SEQUESTRATION POTENTIAL

Bihar has the potential to sequester between 15.94 to 18.66 million tons (MT) of additional above ground carbon through improvement of tree cover. This includes:

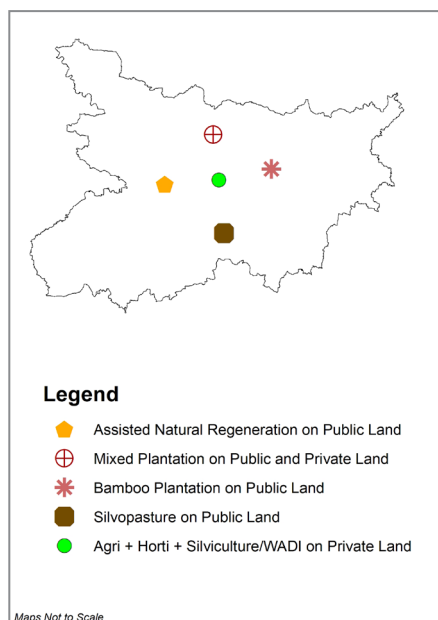
Strategy	Carbon Sequestration Potential (MT of Carbon)
Protection	1.05
Widescale Restoration	11.63
Mosaic Restoration	3.26 - 5.98
Total	15.94 - 18.66

* the lower limit is based on estimates of 20% tree cover in cultivated areas, the upper limit assumes 40% tree cover in cultivated areas.

Notably the above does not include carbon sequestration potential in Bihar’s protected areas.

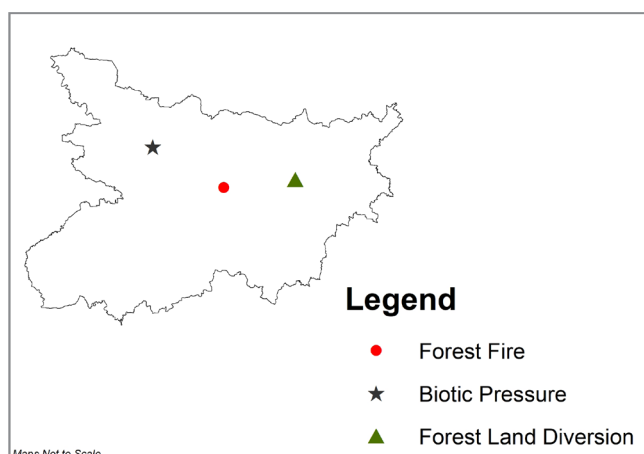
PAST AND ON-GOING INITIATIVES

The study on past and on-going initiatives found that Bihar has 2 projects that involve at least five types of interventions.



These interventions have been implemented by government agencies, private sector as well civil society organisations.

RISKS TO IMPROVEMENT IN FOREST AND TREE COVER



There are four major risks that can adversely impact improvements in forest and tree cover in Bihar:

- Between 2011-2017, Bihar recorded 1,328 incidents of fires.

- Between 2011-2017, Bihar diverted nearly 6836.98 hectares of forest land. This is nearly 1% of Bihar’s total forest area.
- According to the Land Conflict Watch, no conflicts between state agencies and communities were reported in Bihar.
- Biotic pressure including open grazing and collection of fuel-wood.

TENURE AND RESOURCE RIGHTS

No data available for the number of districts in Bihar partially covered under the Panchayat (Extension to Scheduled Areas) Act of 1996. Nearly 71 percent of Bihar’s forests are covered by joint forest management committees, covering 211,674 households. The potential for CFR in Bihar is 0.40 Mha.

FINANCE FLOWS

Between 2011-16, INR 351,524.1 crore was allocated to Bihar under different programs and schemes, for improvements in forest and tree cover.

Programme	Amount (INR crore)
Budgetary Allocation	91.73
Compensatory Afforestation Fund (CAF)	43.81
Thirteenth Finance Commission	- 33.20
NABARD	18.77
Bilateral and Multilateral funders	0.00
Allocations under MGNREGA	3,394.13
State’s share in CAF	712.37

In 2018, Bihar’s share of the Compensatory Afforestation Fund, which was created to compensate the ecosystems services lost as a result of forest land diversion, was INR 712.37 crore.

GEOGRAPHIC AREA AND LAND USE

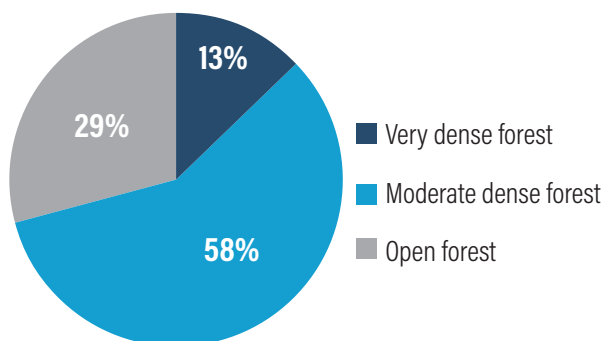
Total Geographic Area: 13.52 MHa

Land Use	Area (MHa)
Forests	6.33
Not available for land cultivation	1.03
Permanent pastures and other grazing lands	0.88
Land under misc. tree crops and groves	0.001
Culturable wasteland	0.35
Fallow land other than current fallow	0.25
Current Fallow	0.26
Net Sown	4.69

FOREST COVER

Recorded Forest Area: 5.98 MHa

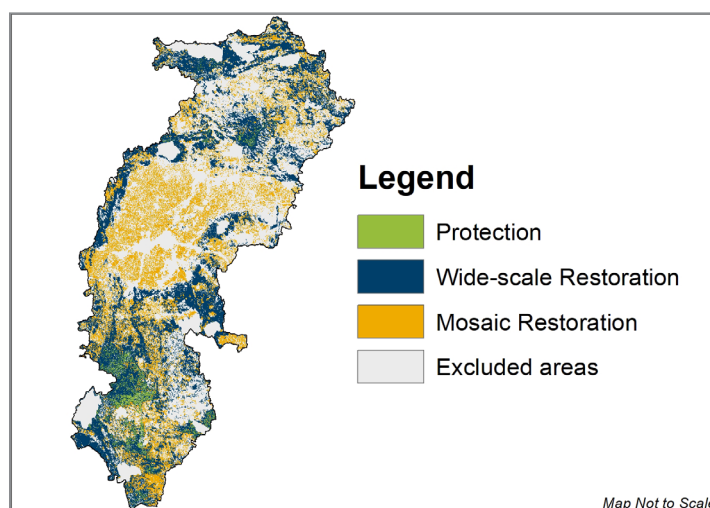
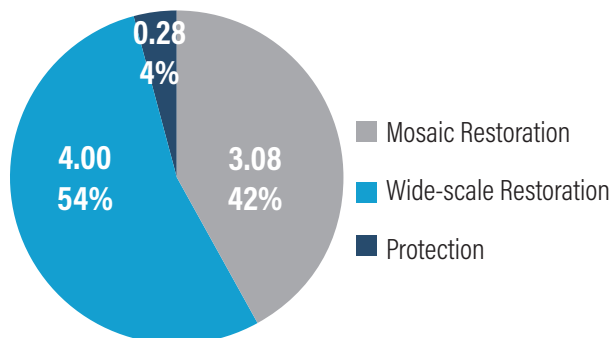
Forest Type	Area (MHa)
Very Dense Forest	0.71
Moderate Dense Forest	3.22
Open Forest	1.63



LANDSCAPE RESTORATION POTENTIAL

Total Area Available for Restoration: 7.37 MHa

Intervention	Area (MHa)
Protection	0.28
Wide-scale Restoration	4.00
Mosaic Restoration	3.08



CARBON SEQUESTRATION POTENTIAL

Chhattisgarh has the potential to sequester between 210.68 to 248.03 million tons (MT) of additional above ground carbon through improvement of tree cover. This includes:

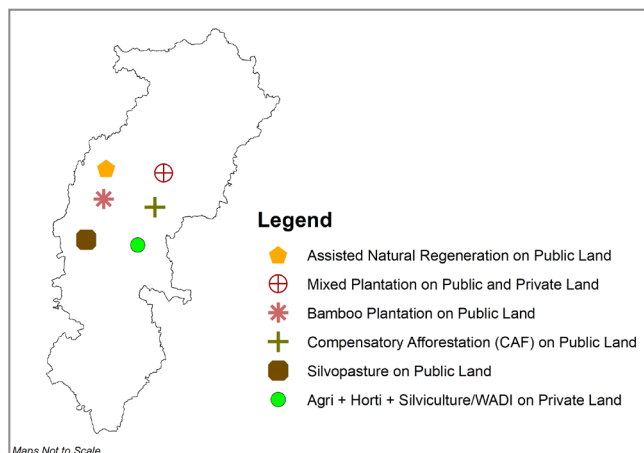
Strategy	Carbon Sequestration Potential (MT of Carbon)
Protection	7.34
Widescale Restoration	176.49
Mosaic Restoration	26.85 - 64.20
Total	210.68 - 248.03

* the lower limit is based on estimates of 20% tree cover in cultivated areas, the upper limit assumes 40% tree cover in cultivated areas.

Notably the above does not include carbon sequestration potential in Chhattisgarh's protected areas.

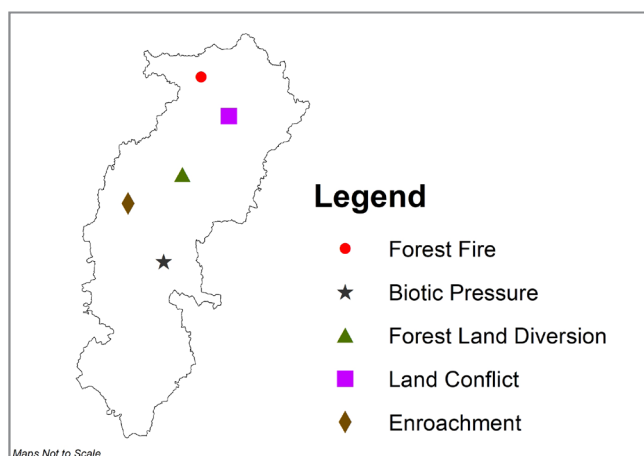
PAST AND ON-GOING INITIATIVES

The study on past and on-going initiatives found that Chhattisgarh has 12 projects that involve at least six types of interventions.



These interventions cover 7,259 hectares and have been implemented by government agencies, private sector as well civil society organisations.

RISKS TO IMPROVEMENT IN FOREST AND TREE COVER



There are four major risks that can adversely impact improvements in forest and tree cover in Chhattisgarh:

- Between 2011-2017, Chhattisgarh recorded 15,523 incidents of fires.
- Between 2011-2017, Chhattisgarh diverted nearly 38,815.4611 hectares of forest land. This is nearly 2% of Chhattisgarh's total forest area.
- According to the Land Conflict Watch, 23 conflicts between state agencies and communities were reported in Chhattisgarh in 1,978. These

conflicts are related to compensatory afforestation (5), land acquisition for development (10), tenure and resource rights (3) and others (5).

- Biotic pressure including open grazing and collection of fuel-wood.

TENURE AND RESOURCE RIGHTS

13 districts in Chhattisgarh are fully covered and 6 districts are partially covered under the Panchayat (Extension to Scheduled Areas) Act of 1996. Nearly 55 percent of Chhattisgarh's forests are covered by joint forest management committees, covering 1,117,000 households. The potential for CFR in Chhattisgarh is 2.00 MHa.

FINANCE FLOWS

Between 2011-16, INR 489,490.8 crore was allocated to Chhattisgarh under different programs and schemes, for improvements in forest and tree cover.

Programme	Amount (INR crore)
Budgetary Allocation	276.08
Compensatory Afforestation Fund (CAF)	516.92
Thirteenth Finance Commission	137.88
NABARD	71.03
Bilateral and Multilateral funders	0.00
Allocations under MGNREGA	3,893.00
State's share in CAF	7,288.17

In 2018, Chhattisgarh's share of the Compensatory Afforestation Fund, which was created to compensate the ecosystems services lost as a result of forest land diversion, was INR 7,288.17 crore.

GEOGRAPHIC AREA AND LAND USE

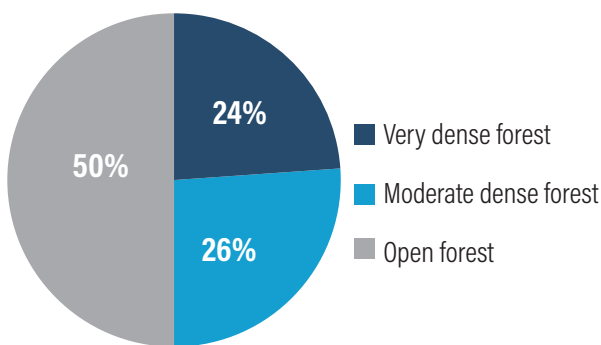
Total Geographic Area: 0.37 MHa

Land Use	Area (MHa)
Forests	0.13
Not available for land cultivation	0.04
Permanent pastures and other grazing lands	0.001
Land under misc. tree crops and groves	0.001
Culturable wasteland	0.53
Fallow land other than current fallow	0.00
Current Fallow	0.15
Net Sown	0.13

FOREST COVER

Recorded Forest Area: 0.12 MHa

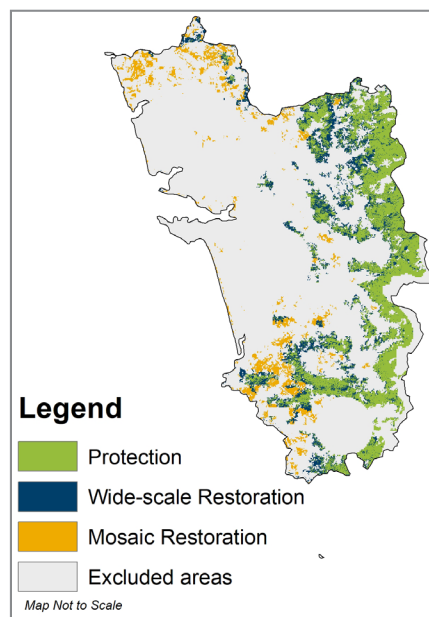
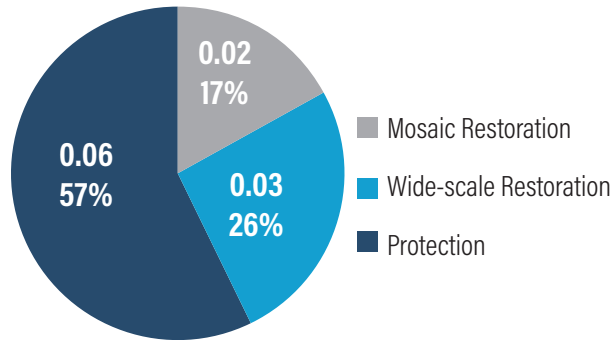
Forest Type	Area (MHa)
Very Dense Forest	0.05
Moderate Dense Forest	0.06
Open Forest	0.11



LANDSCAPE RESTORATION POTENTIAL

Total Area Available for Restoration: 0.11 MHa

Intervention	Area (MHa)
Protection	0.06
Wide-scale Restoration	0.03
Mosaic Restoration	0.02



CARBON SEQUESTRATION POTENTIAL

Goa has the potential to sequester between 8.27 to 8.41 million tons (MT) of additional above ground carbon through improvement of tree cover. This includes:

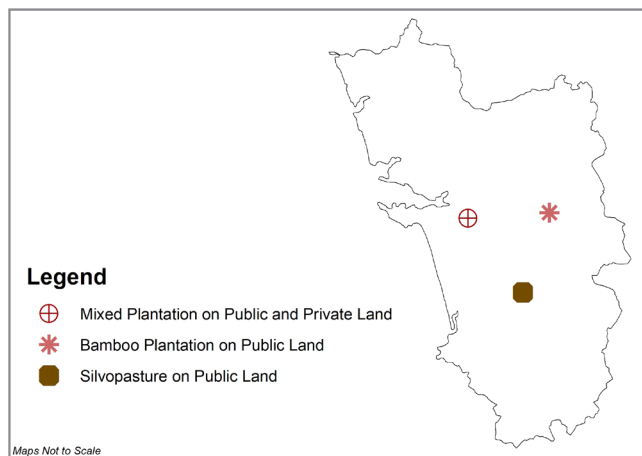
Strategy	Carbon Sequestration Potential (MT of Carbon)
Protection	7.34
Widescale Restoration	0.88
Mosaic Restoration	0.05 - 0.19
Total	8.27 - 8.41

* the lower limit is based on estimates of 20% tree cover in cultivated areas, the upper limit assumes 40% tree cover in cultivated areas.

Notably the above does not include carbon sequestration potential in Goa's protected areas.

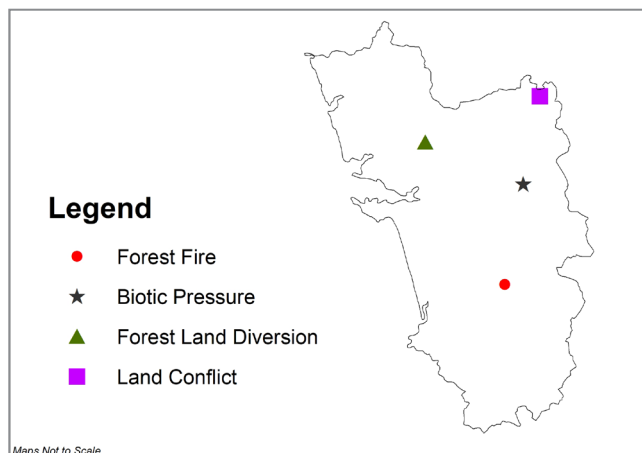
PAST AND ON-GOING INITIATIVES

The study on past and on-going initiatives found that Goa has three projects that involve at least three types of interventions.



These interventions cover 567 hectares and have been implemented by government agencies as well civil society organisations.

RISKS TO IMPROVEMENT IN FOREST AND TREE COVER



There are four major risks that can adversely impact improvements in forest and tree cover in Goa:

- Between 2011-2017, Goa recorded 52 incidents of fires.
- Between 2011-2017, Goa diverted nearly 1,893 hectares of forest land. This is nearly 0.12 % of Goa's total forest area.
- According to the Land Conflict Watch, 1 conflict between state agencies and communities

were reported in Goa. The conflict is related to compensatory land acquisition for development (1).

- Biotic pressure including open grazing and collection of fuel-wood.

TENURE AND RESOURCE RIGHTS

No data available for the number of districts in Goa partially covered under the Panchayat (Extension to Scheduled Areas) Act of 1996. Nearly 8.16 percent of Goa's forests are covered by joint forest management committees, covering 336 households. The potential for CFR in Goa is 0.08 MHa.

FINANCE FLOWS

There is limited data available on fund flows to Goa for improvements in forest and tree cover.

Programme	Amount (INR crore)
Budgetary Allocation	NA
Compensatory Afforestation Fund (CAF)	NA
Thirteenth Finance Commission	NA
NABARD	NA
Bilateral and Multilateral funders	NA
Allocations under MGNREGA	NA
State's share in CAF	400.79

In 2018, Goa's share of the Compensatory Afforestation Fund, which was created to compensate the ecosystems services lost as a result of forest land diversion, was INR 400.79 crore.

GEOGRAPHIC AREA AND LAND USE

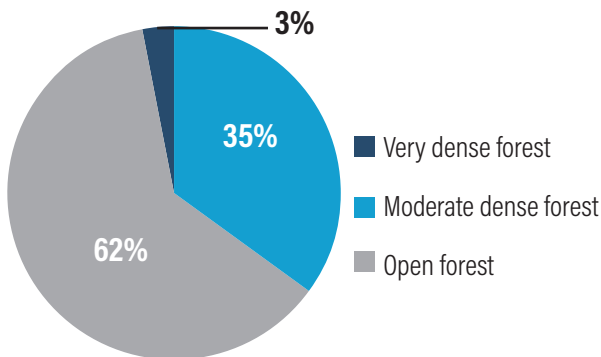
Total Geographic Area: 19.60 MHa

Land Use	Area (MHa)
Forests	1.83
Not available for land cultivation	3.72
Permanent pastures and other grazing lands	0.85
Land under misc. tree crops and groves	0.004
Culturable wasteland	1.96
Fallow land other than current fallow	0.01
Current Fallow	0.38
Net Sown	10.30

FOREST COVER

Recorded Forest Area: 2.16 MHa

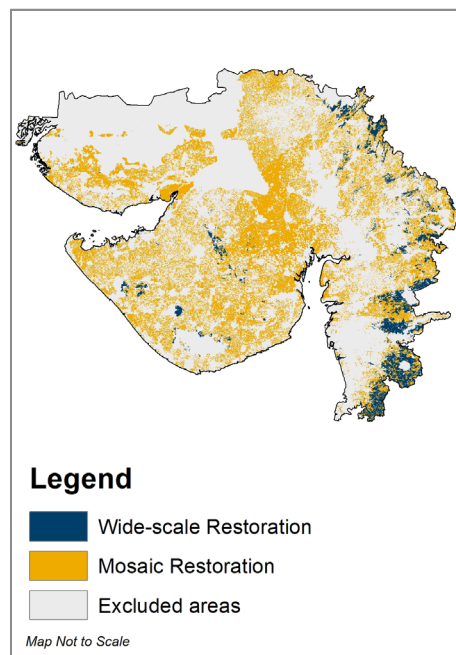
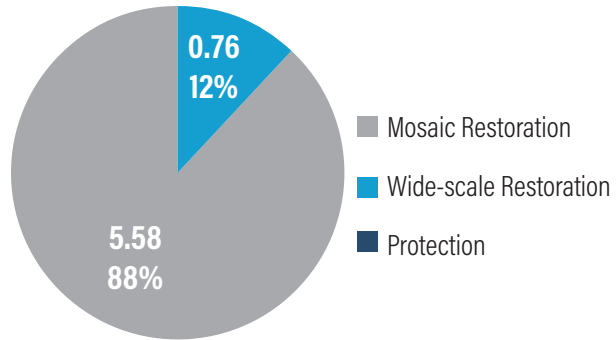
Forest Type	Area (MHa)
Very Dense Forest	0.04
Moderate Dense Forest	0.52
Open Forest	0.92



LANDSCAPE RESTORATION POTENTIAL

Total Area Available for Restoration: 6.34 MHa

Intervention	Area (MHa)
Protection	0.00
Wide-scale Restoration	0.76
Mosaic Restoration	5.58



CARBON SEQUESTRATION POTENTIAL

Gujarat has the potential to sequester between 137.98 to 225.70 million tons (MT) of additional above ground carbon through improvement of tree cover. This includes:

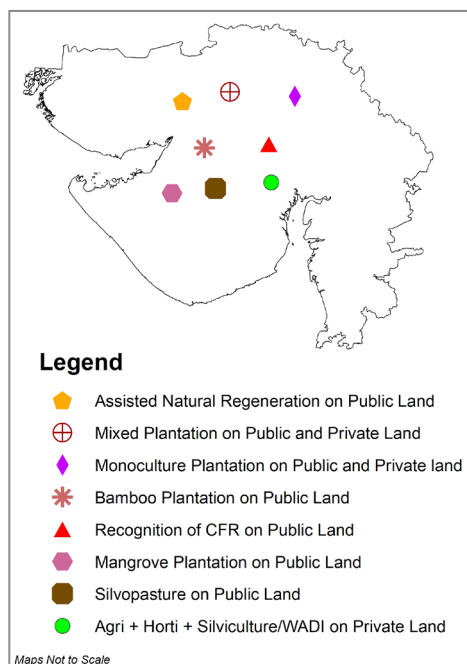
Strategy	Carbon Sequestration Potential (MT of Carbon)
Protection	0.00
Widescale Restoration	52.37
Mosaic Restoration	85.61 - 173.33
Total	137.98 - 225.70

* the lower limit is based on estimates of 20% tree cover in cultivated areas, the upper limit assumes 40% tree cover in cultivated areas.

Notably the above does not include carbon sequestration potential in Gujarat’s protected areas.

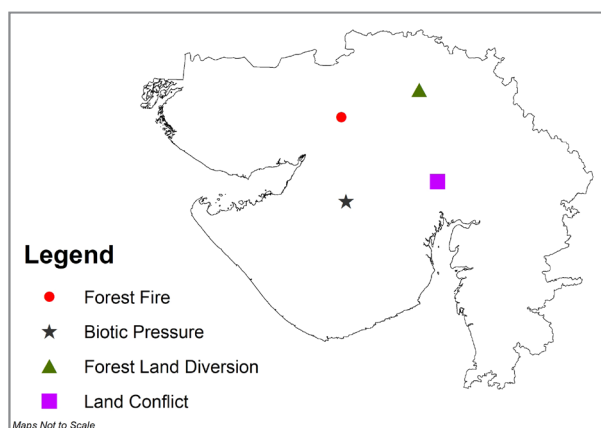
PAST AND ON-GOING INITIATIVES

The study on past and on-going initiatives found that Gujarat has five projects that involve at least eight types of interventions.



These interventions cover 567 hectares and have been implemented by government agencies, private sector as well civil society organisations.

RISKS TO IMPROVEMENT IN FOREST AND TREE COVER



There are four major risks that can adversely impact improvements in forest and tree cover in Gujarat:

- Between 2011-2017, Gujarat recorded 1,453 incidents of fires.

- Between 2011-2017, Gujarat diverted nearly 65,993.135 hectares of forest land. This is nearly 0.13 % of Gujarat’s total forest area.
- According to the Land Conflict Watch, 3 conflicts between state agencies and communities were reported in Gujarat in 2016. These conflicts are related to land acquisition for development (1), tenure and resource rights (2) and other 1
- Biotic pressure including open grazing and collection of fuel-wood.

TENURE AND RESOURCE RIGHTS

4 districts in Gujarat are fully covered and 7 districts are partially covered under the Panchayat (Extension to Scheduled Areas) Act of 1996. Nearly 19 percent of Gujarat’s forests are covered by joint forest management committees, covering 417,032 households. The potential for CFR in Gujarat is 4.47 MHa.

FINANCE FLOWS

Between 2011-16, INR 262,901.3 crore was allocated to Gujarat under different programs and schemes, for improvements in forest and tree cover.

Programme	Amount (INR crore)
Budgetary Allocation	844.59
Compensatory Afforestation Fund (CAF)	151.71
Thirteenth Finance Commission	23.78
NABARD	55.88
Bilateral and Multilateral funders	560.76
Allocations under MGNREGA	992.30
State’s share in CAF	2011.54

In 2018, Gujarat’s share of the Compensatory Afforestation Fund, which was created to compensate the ecosystems services lost as a result of forest land diversion, was INR 2011.54 crore.

HARYANA

GEOGRAPHIC AREA AND LAND USE

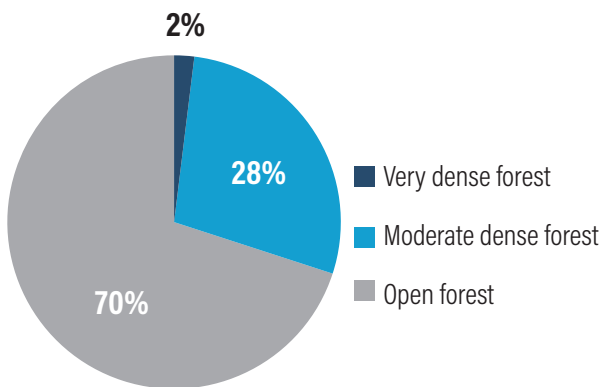
Total Geographic Area: 4.42 MHa

Land Use	Area (MHa)
Forests	0.04
Not available for land cultivation	0.66
Permanent pastures and other grazing lands	0.03
Land under misc. tree crops and groves	0.01
Culturable wasteland	0.18
Fallow land other than current fallow	0.02
Current Fallow	0.10
Net Sown	3.49

FOREST COVER

Recorded Forest Area: 0.15 Mha

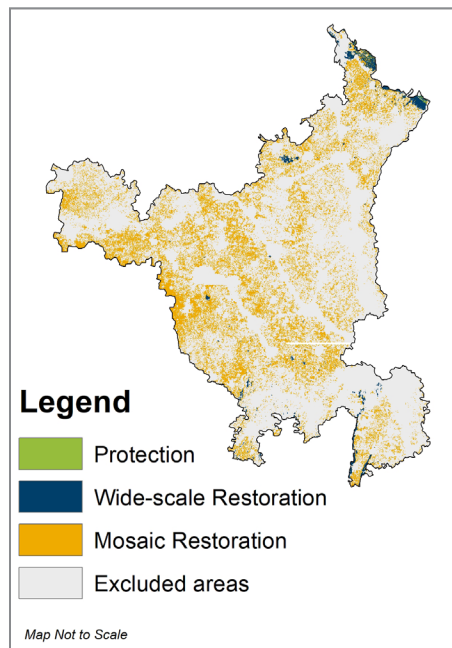
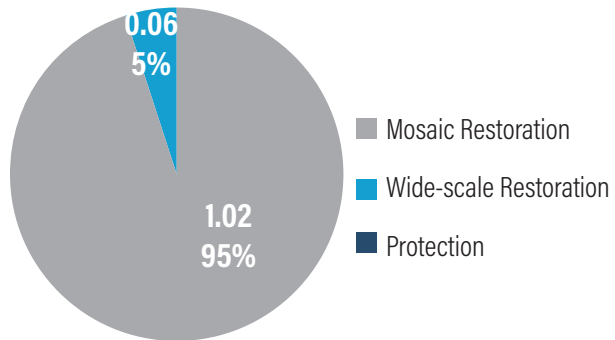
Forest Type	Area (MHa)
Very Dense Forest	0.002
Moderate Dense Forest	0.05
Open Forest	0.11



LANDSCAPE RESTORATION POTENTIAL

Total Area Available for Restoration: 1.08 MHa

Intervention	Area (MHa)
Protection	0.00
Wide-scale Restoration	0.06
Mosaic Restoration	1.02



CARBON SEQUESTRATION POTENTIAL

Haryana has the potential to sequester between 17.13 to 33.96 million tons (MT) of additional above ground carbon through improvement of tree cover. This includes:

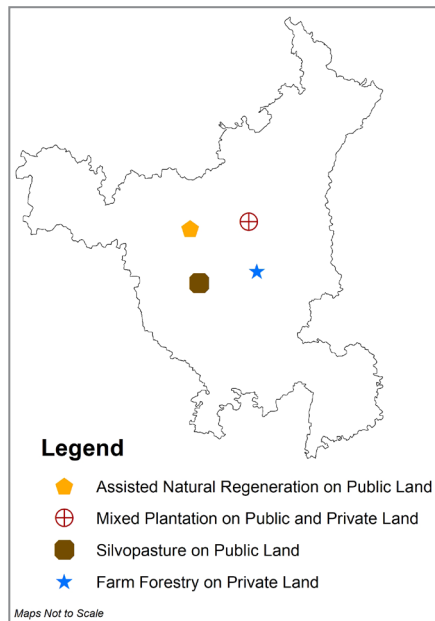
Strategy	Carbon Sequestration Potential (MT of Carbon)
Protection	0.08
Widescale Restoration	3.18
Mosaic Restoration	13.87 - 30.70
Total	17.13 - 33.96

* the lower limit is based on estimates of 20% tree cover in cultivated areas, the upper limit assumes 40% tree cover in cultivated areas.

Notably the above does not include carbon sequestration potential in Haryana’s protected areas.

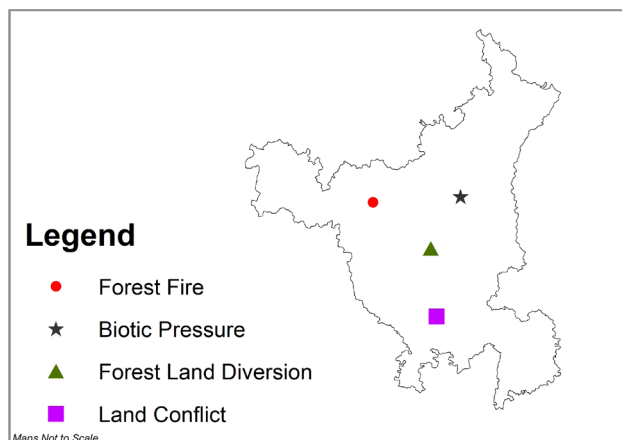
PAST AND ON-GOING INITIATIVES

The study on past and on-going initiatives found that Haryana has four projects that involve at least four types of interventions.



These interventions cover 81136 hectares and have been implemented by government agencies, private sector as well civil society organisations.

RISKS TO IMPROVEMENT IN FOREST AND TREE COVER



There are four major risks that can adversely impact improvements in forest and tree cover in Haryana:

- Between 2011-2017, Haryana recorded 291 incidents of fires.

- Between 2011-2017, Haryana diverted nearly 13,745.04 hectares of forest land. This is nearly 9 % of Haryana’s total forest area.
- According to the Land Conflict Watch, 1 conflict between state agencies and communities were reported in Haryana. The conflict is related to tenure and resource rights (1).
- Biotic pressure including open grazing and collection of fuel-wood.

TENURE AND RESOURCE RIGHTS

No data available for the number of districts in Bihar partially covered under the Panchayat (Extension to Scheduled Areas) Act of 1996. Nearly 26 percent of Haryana’s forests are covered by joint forest management committees, covering 66,036 households. The potential for CFR in Haryana is 0.02 MHa.

FINANCE FLOWS

Between 2011-16, INR 68,933.6 crore was allocated to Haryana under different programs and schemes, for improvements in forest and tree cover.

Programme	Amount (INR crore)
Budgetary Allocation	124.69
Compensatory Afforestation Fund (CAF)	74.95
Thirteenth Finance Commission	9.90
NABARD	0.33
Bilateral and Multilateral funders	2.60
Allocations under MGNREGA	476.87
State’s share in CAF	1,632.17

In 2018, Haryana’s share of the Compensatory Afforestation Fund, which was created to compensate the ecosystems services lost as a result of forest land diversion, was INR 1,632.17 crore.

HIMACHAL PRADESH

GEOGRAPHIC AREA AND LAND USE

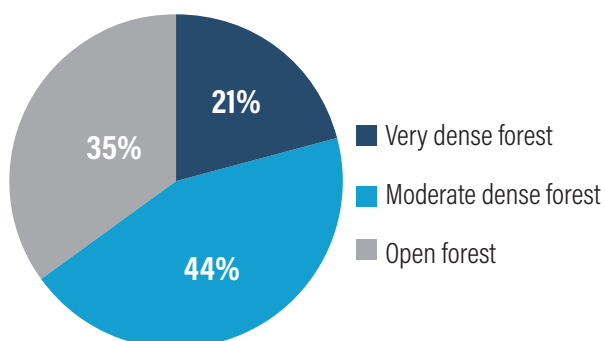
Total Geographic Area: 5.57 MHa

Land Use	Area (MHa)
Forests	1.13
Not available for land cultivation	1.13
Permanent pastures and other grazing lands	0.15
Land under misc. tree crops and groves	0.06
Culturable wasteland	0.12
Fallow land other than current fallow	0.02
Current Fallow	0.54
Net Sown	0.55

FOREST COVER

Recorded Forest Area: 3.70 MHa

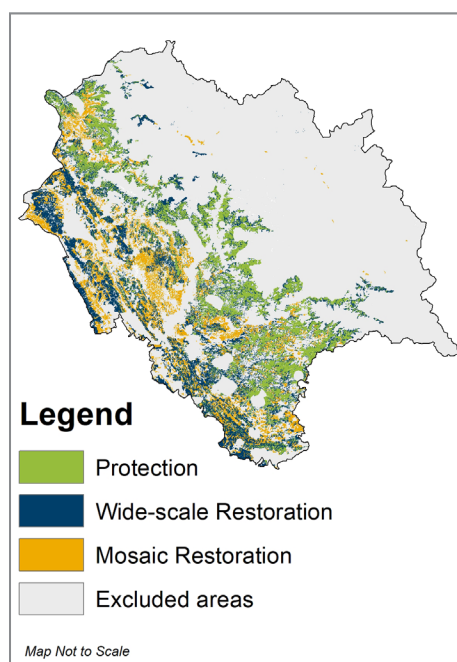
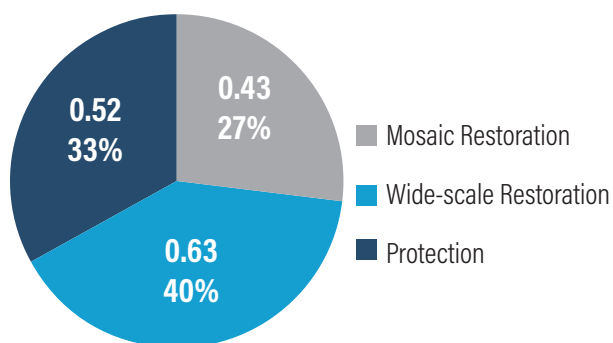
Forest Type	Area (MHa)
Very Dense Forest	0.31
Moderate Dense Forest	0.67
Open Forest	0.52



LANDSCAPE RESTORATION POTENTIAL

Total Area Available for Restoration: 1.58 MHa

Intervention	Area (MHa)
Protection	0.52
Wide-scale Restoration	0.63
Mosaic Restoration	0.43



CARBON SEQUESTRATION POTENTIAL

Himachal Pradesh has the potential to sequester between 53.42 to 63.57 million tons (MT) of additional above ground carbon through improvement of tree cover. This includes:

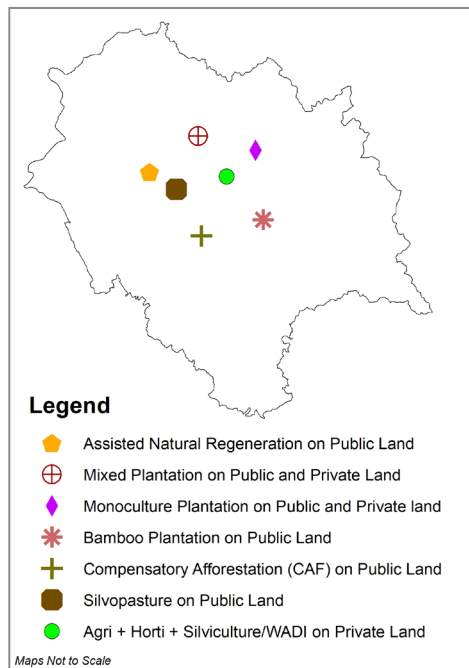
Strategy	Carbon Sequestration Potential (MT of Carbon)
Protection	18.10
Widescale Restoration	32.23
Mosaic Restoration	3.09 - 13.24
Total	53.42 - 63.57

* the lower limit is based on estimates of 20% tree cover in cultivated areas, the upper limit assumes 40% tree cover in cultivated areas.

Notably the above does not include carbon sequestration potential in Himachal Pradesh's protected areas.

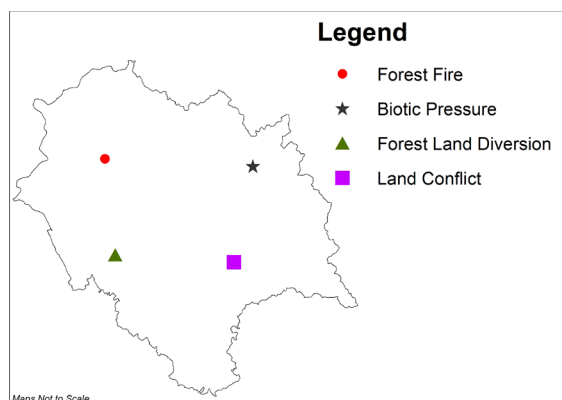
PAST AND ON-GOING INITIATIVES

The study on past and on-going initiatives found that Himachal Pradesh has 9 projects that involve at least seven types of interventions.



These interventions cover 370 hectares and have been implemented by government agencies, private sector as well civil society organisations.

RISKS TO IMPROVEMENT IN FOREST AND TREE COVER



There are four major risks that can adversely impact improvements in forest and tree cover in Gujarat:

- Between 2011-2017, Himachal Pradesh recorded 712 incidents of fires.

- Between 2011-2017, Himachal Pradesh diverted nearly 14,907.369 hectares of forest land. This is nearly 1 percent of Himachal Pradesh's total forest area.
- According to the Land Conflict Watch, 3 conflicts between state agencies and communities were reported in Himachal Pradesh in 2015. These conflicts are related to land acquisition for development (2) and tenure and resource rights (1).
- Biotic pressure including open grazing and collection of fuel-wood.

TENURE AND RESOURCE RIGHTS

2 districts in Himachal Pradesh are fully covered and 1 district is partially covered under the Panchayat (Extension to Scheduled Areas) Act of 1996. Nearly 5.5 percent of Himachal Pradesh's forests are covered by joint forest management committees, covering 263024 households. The potential for CFR in Himachal Pradesh is 1.12 MHa.

FINANCE FLOWS

Between 2011-16, INR 186,853 crore was allocated to Himachal Pradesh under different programs and schemes, for improvements in forest and tree cover.

Programme	Amount (INR crore)
Budgetary Allocation	170.87
Compensatory Afforestation Fund (CAF)	258.61
Thirteenth Finance Commission	-3.75
NABARD	6.45
Bilateral and Multilateral funders	391.92
Allocations under MGNREGA	1036.93
State's share in CAF	2710.98

In 2018, Himachal Pradesh's share of the Compensatory Afforestation Fund, which was created to compensate the ecosystems services lost as a result of forest land diversion, was INR 2,710.98 crore.

JAMMU AND KASHMIR

GEOGRAPHIC AREA AND LAND USE

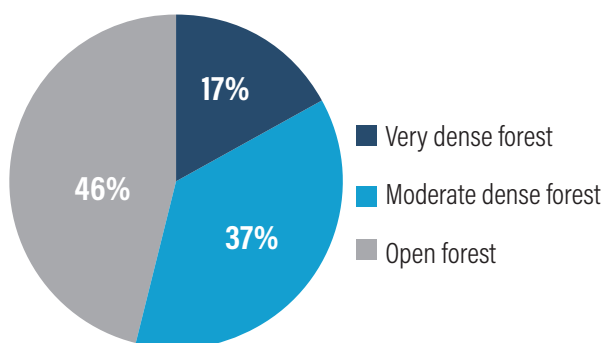
Total Geographic Area: 22.22 MHa

Land Use	Area (MHa)
Forests	2.25
Not available for land cultivation	0.57
Permanent pastures and other grazing lands	0.11
Land under misc. tree crops and groves	0.07
Culturable wasteland	0.13
Fallow land other than current fallow	0.02
Current Fallow	0.11
Net Sown	0.74

FOREST COVER

Recorded Forest Area: 2.02 MHa

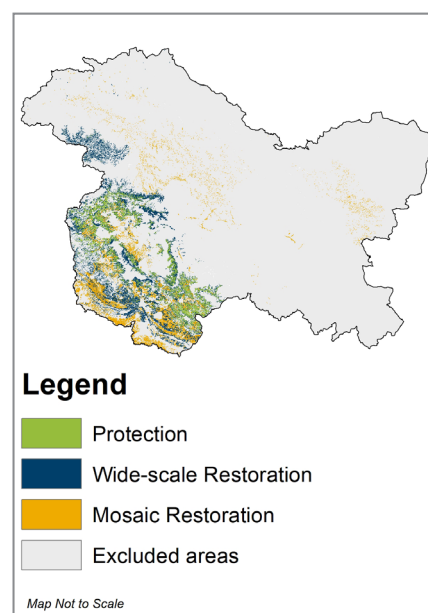
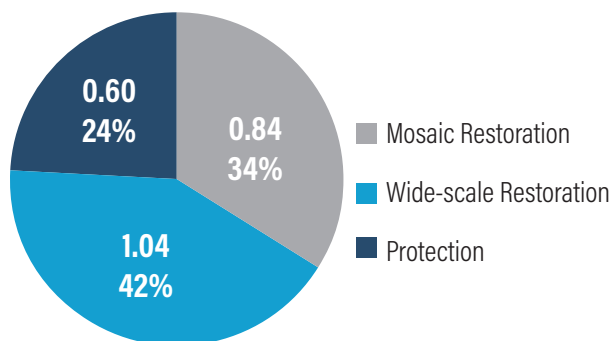
Forest Type	Area (MHa)
Very Dense Forest	0.41
Moderate Dense Forest	0.85
Open Forest	1.11



LANDSCAPE RESTORATION POTENTIAL

Total Area Available for Restoration: 2.48 MHa

Intervention	Area (MHa)
Protection	0.60
Wide-scale Restoration	1.04
Mosaic Restoration	0.84



CARBON SEQUESTRATION POTENTIAL

Jammu and Kashmir has the potential to sequester between 90.69 to 104.91 million tons (MT) of additional above ground carbon through improvement of tree cover. This includes:

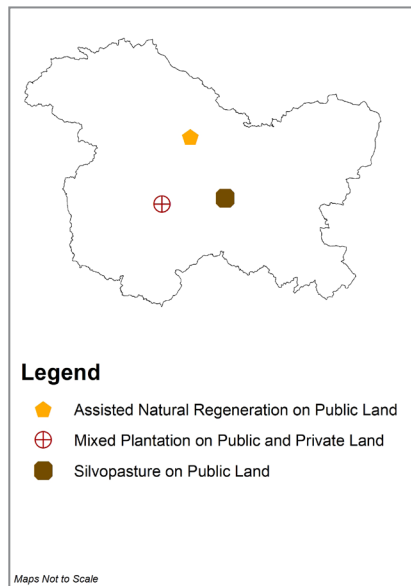
Strategy	Carbon Sequestration Potential (MT of Carbon)
Protection	18.95
Widescale Restoration	59.64
Mosaic Restoration	12.10 - 26.32
Total	90.69 - 104.91

* the lower limit is based on estimates of 20% tree cover in cultivated areas, the upper limit assumes 40% tree cover in cultivated areas.

Notably the above does not include carbon sequestration potential in Jammu and Kashmir's protected areas.

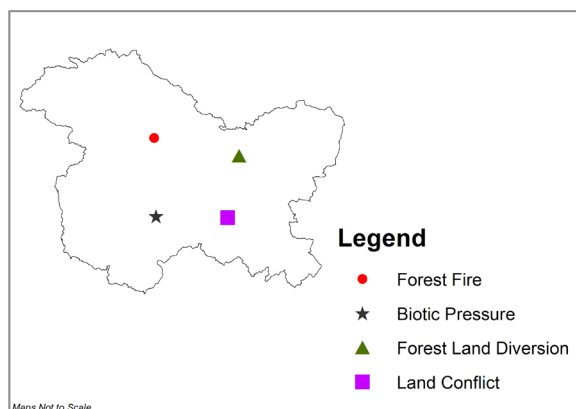
PAST AND ON-GOING INITIATIVES

The study on past and on-going initiatives found that Jammu and Kashmir has three projects that involves at least three types of interventions.



These interventions cover 40 hectares and have been implemented by government agencies, private sector as well civil society organisations.

RISKS TO IMPROVEMENT IN FOREST AND TREE COVER



There are four major risks that can adversely impact improvements in forest and tree cover in Jammu and Kashmir:

- Between 2011-2017, Jammu and Kashmir recorded 574 incidents of fires.

- Between 2011-2017, Jammu and Kashmir's data for forest land diverted is not available.
- According to the Land Conflict Watch, 1 conflict between state agencies and communities was reported in Jammu and Kashmir in 2006. The conflict is related to tenure and resource rights (1).
- Biotic pressure including open grazing and collection of fuel-wood.

TENURE AND RESOURCE RIGHTS

No data available for the number of districts in Jammu and Kashmir partially covered under the Panchayat (Extension to Scheduled Areas) Act of 1996. Nearly 2 percent of Jammu and Kashmir's forests are covered by joint forest management committees, covering 429,796 households. The potential for CFR in Jammu and Kashmir is 0.65 MHa.

FINANCE FLOWS

Between 2011-16, INR 81,467.1 crore was allocated to Jammu and Kashmir under different programs and schemes, for improvements in forest and tree cover.

Programme	Amount (INR crore)
Budgetary Allocation	112.29
Compensatory Afforestation Fund (CAF)	75.78
Thirteenth Finance Commission	63.75
NABARD	0.51
Bilateral and Multilateral funders	00.00
Allocations under MGNREGA	562.33
State's share in CAF	1,554.61

In 2018, Jammu and Kashmir's share of the Compensatory Afforestation Fund, which was created to compensate the ecosystems services lost as a result of forest land diversion, was INR 1,554.61 crore.

GEOGRAPHIC AREA AND LAND USE

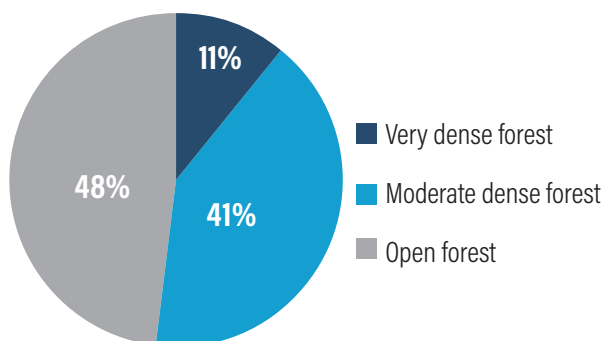
Total Geographic Area: 7.97 MHa

Land Use	Area (MHa)
Forests	2.23
Not available for land cultivation	1.27
Permanent pastures and other grazing lands	0.11
Land under misc. tree crops and groves	0.09
Culturable wasteland	0.35
Fallow land other than current fallow	1.06
Current Fallow	1.45
Net Sown	1.38

FOREST COVER

Recorded Forest Area: 2.36 Mha

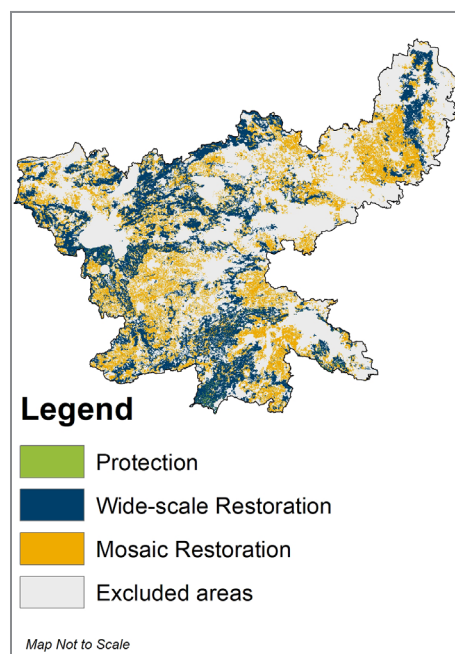
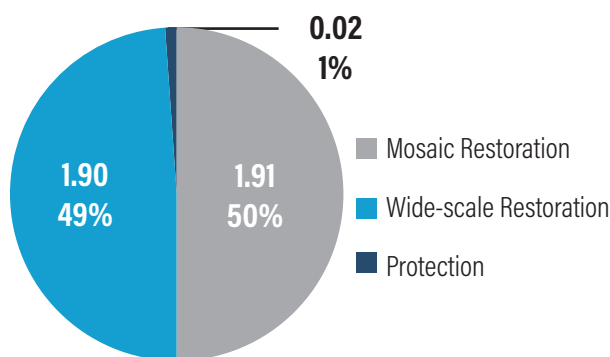
Forest Type	Area (MHa)
Very Dense Forest	0.25
Moderate Dense Forest	0.96
Open Forest	1.12



LANDSCAPE RESTORATION POTENTIAL

Total Area Available for Restoration: 3.83 MHa

Intervention	Area (MHa)
Protection	0.02
Wide-scale Restoration	1.90
Mosaic Restoration	1.91



CARBON SEQUESTRATION POTENTIAL

Jharkhand has the potential to sequester between 92.63 to 108.80 million tons (MT) of additional above ground carbon through improvement of tree cover. This includes:

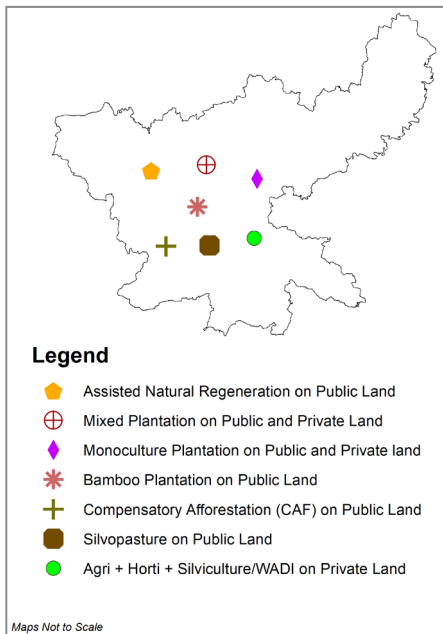
Strategy	Carbon Sequestration Potential (MT of Carbon)
Protection	0.57
Widescale Restoration	74.33
Mosaic Restoration	1773 - 33.90
Total	92.63 - 108.80

* the lower limit is based on estimates of 20% tree cover in cultivated areas, the upper limit assumes 40% tree cover in cultivated areas.

Notably the above does not include carbon sequestration potential in Jharkhand's protected areas.

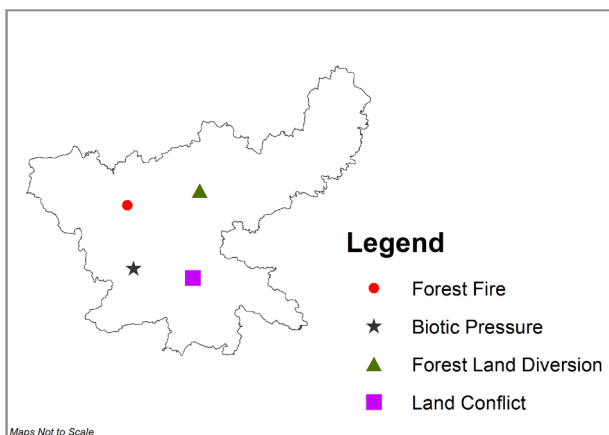
PAST AND ON-GOING INITIATIVES

The study on past and on-going initiatives found that Jharkhand has nine projects that involves at least seven types of interventions.



These interventions cover 3,343 hectares and have been implemented by government agencies, private sector as well civil society organisations.

RISKS TO IMPROVEMENT IN FOREST AND TREE COVER



There are four major risks that can adversely impact improvements in forest and tree cover in Jharkhand:

- Between 2011-2017, Jharkhand recorded 3585 incidents of fires.

- Between 2011-2017, Jharkhand diverted nearly 27913.984 hectares of forest land. This is nearly 1.18% of Jharkhand's total forest area.
- According to the Land Conflict Watch, 11 conflicts between state agencies and communities were reported in Jharkhand in 2015. These conflicts are related to compensatory afforestation (7), and tenure and resource rights (4).
- Biotic pressure including open grazing and collection of fuel-wood.

TENURE AND RESOURCE RIGHTS

13 districts in Jharkhand are fully covered and 3 districts are partially covered under the Panchayat (Extension to Scheduled Areas) Act of 1996. Nearly 73 percent of Jharkhand's forests are covered by joint forest management committees, covering 4,29,796 households. The potential for CFR in Jharkhand is 1.88 MHa.

FINANCE FLOWS

Between 2011-16, INR 496,722.5 crore was allocated to Jharkhand under different programs and schemes, for improvements in forest and tree cover.

Programme	Amount (INR crore)
Budgetary Allocation	14749
Compensatory Afforestation Fund (CAF)	430.96
Thirteenth Finance Commission	59.65
NABARD	65.76
Bilateral and Multilateral funders	00.00
Allocations under MGNREGA	4,263.37
State's share in CAF	5,193.59

In 2018, Jharkhand's share of the Compensatory Afforestation Fund, which was created to compensate the ecosystems services lost as a result of forest land diversion, was INR 5,193.59 crore.

GEOGRAPHIC AREA AND LAND USE

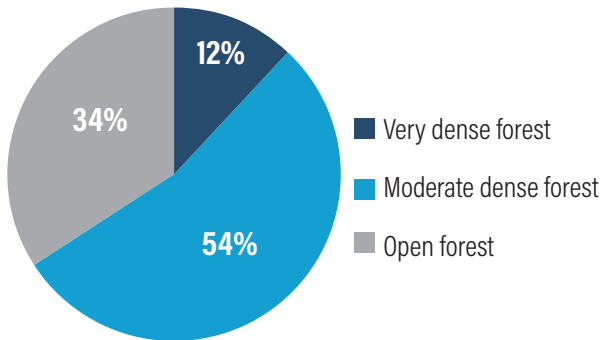
Total Geographic Area: 19.79 MHa

Land Use	Area (MHa)
Forests	3.07
Not available for land cultivation	2.23
Permanent pastures and other grazing lands	0.91
Land under misc. tree crops and groves	0.28
Culturable wasteland	0.41
Fallow land other than current fallow	0.53
Current Fallow	1.7
Net Sown	9.92

FOREST COVER

Recorded Forest Area: 3.82 MHa

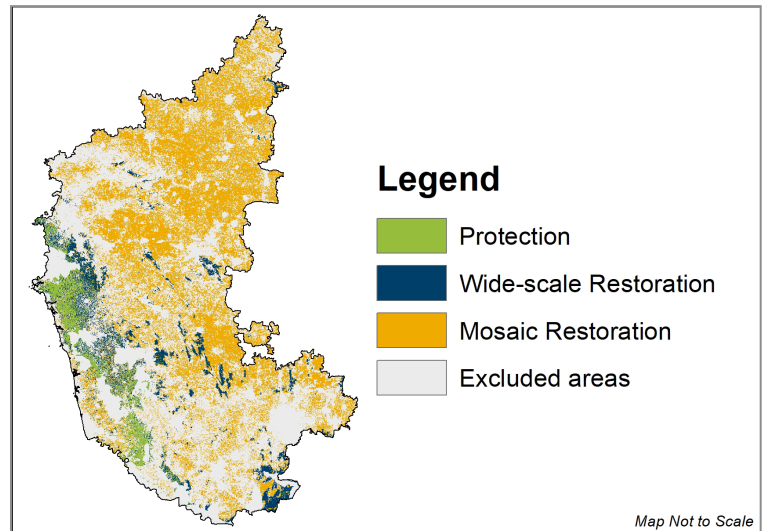
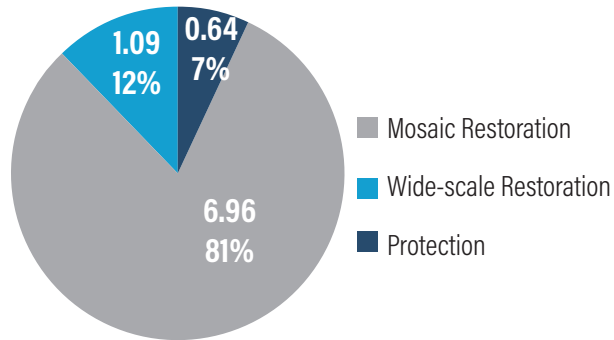
Forest Type	Area (MHa)
Very Dense Forest	0.45
Moderate Dense Forest	2.04
Open Forest	1.26



LANDSCAPE RESTORATION POTENTIAL

Total Area Available for Restoration: 8.69 MHa

Intervention	Area (MHa)
Protection	0.64
Wide-scale Restoration	1.09
Mosaic Restoration	6.96



CARBON SEQUESTRATION POTENTIAL

Karnataka has the potential to sequester between 137.36 to 201.68 million tons (MT) of additional above ground carbon through improvement of tree cover. This includes:

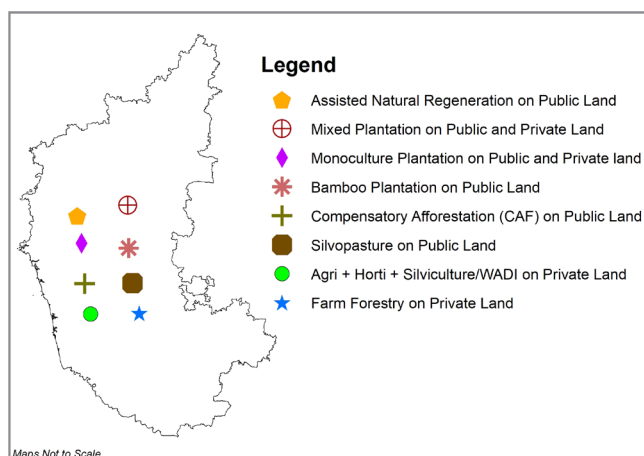
Strategy	Carbon Sequestration Potential (MT of Carbon)
Protection	13.62
Widescale Restoration	57.66
Mosaic Restoration	66.08 - 130.40
Total	137.36 - 201.68

* the lower limit is based on estimates of 20% tree cover in cultivated areas, the upper limit assumes 40% tree cover in cultivated areas.

Notably the above does not include carbon sequestration potential in Karnataka's protected areas.

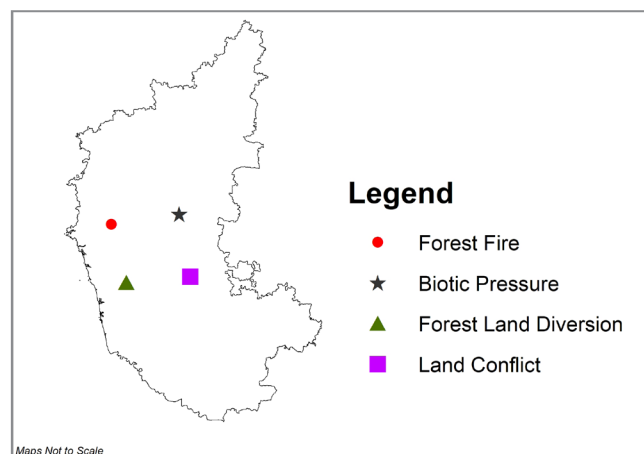
PAST AND ON-GOING INITIATIVES

The study on past and on-going initiatives found that Karnataka has 4 projects that involve at least eight types of interventions.



These interventions cover 1,833,360 hectares and have been implemented by government agencies, private sector as well civil society organisations.

RISKS TO IMPROVEMENT IN FOREST AND TREE COVER



There are four major risks that can adversely impact improvements in forest and tree cover in Karnataka:

- Between 2011-2017, Karnataka recorded 3,585 incidents of fires.
- Between 2011-2017, Karnataka diverted nearly 27,913.984 hectares of forest land. This is nearly 1.18% of Karnataka's total forest area.
- According to the Land Conflict Watch, 3 conflicts between state agencies and communities were reported in Karnataka in 2015. These conflicts are related to land acquisition for development (2) and tenure and resource rights (1).

- Biotic pressure including open grazing and collection of fuel-wood.

TENURE AND RESOURCE RIGHTS

No data available for the number of districts in Karnataka partially covered under the Panchayat (Extension to Scheduled Areas) Act of 1996. Nearly 21 percent of Karnataka's forests are covered by joint forest management committees, covering 272,805 households. The potential for CFR in Karnataka is 2.53 MHa.

FINANCE FLOWS

Between 2011-16, INR 593,676.8 crore was allocated to Karnataka under different programs and schemes, for improvements in forest and tree cover.

Programme	Amount (INR crore)
Budgetary Allocation	1,352.57
Compensatory Afforestation Fund (CAF)	184.79
Thirteenth Finance Commission	72.55
NABARD	144.71
Bilateral and Multilateral funders	205.41
Allocations under MGNREGA	3,976.73
State's share in CAF	1,982.15

In 2018, Karnataka's share of the Compensatory Afforestation Fund, which was created to compensate the ecosystems services lost as a result of forest land diversion, was INR 1,982.15 crore.

GEOGRAPHIC AREA AND LAND USE

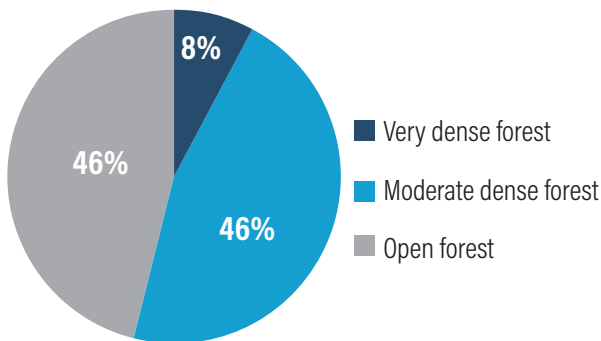
Total Geographic Area: 3.88 MHa

Land Use	Area (MHa)
Forests	1.08
Not available for land cultivation	0.53
Permanent pastures and other grazing lands	0
Land under misc. tree crops and groves	0.003
Culturable wasteland	0.09
Fallow land other than current fallow	0.06
Current Fallow	0.07
Net Sown	2.05

FOREST COVER

Recorded Forest Area: 1.13 MHa

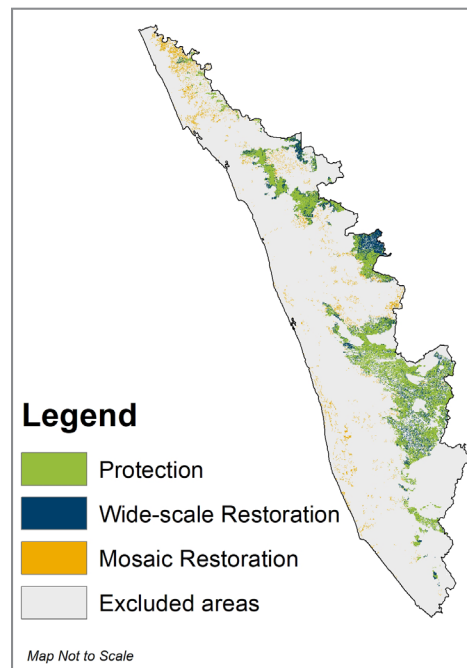
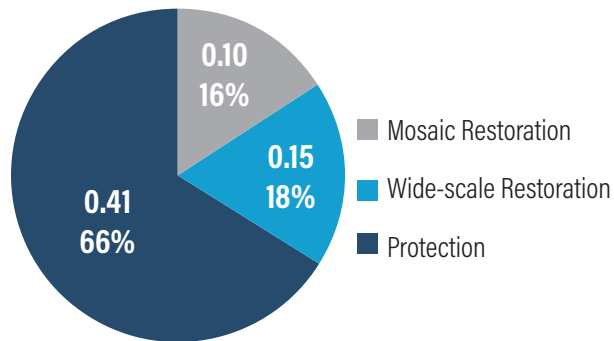
Forest Type	Area (MHa)
Very Dense Forest	0.16
Moderate Dense Forest	0.94
Open Forest	0.92



LANDSCAPE RESTORATION POTENTIAL

Total Area Available for Restoration: 0.66 MHa

Intervention	Area (MHa)
Protection	0.41
Wide-scale Restoration	0.15
Mosaic Restoration	0.10



CARBON SEQUESTRATION POTENTIAL

Kerala has the potential to sequester between 13.03 to 16.90 million tons (MT) of additional above ground carbon through improvement of tree cover. This includes:

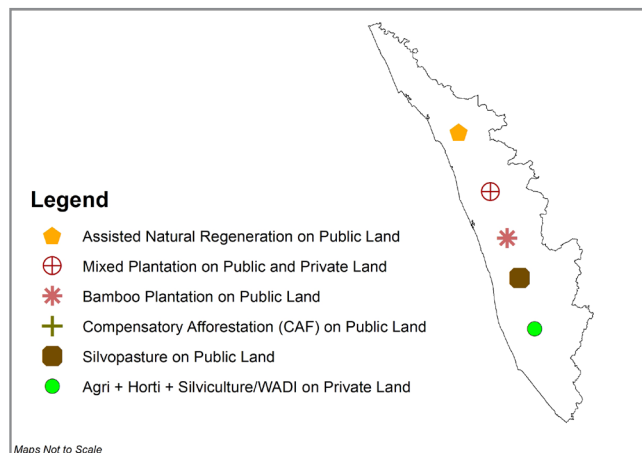
Strategy	Carbon Sequestration Potential (MT of Carbon)
Protection	7.52
Widescale Restoration	5.19
Mosaic Restoration	0.32 - 4.19
Total	13.03 - 16.90

* the lower limit is based on estimates of 20% tree cover in cultivated areas, the upper limit assumes 40% tree cover in cultivated areas.

Notably the above does not include carbon sequestration potential in Kerala's protected areas.

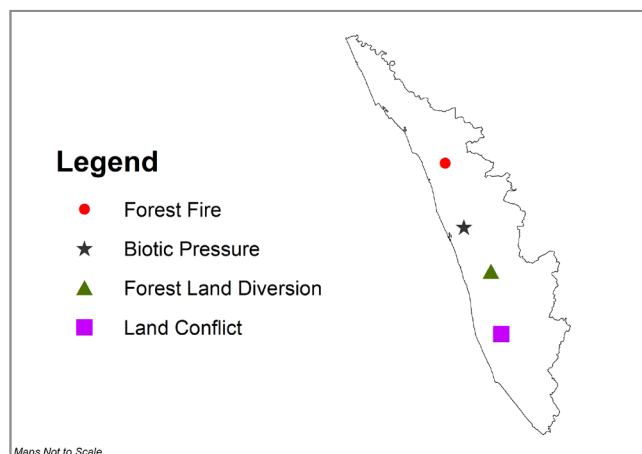
PAST AND ON-GOING INITIATIVES

The study on past and on-going initiatives found that Kerala has 4 projects that involve at least five types of interventions.



These interventions cover 11,000 hectares and have been implemented by government agencies, private sector as well civil society organisations.

RISKS TO IMPROVEMENT IN FOREST AND TREE COVER



There are four major risks that can adversely impact improvements in forest and tree cover in Kerala:

- Between 2011-2017, Kerala recorded 1,157 incidents of fires.
- Between 2011-2017, Kerala diverted nearly 10406.517 hectares of forest land. This is nearly 1.74 % of Kerala's total forest area.
- According to the Land Conflict Watch, 3 conflicts between state agencies and communities were

reported in Kerala in 1,988. These conflicts are related to land acquisition for development (1) and tenure and resource rights (2).

- Biotic pressure including open grazing and collection of fuel-wood.

TENURE AND RESOURCE RIGHTS

No data available for the number of districts in Kerala partially covered under the Panchayat (Extension to Scheduled Areas) Act of 1996. Nearly 18 percent of Kerala's forests are covered by joint forest management committees, covering 78,501 households. The potential for CFR in Kerala is 0.90 MHa.

FINANCE FLOWS

Between 2011-16, INR 544,843.5 crore was allocated to Kerala under different programs and schemes, for improvements in forest and tree cover.

Programme	Amount (INR crore)
Budgetary Allocation	97.45
Compensatory Afforestation Fund (CAF)	4.54
Thirteenth Finance Commission	47.78
NABARD	42.81
Bilateral and Multilateral funders	0.00
Allocations under MGNREGA	5255.87
State's share in CAF	112.91

In 2018, Kerala's share of the Compensatory Afforestation Fund, which was created to compensate the ecosystems services lost as a result of forest land diversion, was INR 112.91 crore.

MADHYA PRADESH

GEOGRAPHIC AREA AND LAND USE

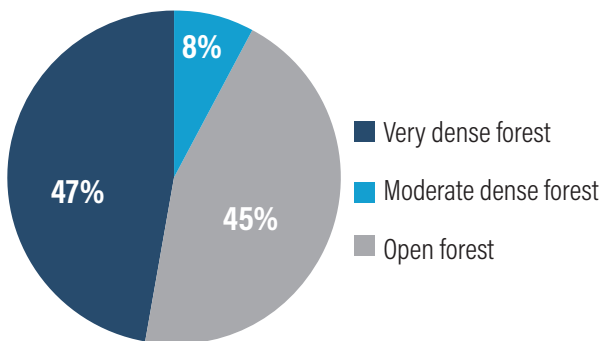
Total Geographic Area: 30.825 MHa

Land Use	Area (MHa)
Forests	8.69
Not available for land cultivation	3.51
Permanent pastures and other grazing lands	1.29
Land under misc. tree crops and groves	0.02
Culturable wasteland	1.00
Fallow land other than current fallow	0.47
Current Fallow	0.35
Net Sown	15.42

FOREST COVER

Recorded Forest Area: 9.46 MHa

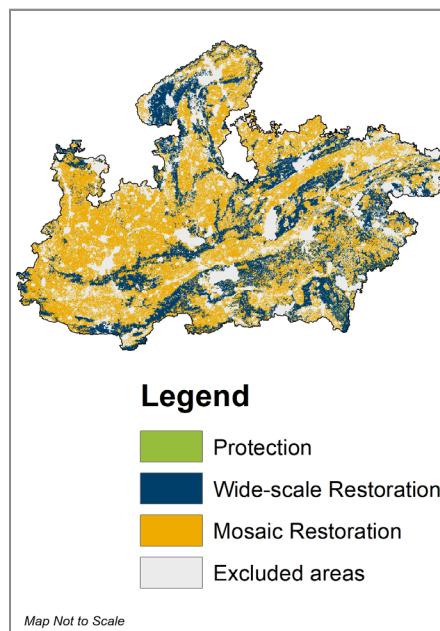
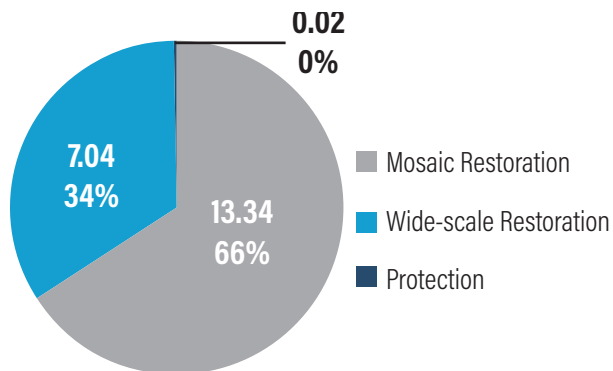
Forest Type	Area (MHa)
Very Dense Forest	0.65
Moderate Dense Forest	3.45
Open Forest	3.62



LANDSCAPE RESTORATION POTENTIAL

Total Area Available for Restoration: 20.40 MHa

Intervention	Area (MHa)
Protection	0.02
Wide-scale Restoration	7.04
Mosaic Restoration	13.34



CARBON SEQUESTRATION POTENTIAL

Madhya Pradesh has the potential to sequester between 548.77 to 709.22 million tons (MT) of additional above ground carbon through improvement of tree cover. This includes:

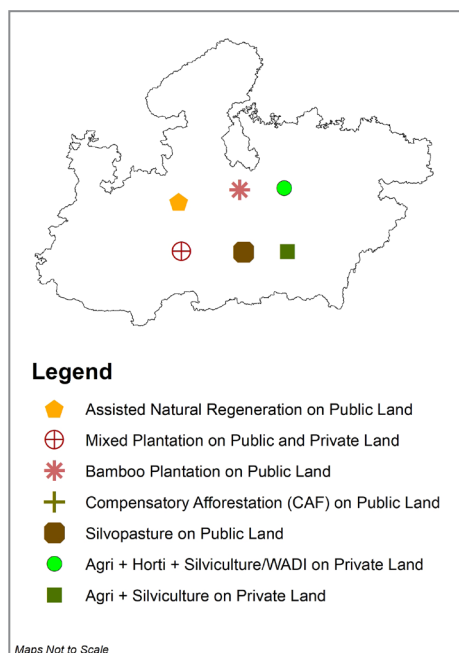
Strategy	Carbon Sequestration Potential (MT of Carbon)
Protection	0.56
Widescale Restoration	387.98
Mosaic Restoration	160.23 - 320.68
Total	548.77 - 709.22

* the lower limit is based on estimates of 20% tree cover in cultivated areas, the upper limit assumes 40% tree cover in cultivated areas.

Notably the above does not include carbon sequestration potential in Madhya Pradesh's protected areas.

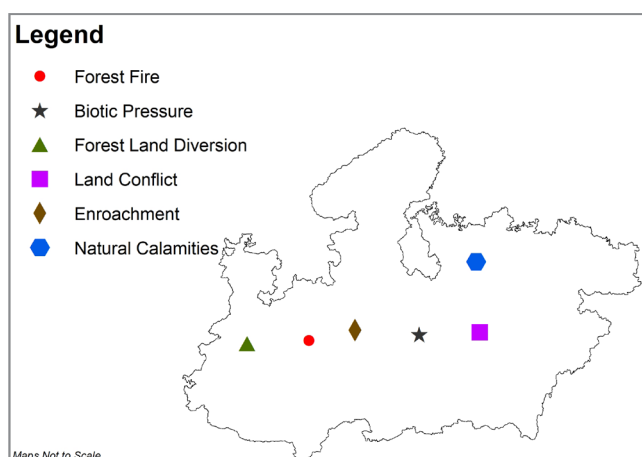
PAST AND ON-GOING INITIATIVES

The study on past and on-going initiatives found that Madhya Pradesh has 17 projects that involve at least six types of interventions.



These interventions cover 7,364 hectares and have been implemented by government agencies, private sector as well civil society organisations.

RISKS TO IMPROVEMENT IN FOREST AND TREE COVER



There are four major risks that can adversely impact improvements in forest and tree cover in Madhya Pradesh:

- Between 2011-2017, Madhya Pradesh recorded 13,564 incidents of fires.
- Between 2011-2017, Madhya Pradesh diverted nearly 37,556.835 hectares of forest land. This is nearly 1.74 % of Madhya Pradesh's total forest area.
- According to the Land Conflict Watch, 2 conflicts between state agencies and communities were reported in Madhya Pradesh in 2015. These conflicts are related to land acquisition for development (1) and tenure and resource rights (1).
- Biotic pressure including open grazing and collection of fuel-wood.

TENURE AND RESOURCE RIGHTS

5 districts in Madhya Pradesh are fully covered and 15 districts are partially covered under the Panchayat (Extension to Scheduled Areas) Act of 1996. Nearly 70 percent of Madhya Pradesh's forests are covered by joint forest management committees, covering 1,700,000 households. The potential for CFR in Madhya Pradesh is 3.77 MHa.

FINANCE FLOWS

Between 2011-16, INR 957,476 crore was allocated to Madhya Pradesh under different programs and schemes, for improvements in forest and tree cover.

Programme	Amount (INR crore)
Budgetary Allocation	910.28
Compensatory Afforestation Fund (CAF)	41752
Thirteenth Finance Commission	135.18
NABARD	100.84
Bilateral and Multilateral funders	29.69
Allocations under MGNREGA	7,981.26
State's share in CAF	6353.67

In 2018, Madhya Pradesh's share of the Compensatory Afforestation Fund, which was created to compensate the ecosystems services lost as a result of forest land diversion, was INR 6,353.67 crore.

MAHARASHTRA

GEOGRAPHIC AREA AND LAND USE

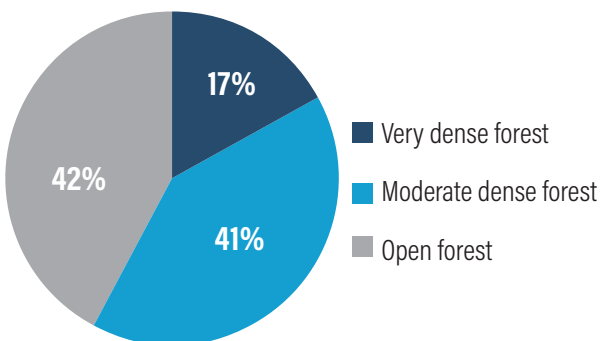
Total Geographic Area: 30.771 MHa

Land Use	Area (MHa)
Forests	5.21
Not available for land cultivation	3.18
Permanent pastures and other grazing lands	1.24
Land under misc. tree crops and groves	0.25
Culturable wasteland	0.91
Fallow land other than current fallow	1.19
Current Fallow	1.40
Net Sown	17.36

FOREST COVER

Recorded Forest Area: 6.15 MHa

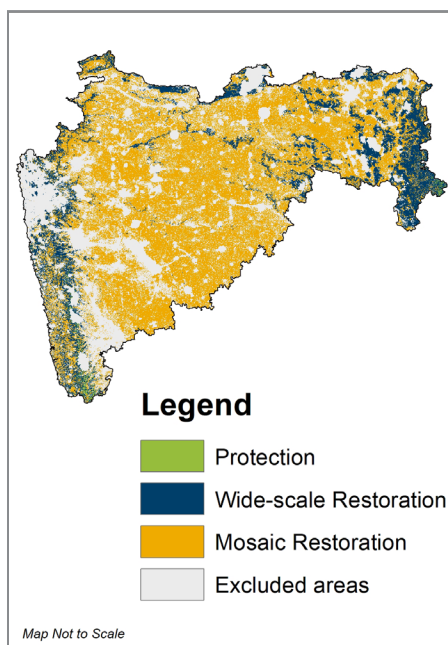
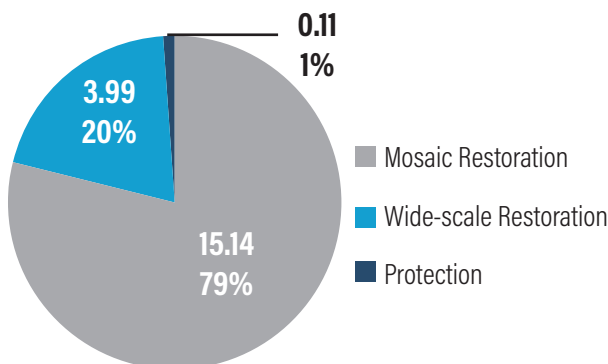
Forest Type	Area (MHa)
Very Dense Forest	0.87
Moderate Dense Forest	2.07
Open Forest	2.12



LANDSCAPE RESTORATION POTENTIAL

Total Area Available for Restoration: 19.23 MHa

Intervention	Area (MHa)
Protection	0.11
Wide-scale Restoration	3.99
Mosaic Restoration	15.14



CARBON SEQUESTRATION POTENTIAL

Maharashtra has the potential to sequester between 358.52 to 559.80 million tons (MT) of additional above ground carbon through improvement of tree cover. This includes:

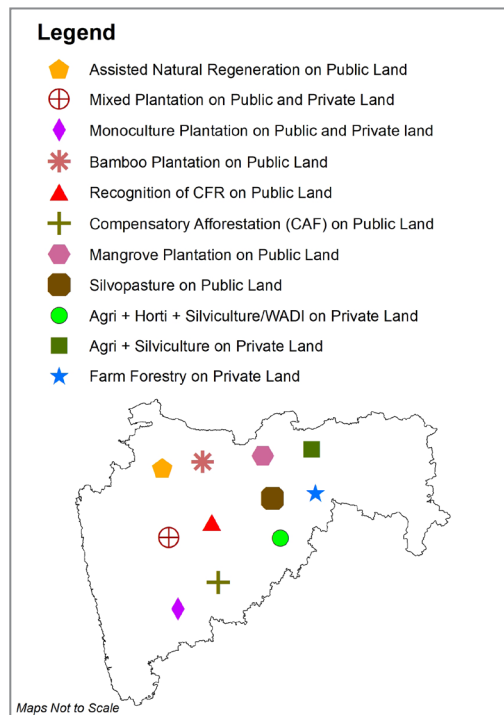
Strategy	Carbon Sequestration Potential (MT of Carbon)
Protection	2.75
Widescale Restoration	215.15
Mosaic Restoration	140.63 - 341.90
Total	358.52 - 559.80

* the lower limit is based on estimates of 20% tree cover in cultivated areas, the upper limit assumes 40% tree cover in cultivated areas.

Notably the above does not include carbon sequestration potential in Maharashtra's protected areas.

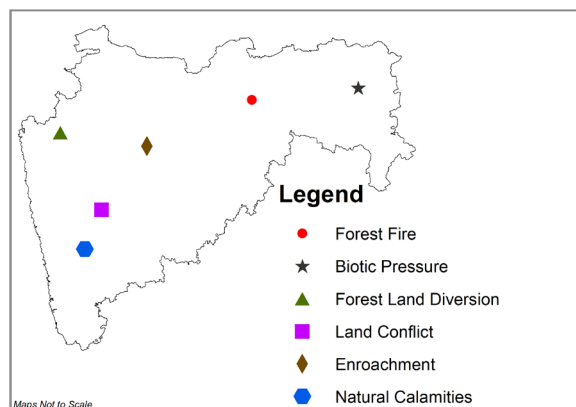
PAST AND ON-GOING INITIATIVES

The study on past and on-going initiatives found that Maharashtra has 22 projects that involve at least eleven types of interventions.



These interventions cover 11,749 hectares and have been implemented by government agencies, private sector as well civil society organisations.

RISKS TO IMPROVEMENT IN FOREST AND TREE COVER



There are four major risks that can adversely impact improvements in forest and tree cover in Maharashtra:

- Between 2011-2017, Maharashtra recorded 12,428 incidents of fires.
- Between 2011-2017, Maharashtra diverted nearly 25,520.711 hectares of forest land. This is nearly 1.74 % of Maharashtra's total forest area.
- According to the Land Conflict Watch, 3 conflicts between state agencies and communities were reported in Maharashtra in . These conflicts are related to land acquisition for development (3).
- Biotic pressure including open grazing and collection of fuel-wood.

TENURE AND RESOURCE RIGHTS

12 districts in Maharashtra are covered under the Panchayat (Extension to Scheduled Areas) Act of 1996. Nearly 39 percent of Maharashtra's forests are covered by joint forest management committees, covering 2,708,597 households. The potential for CFR in Maharashtra is 3.63 MHa.

FINANCE FLOWS

Between 2011-16, INR 800,855 crore was allocated to Maharashtra under different programs and schemes, for improvements in forest and tree cover.

Programme	Amount (INR crore)
Budgetary Allocation	1,646.76
Compensatory Afforestation Fund (CAF)	541.84
Thirteenth Finance Commission	90.30
NABARD	114.48
Bilateral and Multilateral funders	41.06
Allocations under MGNREGA	5574.11
State's share in CAF	5029.50

In 2018, Maharashtra's share of the Compensatory Afforestation Fund, which was created to compensate the ecosystems services lost as a result of forest land diversion, was 5029.50 crore INR.

MANIPUR

GEOGRAPHIC AREA AND LAND USE

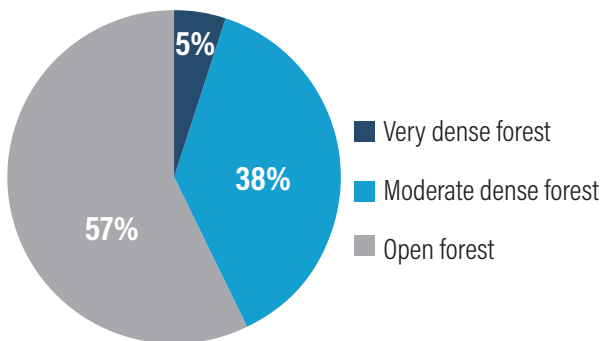
Total Geographic Area: 2.23 MHa

Land Use	Area (MHa)
Forests	1.69
Not available for land cultivation	0.03
Permanent pastures and other grazing lands	0.001
Land under misc. tree crops and groves	0.006
Culturable wasteland	0.001
Fallow land other than current fallow	0
Current Fallow	0
Net Sown	0.37

FOREST COVER

Recorded Forest Area: 1.74 MHa

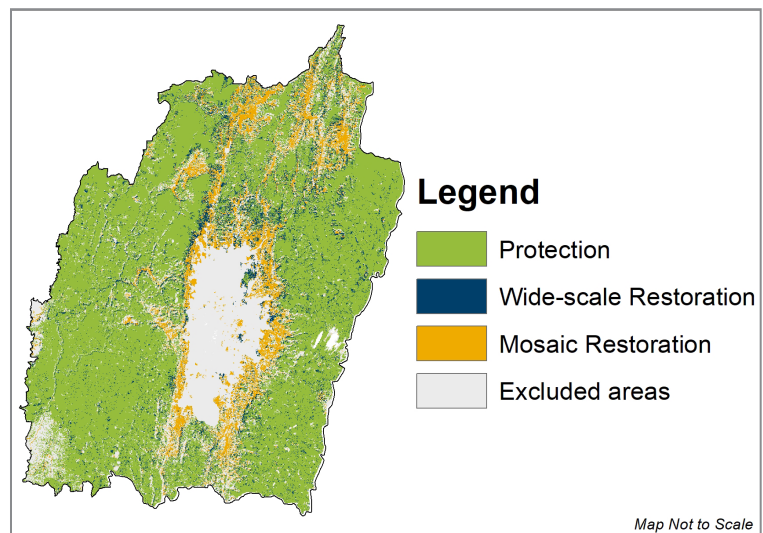
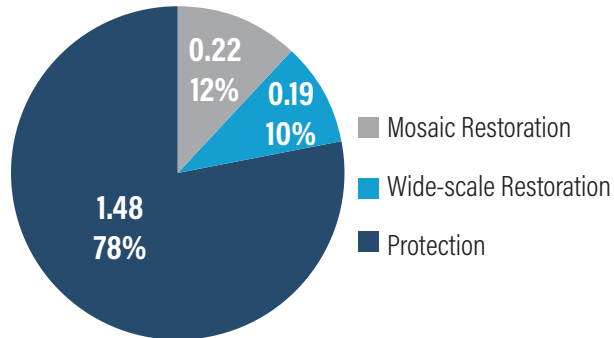
Forest Type	Area (MHa)
Very Dense Forest	0.09
Moderate Dense Forest	0.65
Open Forest	0.99



LANDSCAPE RESTORATION POTENTIAL

Total Area Available for Restoration: 1.89 MHa

Intervention	Area (MHa)
Protection	1.48
Wide-scale Restoration	0.19
Mosaic Restoration	0.22



CARBON SEQUESTRATION POTENTIAL

Manipur has the potential to sequester between 32.67 to 34.39 million tons (MT) of additional above ground carbon through improvement of tree cover. This includes:

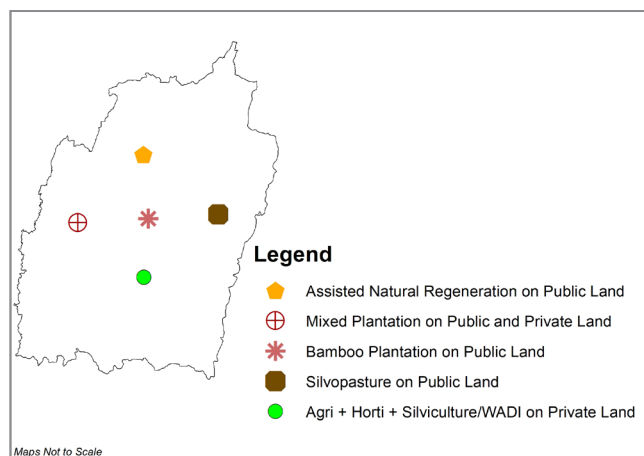
Strategy	Carbon Sequestration Potential (MT of Carbon)
Protection	24.34
Widescale Restoration	7.64
Mosaic Restoration	0.69 - 2.41
Total	32.67 - 34.39

* the lower limit is based on estimates of 20% tree cover in cultivated areas, the upper limit assumes 40% tree cover in cultivated areas.

Notably the above does not include carbon sequestration potential in Manipur's protected areas.

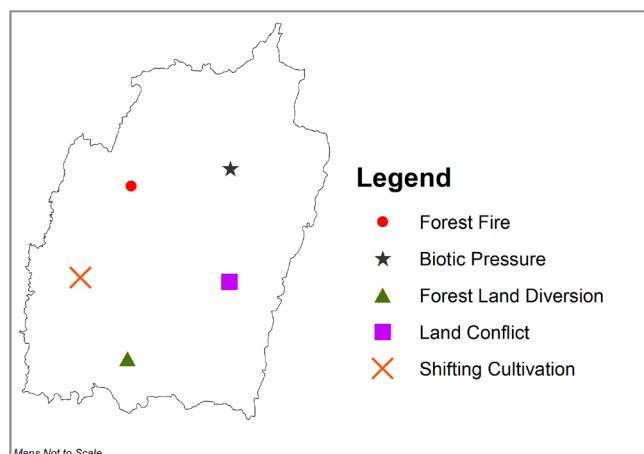
PAST AND ON-GOING INITIATIVES

The study on past and on-going initiatives found that Manipur has 5 projects that involve at least eleven types of interventions.



These interventions cover 843 hectares and have been implemented by government agencies, private sector as well civil society organisations.

RISKS TO IMPROVEMENT IN FOREST AND TREE COVER



There are four major risks that can adversely impact improvements in forest and tree cover in Manipur:

- Between 2011-2017, Manipur recorded 9344 incidents of fires.
- Between the year 2000 and 2017, Manipur diverted nearly 1,425.351 hectares of forest land. This is nearly 0.08 % of Manipur's total forest area.
- According to the Land Conflict Watch, 1 conflict between state agencies and communities was reported in Manipur in 2010. These conflicts are

related to land tenure and resource rights (1).

- Biotic pressure including open grazing and collection of fuel-wood.

TENURE AND RESOURCE RIGHTS

No data available for the number of districts in Manipur partially covered under the Panchayat (Extension to Scheduled Areas) Act of 1996. Nearly 10 percent of Manipur's forests are covered by joint forest management committees, covering 24,102 households. The potential for CFR in Manipur is 0.001 MHa.

FINANCE FLOWS

Between 2011-16, INR 69,460.7 crore was allocated to Manipur under different programs and schemes, for improvements in forest and tree cover.

Programme	Amount (INR crore)
Budgetary Allocation	154.21
Compensatory Afforestation Fund (CAF)	16.66
Thirteenth Finance Commission	80.98
NABARD	0.36
Bilateral and Multilateral funders	00.00
Allocations under MGNREGA	442.41
State's share in CAF	418.86

In 2018, Manipur's share of the Compensatory Afforestation Fund, which was created to compensate the ecosystems services lost as a result of forest land diversion, was INR 418.86 crore.

MEGHALAYA

GEOGRAPHIC AREA AND LAND USE

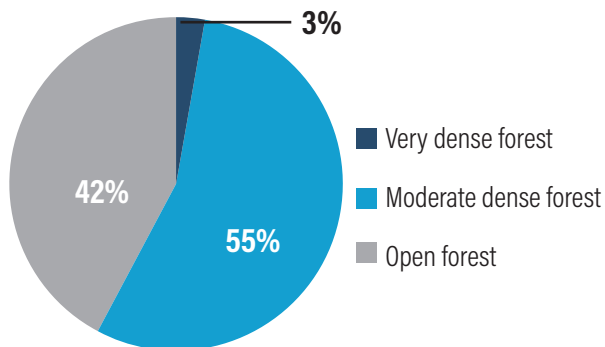
Total Geographic Area: 2.24 MHa

Land Use	Area (MHa)
Forests	0.94
Not available for land cultivation	0.24
Permanent pastures and other grazing lands	1
Land under misc. tree crops and groves	6
Culturable wasteland	1
Fallow land other than current fallow	0
Current Fallow	0
Net Sown	0.28

FOREST COVER

Recorded Forest Area: 0.95 MHa

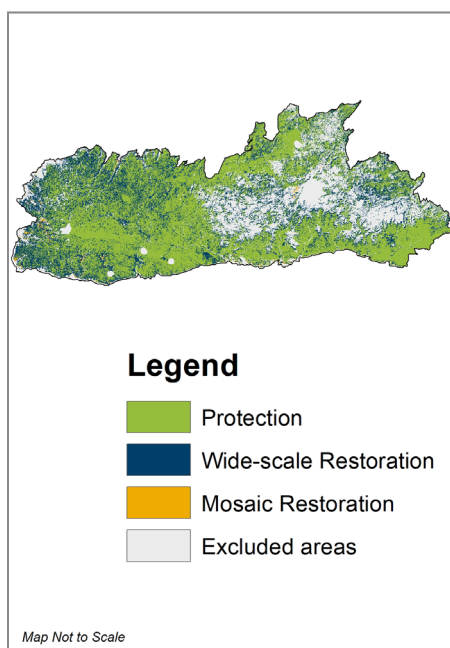
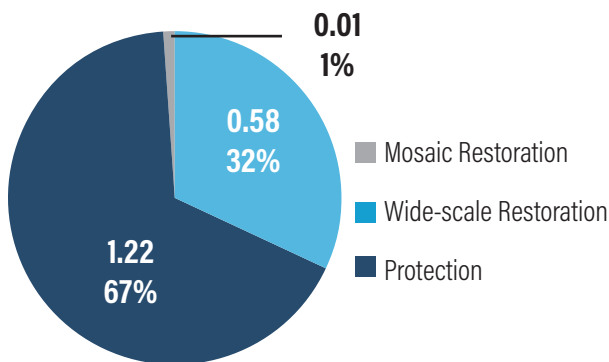
Forest Type	Area (MHa)
Very Dense Forest	0.045
Moderate Dense Forest	0.94
Open Forest	0.73



LANDSCAPE RESTORATION POTENTIAL

Total Area Available for Restoration: 1.81 MHa

Intervention	Area (MHa)
Protection	1.22
Wide-scale Restoration	0.58
Mosaic Restoration	0.01



CARBON SEQUESTRATION POTENTIAL

Meghalaya has the potential to sequester between 51.14 to 51.25 million tons (MT) of additional above ground carbon through improvement of tree cover. This includes:

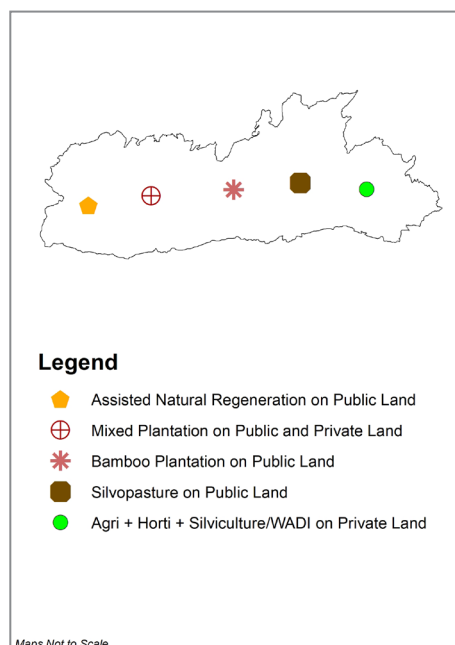
Strategy	Carbon Sequestration Potential (MT of Carbon)
Protection	25.91
Widescale Restoration	25.20
Mosaic Restoration	0.03 - 0.14
Total	51.14 - 51.25

* the lower limit is based on estimates of 20% tree cover in cultivated areas, the upper limit assumes 40% tree cover in cultivated areas.

Notably the above does not include carbon sequestration potential in Meghalaya's protected areas.

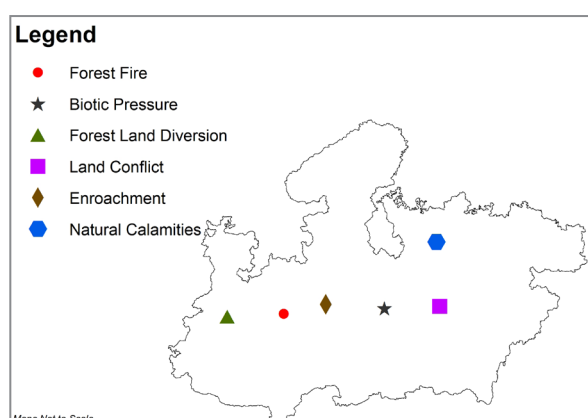
PAST AND ON-GOING INITIATIVES

The study on past and on-going initiatives found that Meghalaya has 3 projects that involve at least five types of interventions.



These interventions cover 2,050 hectares and have been implemented by government agencies, private sector as well civil society organisations.

RISKS TO IMPROVEMENT IN FOREST AND TREE COVER



There are four major risks that can adversely impact improvements in forest and tree cover in Meghalaya's:

- Between 2011-2017, Meghalaya recorded 9,344 incidents of fires.

- Between the year 2000 and 2017, Meghalaya diverted nearly 530,593 hectares of forest land. This is nearly 0.03 % of Meghalaya's total forest area.
- According to the Land Conflict Watch, 4 conflicts between state agencies and communities were reported in Meghalaya in 2015. These conflicts are related to land acquisition for development (3) and tenure and resource rights (1).
- Biotic pressure including open grazing and collection of fuel-wood.

TENURE AND RESOURCE RIGHTS

No data available for the number of districts in Meghalaya partially covered under the Panchayat (Extension to Scheduled Areas) Act of 1996. Nearly 2 percent of Meghalaya's forests are covered by joint forest management committees, covering 39,210 households. The potential for CFR in Meghalaya is 0.

FINANCE FLOWS

Between 2011-16, INR 68346.7 crore was allocated to Meghalaya under different programs and schemes, for improvements in forest and tree cover.

Programme	Amount (INR crore)
Budgetary Allocation	168.84
Compensatory Afforestation Fund (CAF)	5.2
Thirteenth Finance Commission	94.33
NABARD	1.54
Bilateral and Multilateral funders	00.00
Allocations under MGNREGA	413.56
State's share in CAF	193.51

In 2018, Meghalaya's share of the Compensatory Afforestation Fund, which was created to compensate the ecosystems services lost as a result of forest land diversion, was INR 193.51 crore.

MIZORAM

GEOGRAPHIC AREA AND LAND USE

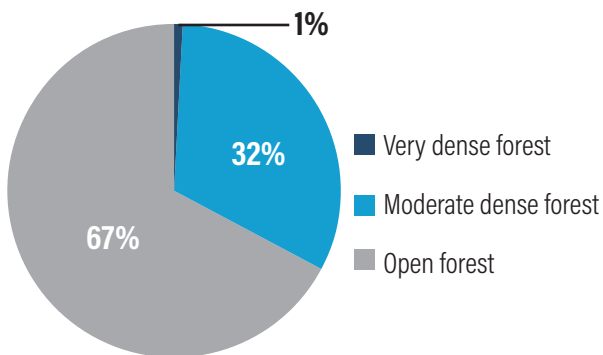
Total Geographic Area: 2.10 MHa

Land Use	Area (MHa)
Forests	1.59
Not available for land cultivation	0.10
Permanent pastures and other grazing lands	0.005
Land under misc. tree crops and groves	0.07
Culturable wasteland	0.007
Fallow land other than current fallow	0.16
Current Fallow	0.04
Net Sown	0.11

FOREST COVER

Recorded Forest Area: 0.56 MHa

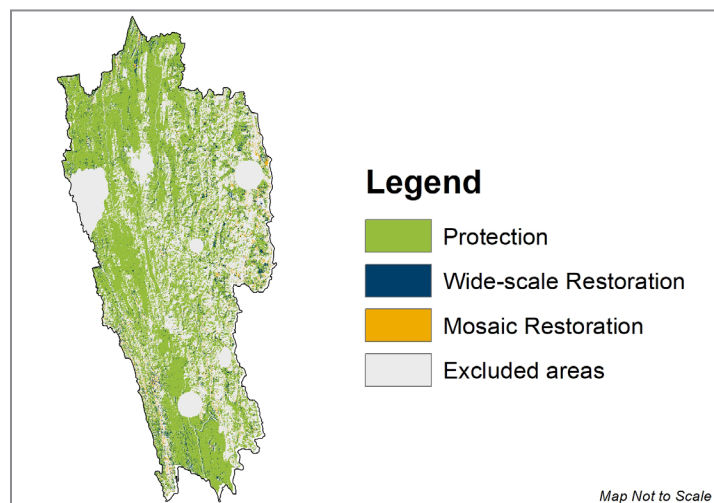
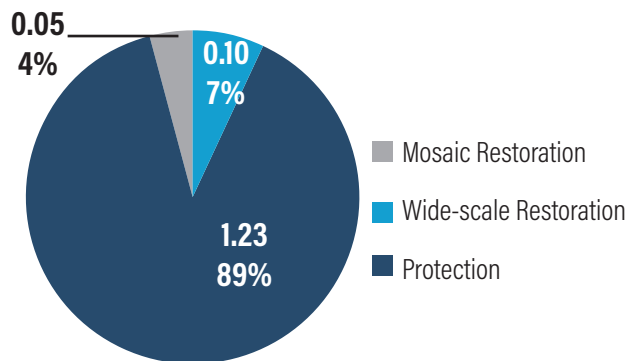
Forest Type	Area (MHa)
Very Dense Forest	0.013
Moderate Dense Forest	0.59
Open Forest	1.22



LANDSCAPE RESTORATION POTENTIAL

Total Area Available for Restoration: 1.38 MHa

Intervention	Area (MHa)
Protection	1.23
Wide-scale Restoration	0.10
Mosaic Restoration	0.05



CARBON SEQUESTRATION POTENTIAL

Mizoram has the potential to sequester between 50.47 to 50.84 million tons (MT) of additional above ground carbon through improvement of tree cover. This includes:

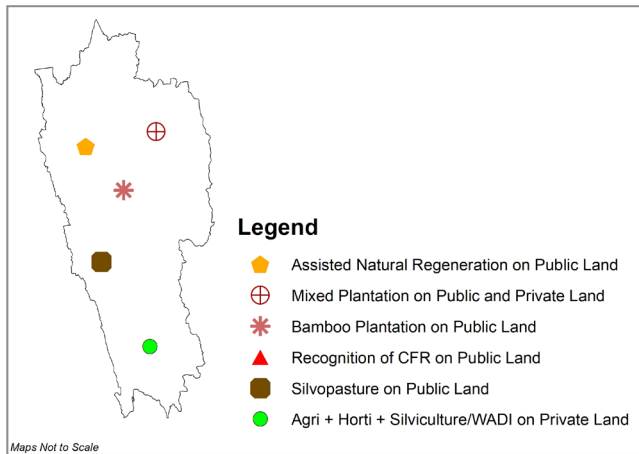
Strategy	Carbon Sequestration Potential (MT of Carbon)
Protection	25.19
Widescale Restoration	25.20
Mosaic Restoration	0.08 - 0.45
Total	50.47 - 50.84

* the lower limit is based on estimates of 20% tree cover in cultivated areas, the upper limit assumes 40% tree cover in cultivated areas.

Notably the above does not include carbon sequestration potential in Mizoram's protected areas.

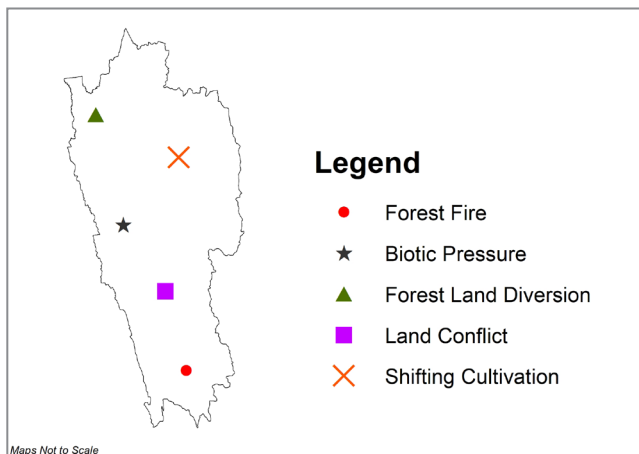
PAST AND ON-GOING INITIATIVES

The study on past and on-going initiatives found that Mizoram has 3 projects that involve at least five types of interventions.



These interventions cover 1,070 hectares and have been implemented by government agencies, private sector as well civil society organisations.

RISKS TO IMPROVEMENT IN FOREST AND TREE COVER



There are four major risks that can adversely impact improvements in forest and tree cover in Mizoram:

- Between 2011-2017, Mizoram recorded 13,730 incidents of fires.
- Between the year 2000 and 2017, Mizoram diverted nearly 38,438.527 hectares of forest land. This is nearly 2 % of Mizoram's total forest area.
- According to the Land Conflict Watch, zero conflict between state agencies and communities was reported in Mizoram.

- Biotic pressure including open grazing and collection of fuel-wood.

TENURE AND RESOURCE RIGHTS

No data available for the number of districts in Mizoram partially covered under the Panchayat (Extension to Scheduled Areas) Act of 1996. Nearly 3 percent of Mizoram's forests are covered by joint forest management committees, covering 80,685 households. The potential for CFR in Mizoram is 0.

FINANCE FLOWS

Between 2011-16, INR 70,332 crore was allocated to Mizoram under different programs and schemes, for improvements in forest and tree cover. Add table. Mention clearly that data is not available for certain categories for some years.

Programme	Amount (INR crore)
Budgetary Allocation	253.77
Compensatory Afforestation Fund (CAF)	4.40
Thirteenth Finance Commission	99.10
NABARD	0.00
Bilateral and Multilateral funders	0.00
Allocations under MGNREGA	346.057
State's share in CAF	120.74

In 2018, Mizoram's share of the Compensatory Afforestation Fund, which was created to compensate the ecosystems services lost as a result of forest land diversion, was INR 120.74 crore.

NAGALAND

GEOGRAPHIC AREA AND LAND USE

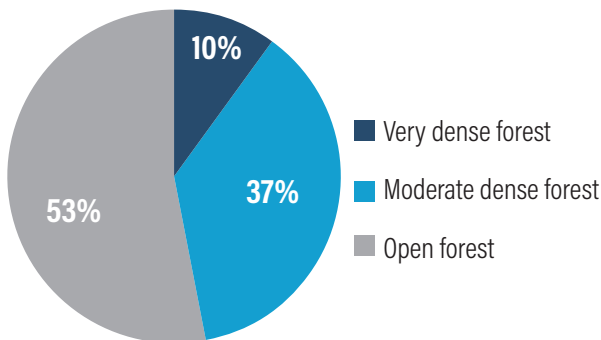
Total Geographic Area: 1.65 MHa

Land Use	Area (MHa)
Forests	0.86
Not available for land cultivation	0.09
Permanent pastures and other grazing lands	0
Land under misc. tree crops and groves	0.09
Culturable wasteland	0.07
Fallow land other than current fallow	0.10
Current Fallow	0.05
Net Sown	0.38

FOREST COVER

Recorded Forest Area: 0.86 MHa

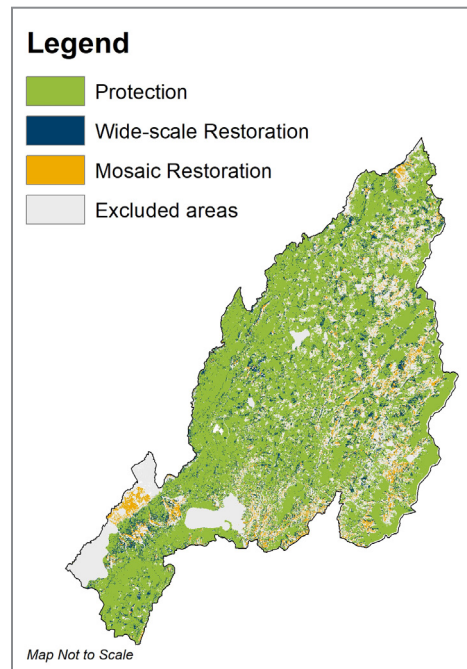
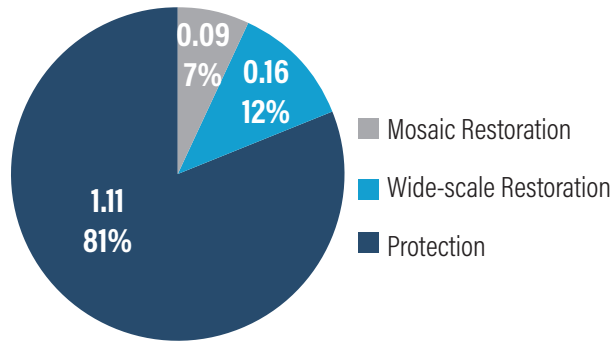
Forest Type	Area (MHa)
Very Dense Forest	0.12
Moderate Dense Forest	0.46
Open Forest	0.66



LANDSCAPE RESTORATION POTENTIAL

Total Area Available for Restoration: 1.36 MHa

Intervention	Area (MHa)
Protection	1.11
Wide-scale Restoration	0.16
Mosaic Restoration	0.09



CARBON SEQUESTRATION POTENTIAL

Nagaland has the potential to sequester between 26.53 to 27.25 million tons (MT) of additional above ground carbon through improvement of tree cover. This includes:

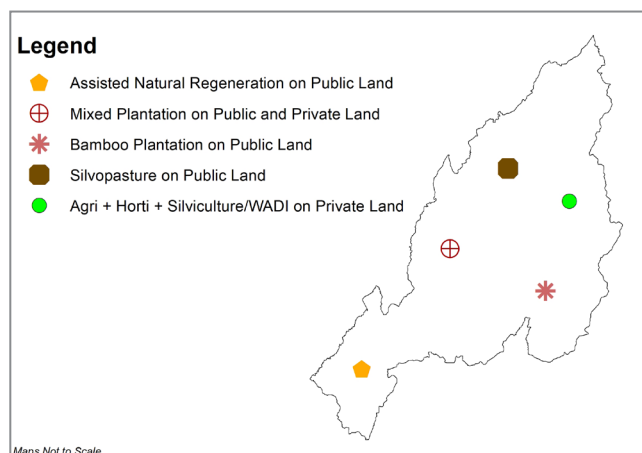
Strategy	Carbon Sequestration Potential (MT of Carbon)
Protection	19.72
Widescale Restoration	6.64
Mosaic Restoration	0.17 - 0.89
Total	26.53 - 27.25

* the lower limit is based on estimates of 20% tree cover in cultivated areas, the upper limit assumes 40% tree cover in cultivated areas.

Notably the above does not include carbon sequestration potential in Nagaland’s protected areas.

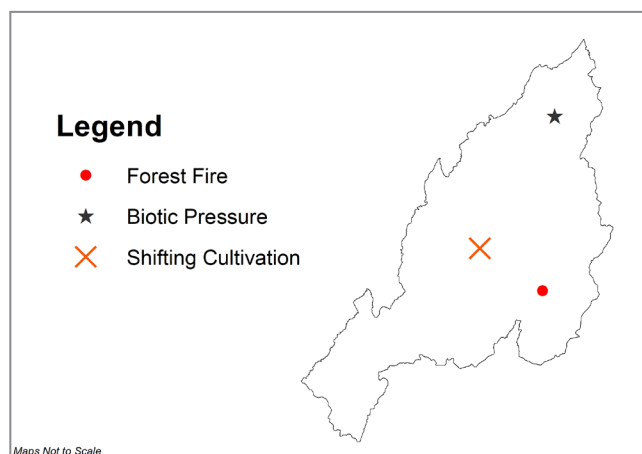
PAST AND ON-GOING INITIATIVES

The study on past and on-going initiatives found that Nagaland has 5 projects that involve at least five types of interventions.



These interventions cover 51,00 hectares and have been implemented by government agencies, private sector as well civil society organisations.

RISKS TO IMPROVEMENT IN FOREST AND TREE COVER



There are four major risks that can adversely impact improvements in forest and tree cover in Nagaland:

- Between 2011-2017, Nagaland recorded 5908 incidents of fires.
- No data is available for forest land diversion between the year 2000 and 2017 in Nagaland.
- According to the Land Conflict Watch, zero conflicts between state agencies and communities were reported in Nagaland.

- Biotic pressure including open grazing and collection of fuel-wood.

TENURE AND RESOURCE RIGHTS

No data available for the number of districts in Nagaland partially covered under the Panchayat (Extension to Scheduled Areas) Act of 1996. Nearly 4.65 percent of Nagaland’s forests are covered by joint forest management committees, covering 159,587 households. The potential for CFR in Nagaland is 0.02 MHa.

FINANCE FLOWS

Between 2011-16, INR 78413.4 crore was allocated to Nagaland under different programs and schemes, for improvements in forest and tree cover.

Programme	Amount (INR crore)
Budgetary Allocation	405.60
Compensatory Afforestation Fund (CAF)	0.00
Thirteenth Finance Commission	87.35
NABARD	4.36
Bilateral and Multilateral funders	17.67
Allocations under MGNREGA	269.15
State’s share in CAF	-

Nagaland was not made an allocation under the Compensatory Afforestation Fund, which was created to compensate the ecosystem services lost as a result of forest land diversion.

ODISHA

GEOGRAPHIC AREA AND LAND USE

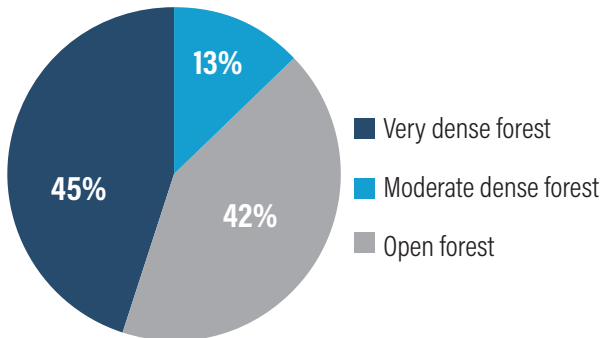
Total Geographic Area: 15.5 MHa

Land Use	Area (MHa)
Forests	5.81
Not available for land cultivation	2.33
Permanent pastures and other grazing lands	0.52
Land under misc. tree crops and groves	0.22
Culturable wasteland	0.56
Fallow land other than current fallow	0.63
Current Fallow	0.88
Net Sown	4.49

FOREST COVER

Recorded Forest Area: 6.12 MHa

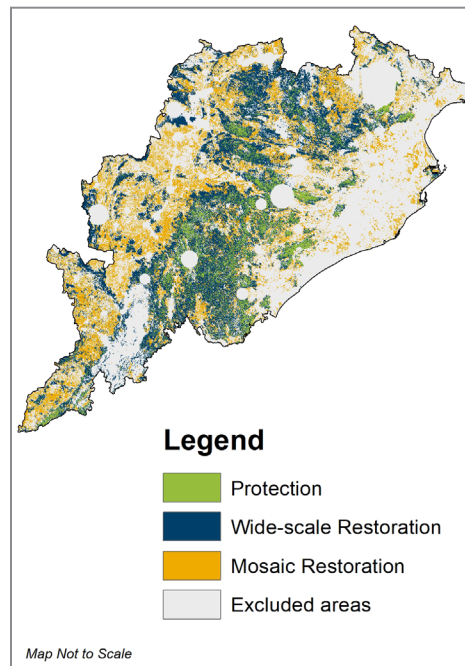
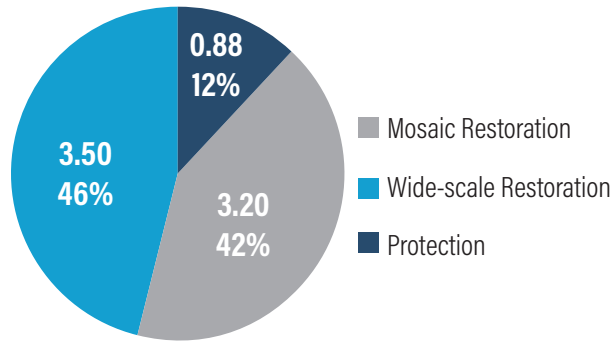
Forest Type	Area (MHa)
Very Dense Forest	0.69
Moderate Dense Forest	2.13
Open Forest	2.30



LANDSCAPE RESTORATION POTENTIAL

Total Area Available for Restoration: 7.58 MHa

Intervention	Area (MHa)
Protection	0.88
Wide-scale Restoration	3.50
Mosaic Restoration	3.20



CARBON SEQUESTRATION POTENTIAL

Odisha has the potential to sequester between 169.40 to 224.05 million tons (MT) of additional above ground carbon through improvement of tree cover. This includes:

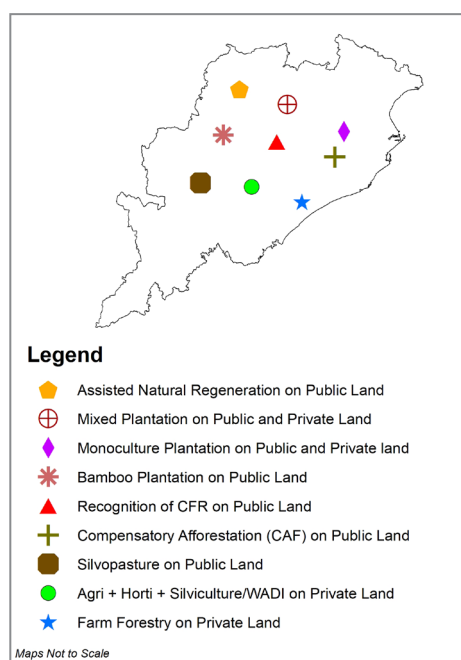
Strategy	Carbon Sequestration Potential (MT of Carbon)
Protection	23.09
Widescale Restoration	145.95
Mosaic Restoration	0.36 - 55.01
Total	169.40 - 224.05

* the lower limit is based on estimates of 20% tree cover in cultivated areas, the upper limit assumes 40% tree cover in cultivated areas.

Notably the above does not include carbon sequestration potential in Odisha’s protected areas.

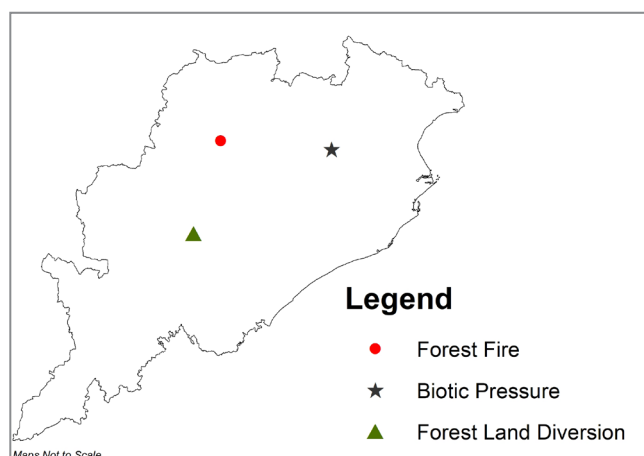
PAST AND ON-GOING INITIATIVES

The study on past and on-going initiatives found that Odisha has 27 projects that involve at least nine types of interventions.



These interventions cover 185504 hectares and have been implemented by government agencies, private sector as well civil society organisations.

RISKS TO IMPROVEMENT IN FOREST AND TREE COVER



There are four major risks that can adversely impact improvements in forest and tree cover in Odisha:

- Between 2011-2017, Odisha recorded 16,573 incidents of fires.

- Between the year 2000 and 2017, Odisha diverted nearly 39,837.501 hectares of forest land. This is nearly 0.77% of Odisha’s total forest area.
- According to the Land Conflict Watch, 41 conflicts between state agencies and communities were reported in Odisha in 2015. These conflicts are related to compensatory afforestation (14), land acquisition for development (3) and tenure and resource rights (24).
- Biotic pressure including open grazing and collection of fuel-wood.

TENURE AND RESOURCE RIGHTS

6 districts in Odisha are fully covered and 7 districts are partially covered under the Panchayat (Extension to Scheduled Areas) Act of 1996. Nearly 20 percent of Odisha’s forests are covered by joint forest management committees, covering 1,642,982 households. The potential for CFR in Odisha is 1.78 MHa.

FINANCE FLOWS

Between 2011-16, INR 473983 crore INR was allocated to Odisha under different programs and schemes, for improvements in forest and tree cover.

Programme	Amount (INR crore)
Budgetary Allocation	735.57
Compensatory Afforestation Fund (CAF)	883.92
Thirteenth Finance Commission	75.05
NABARD	74.25
Bilateral and Multilateral funders	373.62
Allocations under MGNREGA	0.00
State’s share in CAF	9,725.19

In 2018, Odisha’s share of the Compensatory Afforestation Fund, which was created to compensate the ecosystems services lost as a result of forest land diversion, was INR 9,725.19 crore.

GEOGRAPHIC AREA AND LAND USE

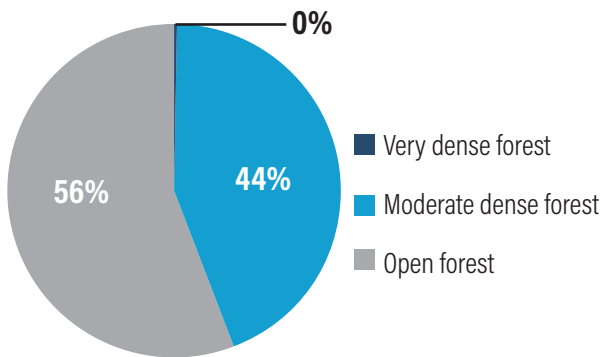
Total Geographic Area: 5.03 MHa

Land Use	Area (MHa)
Forests	0.29
Not available for land cultivation	0.55
Permanent pastures and other grazing lands	0.005
Land under misc. tree crops and groves	0.008
Culturable wasteland	0.006
Fallow land other than current fallow	0.006
Current Fallow	0.005
Net Sown	4.15

FOREST COVER

Recorded Forest Area: 0.30 MH

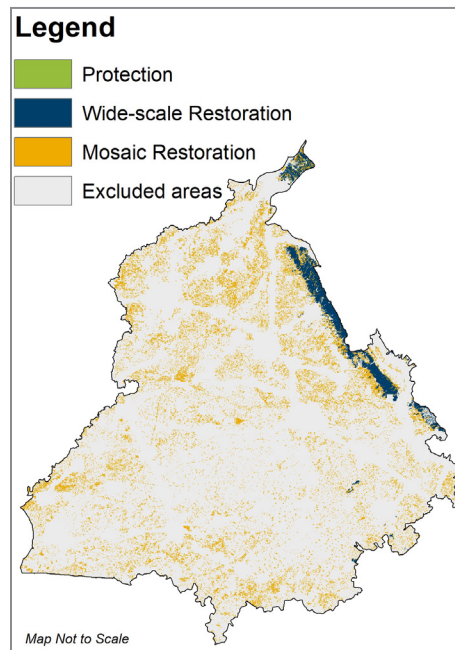
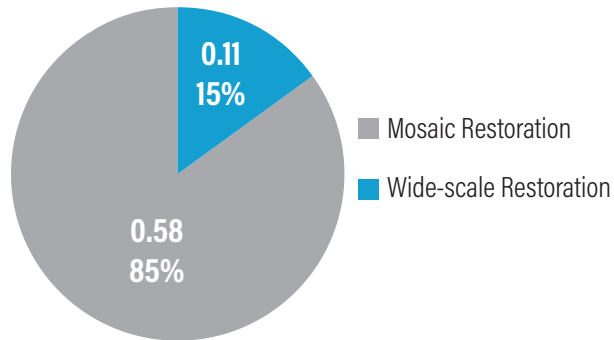
Forest Type	Area (MHa)
Very Dense Forest	0.0008
Moderate Dense Forest	0.08
Open Forest	0.10



LANDSCAPE RESTORATION POTENTIAL

Total Area Available for Restoration: 0.69 MHa

Intervention	Area (MHa)
Protection	0.00
Wide-scale Restoration	0.11
Mosaic Restoration	0.58



CARBON SEQUESTRATION POTENTIAL

Punjab has the potential to sequester between 10.65 to 20.23 million tons (MT) of additional above ground carbon through improvement of tree cover. This includes:

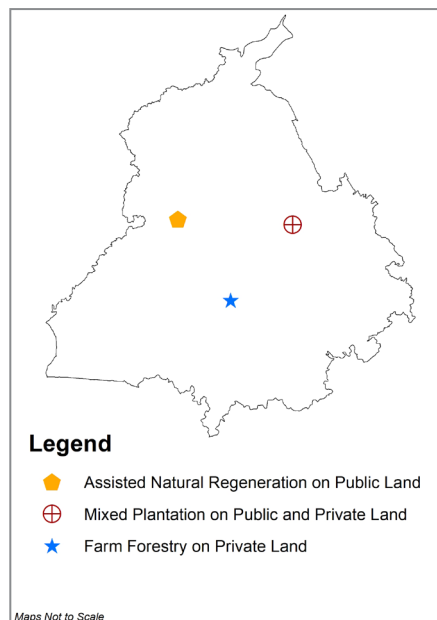
Strategy	Carbon Sequestration Potential (MT of Carbon)
Protection	0.03
Widescale Restoration	4.71
Mosaic Restoration	5.91 - 15.50
Total	10.65 - 20.23

* the lower limit is based on estimates of 20% tree cover in cultivated areas, the upper limit assumes 40% tree cover in cultivated areas.

Notably the above does not include carbon sequestration potential in Punjab’s protected areas.

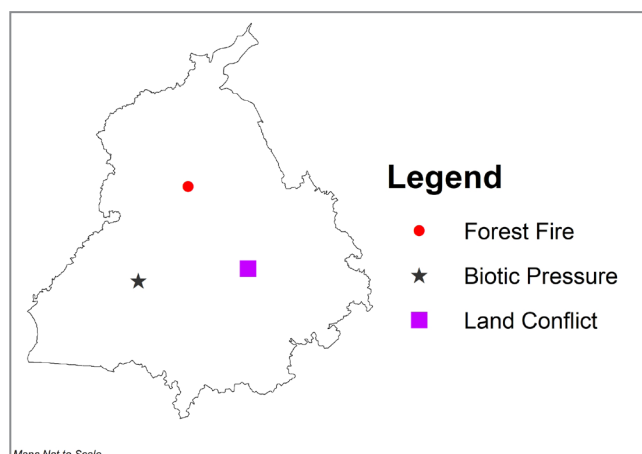
PAST AND ON-GOING INITIATIVES

The study on past and on-going initiatives found that Punjab has 4 projects that involve at least three types of interventions.



These interventions cover 7,060 hectares and have been implemented by government agencies, private sector as well civil society organisations.

RISKS TO IMPROVEMENT IN FOREST AND TREE COVER



There are four major risks that can adversely impact improvements in forest and tree cover in Punjab:

- Between 2011-2017, Punjab recorded 521 incidents of fires.
- Between the year 2000 and 2017, Punjab diverted

nearly 75,314.695 hectares of forest land. This is nearly 41 % of Punjab’s total forest area. area.

- According to the Land Conflict Watch, 1 conflict between state agencies and communities was reported in Punjab in 2015. These conflicts are related to tenure and resource rights (1).
- Biotic pressure including open grazing and collection of fuel-wood.

TENURE AND RESOURCE RIGHTS

No data available for the number of districts in Punjab partially covered under the Panchayat (Extension to Scheduled Areas) Act of 1996. Nearly 58 percent of Punjab’s forests are covered by joint forest management committees, covering 91,850 households. The potential for CFR in Punjab is 0.07 MHa.

FINANCE FLOWS

Between 2011-16, 50939.8 crore INR was allocated to Punjab under different programs and schemes, for improvements in forest and tree cover.

Programme	Amount (INR crore)
Budgetary Allocation	68.67
Compensatory Afforestation Fund (CAF)	103.89
Thirteenth Finance Commission	26.10
NABARD	00.00
Bilateral and Multilateral funders	00.00
Allocations under MGNREGA	310.74
State’s share in CAF	1,371.58

In 2018, Punjab’s share of the Compensatory Afforestation Fund, which was created to compensate the ecosystems services lost as a result of forest land diversion, was INR 1371.58 crore.

RAJASTHAN

GEOGRAPHIC AREA AND LAND USE

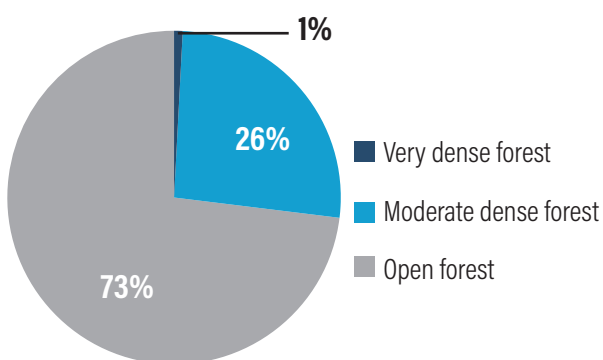
Total Geographic Area: 34.2 MHa

Land Use	Area (MHa)
Forests	2.76
Not available for land cultivation	4.27
Permanent pastures and other grazing lands	1.69
Land under misc. tree crops and groves	0.02
Culturable wasteland	4.00
Fallow land other than current fallow	1.85
Current Fallow	1.40
Net Sown	18.27

FOREST COVER

Recorded Forest Area: 3.27 Mha

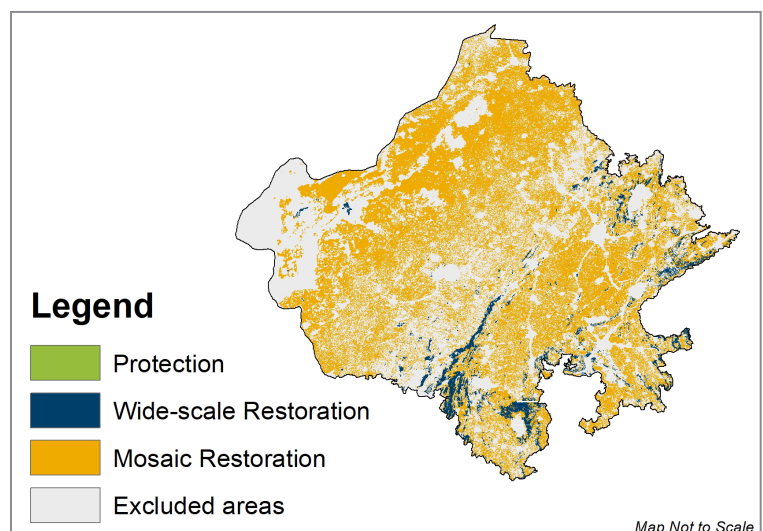
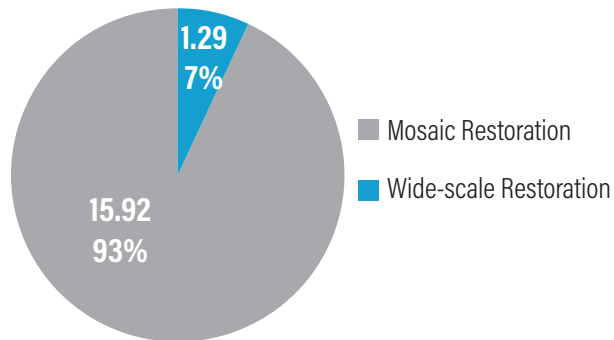
Forest Type	Area (MHa)
Very Dense Forest	0.078
Moderate Dense Forest	0.43
Open Forest	1.21



LANDSCAPE RESTORATION POTENTIAL

Total Area Available for Restoration: 17.21 MHa

Intervention	Area (MHa)
Protection	0.00
Wide-scale Restoration	1.29
Mosaic Restoration	15.92



CARBON SEQUESTRATION POTENTIAL

Rajasthan has the potential to sequester between 342.73 to 642.57 million tons (MT) of additional above ground carbon through improvement of tree cover. This includes:

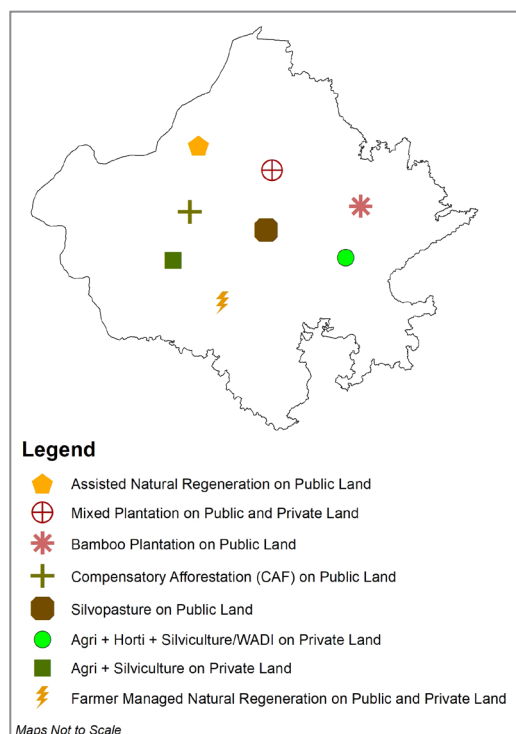
Strategy	Carbon Sequestration Potential (MT of Carbon)
Protection	0.00
Widescale Restoration	92.02
Mosaic Restoration	250.71 - 550.55
Total	342.73 - 642.57

* the lower limit is based on estimates of 20% tree cover in cultivated areas, the upper limit assumes 40% tree cover in cultivated areas.

Notably the above does not include carbon sequestration potential in Rajasthan's protected areas.

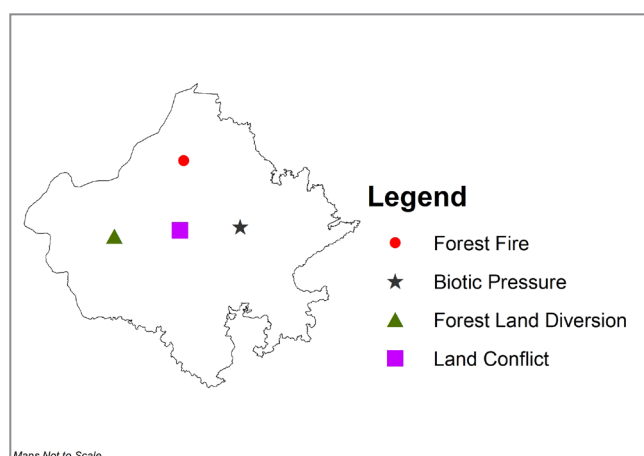
PAST AND ON-GOING INITIATIVES

The study on past and on-going initiatives found that Rajasthan has 9 projects that involve at least eight types of interventions.



These interventions cover 3,941 hectares and have been implemented by government agencies, private sector as well civil society organisations.

RISKS TO IMPROVEMENT IN FOREST AND TREE COVER



There are four major risks that can adversely impact improvements in forest and tree cover in Rajasthan:

- Between 2011-2017, Rajasthan recorded 714 incidents of fires.

- Between the year 2000 and 2017, Rajasthan diverted nearly 27284.092 hectares of forest land. This is nearly 1.64 % of Rajasthan's total forest area.
- According to the Land Conflict Watch, 3 conflicts between state agencies and communities were reported in Andhra Pradesh in 2015. These conflicts are related to land acquisition for development (2) and tenure and resource rights (1).
- Biotic pressure including open grazing and collection of fuel-wood.

TENURE AND RESOURCE RIGHTS

2 districts in Rajasthan are fully covered and 2 districts are partially covered under the Panchayat (Extension to Scheduled Areas) Act of 1996. Nearly 26 percent of Rajasthan's forests are covered by joint forest management committees, covering 571,051 households. The potential for CFR in Rajasthan is 2.71 MHa.

FINANCE FLOWS

Between 2011-16, 852361.9 crore INR was allocated to Rajasthan under different programs and schemes, for improvements in forest and tree cover.

Programme	Amount (INR crore)
Budgetary Allocation	1,564.58
Compensatory Afforestation Fund (CAF)	177.82
Thirteenth Finance Commission	3.68
NABARD	35.96
Bilateral and Multilateral funders	364.00
Allocations under MGNREGA	6,357.58
State's share in CAF	2,635.80

In 2018, Rajasthan's share of the Compensatory Afforestation Fund, which was created to compensate the ecosystems services lost as a result of forest land diversion, was INR 2,635.80 crore.

SIKKIM

GEOGRAPHIC AREA AND LAND USE

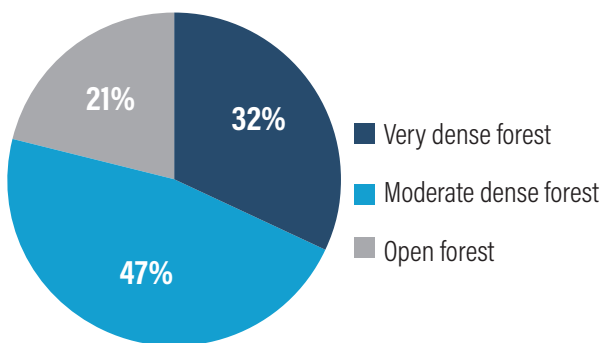
Total Geographic Area: 0.71 MHa

Land Use	Area (MHa)
Forests	0.34
Not available for land cultivation	0.010
Permanent pastures and other grazing lands	NA
Land under misc. tree crops and groves	0.004
Culturable wasteland	0.004
Fallow land other than current fallow	0.005
Current Fallow	0.007
Net Sown	0.077

FOREST COVER

Recorded Forest Area: 0.58 MHa

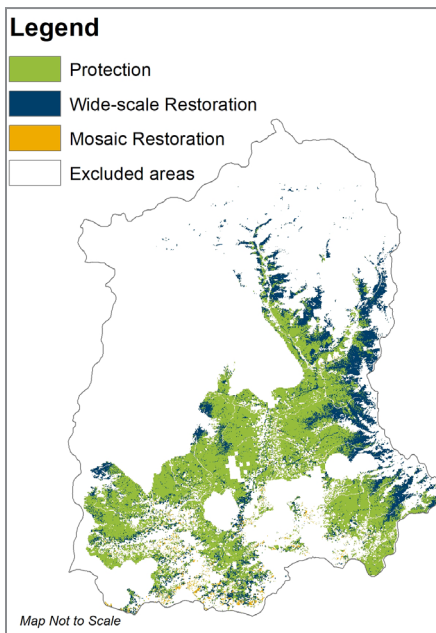
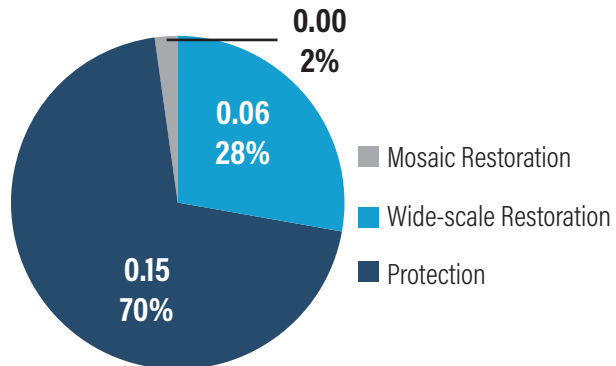
Forest Type	Area (MHa)
Very Dense Forest	0.10
Moderate Dense Forest	0.15
Open Forest	0.07



LANDSCAPE RESTORATION POTENTIAL

Total Area Available for Restoration: 0.21 MHa

Intervention	Area (MHa)
Protection	0.15
Wide-scale Restoration	0.06
Mosaic Restoration	0.00



CARBON SEQUESTRATION POTENTIAL

Sikkim has the potential to sequester between 6.94 to 7.02 million tons (MT) of additional above ground carbon through improvement of tree cover. This includes:

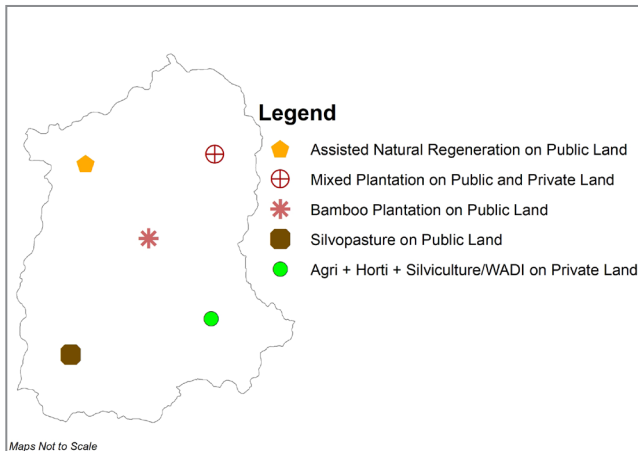
Strategy	Carbon Sequestration Potential (MT of Carbon)
Protection	4.00
Widescale Restoration	2.93
Mosaic Restoration	0.01 - 0.09
Total	6.94 - 7.02

* the lower limit is based on estimates of 20% tree cover in cultivated areas, the upper limit assumes 40% tree cover in cultivated areas.

Notably the above does not include carbon sequestration potential in Sikkim’s protected areas.

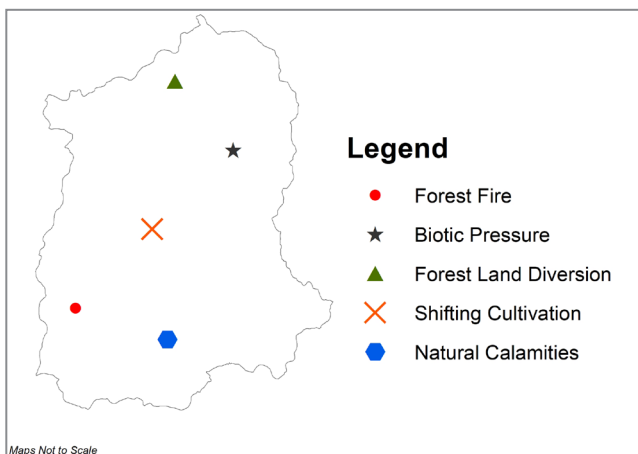
PAST AND ON-GOING INITIATIVES

The study on past and on-going initiatives found that Sikkim has 3 projects that involve at least five types of interventions.



These interventions cover 7,060 hectares and have been implemented by government agencies, private sector as well civil society organisations.

RISKS TO IMPROVEMENT IN FOREST AND TREE COVER



There are four major risks that can adversely impact improvements in forest and tree cover in Sikkim:

- Between 2011-2017, Maharashtra recorded 12428 incidents of fires.
- Between the year 2000 and 2017, Sikkim diverted nearly 2,754.85 hectares of forest land. This is nearly 0.82% of Sikkim’s total forest area.
- According to the Land Conflict Watch, zero conflict between state agencies and communities

was reported in Sikkim.

- Biotic pressure including open grazing and collection of fuel-wood.

TENURE AND RESOURCE RIGHTS

No data available for the number of districts in Punjab partially covered under the Panchayat (Extension to Scheduled Areas) Act of 1996. Nearly 16 percent of Sikkim’s forests are covered by joint forest management committees, covering 46,000 households. The potential for CFR in Sikkim is 0.28 MHa.

FINANCE FLOWS

Between 2011-16, INR 39919 crore was allocated to Sikkim under different programs and schemes, for improvements in forest and tree cover.

Programme	Amount (INR crore)
Budgetary Allocation	46.52
Compensatory Afforestation Fund (CAF)	40.99
Thirteenth Finance Commission	61.15
NABARD	1.81
Bilateral and Multilateral funders	84.39
Allocations under MGNREGA	164.33
State’s share in CAF	445.93

In 2018, Sikkim’s share of the Compensatory Afforestation Fund, which was created to compensate the ecosystems services lost as a result of forest land diversion, was INR 445.93 crore.

TAMIL NADU

GEOGRAPHIC AREA AND LAND USE

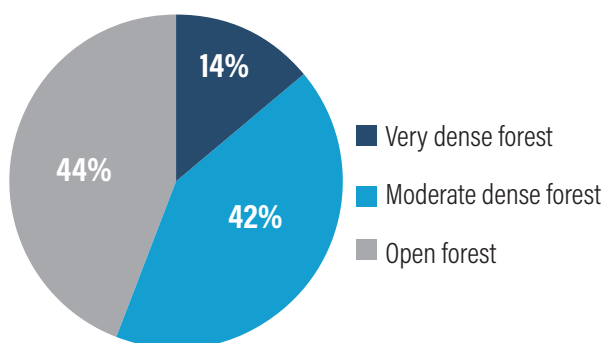
Total Geographic Area: 13.01 MHa

Land Use	Area (MHa)
Forests	2.13
Not available for land cultivation	2.68
Permanent pastures and other grazing lands	0.11
Land under misc. tree crops and groves	0.25
Culturable wasteland	0.33
Fallow land other than current fallow	1.72
Current Fallow	1.12
Net Sown	4.71

FOREST COVER

Recorded Forest Area: 2.28 MHa

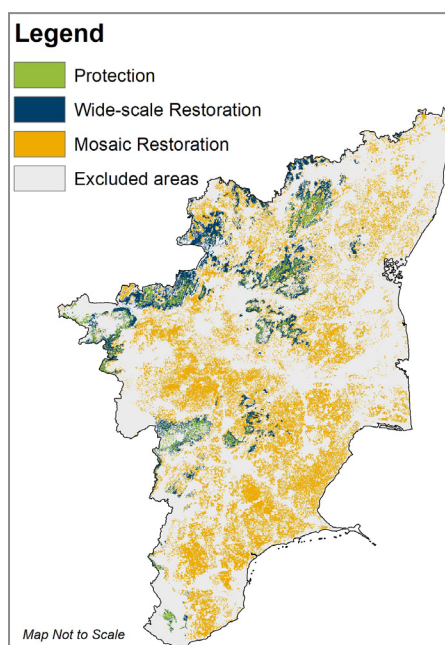
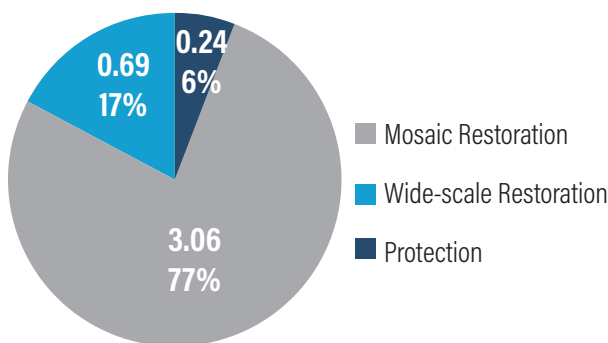
Forest Type	Area (MHa)
Very Dense Forest	0.36
Moderate Dense Forest	1.09
Open Forest	1.16



LANDSCAPE RESTORATION POTENTIAL

Total Area Available for Restoration: 3.99 MHa

Intervention	Area (MHa)
Protection	0.24
Wide-scale Restoration	0.69
Mosaic Restoration	3.06



CARBON SEQUESTRATION POTENTIAL

Tamil Nadu has the potential to sequester between 71.35 to 97.03 million tons (MT) of additional above ground carbon through improvement of tree cover. This includes:

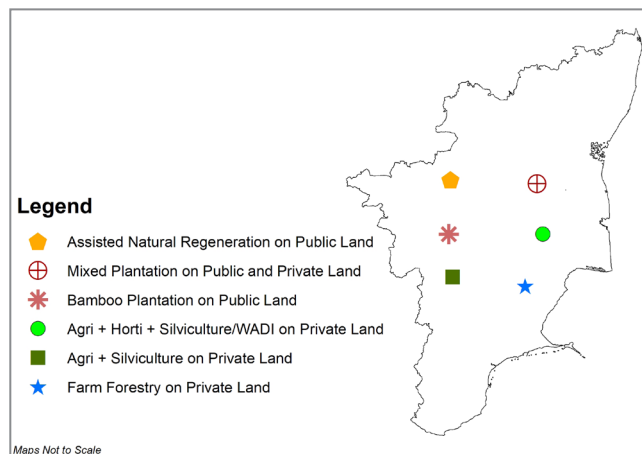
Strategy	Carbon Sequestration Potential (MT of Carbon)
Protection	6.31
Widescale Restoration	35.56
Mosaic Restoration	29.48 - 55.16
Total	71.35 - 97.03

* the lower limit is based on estimates of 20% tree cover in cultivated areas, the upper limit assumes 40% tree cover in cultivated areas.

Notably the above does not include carbon sequestration potential in Tamil Nadu’s protected areas.

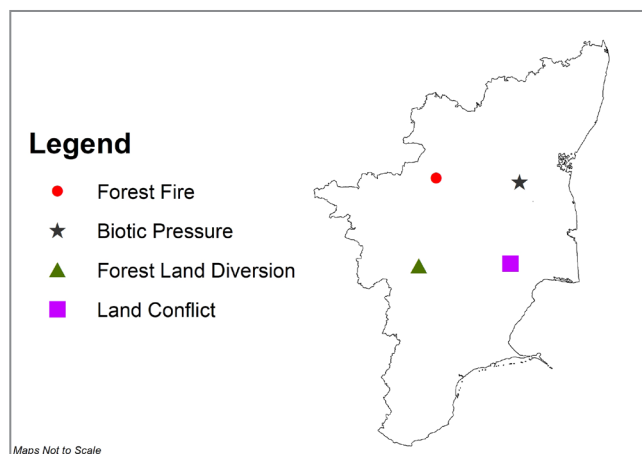
PAST AND ON-GOING INITIATIVES

The study on past and on-going initiatives found that in Tamil Nadu has 7 projects that involve at least six types of interventions.



These interventions cover 936 hectares and have been implemented by government agencies, private sector as well civil society organisations.

RISKS TO IMPROVEMENT IN FOREST AND TREE COVER



There are four major risks that can adversely impact improvements in forest and tree cover in Tamil Nadu:

- Between 2011-2017, Tamil Nadu recorded 1,178 incidents of fires.
- Between the year 2000 and 2017, Tamil Nadu diverted nearly 2,144.44 hectares of forest land. This is nearly 0.08 % of Tamil Nadu’s total forest area.

- According to the Land Conflict Watch, 1 conflict between state agencies and communities was reported in Tamil Nadu. These conflicts are related to tenure and resource rights (1).
- Biotic pressure including open grazing and collection of fuel-wood.

TENURE AND RESOURCE RIGHTS

No data available for the number of districts in Punjab partially covered under the Panchayat (Extension to Scheduled Areas) Act of 1996. Nearly 33 percent of Tamil Nadu’s forests are covered by joint forest management committees, covering 482,269 households. The potential for CFR in Tamil Nadu is 1.71 MHa.

FINANCE FLOWS

Between 2011-16, INR 592,087.8 crore was allocated to Tamil Nadu under different programs and schemes, for improvements in forest and tree cover.

Programme	Amount (INR crore)
Budgetary Allocation	627.70
Compensatory Afforestation Fund (CAF)	4.73
Thirteenth Finance Commission	-71.88
NABARD	92.29
Bilateral and Multilateral funders	297.55
Allocations under MGNREGA	4,970.49
State’s share in CAF	148.08

In 2018, Tamil Nadu’s share of the Compensatory Afforestation Fund, which was created to compensate the ecosystems services lost as a result of forest land diversion, was INR 148.08 crore.

GEOGRAPHIC AREA AND LAND USE

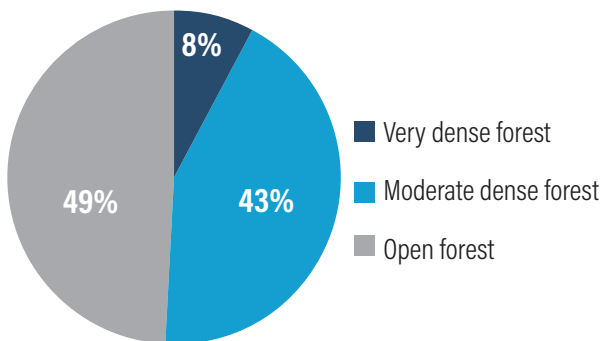
Total Geographic Area: 11.48 MHa

Land Use	Area (MHa)
Forests	2.74
Not available for land cultivation	1.51
Permanent pastures and other grazing lands	0.30
Land under misc. tree crops and groves	0.11
Culturable wasteland	0.17
Fallow land other than current fallow	0.71
Current Fallow	0.96
Net Sown	4.96

FOREST COVER

Recorded Forest Area: 2.69 MHa

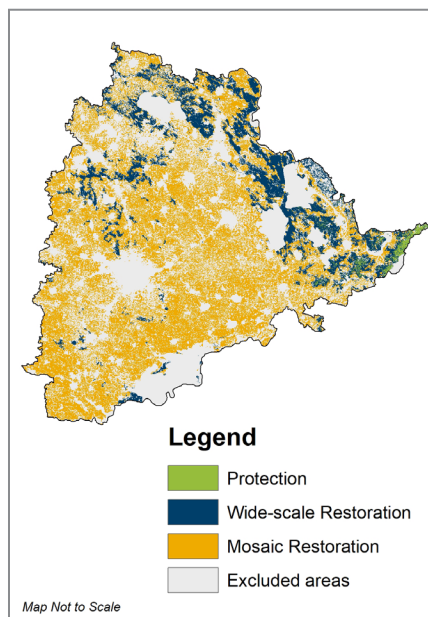
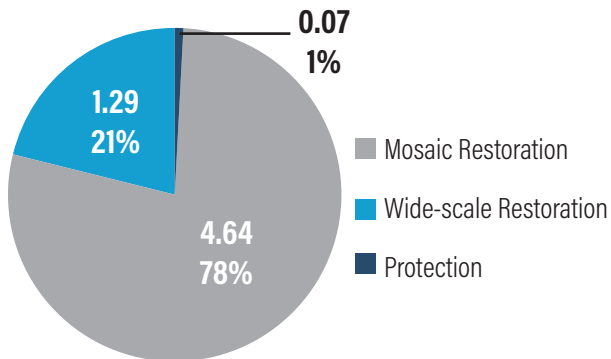
Forest Type	Area (MHa)
Very Dense Forest	0.15
Moderate Dense Forest	0.87
Open Forest	1.00



LANDSCAPE RESTORATION POTENTIAL

Total Area Available for Restoration: 5.99 MHa

Intervention	Area (MHa)
Protection	0.07
Wide-scale Restoration	1.29
Mosaic Restoration	4.64



CARBON SEQUESTRATION POTENTIAL

Telangana has the potential to sequester between 116.70 to 156.12 million tons (MT) of additional above ground carbon through improvement of tree cover. This includes:

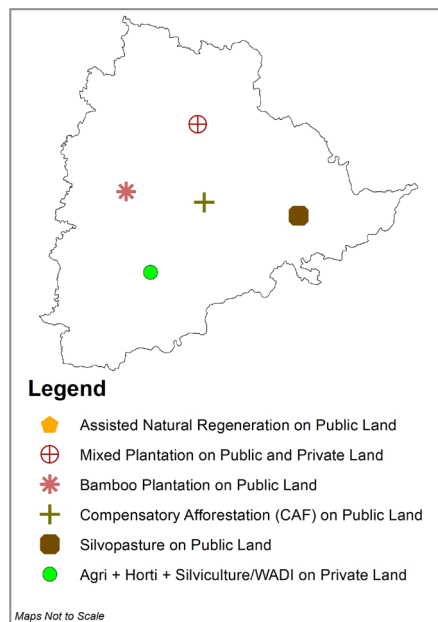
Strategy	Carbon Sequestration Potential (MT of Carbon)
Protection	2.06
Widescale Restoration	69.37
Mosaic Restoration	45.28 - 84.69
Total	116.70 - 156.12

* the lower limit is based on estimates of 20% tree cover in cultivated areas, the upper limit assumes 40% tree cover in cultivated areas.

Notably the above does not include carbon sequestration potential in Telangana’s protected areas.

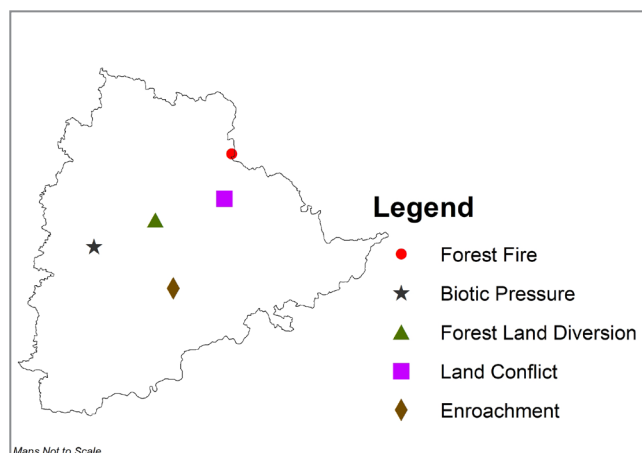
PAST AND ON-GOING INITIATIVES

The study on past and on-going initiatives found that Telangana has 4 projects that involve at least five types of interventions.



These interventions cover 524 hectares and have been implemented by government agencies, private sector as well civil society organisations.

RISKS TO IMPROVEMENT IN FOREST AND TREE COVER



There are four major risks that can adversely impact improvements in forest and tree cover in Telangana:

- Between 2011-2017, Telangana recorded 3,954 incidents of fires.

- Between the year 2000 and 2017, Telangana diverted nearly 28,815.3632 hectares of forest land. This is nearly 1.41 % of Telangana’s total forest area.
- According to the Land Conflict Watch, 2 conflicts between state agencies and communities were reported in Telangana in 2015. These conflicts are related to land acquisition for development (1) and tenure and resource rights (1).
- Biotic pressure including open grazing and collection of fuel-wood.

TENURE AND RESOURCE RIGHTS

3 districts in Telangana are partially covered under the Panchayat (Extension to Scheduled Areas) Act of 1996. No data is available on the number of joint forest management committees and the potential for CFR in Telangana.

FINANCE FLOWS

Between 2011-16, INR 333,041.9 crore was allocated to Telangana under different programs and schemes, for improvements in forest and tree cover.

Programme	Amount (INR crore)
Budgetary Allocation	390.21
Compensatory Afforestation Fund (CAF)	77.00
Thirteenth Finance Commission	0.00
NABARD	20.78
Bilateral and Multilateral funders	0.00
Allocations under MGNREGA	2,842.43
State’s share in CAF	2,115.51

In 2018, Telangana’s share of the Compensatory Afforestation Fund, which was created to compensate the ecosystems services lost as a result of forest land diversion, was INR 2,115.51 crore.

GEOGRAPHIC AREA AND LAND USE

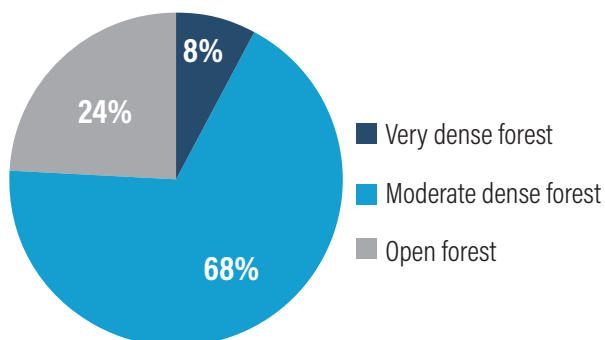
Total Geographic Area: 1.04 MHa

Land Use	Area (MHa)
Forest and Tree Cover	0.63
Not available for land cultivation	0.15
Permanent pastures and other grazing lands	0.001
Land under misc. tree crops and groves	0.01
Culturable wasteland	0.003
Fallow land other than current fallow	0.002
Current Fallow	0.002
Net Sown	0.26

FOREST COVER

Recorded Forest Area: 0.62 MHa

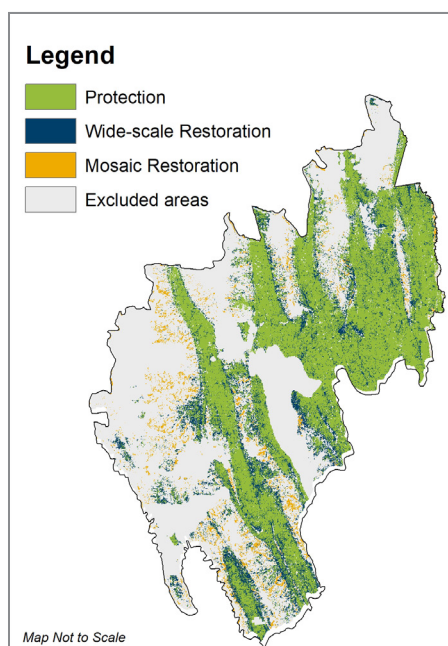
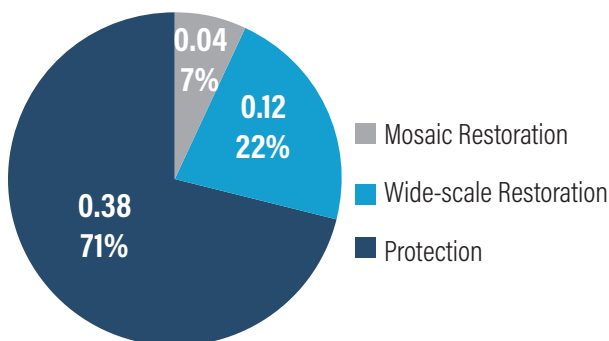
Forest Type	Area (MHa)
Very Dense Forest	0.06
Moderate Dense Forest	0.52
Open Forest	0.18



LANDSCAPE RESTORATION POTENTIAL

Total Area Available for Restoration: 0.54 MHa

Intervention	Area (MHa)
Protection	0.38
Wide-scale Restoration	0.12
Mosaic Restoration	0.04



CARBON SEQUESTRATION POTENTIAL

Tripura has the potential to sequester between 13.51 to 13.79 million tons (MT) of additional above ground carbon through improvement of tree cover. This includes:

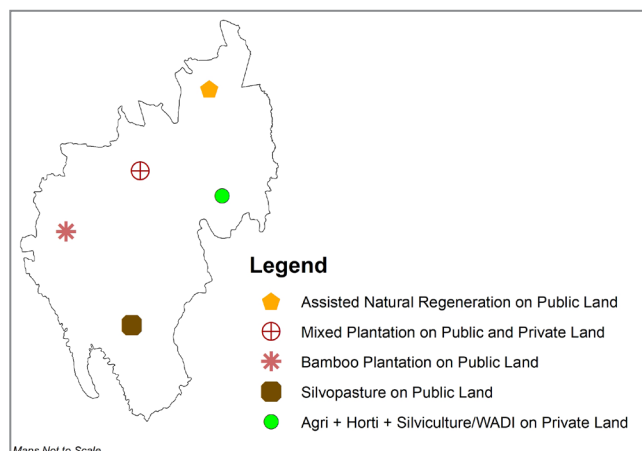
Strategy	Carbon Sequestration Potential (MT of Carbon)
Protection	8.99
Widescale Restoration	4.42
Mosaic Restoration	0.10 - 0.38
Total	13.51 - 13.79

* the lower limit is based on estimates of 20% tree cover in cultivated areas, the upper limit assumes 40% tree cover in cultivated areas.

Notably the above does not include carbon sequestration potential in Tripura’s protected areas.

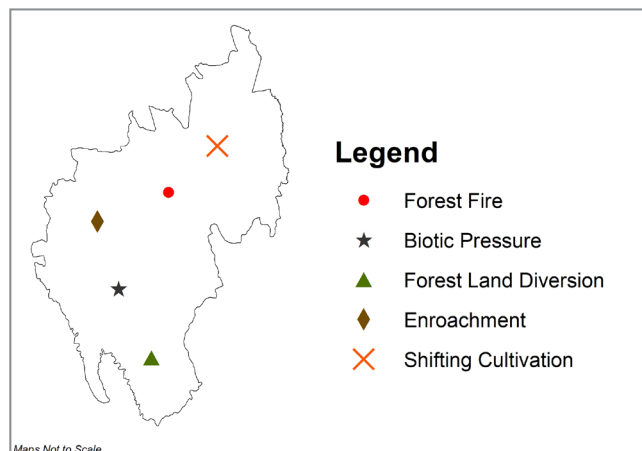
PAST AND ON-GOING INITIATIVES

The study on past and on-going initiatives found that Tripura has 3 projects that involve at least five types of interventions.



These interventions cover 21,956 hectares and have been implemented by government agencies, private sector as well civil society organisations.

RISKS TO IMPROVEMENT IN FOREST AND TREE COVER



There are four major risks that can adversely impact improvements in forest and tree cover in Tripura:

- Between 2011-2017, Tripura recorded 4,868 incidents of fires.
- Between the year 2000 and 2017, Tripura diverted nearly 2,312.786 hectares of forest land. This is nearly 0.3 % of Tripura’s total forest area.
- According to the Land Conflict Watch, zero conflict between state agencies and communities was reported in Tripura.

- Biotic pressure including open grazing and collection of fuel-wood.

TENURE AND RESOURCE RIGHTS

No data available for the number of districts in Tripura partially covered under the Panchayat (Extension to Scheduled Areas) Act of 1996. Nearly 38 percent of Tripura’s forests are covered by joint forest management committees, covering 79,445 households. The potential for CFR in Tripura is 0.49 MHa.

FINANCE FLOWS

Between 2011-16, INR 318,053.5 crore was allocated to Tripura under different programs and schemes, for improvements in forest and tree cover.

Programme	Amount (INR crore)
Budgetary Allocation	189.98
Compensatory Afforestation Fund (CAF)	19.28
Thirteenth Finance Commission	59.78
NABARD	0.24
Bilateral and Multilateral funders	236.61
Allocations under MGNREGA	2,674.65
State’s share in CAF	257.64

In 2018, Tripura’s share of the Compensatory Afforestation Fund, which was created to compensate the ecosystems services lost as a result of forest land diversion, was INR 257.64 crore.

UTTAR PRADESH

GEOGRAPHIC AREA AND LAND USE

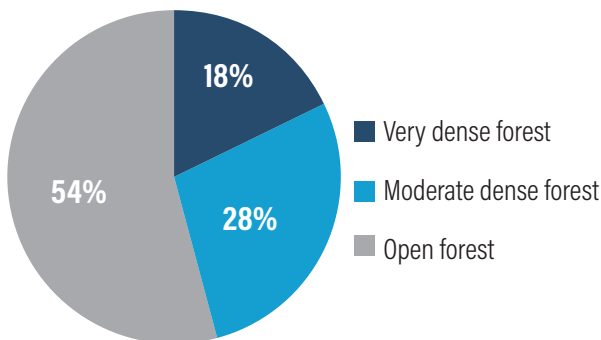
Total Geographic Area: 24.09 MHa

Land Use	Area (MHa)
Forests	1.66
Not available for land cultivation	3.5
Permanent pastures and other grazing lands	0.07
Land under misc. tree crops and groves	0.33
Culturable wasteland	0.41
Fallow land other than current fallow	1.13
Current Fallow	0.06
Net Sown	16.54

FOREST COVER

Recorded Forest Area: 1.65 MHa

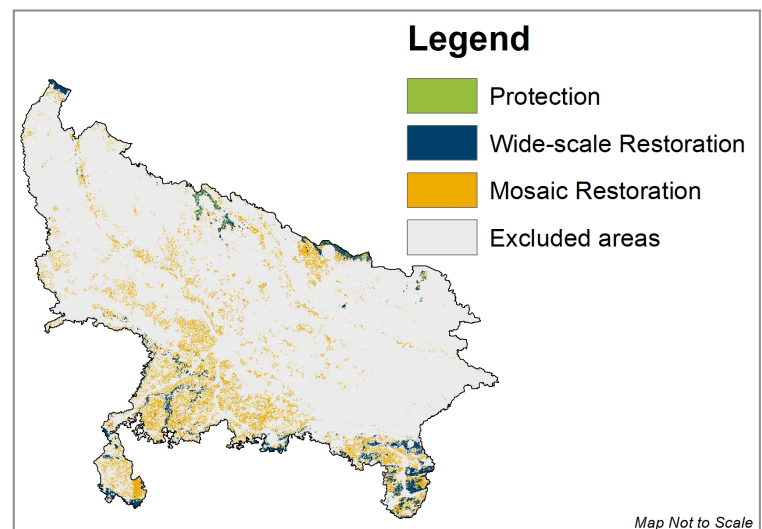
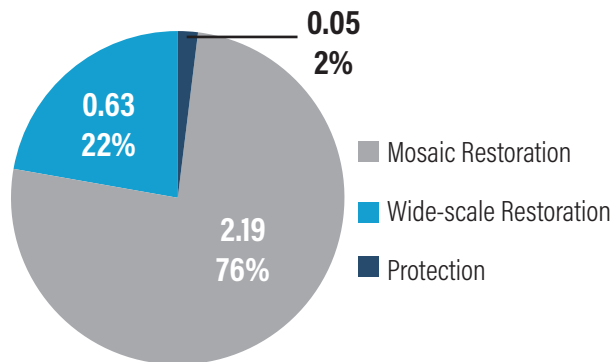
Forest Type	Area (MHa)
Very Dense Forest	0.26
Moderate Dense Forest	0.41
Open Forest	0.79



LANDSCAPE RESTORATION POTENTIAL

Total Area Available for Restoration: 2.87 MHa

Intervention	Area (MHa)
Protection	0.05
Wide-scale Restoration	0.63
Mosaic Restoration	2.19



CARBON SEQUESTRATION POTENTIAL

Uttar Pradesh has the potential to sequester between 61.49 to 93.27 million tons (MT) of additional above ground carbon through improvement of tree cover. This includes:

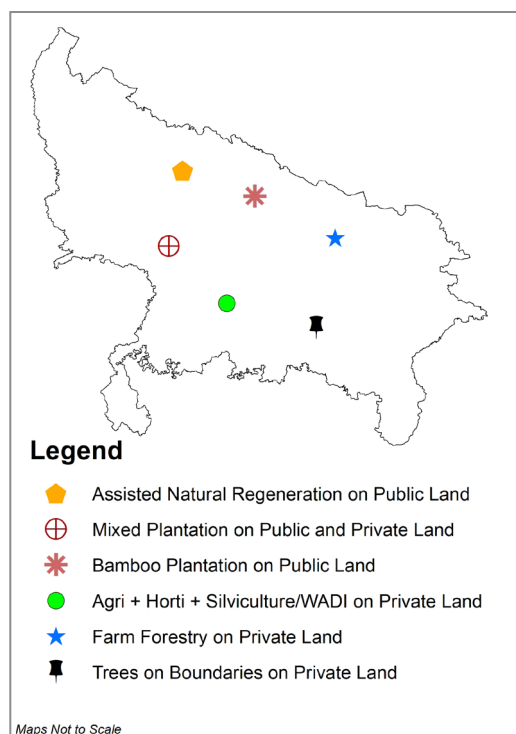
Strategy	Carbon Sequestration Potential (MT of Carbon)
Protection	1.14
Widescale Restoration	37.59
Mosaic Restoration	22.76 - 54.54
Total	61.49 - 93.27

* the lower limit is based on estimates of 20% tree cover in cultivated areas, the upper limit assumes 40% tree cover in cultivated areas.

Notably the above does not include carbon sequestration potential in Uttar Pradesh's protected areas.

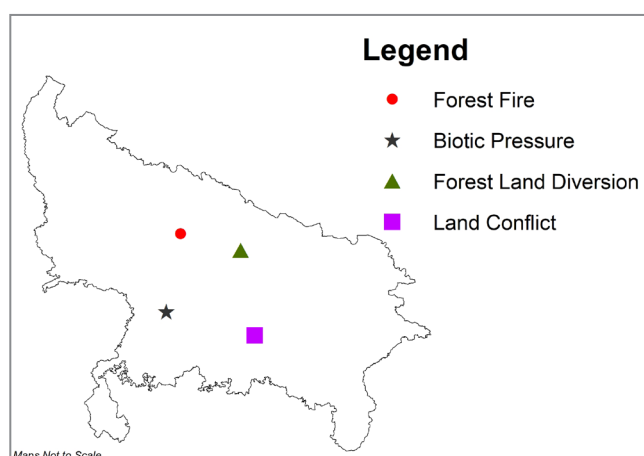
PAST AND ON-GOING INITIATIVES

The study on past and on-going initiatives found that Uttar Pradesh has 6 projects that involve at least six types of interventions.



These interventions cover 6,002 hectares and have been implemented by government agencies, private sector as well civil society organisations.

RISKS TO IMPROVEMENT IN FOREST AND TREE COVER



There are four major risks that can adversely impact improvements in forest and tree cover in Uttar Pradesh:

- Between 2011-2017, Uttar Pradesh recorded 3204 incidents of fires.

- Between the year 2000 and 2017, Uttar Pradesh diverted nearly 50,052.855 hectares of forest land. This is nearly 3.4 % of Uttar Pradesh's total forest area.
- According to the Land Conflict Watch, 3 conflicts between state agencies and communities were reported in Uttar Pradesh in 2015. These conflicts are related to land acquisition for development (1) and tenure and resource rights (2).
- Biotic pressure including open grazing and collection of fuel-wood.

TENURE AND RESOURCE RIGHTS

No data available for the number of districts in Uttar Pradesh partially covered under the Panchayat (Extension to Scheduled Areas) Act of 1996. Nearly 11 percent of Uttar Pradesh's forests are covered by joint forest management committees, covering 706,050 households. The potential for CFR in Uttar Pradesh is 0.81 MHa.

FINANCE FLOWS

Between 2011-16, INR 606374.7 crore was allocated to Uttar Pradesh under different programs and schemes, for improvements in forest and tree cover.

Programme	Amount (INR crore)
Budgetary Allocation	168.09
Compensatory Afforestation Fund (CAF)	150.39
Thirteenth Finance Commission	-8.88
NABARD	11.51
Bilateral and Multilateral funders	326.63
Allocations under MGNREGA	5,416.00
State's share in CAF	2,557.18

In 2018, Uttar Pradesh's share of the Compensatory Afforestation Fund, which was created to compensate the ecosystems services lost as a result of forest land diversion, was INR 2,557.17 crore.

UTTARAKHAND

GEOGRAPHIC AREA AND LAND USE

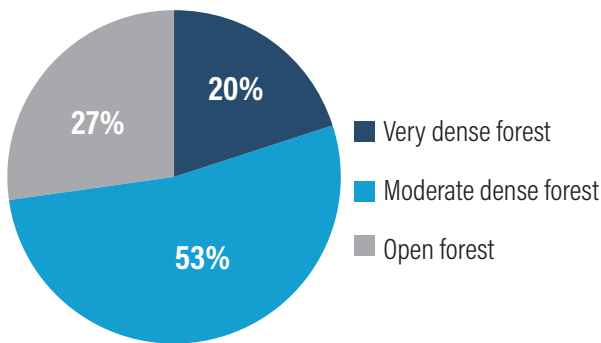
Total Geographic Area: 5.34 MHa

Land Use	Area (MHa)
Forests	3.8
Not available for land cultivation	0.45
Permanent pastures and other grazing lands	0.19
Land under misc. tree crops and groves	0.39
Culturable wasteland	0.32
Fallow land other than current fallow	0.09
Current Fallow	0.06
Net Sown	0.70

FOREST COVER

Recorded Forest Area: 3.18 MHa

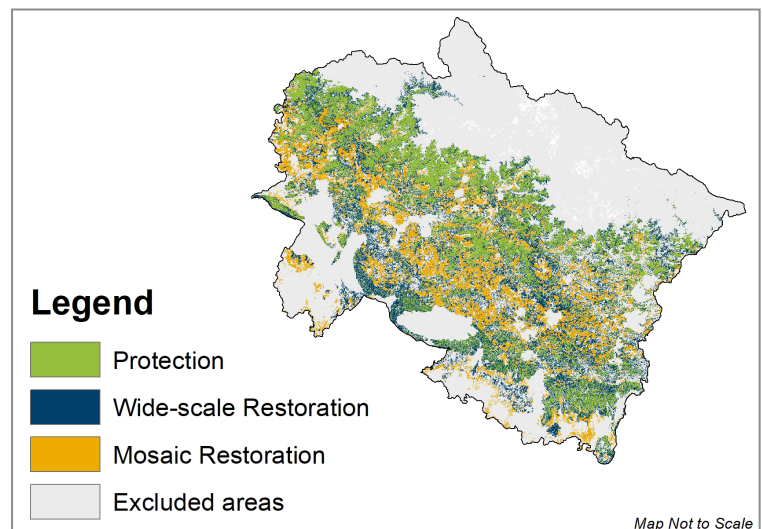
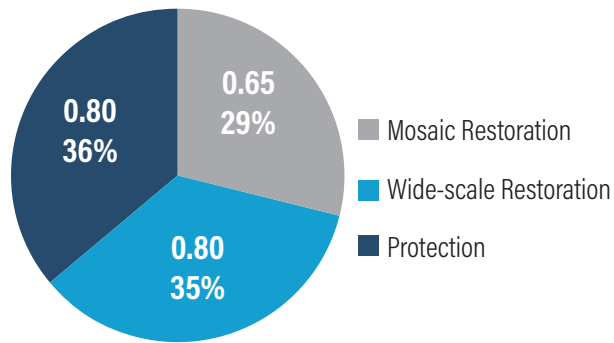
Forest Type	Area (MHa)
Very Dense Forest	0.49
Moderate Dense Forest	1.29
Open Forest	0.64



LANDSCAPE RESTORATION POTENTIAL

Total Area Available for Restoration: 2.25 MHa

Intervention	Area (MHa)
Protection	0.80
Wide-scale Restoration	0.80
Mosaic Restoration	0.65



CARBON SEQUESTRATION POTENTIAL

Uttarakhand has the potential to sequester between 64.17 to 74.91 million tons (MT) of additional above ground carbon through improvement of tree cover. This includes:

Strategy	Carbon Sequestration Potential (MT of Carbon)
Protection	23.30
Widescale Restoration	34.86
Mosaic Restoration	6.01 - 16.75
Total	64.17 to 74.91

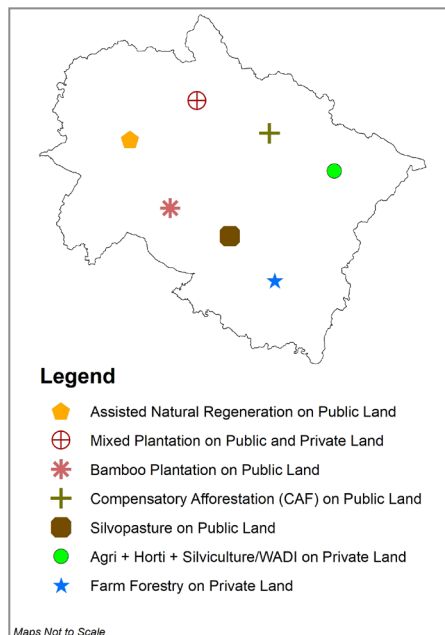
* the lower limit is based on estimates of 20% tree cover in cultivated areas, the upper limit assumes 40% tree cover in cultivated areas.

Notably the above does not include carbon sequestration potential in Uttarakhand's protected areas.

Notably the above does not include carbon sequestration potential in Uttarakhand's protected areas.

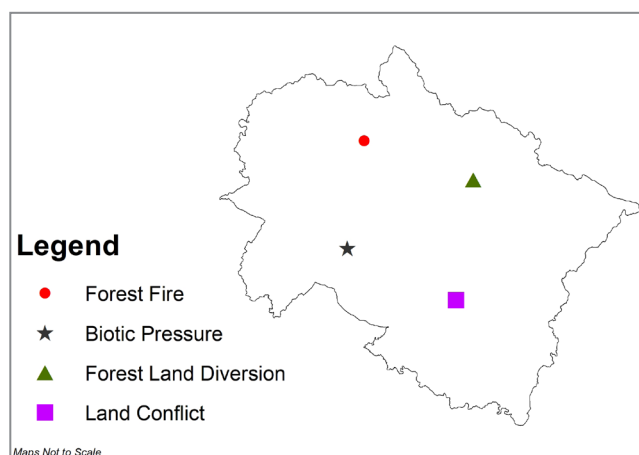
PAST AND ON-GOING INITIATIVES

The study on past and on-going initiatives found that Uttarakhand has 7 projects that involve at least seven types of interventions.



These interventions cover 680 hectares and have been implemented by government agencies, private sector as well civil society organisations.

RISKS TO IMPROVEMENT IN FOREST AND TREE COVER



There are four major risks that can adversely impact improvements in forest and tree cover in Uttarakhand:

- Between 2011-2017, Uttarakhand recorded 3932 incidents of fires.
- Between the year 2000 and 2017, Uttarakhand diverted nearly 50551.621 hectares of forest land. This is nearly 2.08 % of Uttarakhand's total forest area.
- According to the Land Conflict Watch, 6 conflicts between state agencies and communities were reported in Uttarakhand in 2015. These conflicts are related to land acquisition for development (1) and tenure and resource rights (5).
- Biotic pressure including open grazing and collection of fuel-wood.

TENURE AND RESOURCE RIGHTS

No data available for the number of districts in Uttarakhand partially covered under the Panchayat (Extension to Scheduled Areas) Act of 1996. Nearly 16 percent of Uttarakhand's forests are covered by joint forest management committees, covering 629,000 households. The potential for CFR in Uttarakhand is 1.15 MHa.

FINANCE FLOWS

Between 2011-16, INR 165,266.9 crore was allocated to Uttarakhand under different programs and schemes, for improvements in forest and tree cover.

Programme	Amount (crore INR)
Budgetary Allocation	576.15
Compensatory Afforestation Fund (CAF)	258.28
Thirteenth Finance Commission	33.15
NABARD	10.10
Bilateral and Multilateral funders	153.86
Allocations under MGNREGA	621.14
State's share in CAF	3,801.17

In 2018, Uttarakhand's share of the Compensatory Afforestation Fund, which was created to compensate the ecosystems services lost as a result of forest land diversion, was INR 3,801.17 crore.

WEST BENGAL

GEOGRAPHIC AREA AND LAND USE

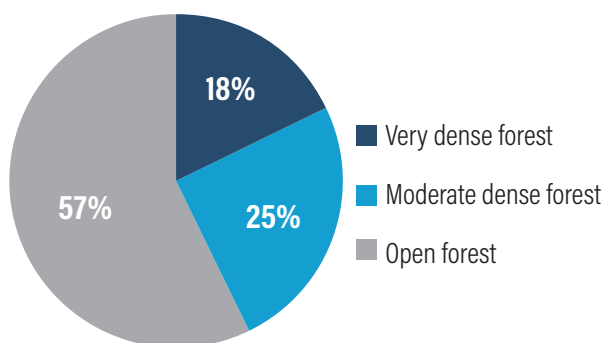
Total geographic area: 8.87 MHa

Land Use	Area (MHa)
Forests	1.17
Not available for land cultivation	1.85
Permanent pastures and other grazing lands	0.002
Land under misc. tree crops and groves	0.049
Culturable wasteland	0.018
Fallow land other than current fallow	0.12
Current Fallow	0.349
Net Sown	5.234

FOREST COVER

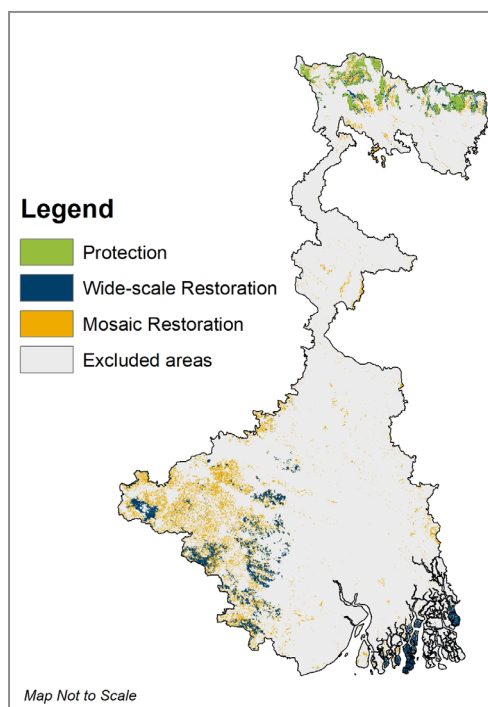
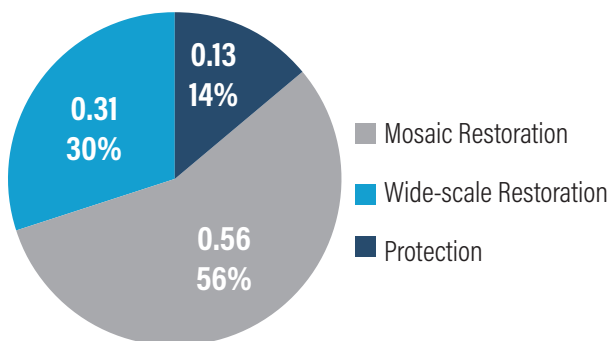
Recorded Forest Area: 1.18 MHa

Forest Type	Area (MHa)
Very Dense Forest	0.29
Moderate Dense Forest	0.41
Open Forest	0.97



LANDSCAPE RESTORATION POTENTIAL

Intervention	Area (MHa)
Protection	0.13
Wide-scale Restoration	0.31
Mosaic Restoration	0.56



CARBON SEQUESTRATION POTENTIAL

West Bengal has the potential to sequester between 20.51 to 25.24 million tons (MT) of additional above ground carbon through improvement of tree cover. This includes:

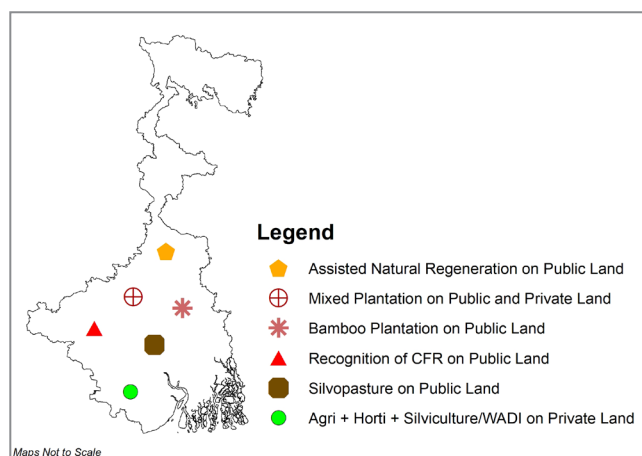
Strategy	Carbon Sequestration Potential (MT of Carbon)
Protection	2.37
Widescale Restoration	13.16
Mosaic Restoration	4.98 - 9.71
Total	20.51 - 25.24

* the lower limit is based on estimates of 20% tree cover in cultivated areas, the upper limit assumes 40% tree cover in cultivated areas.

Notably the above does not include carbon sequestration potential in West Bengal's protected areas.

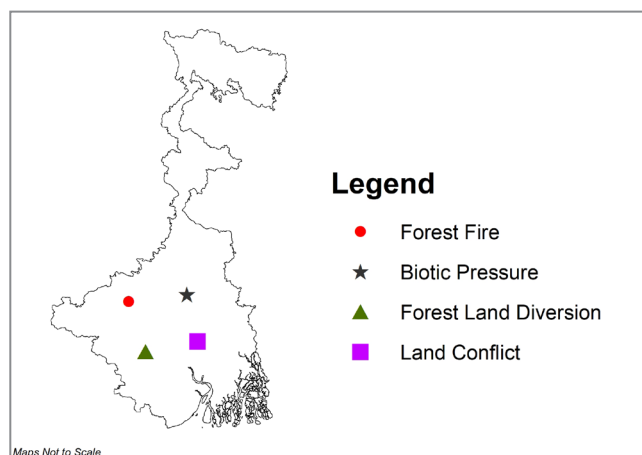
PAST AND ON-GOING INITIATIVES

The study on past and on-going initiatives found that West Bengal has 4 projects that involve at least six types of interventions.



These interventions cover 1,377 hectares and have been implemented by government agencies, private sector as well civil society organisations.

RISKS TO IMPROVEMENT IN FOREST AND TREE COVER



There are four major risks that can adversely impact improvements in forest and tree cover in West Bengal:

- Between 2011-2017, West Bengal recorded 1192 incidents of fires.

- Between the year 2000 and 2017, West Bengal diverted nearly 1,509.945 hectares of forest land. This is nearly 0.08 % of West Bengal's total forest area.
- According to the Land Conflict Watch, 1 conflict between state agencies and communities was reported in West Bengal in 2015. These conflicts are related to land acquisition for development (1).
- Biotic pressure including open grazing and collection of fuel-wood.

TENURE AND RESOURCE RIGHTS

No data available for the number of districts in West Bengal partially covered under the Panchayat (Extension to Scheduled Areas) Act of 1996. Nearly 54 percent of West Bengal's forests are covered by joint forest management committees, covering 505,149 households. The potential for CFR in West Bengal is 0.53 MHa.

FINANCE FLOWS

Between 2011-16, 791,204.1 crore INR was allocated to West Bengal under different programs and schemes, for improvements in forest and tree cover.

Programme	Amount (INR Crore)
Budgetary Allocation	134.94
Compensatory Afforestation Fund (CAF)	4.84
Thirteenth Finance Commission	21.75
NABARD	21.05
Bilateral and Multilateral funders	86.31
Allocations under MGNREGA	7,643.14
State's share in CAF	277.33

In 2018, West Bengal's share of the Compensatory Afforestation Fund, which was created to compensate the ecosystems services lost as a result of forest land diversion, was INR 277.33 crore.

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ABOUT WRI INDIA

WRI India is a research organization with experts and staff who work closely with leaders to turn big ideas into action to sustain a healthy environment - the foundation of economic opportunity and human well-being. We envision an equitable and prosperous planet driven by wise management of natural resources. We aspire to create a world where actions of governments, businesses, and communities combine to eliminate poverty and sustain the natural environment for all people.

Our Challenge

Natural resources are at the foundation of economic opportunity and human well-being. But today, we are depleting Earth's resources at rates that are not sustainable, endangering economies and people's lives. People depend on clean water, fertile land, healthy forests, and a stable climate. Livable cities and clean energy are essential for a sustainable planet. We must address these urgent, global challenges this decade.

Our Vision

We envision an equitable and prosperous planet driven by the wise management of natural resources. We aspire to create a world where the actions of government, business, and communities combine to eliminate poverty and sustain the natural environment for all people.

Our Approach

COUNT IT

We start with data. We conduct independent research and draw on the latest technology to develop new insights and recommendations. Our rigorous analysis identifies risks, unveils opportunities, and informs smart strategies. We focus our efforts on influential and emerging economies where the future of sustainability will be determined.

CHANGE IT

We use our research to influence government policies, business strategies, and civil society action. We test projects with communities, companies, and government agencies to build a strong evidence base. Then, we work with partners to deliver change on the ground that alleviates poverty and strengthens society. We hold ourselves accountable to ensure our outcomes will be bold and enduring.

SCALE IT

We don't think small. Once tested, we work with partners to adopt and expand our efforts regionally and globally. We engage with decision-makers to carry out our ideas and elevate our impact. We measure success through government and business actions that improve people's lives and sustain a healthy environment.



WRI INDIA