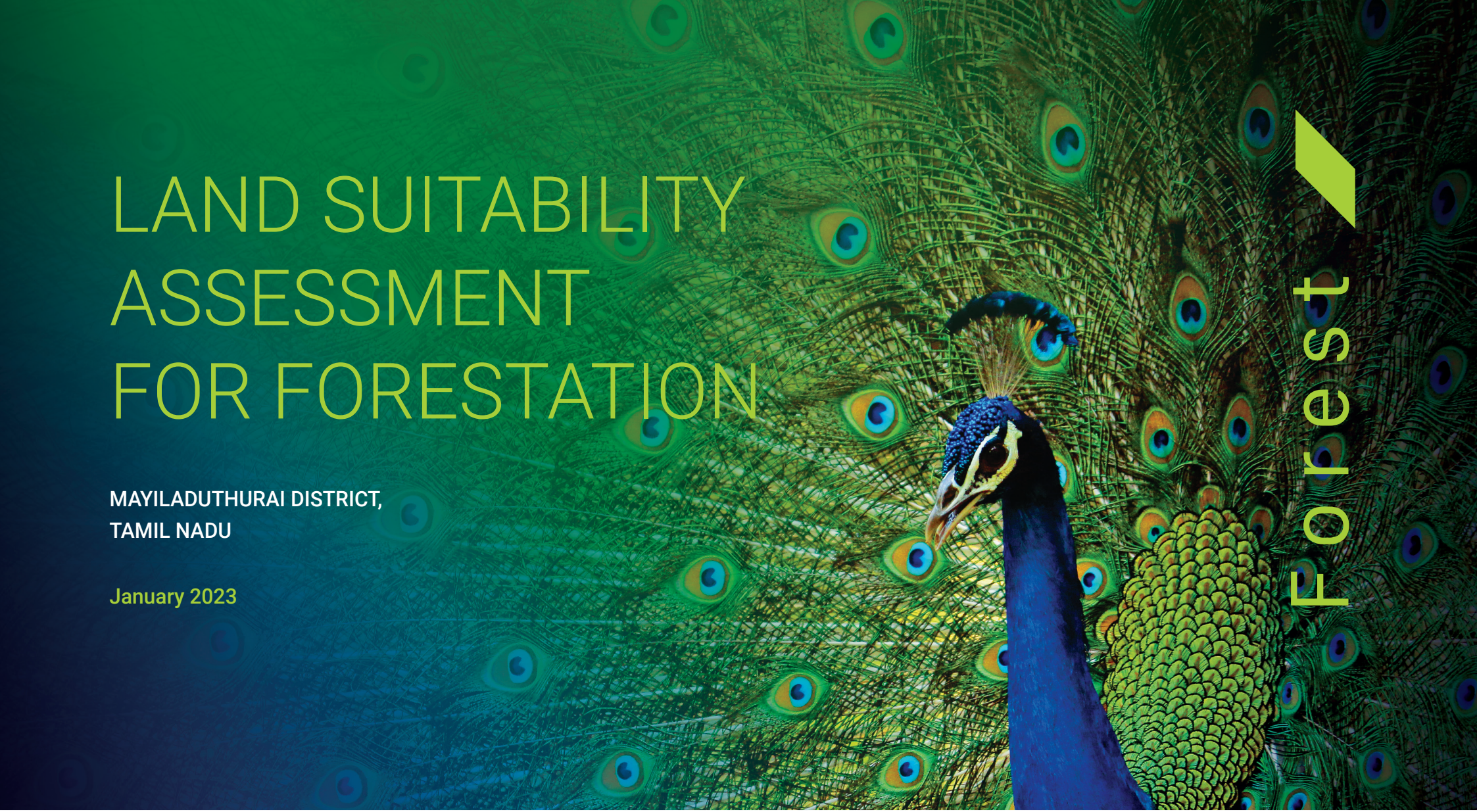
LAND SUITABILITY ASSESSMENT FOR FORESTATION

MAYILADUTHURAI DISTRICT, TAMIL NADU

January 2023



Forest

AurovilleConsulting

LiLa
Earth Intelligence for Climate Action

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ACKNOWLEDGEMENT

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ABOUT LILA

LifeLands (LiLa) is an innovative digital tool that uses satellite imagery, AI & GIS Mapping and (i) creates land-cover maps at high spatial resolution for any area of interest, (ii) detects degraded/unused lands and (iil) evaluates these lands in regard to climate mitigation and adaptation interventions such as sustainable water management, forestation and solar energy generation.

Examples on how Lila can be used:

- It can detect degraded lands with high spatial resolution and shortlist lands that are best suited to meet India's reforestation target.
- It can undertake a high-level water demand assessment of any area of interest and identify best locations for surface and ground water management.
- It can monitor land-use change over time and help in reporting increase or decrease in forest cover.
- It can identify degraded lands that are best suited for distributed solar energy to meet energy security targets and inform utilities and project developers.
- It can inform land-use and zoning exercise at the local and state level.
- It combines socio-environmental and advanced physical terrain analysis to generate blueprints for sustainable rural development.

LiLa

Earth Intelligence for Climate Action

Forest

KEY FINDINGS

TOTAL GEOGRAPHICAL AREA
1,186 km^2

UNUSED LAND
118 km^2

CURRENT TREE COVER
7.84 %

Mayiladuthurai district has a total geographical area of 1,186 km^2 of which 118 km^2 or 10% has been classified as unused or fallow lands.

TREE COVER TARGET

The district has an existing 94.07 km^2 (7.84%) land under tree cover. The target is to achieve a tree cover target of 33%, this would require a geographical area of 298 km^2 or 73,749 acres under tree cover.

73,749	acres
2.49	MtC

TECHNICAL POTENTIAL

The suitability analysis revealed that 16,237 acres of unused land have a technical potential for forestation. These lands are distributed over 1,107 plots. The suitable lands identified would help achieving 22% of the target. Foresting the lands with technical potential would create a potential carbon stock of 0.55 MtC.

0.55	MtC
16,237	acre
1,107	plots
22%	of target

HIGHEST POTENTIAL

Highly suitable areas for forestation favour higher elevations. However, the district is in a low-lying area. Furthermore, no unused lands were positioned to build forest corridors. Therefore, no unused lands that meet the set of high potential criteria were identified.

-	MtC
-	acre
-	plots
-	of target

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01 INTRODUCTION

The objective of this report is to identify unused lands in Mayiladuthurai district and evaluate its potential for forestation initiatives that can contribute in meeting the state's tree-cover target of 33% by the year 2030.

Land is a finite resource with competing and conflicting use. Unplanned and unscientific use of land can exacerbate climate change, and disasters like drought or floods. Judicious use of land resources is key in meeting the state's social, economic and environmental development goals. A comprehensive land suitability assessment can guide responsible and sustainable development practices and land-use policies.

As per its intended Nationally Determined Contribution under the United Nations Framework Convention on Climate Change, India is targeting the creation of an additional carbon sink which is equivalent to 2.5 to 4 billion tonnes of CO_2 by 2030 – through additional forest and tree cover of 25-30 million hectares. In this context, the State Government of Tamil Nadu has set a target to increase its percentage of tree cover from 23% to 33% by the year 2030.

The objective of this report is to identify unused lands in Mayiladuthurai district and evaluate to what extent these unused lands can be utilized to meet the state's tree cover target. Degraded lands can become key elements in rolling out climate adaptation and mitigation programs. The use is geospatial data can create critical data-based insights that supports decision-making by proving detailed information on exactly "where" (location) and "why" (attributes of the location) to implement forestation initiatives. This type of geospatial information, if provided to local authorities, planning bodies, restoration organizations and other government bodies, has the potential to benefit the district in meeting its forestation targets.

02 TECHNOLOGY OFFER

ANALYSING INTERLINKAGES FOR INFORMED DECISION MAKING

Lila combines geo-spatial and socio-economic data-layers to address the core aspects of sustainable land-use management. It identifies and evaluates unused lands for its potential in terms of solar energy, forestation, and water management.

The tool is designed to provide flexible solutions with in-built climate intelligence that enables to understand the physical constraints and social demand of a local region and facilitate rapid decision-making & implementation.

It allows a 360° view of a highly interlinked problem by analyzing multiple layers of information at once and by creating rapid data-based insights derived from earth observation data, machine learning algorithms, integrated public datasets and in-depth subject expertise. An automated data pipeline performs a comprehensive evaluation of the natural potential of a land with respect to its ecosystem as well the socio-economic context, to ensure that its protection and development get the “right” context.

We have an in-house land-cover algorithm that analyses satellite imagery across a year and assigns every pixel a land-cover class based on its recorded electromagnetic spectral signature. This way we can reliably identify lands that have been lying barren over a certain period of time or those that remain unused. We perform advanced terrain analysis based on digital elevation maps to understand the physical constraints. And we assess the true potential of a land with respect to its ecosystem as well the socio-economic context. This information is further fed to our suitability analytics for site rating and selection.

This can replace the current outdated ways of infrastructure expansion that involve long lead times and lack of reliable data for planning and impact measurement. By creating more transparency and delivering sustainable development goals (SDGs) faster in a more diligent and precise manner.

03 METHODOLOGY

ANALYSING INTERLINKAGES FOR INFORMED DECISION MAKING

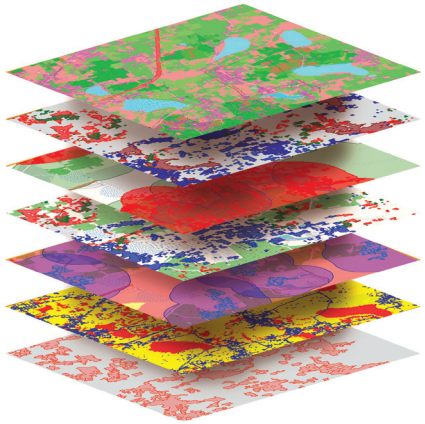
Lila combines geo-spatial and socio-economic data-layers to address the core aspects of sustainable land-use management. It identifies and evaluates unused lands for its potential in terms of solar energy, reforestation and water management.

Analysing multiple dimensions and interlinkages & making the right decisions

Data Sources

- Multiple remote sensing data
- Ground data
- Public data sets

Data Layers



- Weather
- Land-Cover
- Soil
- Terrain
- Infrastructure
- Demographics
- Etc.

Data Analytics

- In-house algorithms
- Used defined criteria
- Demand modelling
- Suitability assessment
- Rating and pre-selection

Experts

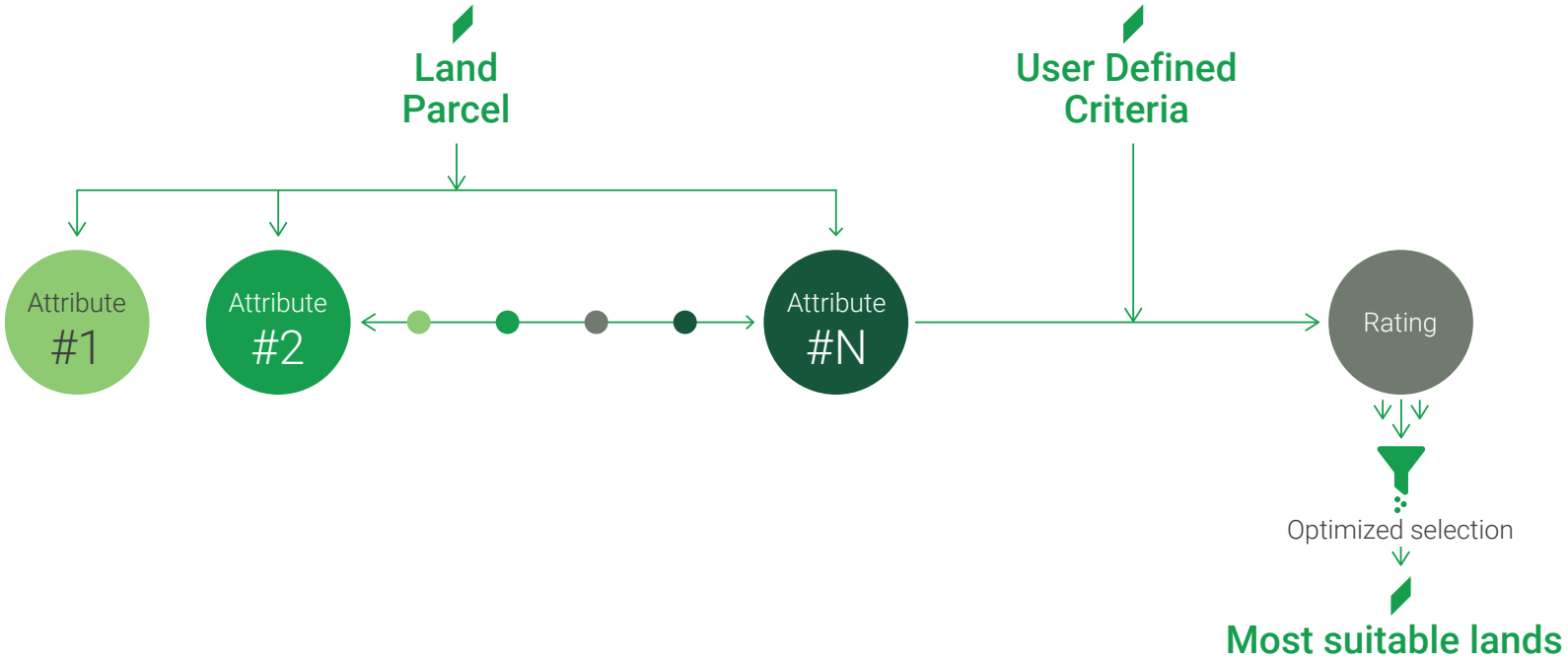
Results

- Recommendation report
- Visualization maps

Unifying diverse data & expertise on a single platform

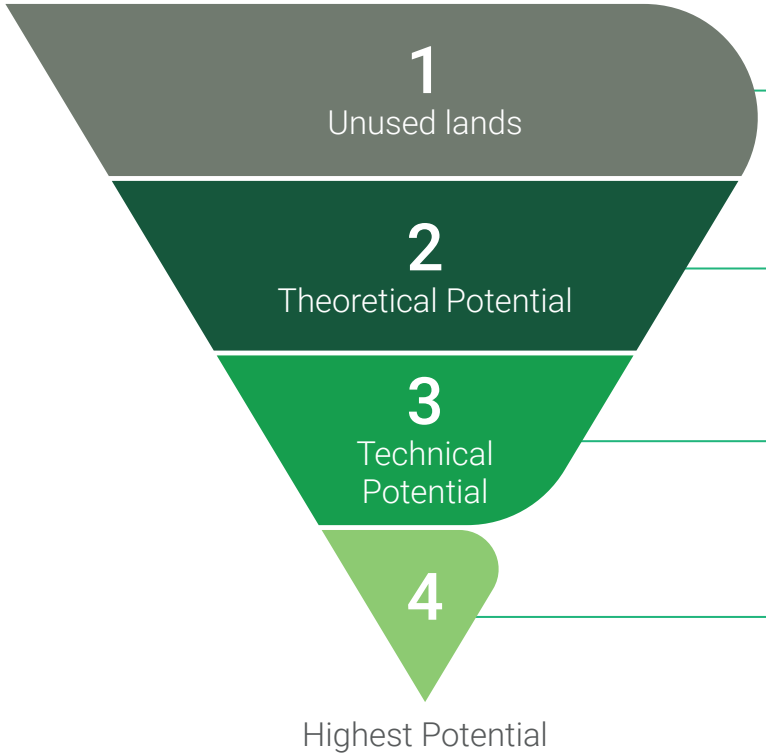
Insights from the integrated technology layers along with user-defined criteria are utilised to optimise the land evaluation and recommendation process.

User-based Prioritsation Ratings



EVALUATION STEPS

The land suitability assessment is undertaken in a 4-step filtration process to identify unused lands that consecutively meet theoretical, technical and highest potential criteria (refer to tables below).



Unused lands:
All lands that have not been cultivated for a period of one year.

Theoretical Potential:
All lands suitable for forestation initiatives.

Technical Potential:
All suitable lands meeting a minimum set of technical criteria.

Highest Potential:
Lands with the highest potential for forestation.

Additionally all lands with technical potential have been analysed in regards to its distribution by size and for its competing land-use for water harvesting and solar energy generation.

LAND DISTRIBUTION	
Categories	
>2.5 to 20	acres
>20 to 100	acres
>100	acres

COMPETING USE FOR CLIMATE ACTION	
Criteria	
Solar potential	High
Water Harvesting potential	High

THEORETICAL POTENTIAL		
Criteria		
Distance from substation	>1	km
Distance to railway	>200	m
Distance from highways	>500	m
Terrain (geology/soil)	suitable	

TECHNICAL POTENTIAL		
Criteria		
Min. land size	>1	acre

HIGHEST POTENTIAL			
Criteria	**High**	**Medium**	**Low**
Elevation	>0.7	>0.7	0
Water potential	yes	yes	no
Forest corridor	yes	no	no
Seclusion (km)	> 1	no	no

To estimate the carbon stock, the co-efficient of 33.82 tonnes of carbon (tC) per acre is utilised. This coefficient has been obtained from carbon stock values of forests in Tamil Nadu, as per The Ministry of Environment, Forest and Climate change, Forest Survey of India (FSI, 2017), (FSI, 2019), (FSI, 2021).

To contribute in meeting Tamil Nadu's tree cover target of 33% of total geographic area, the Mayiladuthurai district would need a cumulative area of 73,749 acres of land.

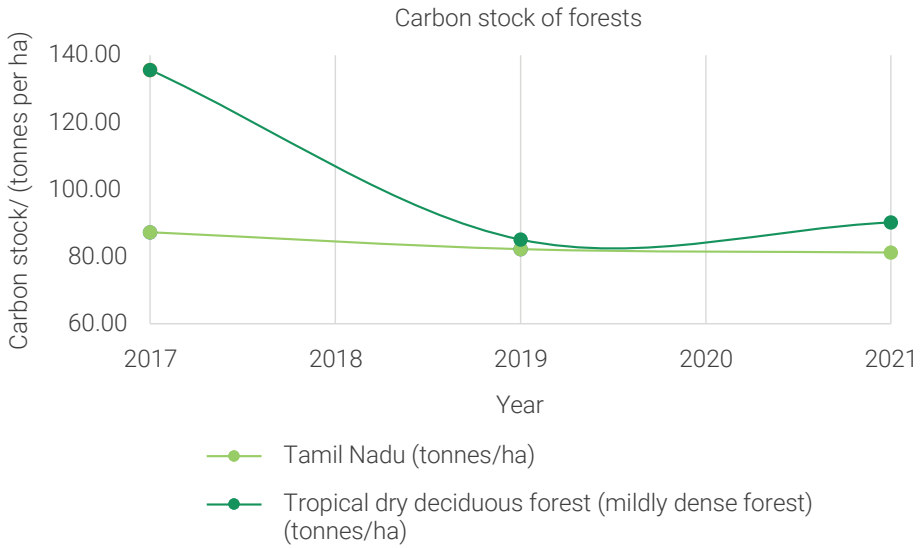
TARGET SETTING

Tamil Nadu is planning to increase its tree cover from 23% to 33% of the total geographic area (TGA) by the year 2030. This will require 13,005 km^2 of land to be forested. Mayiladuthurai district as of 2022 has a tree cover of 7.84% of TGA. We consider this as the baseline. If the district were to aim at 33% tree cover an additional 25% of tree cover is needed, which is equivalent to 73,749 acres being forested. This would result in the creation of a carbon stock in the tune of 2.49 million tonnes of carbon (MtC).

TREE COVER TARGET		
	State	**District**
Tree cover baseline (%)	23%	7.84%
Target tree cover (%)	33%	33%
Land requirement (acres)	32,13,800	73,749
Carbon stock creation (MtC)	108.69	2.49

CARBON STOCK CALCULATIONS

Carbon stock accounting is based on the stock difference method as outlined in (FSI, 2019). The trend in carbon stock per ha of forests were plotted according to the overall values of the state and the dominant forest type in Tamil Nadu (see figure below), which are tropical deciduous and thorn forests (Government of Tamil Nadu Forest Department, 2017). However, the data for the latter pertains to pan India. The available data was from 2017 – 2021 for every alternate year.



The carbon stock values for the tropical dry deciduous forests in India does not show a consistent trend. However, the latter two values are similar to the other trend. The carbon stock values specific to Tamil Nadu show an almost constant trend, indicating that the net change in carbon in the pool is almost zero. This indicates that the total net CO_2 that can be sequestered by a forest is already achieved. Thus, the average of these values can be used to estimate the total carbon stock (in tC) that can be potentially created by a forested area in Tamil Nadu, over its lifetime. This will also allow us to estimate the equivalent net CO_2 that was sequestered.

The average value of the carbon stock per unit area in Tamil Nadu is 84 tC/ha. To convert it into per acre, the value is divided by 2.471, to receive 33.82 tC/acre.

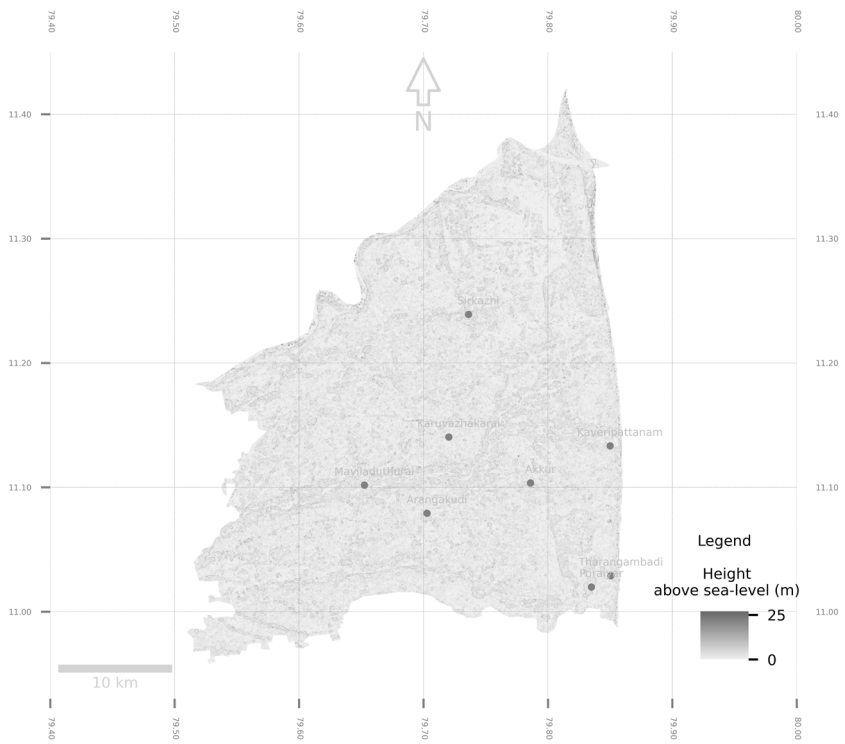
To estimate the equivalent CO_2, the carbon stock is multiplied by 3.67 to represent this value with the equivalent mass of CO_2 sequestered (FSI, 2021). Thus, the coefficient for calculating the total net CO_2 that can be sequestered by a forest over its lifetime (in Tamil Nadu) is 124.12 tCO_2/acres.

KEY TERMS: The following table provides further details on the key terms utilized for the land suitability assessment.

Term	Description
Theoretical potential	Identified unused lands, that met a set of criteria indicating a basic potential for forestation, are highlighted The criteria are listed above.
Technical potential	A set of criteria that characterizes unused lands with a relatively good potential for forestation, in terms of social, economic and environmental factors. The criteria under are listed above.
Low potential	A sub-category of technical potential criteria. This is a minimum criteria.
Medium potential	A sub-category of technical potential criteria, satisfying a higher number of criteria than 'low'. In this analysis it relates to the elevation and the water potential of the unused land.
High potential	A sub-category of technical potential criteria, satisfying the highest number of criteria. In this analysis it relates to the elevation, the relative position of the unused land with surrounding forests, distance from populated areas, and the water potential of the unused land.
Competing use for climate action	This analysis considers the suitability of unused lands for other climate action purposes, such as water harvesting, and solar energy deployment.
Land use	In this analysis, the algorithm identifies 6 categories of land use: unused/barren, sparse vegetation, cropland, tree cover, water and built-up. Land is recognized under each of these categories by the algorithm based on the pixel properties obtained through satellite imagery.
Roads	Different types of pathways are recognized as roads, including highways, primary, secondary, tertiary and residential roads. The roads included in this analysis consider those sufficient to allow mini-trucks to pass.
Terrain/geology	Terrains are classified as either suitable or not suitable for forestation. Only terrains that are not at suitable for forestation, such as rocky ones, have been marked out as unsuitable.
Elevation	The elevation of any land is measured relative to the highest point of the watershed it is in. Ex: lands with elevation > 0.7 are lands that lie above 70% of the region's watershed elevation.
Water potential	Lands with water potential are those that intercept, catch or receive run-off water flows that are a result of considerable precipitation.
Forest corridor	This criteria indicates whether the identified unused is positioned in a way that can potentially create a forest corridor, based on the relative position and proximity to surrounding forests.
Seclusion	This criteria ensures that the unused lands are at a specified distance from populated areas.
Water harvesting potential	Lands with water harvesting potential are areas that intercept run-off water and in addition also have a considerable percentage of vegetation cover (30% and above).
Solar Potential	Lands with solar potential are lands that could accommodate ground-mounted solar systems with commercial viability.
Carbon stock	The carbon stored in the forest ecosystem. In this analysis, the net carbon accumulated over the forest's lifetime is considered.
Carbon sequestration	The amount of CO_2 sequestered by a forest ecosystem. In this analysis, the net CO_2 absorbed from the atmosphere over the forest's lifetime is considered.

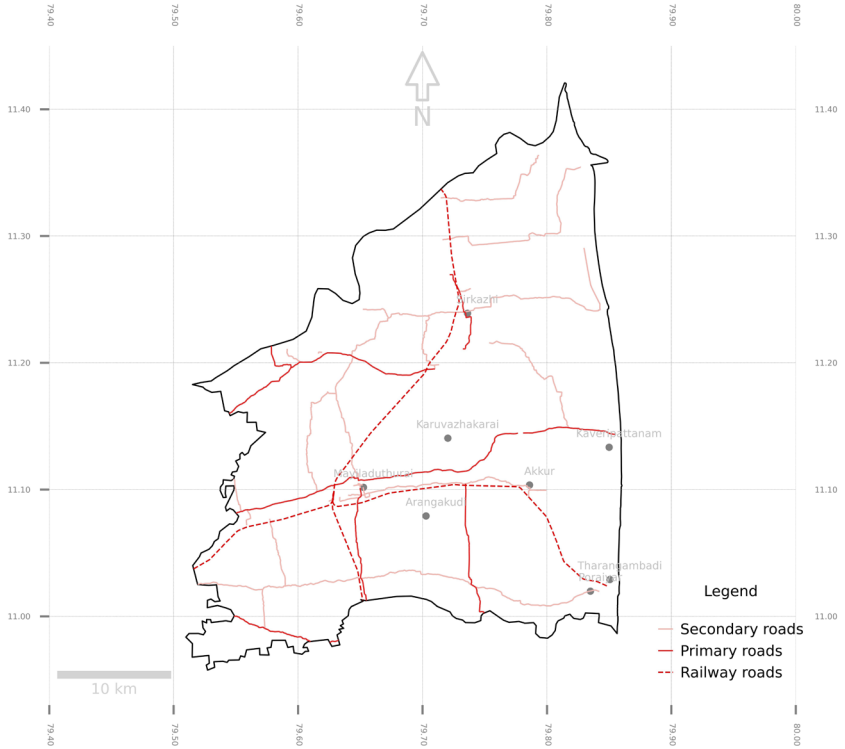
ELEVATION

Lands with relatively high elevation with respect to the region's watershed elevation were considered. On that scale, only lands that are above 70% of the region's watershed elevation were considered for lands rated with the highest forestation potential.



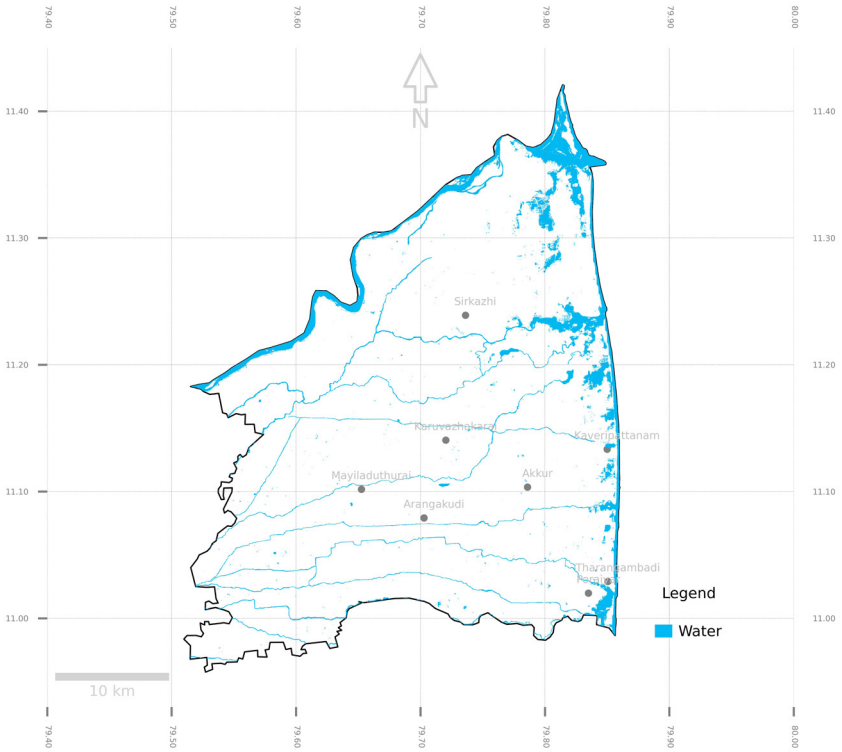
MAJOR ROADS

Vicinity to a road that can accommodate load carriers provides direct access to the site with the possibility of transporting equipment and tree saplings.



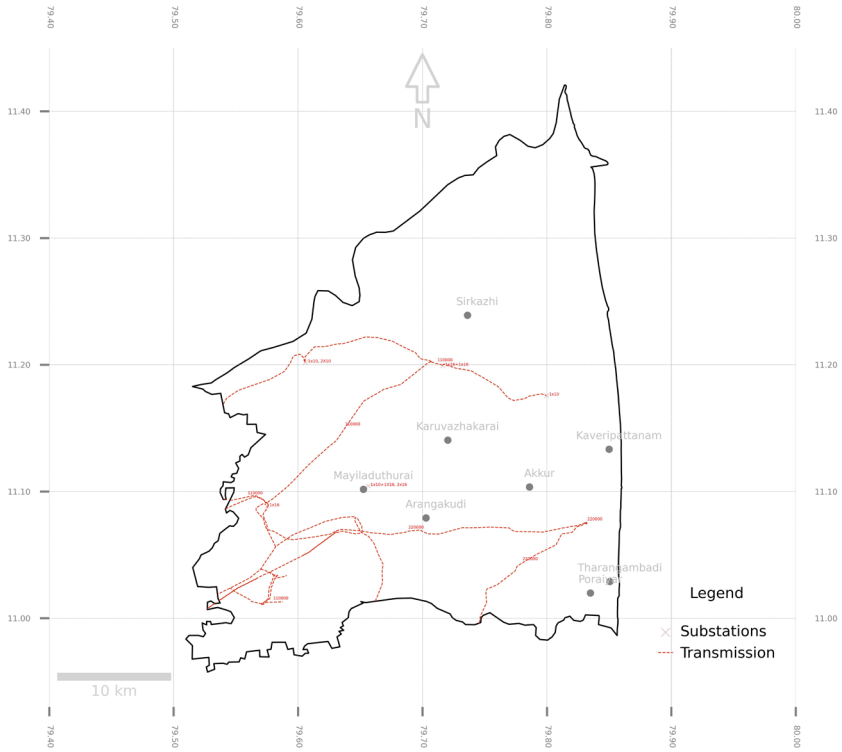
WATER BODIES

Large water bodies, if available, could be utilized for nurturing and developing forests.



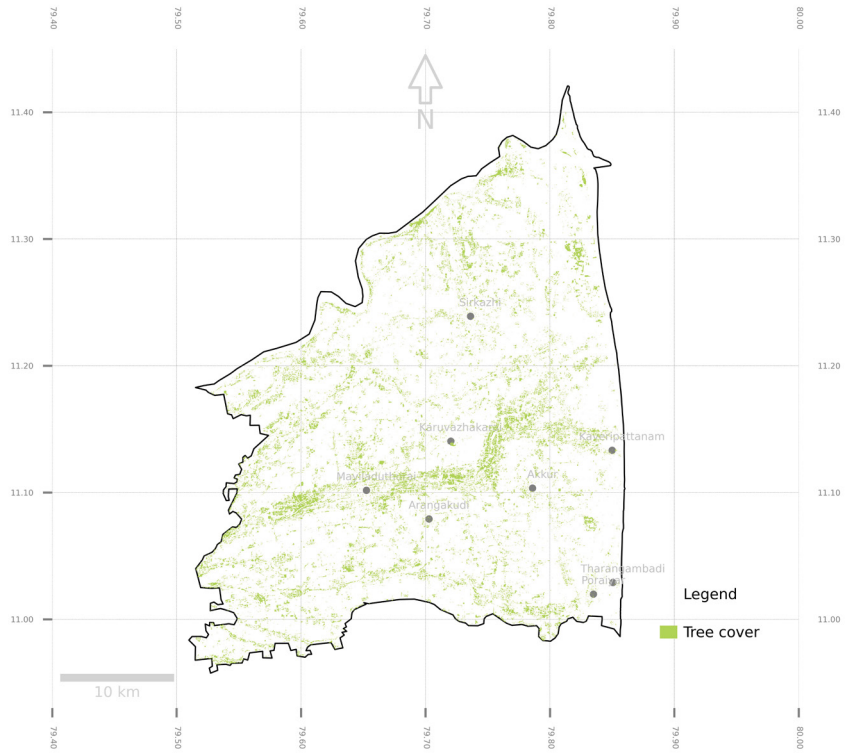
POWER EVACUATION

Substations are critical nodes in the power distribution sector and indicate development zones.



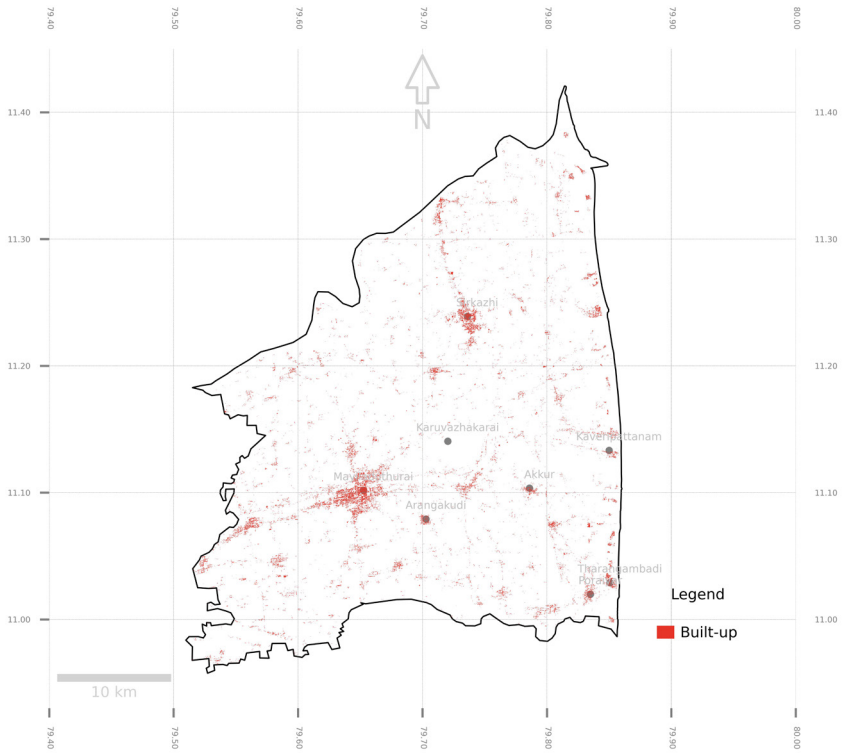
TREE COVER

The existing tree cover can indicate potential areas for creating forest corridors. They also indicate dry and relatively suitable areas for forestation efforts.



BUILT-UP

To involve and develop local communities, their proximity to the potential lands for forestation plays a key role.



To view the interactive map with these features: **Click here**

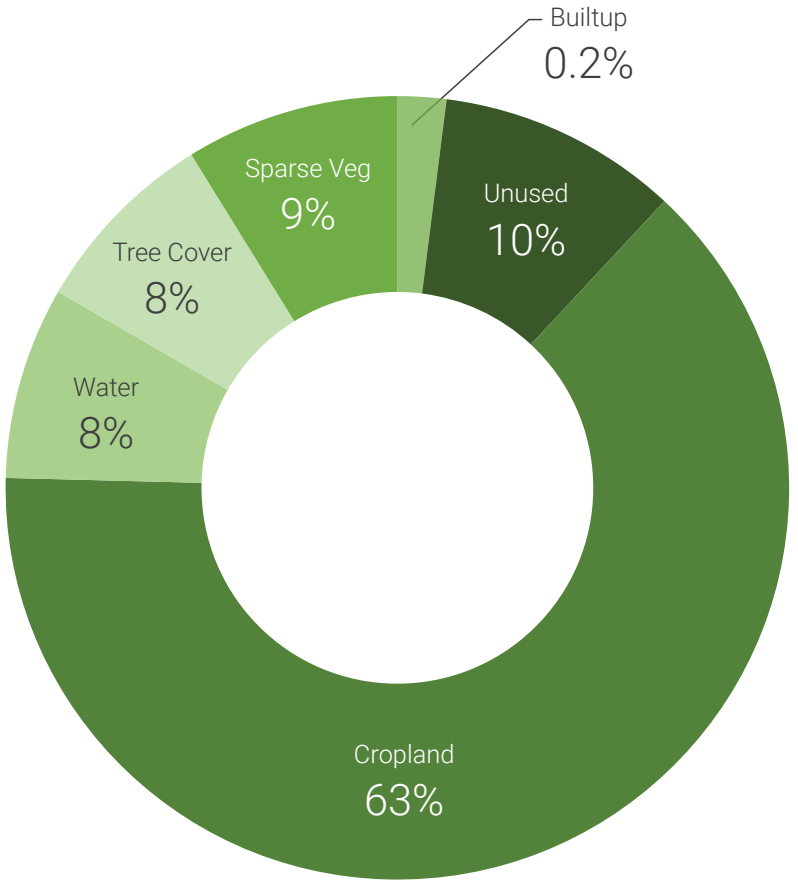
04 LAND COVER

The districts land cover has been identified as per details below. All land cover layers are shown as of 2022, except for the built-up area layer, which is based on 2019 data.

Land Cover	km^2
Builtup	23.83
Unused	117.78
Cropland	753.00
Water	94.16
Tree Cover	93.07
Sparse Veg	104.59
Total	**1,186**

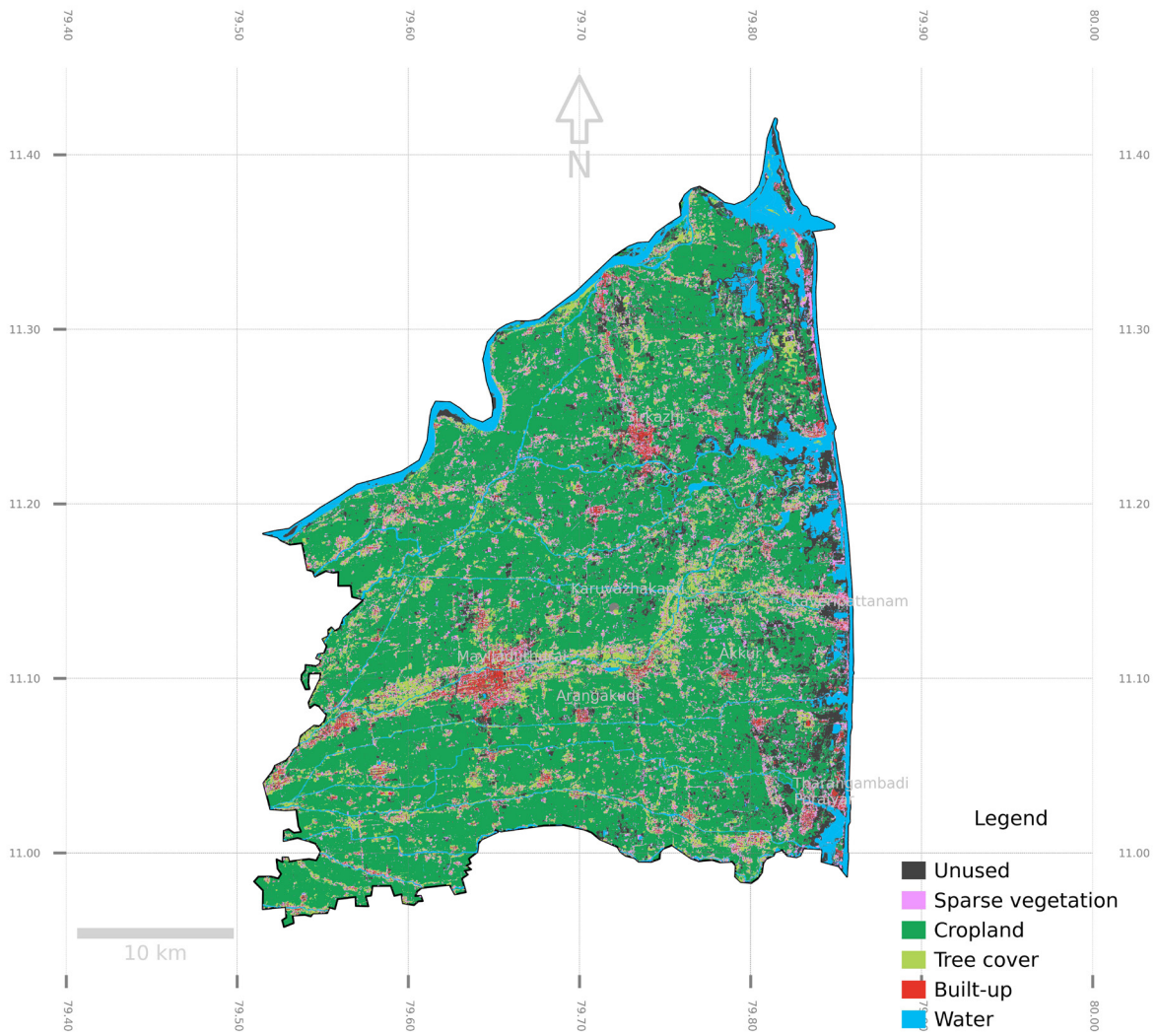
Mayiladuthurai district is dominated by agriculture. 63% of TGA is under crop land. The tree cover makes up 8%, considering thestate average of 23.80% (MOEF, 2017) this is low. The tree cover is mainly found along or close to rivers, which are a significant number, and run across the district in multiple areas. The total unused area makes up 10% of the TGA. This possibly presents ample opportunities for climate mitigation and adaptation actions including forestation.

Unused or fallow lands account for the second highest recorded land-use in the district, with 10% of TGA or 117.81 km^2 . These lands will be assessed for its suitability for increasing tree cover



LANDCOVER DEFINITIONS:

Unused Lands	Lands that have been unused throughout the year (in terms of cultivation/built-up/water/trees) and does not belong to any of the other categories, and could be in barren condition sometimes.
Sparse Vegetation	Includes scrubs, grassland and sparse vegetation.
Cropland	Land covered with annual cropland that is sowed/planted and harvestable at least once within the 12 months after the sowing/planting date. The annual cropland produces a herbaceous cover and is sometimes combined with some tree or woody vegetation. Note that perennial woody crops will be classified as the appropriate tree cover or shrub land cover type. Greenhouses are considered as built-up.
Tree-cover	This class includes any geographic area dominated by trees with a cover of 10% or more. Other land cover classes (shrubs and/or herbs in the understorey, built-up, permanent water bodies, …) can be present below the canopy, even with a density higher than trees. Areas planted with trees for afforestation purposes and plantations (e.g. oil palm, olive trees) are included in this class. This class also includes tree covered areas seasonally or permanently flooded with fresh water.
Permanent Water Bodies	This class includes any geographic area covered for most of the year (more than 9 months) by water bodies: lakes, reservoirs, and rivers. They can either be fresh or salt-water bodies.
Built-up	Land covered by buildings. Buildings include both residential and industrial building.



To view the interactive map with these land cover layers: **Click here**

05 TREE COVER RESULTS

Technical suitability

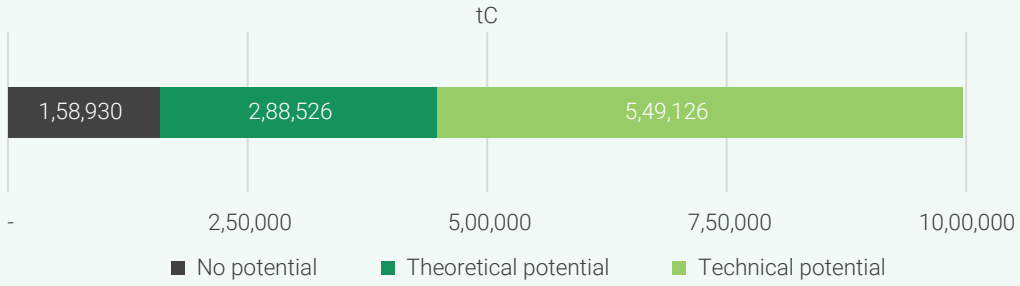
KEY RESULTS

Suitable land	16,237	acres
Share on total area	5.5	%
Share of unused area	56	%
Share of target	22	%

RESULTS

Filters	Plots (nos)	Area (acres)	Carbon stock potential (tC)
No Potential	5,720	4,699	1,58,930
Theroetical	26,747	8,531	2,88,526
Technical	1,107	16,237	5,49,126

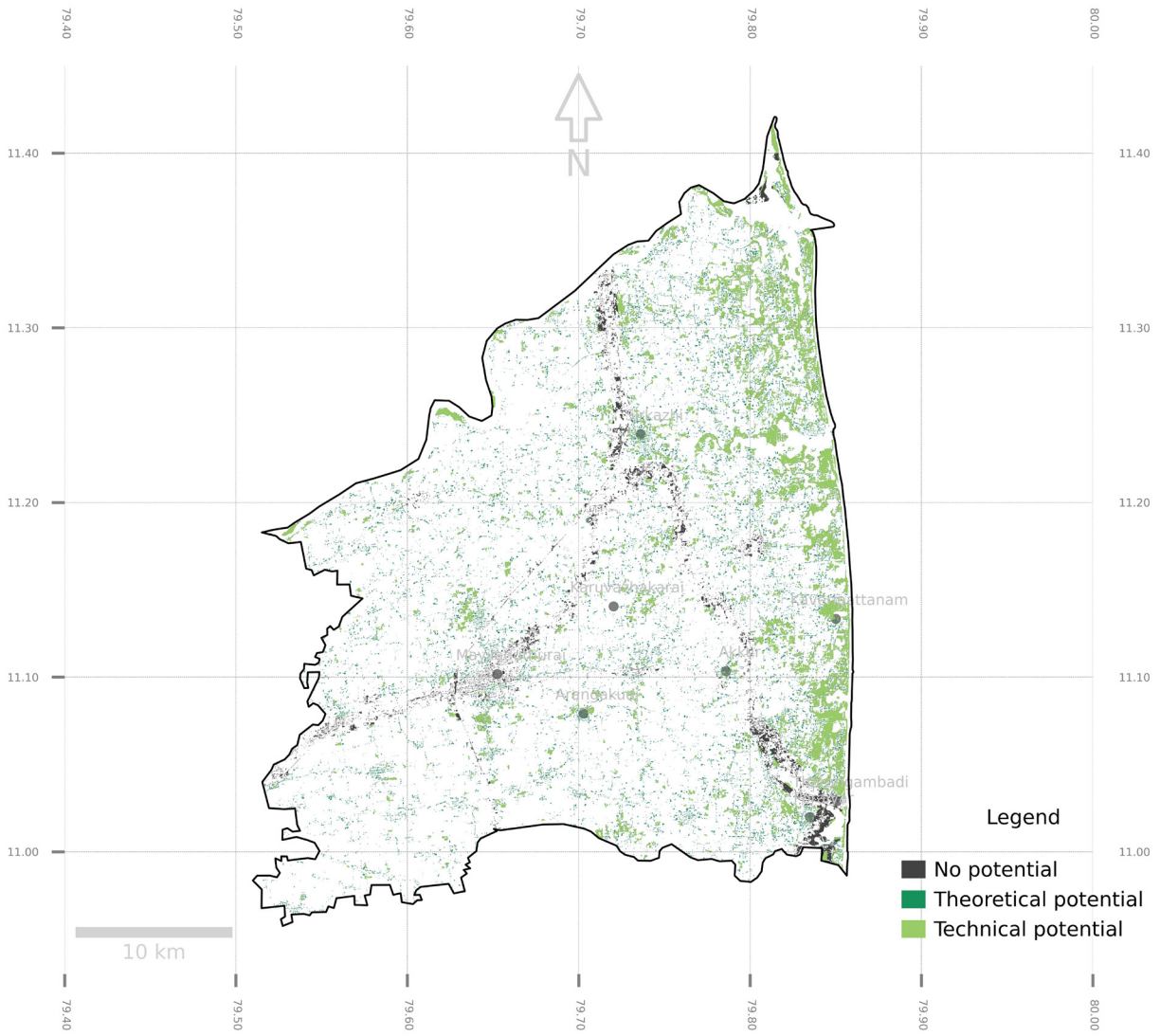
CARBON STOCK POTENTIAL



No Potential
4,699 acres

Theroetical
8,531 acres

Technical
16,237 acres



To view the interactive map with these land suitability layers: Click here

Distribution by plot size

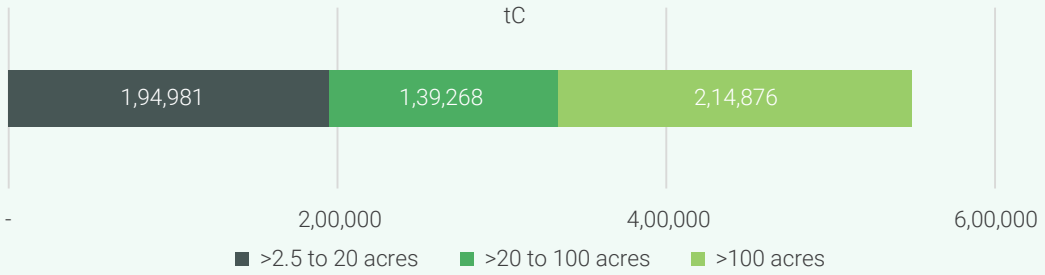
KEY RESULTS

Largest plot	1,043	acres
Plots > 100 acres	26	nos
Carbon stock with plots >20 acres	3,54,145	tC
Carbon stock with plots >100 acres	2,14,876	tC

RESULTS

Plot sizes (acres)	Plots (nos)	Area (acres)	Carbon stock potential (tC)
>2.5 to 20	972	5,765	1,94,981
>20 to 100	109	4,118	1,39,268
>100	26	6,354	2,14,876

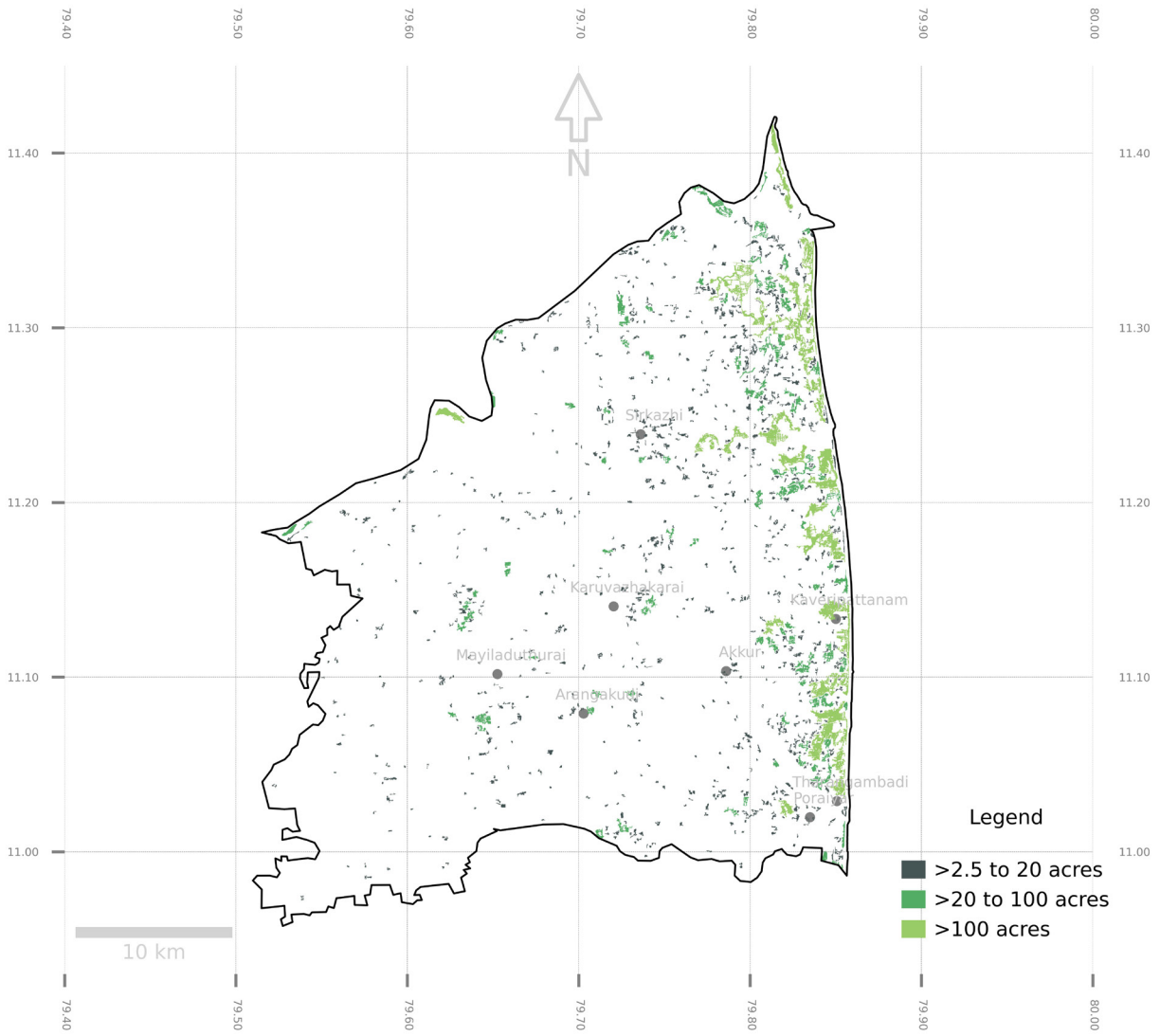
CARBON STOCK POTENTIAL



>2.5 to 20 acres
5,765 acres

>20 to 100 acres
4,118 acres

>100 acres
6,354 acres



To view the interactive map with these land suitability layers: Click here

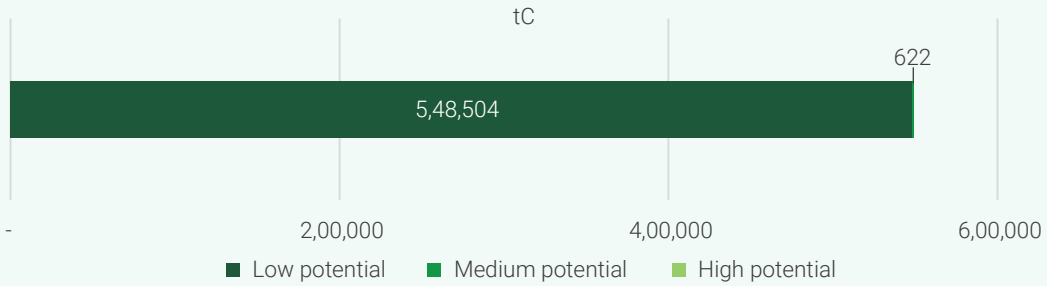
High Potential

KEY RESULTS

Total area	-	acres
Plots	-	nos
Carbon stock	-	tC
Share of target	-	%

RESULTS			
Potential	**>2.5 to 20 (acres)**	**>20 to 100 (acres)**	**>100 (acres)**
Low	5,747	4,118	6,354
Medium	18	-	-
High	-	-	-

CARBON STOCK POTENTIAL



Low

16,219 acres

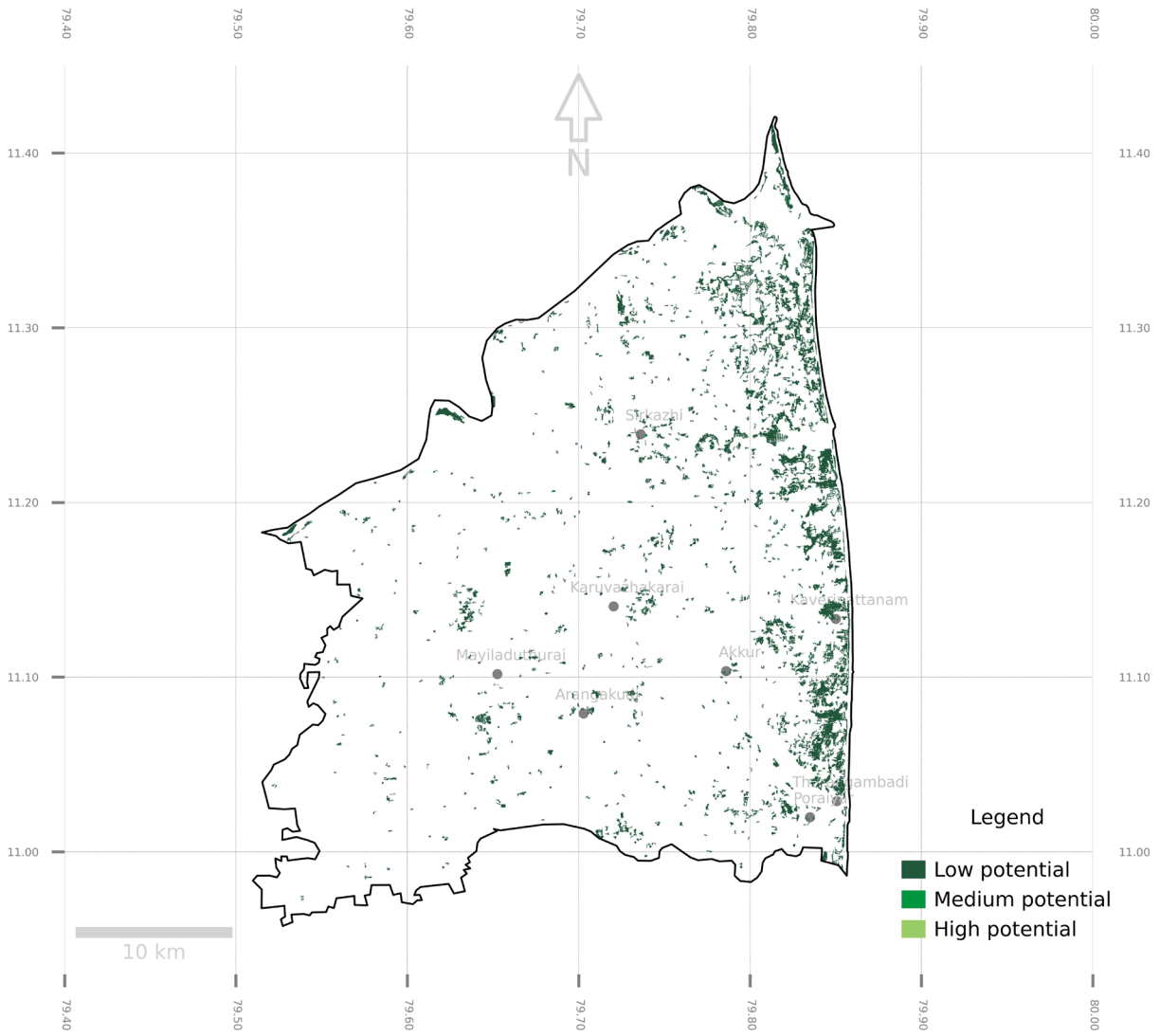
Medium

18 acres

High

0 acres

No unused lands were found to meet the highest criteria for forestation for this district, as no areas were positioned for creating forest corridors.



To view the interactive map with these land suitability layers: Click here

Competing use for Climate Action

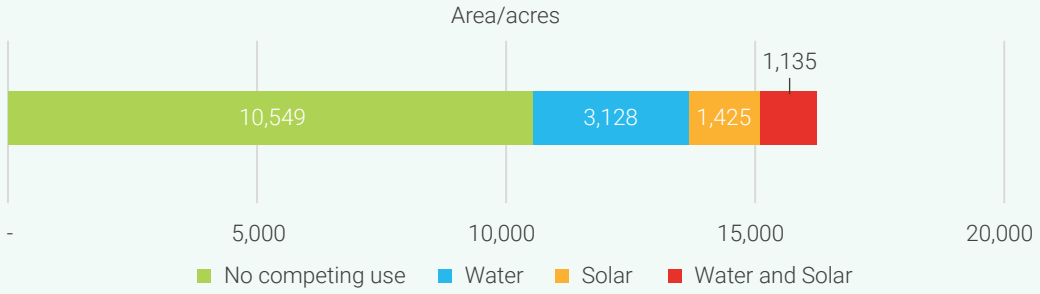
KEY RESULTS

Competing use	5,688	acres
Share of suitable area	65	%
Water use	3,128	acres
Solar use	1,425	acres

RESULTS

Plot sizes	Solar (acres)	Water (acres)	S&W (acres)
>2.5 to 20	0	1,176	-
>2.5 to 20	645	694	578
>100	780	1,258	557

COMPETING USE

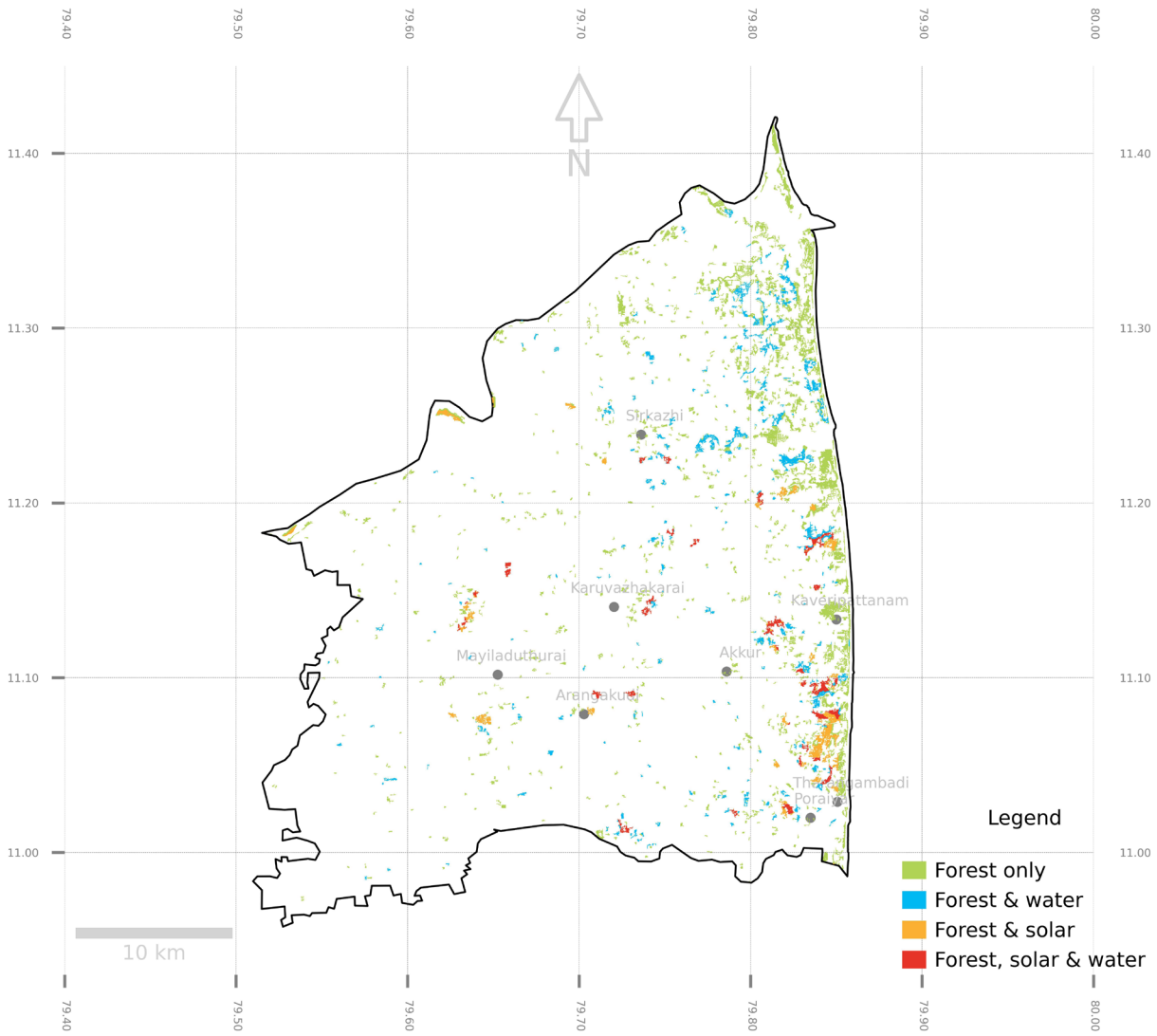


No competing use
10,549 acres

Water
3,128 acres

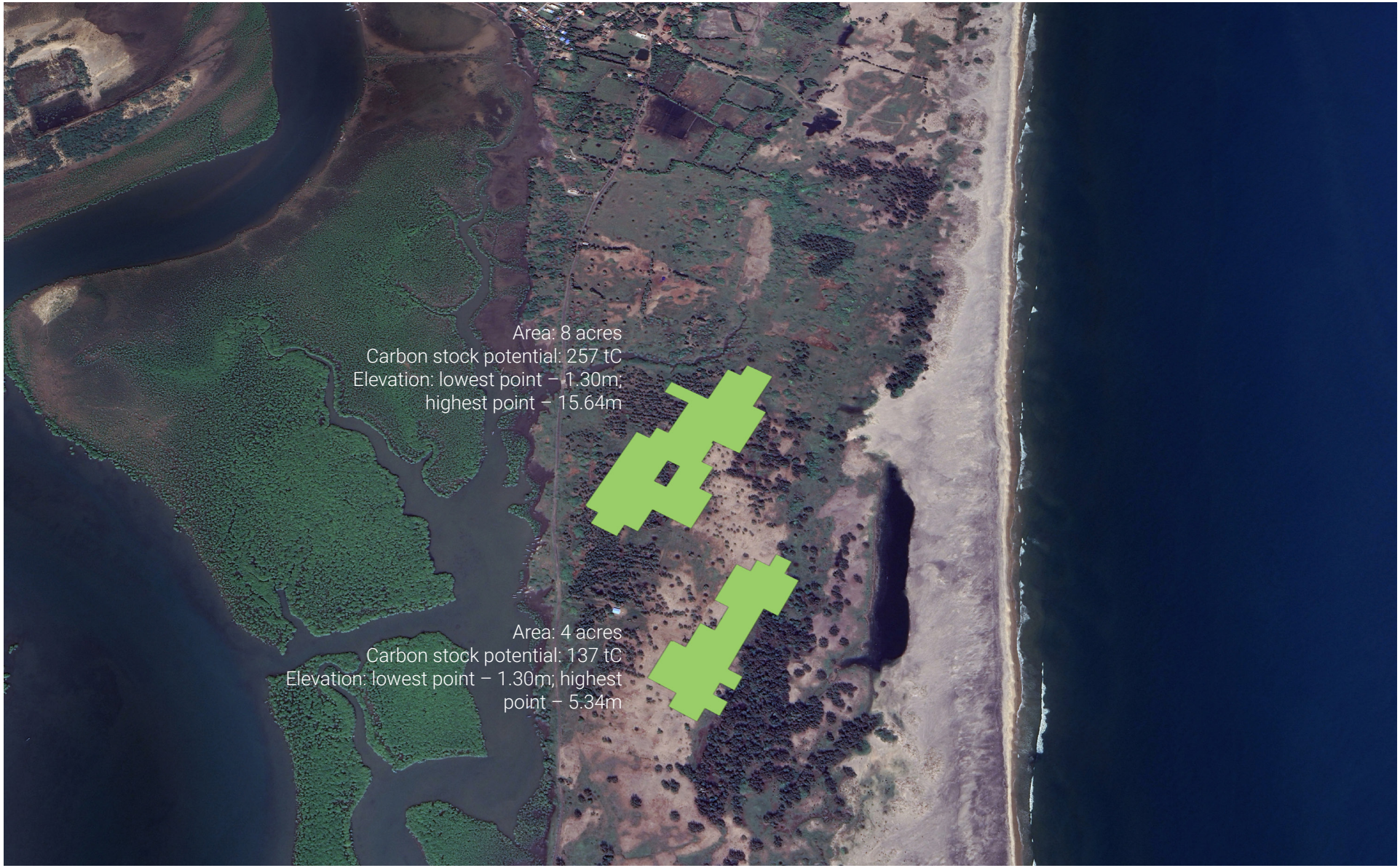
Solar
1,425 acres

W & S
1,135 acres



To view the interactive map with these competing lands: **Click here**

Highest rated site



Top 15 Lands Identified

ID	Location		Area	Carbon stock potential	CO_2 Sequestration potential	Elevation		Water Potential	Competing use	
	Lon (°)	Lat (°)	(acres)	(tC)	(tCO_2)	Min (m)	Max (m)	Y/N	(acres)	Type
1	79.821	11.374	8	257	945	1.30	15.64	Y	0 0 0	"Water Solar S&W"
2	79.823	11.373	4	137	503	1.30	5.34	Y	0 0 0	"Water Solar S&W"
3	79.739	11.238	4	134	491	0.81	5.64	Y	0 0 0	"Water Solar S&W"
4	79.837	11.112	3	94	344	1.74	6.95	Y	0 3 0	"Water Solar S&W"
5	79.839	11.058	1,043	35,291	1,29,517	0.00	9.85	N	19 471 136	"Water Solar S&W"
6	79.836	11.302	529	17,896	65,679	0.00	17.37	N	55 0 0	"Water Solar S&W"
7	79.849	11.177	488	16,505	60,575	0.00	6.96	N	152 92 123	"Water Solar S&W"
8	79.843	11.218	472	15,957	58,562	0.00	9.38	N	0 0 0	"Water Solar S&W"
9	79.815	11.243	356	12,032	44,158	0.01	8.47	N	59 0 0	"Water Solar S&W"

ID	Location		Area	Carbon stock potential	CO_2 Sequestration potential	Elevation		Water Potential	Competing use	
	Lon (°)	Lat (°)	(acres)	(tC)	(tCO_2)	Min (m)	Max (m)	Y/N	(acres)	Type
10	79.849	11.139	290	9,816	36,023	0.01	9.30	N	0 0 0	Water Solar S&W
11	79.836	11.332	277	9,368	34,379	0.00	22.06	N	0 0 0	Water Solar S&W
12	79.842	11.095	261	8,826	32,391	0.00	8.01	N	61 42 142	Water Solar S&W
13	79.785	11.326	256	8,649	31,741	0.00	14.52	N	16 0 0	Water Solar S&W
14	79.820	11.225	207	7,011	25,729	0.00	11.17	N	175 0 0	Water Solar S&W
15	79.852	11.124	177	5,984	21,962	0.00	11.11	N	6 0 0	Water Solar S&W

To view the interactive map with the top 15 lands: Click here

06 SETTLEMENT – LEVEL ANALYSIS

The analysis conducted at settlement-level indicates the potential for forestation, with respect to existing tree-cover, population density (data from (Meta, 2022)) and identified unused lands within the settlement boundaries (see Table below). Due to a lack of data available in the public domain the settlements in the table are not an exhaustive list, they include 252 out of 287 revenue-based villages in Mayiladuthurai district.

For each settlement the total geographic area (TGA), the existing tree cover and the unused lands with technical potential for forestation were derived using remote sensing. The existing tree cover at settlement level is represented in terms of the percentage share on TGA and also in relation to the settlement population. The latter indicates the tree cover area for every 1,000 people of the settlement population.

The total tree cover potential was estimated for each settlement as a percentage of TGA. Total tree cover potential is defined as the total area of unused land with technical potential for forestation added to the current land area under tree cover.

Settlements with high ratios and untapped potential are observed to lie closer to the coast. Thus, forestation efforts in these settlements may prove easier targets and more effective in the overall efforts to meet the district's target.

Forest potential by settlement

KEY RESULTS

Top 10 technical potential	6,845	acres
Share on district TGA	2.34	%
Share on district potential	42.16	%
Plot numbers	320	nos

RESULTS

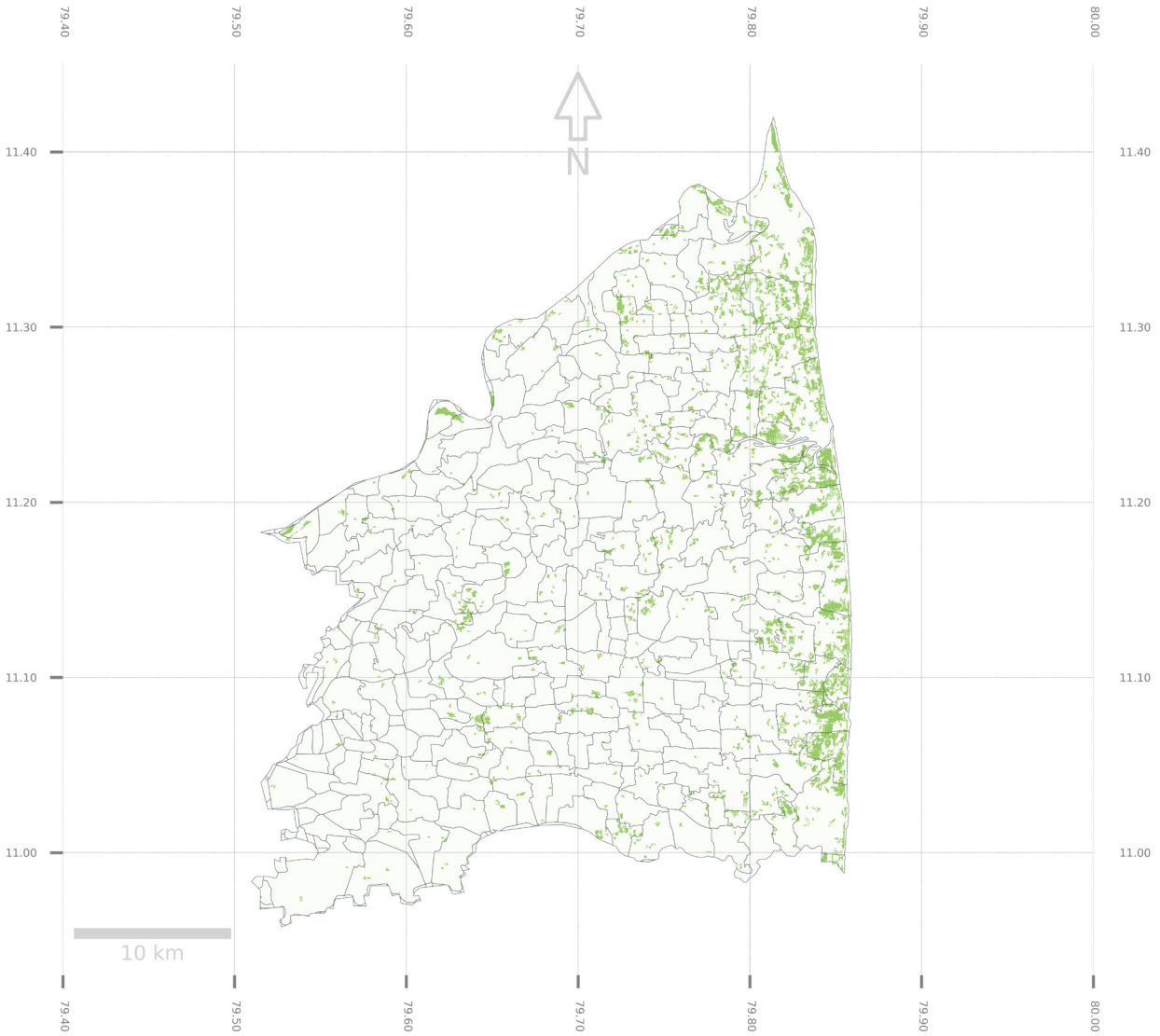
Village	TGA (acres)	Area (acres)	Plots (nos)
Pudupattinam	6,314	934	41
Thandavankulam	3,128	925	27
Vettangudy	4,242	894	62
Thirumullaivasal	4,390	892	60
Thennampattiam	2,051	743	27
Manikkapangu	1,418	640	14
Keelaiyur	2,316	566	21
Pillaiperumalnallur	2,043	519	31
Vanagiri	1,923	439	23
Kalamanallur	774	293	14

Insights

The majority of unused lands with technical suitability for forestation are located along the coast.

Not all settlements have unused lands with technical potential for forestation.

Unused land with technical potential are in close vicinity to water bodies.


79.40
79.50
79.60
79.70
79.80
79.90
80.00
N
11.40
11.30
11.20
11.10
11.00
10 km

Tree cover intensity by settlement

KEY RESULTS

Top 10 settlements treecover	2,159	acres
Share on district TGA	2.73	%
Share on district treecover	9	%
Highest settlement treecover share	41	%

RESULTS

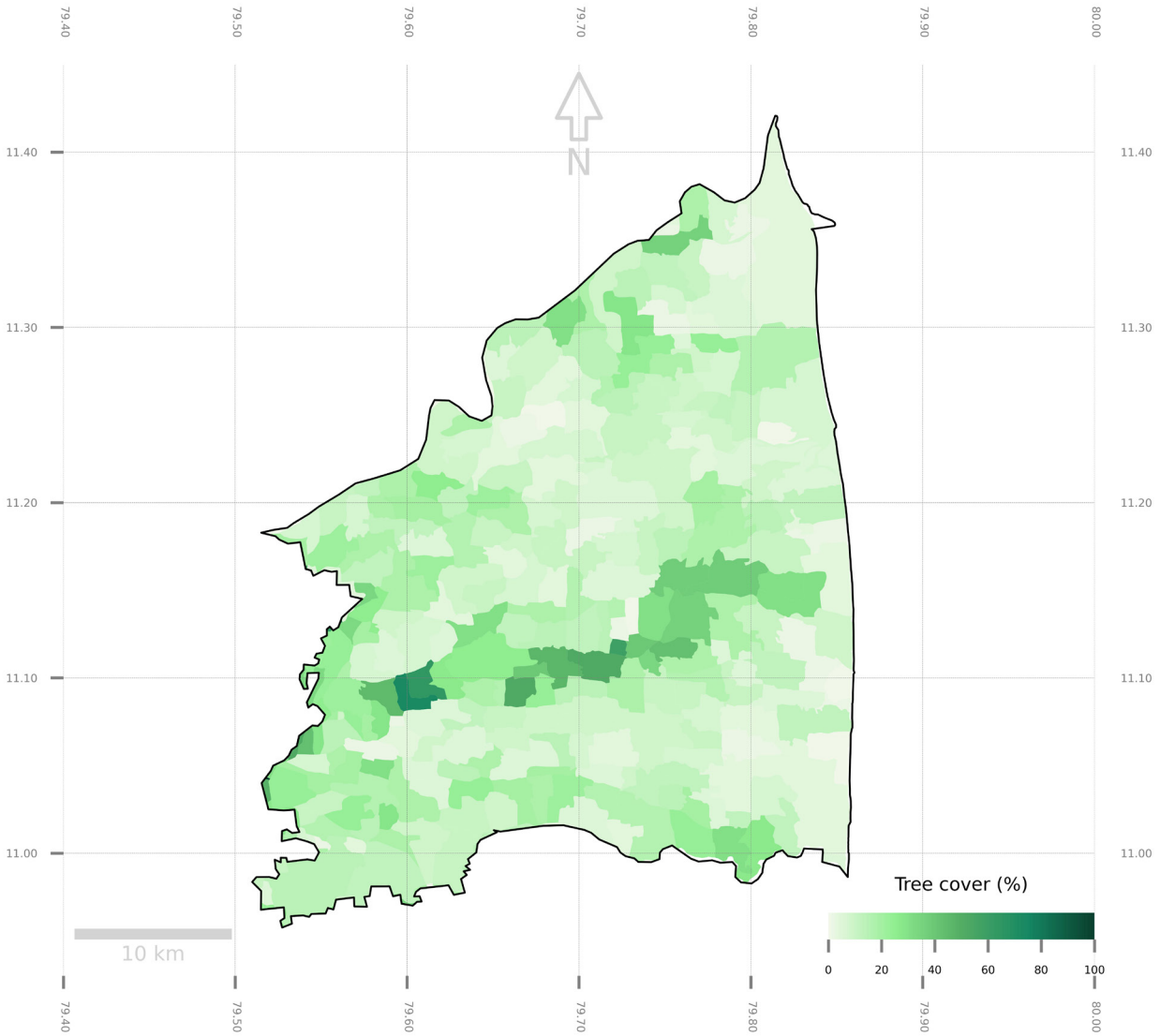
Village	TGA (acres)	TGA (acres)	Tree cover %
Anaimelagaram	733	304	41%
Lakshminayanapuram II	239	79	33%
Arupathy	1,263	373	30%
Kadiramangalam	150	44	29%
Nallathukudi	773	225	29%
Mannampandal	1,181	311	26%
Mudikandanallur	769	190	25%
Inam Tiruvalangadu	295	72	24%
Nadukkarai Keelapathi	485	109	22%
Radhanallur	2,107	452	21%

Insights

Settlements across the central region of the district have a relatively high tree cover %.

Areas with higher tree cover % correspond to areas with surface waterbodies such as rivers.

88% of the settlements have a tree cover of less than 10%.


79.40
79.50
79.60
79.70
79.80
79.90
80.00
N
11.40
11.30
11.20
11.10
11.00
10 km
Tree cover (%)
0
20
40
60
80
100

Tree cover per 1,000 resident

KEY RESULTS

Lowest 10 settlements treecover	751	acres
Lowest 10 settlements population	1,49,263	nos
Avg. tree cover per 1,000 resident	5.03	acres
Lowest tree cover per 1000 resident	1.10	acres

RESULTS

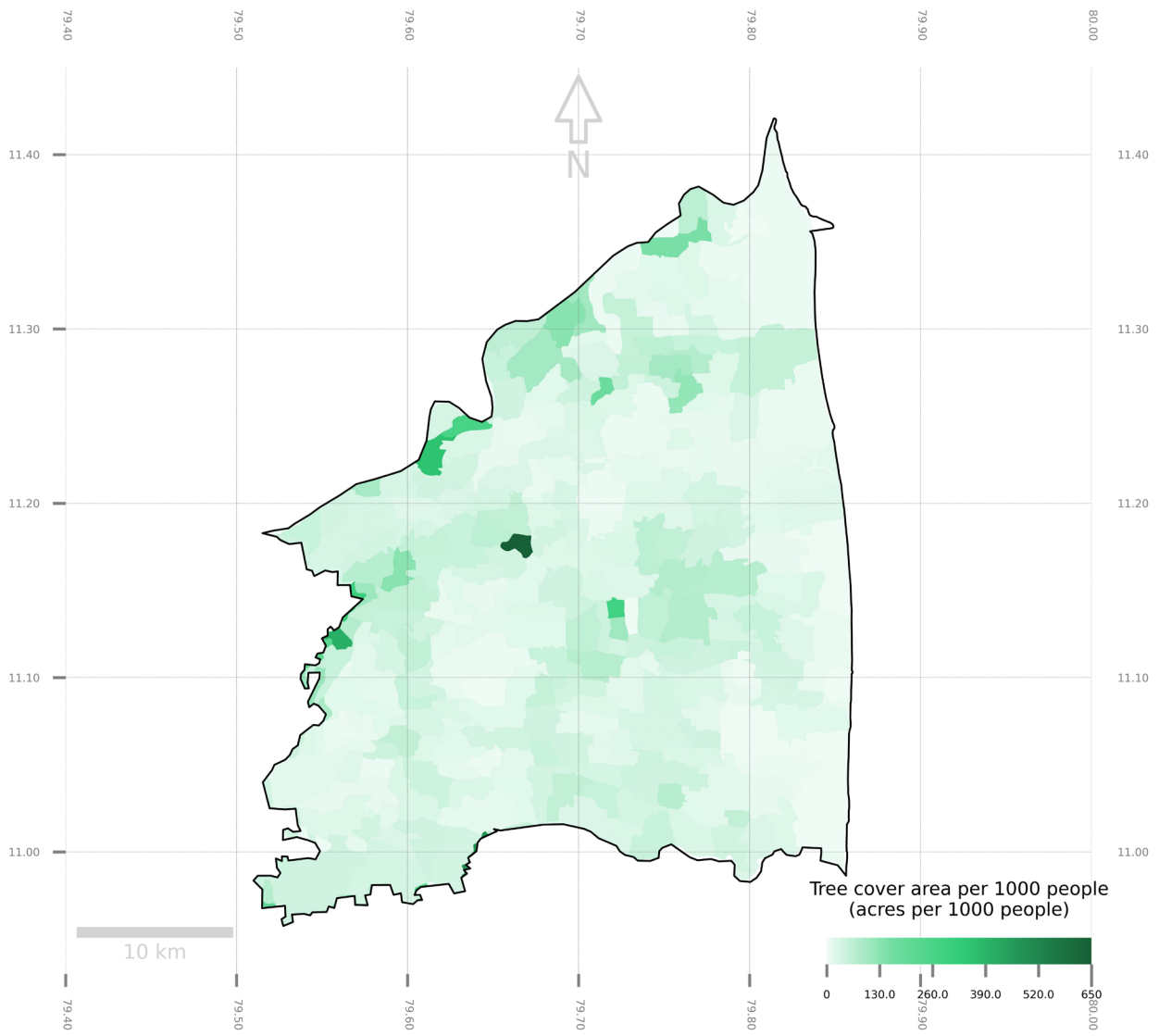
Village	Population	Tree cover	Tree cover per 1000 people	Potential (acres)
Kalamanallur	4,542	5	1.10	293
Manikkapangu	8,430	12	1.42	640
Kattur	3,951	10	2.53	96
Pattamangalam	27,677	74	2.67	13
Keelaiyur	12,688	62	4.89	566
Akkurpandaravadai	4,366	25	5.73	24
Thirukkadaiyur	8,876	52	5.86	87
Inam Senniyanallur	4,709	30	6.37	3
Maruthur	13,402	86	6.42	10
Mayiladuthurai	60,622	395	6.52	22

Insights

80% of the settlements has less than 50 acres under tree cover per 1,000 residents.

Settlements with higher tree cover ratios, correspond to relatively low populated villages.

Based on a settlement-level analysis, the maximum ratio found is 650 acres per 1,000 inhabitants and the lowest is 1.10 acers per 1,000 habitants.


79.40
79.50
79.60
79.70
79.80
79.90
80.00
N
11.40
11.30
11.20
11.10
11.00
10 km
Tree cover area per 1000 people
(acres per 1000 people)
0
130.0
260.0
390.0
520.0
650

Settlement - Level Stats

Settlement	Location (long/lat.)		Population (nos.)	TGA (acres)	Tree cover(acres)	Tree cover (%)	Technical potential (acres)	Technical potential (plot nos.)	Tree cover of TGA (%)	Tree cover per 1000 people (acres)
Achalpuram	79.75	11.33	5,017	1,376	104	8%	24	6	8	21
Agani	79.7	11.24	1,045	1,230	30	2%	70	7	2	28
Agaradhanur	79.7	11.06	685	640	27	4%	0	0	4	40
Agaraelathur	79.66	11.26	1,903	1,244	79	6%	11	1	6	42
Agarakkirangudi	79.66	11.08	2,885	907	57	6%	96	10	6	20
Agaraperunthottam	79.83	11.19	397	295	7	2%	58	4	3	19
agaravallam	79.68	11.05	1,259	407	47	12%	15	3	12	37
Agaravattaram	79.78	11.29	1,756	722	94	13%	26	7	13	53
Akkurpandaravadai	79.8	11.11	4,366	686	25	4%	24	5	4	6
Alakkudy	79.77	11.37	1,630	1,031	111	11%	58	6	11	68
Alalasundram	79.76	11.32	1,150	660	27	4%	17	7	4	24
Alangadu	79.78	11.27	2,174	1,232	54	4%	48	10	4	25
Alangudi	79.56	11.12	117	357	47	13%	1	1	13	403
Alaveli	79.71	11.15	753	650	22	3%	16	3	3	30
Anaimelagaram	79.6	11.09	5,902	733	304	41%	0	0	41	52
Ananthanallur	79.62	11.03	556	793	27	3%	2	1	3	49
Anathandavapuram	79.67	11.16	3,177	1,393	67	5%	0	0	5	21
Annavasal	79.71	11.07	4,231	1,157	59	5%	22	4	5	14
Arapallam	79.77	11.33	3,052	1,119	77	7%	67	7	7	25
Arasur	79.73	11.28	1,881	824	114	14%	24	3	14	60
Arasur	79.72	11.03	1,466	791	77	10%	7	4	10	52
Ariyalur	79.66	11.06	1,107	826	44	5%	21	4	5	40
Arpakkam	79.75	11.27	648	439	30	7%	10	4	7	46

Settlement	Location (long/lat.)		Population (nos.)	TGA (acres)	Tree cover(acres)	Tree cover (%)	Technical potential (acres)	Technical potential (plot nos.)	Tree cover of TGA (%)	Tree cover per 1000 people (acres)
Arulmolithevan	79.62	11.14	2,111	798	20	3%	59	4	2	9
Arupathy	79.71	11.11	5,108	1,263	373	30%	22	3	30	73
Aruvappadi	79.64	11.16	1,401	768	44	6%	0	0	6	32
Asikkadu	79.61	11.07	800	895	27	3%	0	0	3	34
Athiyur	79.7	11.27	711	748	32	4%	4	2	4	45
Athuppakkam	79.79	11.02	446	362	27	7%	53	8	8	61
Attur	79.57	11.19	1,254	880	42	5%	13	4	5	33
Budangudi	79.56	11.17	5,248	1,307	163	12%	1	1	12	31
Chandirappadi	79.85	10.99	908	225	7	3%	68	4	3	8
Dharmadanapuram	79.7	11.17	3,428	1,455	89	6%	14	3	6	26
Eachangudi	79.73	11.05	797	723	37	5%	5	1	5	47
Edakkudi	79.68	11.03	2,295	808	86	11%	7	3	11	38
Edakudivasapathy I	79.74	11.2	1,944	1,415	49	3%	21	4	3	25
Edamanal	79.8	11.25	3,052	1,229	82	7%	158	11	7	27
Eduthukkatti	79.79	11	4,949	1,168	200	17%	16	5	17	40
Elanthoppu	79.65	11.23	2,216	1,235	25	2%	4	2	2	11
Elumagalur	79.63	11	2,870	1,828	111	6%	8	3	6	39
Eravancheri	79.75	11.03	685	600	49	8%	6	1	8	72
Erukkur	79.71	11.28	4,202	1,325	116	9%	9	2	9	28
Gopalasamuthiram	79.71	11.31	857	789	86	11%	24	4	11	101
Ilaiyalur	79.71	11.08	2,191	942	54	6%	56	7	6	25
Iluppur	79.77	11.01	6,149	1,413	190	13%	15	3	13	31
Inam Senniyanallur	79.57	11.07	4,709	365	30	8%	3	1	8	6
Inam Tiruvalangadu	79.54	11.06	2,931	295	72	24%	0	0	24	24
Ivanallur	79.6	11.16	627	803	84	10%	3	1	10	134

Settlement	Location (long/lat.)		Population (nos.)	TGA (acres)	Tree cover(acres)	Tree cover (%)	Technical potential (acres)	Technical potential (plot nos.)	Tree cover of TGA (%)	Tree cover per 1000 people (acres)
Kadakkam	79.69	11.06	1,532	727	64	9%	0	0	9	42
Kadalangudi	79.56	11.19	1,484	896	57	6%	17	2	6	38
Kadalangudi	79.57	11.11	2,701	1,064	44	4%	3	1	4	16
Kadambakkam	79.61	11.23	125	810	44	5%	5	1	5	355
Kadavasal	79.77	11.26	1,651	501	35	7%	25	4	7	21
Kadiramangalam	79.54	11.06	982	150	44	29%	0	0	30	45
Kaduvangudi	79.63	11.23	1,568	1,061	47	4%	0	0	4	30
Kahiyappanallur	79.82	11.05	6,358	1,992	49	2%	149	21	2	8
Kalahasthinathapuram	79.77	11.11	2,502	1,013	106	10%	3	1	10	42
Kalamanallur	79.85	11.1	4,542	774	5	1%	293	14	1	1
Kali -I	79.58	11.15	579	324	62	19%	8	1	19	107
Kali II Bit	79.58	11.16	1,192	1,157	86	7%	3	2	7	73
Kanganamputhur	79.63	11.15	2,279	875	47	5%	84	12	5	21
Kanjanagaram	79.7	11.13	1,456	1,233	89	7%	2	1	7	61
Kanjuvoy	79.55	11.03	3,965	680	44	6%	0	0	7	11
Kannapiranadi	79.76	11.3	523	339	5	1%	5	3	1	9
Kanniyakudi	79.68	11.18	1,066	694	42	6%	1	1	6	39
Kappur	79.63	11.05	3,337	614	49	8%	4	1	8	15
Karaimedu	79.75	11.2	4,411	1,858	99	5%	59	9	5	22
Karkoil	79.69	11.2	1,672	965	52	5%	14	7	5	31
Karuvazhakarai	79.72	11.14	105	309	30	10%	0	0	10	284
Kattucheri	79.82	11.01	3,203	1,107	79	7%	142	13	7	25
Kattur	79.8	11.36	3,951	786	10	1%	96	6	1	3
Kazhanivasal	79.66	11.02	3,773	1,036	59	6%	22	3	6	16
Keelaiyur	79.85	11.16	12,688	2,316	62	3%	566	21	3	5

Settlement	Location (long/lat.)		Population (nos.)	TGA (acres)	Tree cover(acres)	Tree cover (%)	Technical potential (acres)	Technical potential (plot nos.)	Tree cover of TGA (%)	Tree cover per 1000 people (acres)
Keelaiyur	79.6	11.06	327	786	20	3%	2	1	3	60
Keelamarudandanallur	79.66	11.17	564	853	22	3%	54	3	3	39
Keelamathur	79.75	11.07	1,227	733	40	5%	0	0	5	32
Keelamathur	79.69	11.27	1,401	1,010	27	3%	0	0	3	19
Keelasattanathapuram	79.79	11.19	3,428	1,285	128	10%	28	7	10	37
Kesingan	79.61	11.18	2,550	1,049	82	8%	27	6	8	32
Kidarankondan	79.76	11.13	5,242	1,984	413	21%	38	6	21	79
Kilaparuthikudi	79.57	11	467	263	7	3%	0	0	3	16
Kildangal	79.79	11.12	590	280	30	11%	2	1	11	50
Kilianur	79.68	11.06	394	607	20	3%	19	1	3	50
Killiyur	79.77	11.07	1,036	697	44	6%	0	0	6	43
Kiloy	79.61	11.2	6,397	1,222	146	12%	8	3	12	23
Kizhaiyur	79.74	11.14	3,659	1,327	227	17%	93	4	17	62
Kizhaperumpallam	79.83	11.12	940	1,312	20	2%	202	22	2	21
Kodangudi	79.68	11.08	1,171	892	49	5%	3	1	6	42
Kodavilagam	79.71	11.04	861	758	30	4%	6	1	4	34
Kodimangalam	79.54	11.02	783	266	17	6%	0	0	6	22
Kokkur	79.57	11.05	3,225	651	72	11%	1	1	11	22
Komal - East	79.59	11.04	5,895	1,633	173	11%	16	4	11	29
Komal - West	79.58	11.03	9,176	1,258	119	9%	26	5	9	13
Kondal	79.67	11.24	1,923	1,039	20	2%	3	1	2	10
Kondathur	79.72	11.17	1,651	1,199	49	4%	34	6	4	30
Kondathur	79.71	11.18	962	470	7	1%	0	0	2	8
Konerirajapuram I Bit	79.54	11.01	-	104	5	5%	0	0	5	inf
Konerirajapuram II Bit	79.55	11.01	-	129	2	2%	0	0	2	inf

Settlement	Location (long/lat.)		Population (nos.)	TGA (acres)	Tree cover(acres)	Tree cover (%)	Technical potential (acres)	Technical potential (plot nos.)	Tree cover of TGA (%)	Tree cover per 1000 people (acres)
Koothiyampettai	79.73	11.3	4,912	1,585	267	17%	208	16	17	54
Korukkai	79.61	11.16	2,195	919	116	13%	3	1	13	53
Kothangudi	79.59	11.02	4,282	415	69	17%	0	0	17	16
Kothangudi	79.74	11.03	2,629	1,010	94	9%	23	5	9	36
Kovangudi	79.64	11.08	2,550	713	52	7%	53	4	7	20
Kozhaiyur	79.61	11.05	501	632	22	3%	6	2	4	44
Kulichar	79.7	11.09	1,888	925	74	8%	35	2	8	39
Kunnam	79.67	11.28	1,077	1,891	106	6%	31	6	6	99
Lakshiminayanapuram I	79.72	11.13	48	367	5	1%	0	0	1	103
Lakshminayanapuram II	79.72	11.12	2,279	239	79	33%	0	0	33	35
Madapuram	79.78	11.1	3,091	915	91	10%	3	1	10	30
Madhanam	79.77	11.31	418	621	15	2%	18	4	2	35
Madiravelur	79.66	11.3	1,494	1,179	99	8%	75	9	8	66
Maharajapuram	79.77	11.28	376	523	30	6%	17	5	6	79
Maharajapuram	79.61	11.13	690	566	27	5%	4	1	5	39
Mahendrapalli	79.78	11.36	1,923	1,159	57	5%	149	6	5	30
Mamakudi	79.82	11.11	3,410	1,704	124	7%	115	18	7	36
Manakkudi	79.68	11.12	3,721	887	74	8%	26	4	8	20
Manalmedu	79.59	11.21	4,536	1,401	148	11%	27	3	11	33
Mangaimadam	79.81	11.19	4,599	939	84	9%	53	7	9	18
Manganallur	79.64	11.03	4,004	909	124	14%	8	2	14	31
Manigramam	79.82	11.15	8,905	1,024	183	18%	23	7	18	21
Manikkapangu	79.85	11.05	8,430	1,418	12	1%	640	14	1	1
Mannampandal	79.69	11.11	6,334	1,181	311	26%	35	6	26	49
Maraiyur	79.62	11.08	690	596	20	3%	29	3	3	29

Settlement	Location (long/lat.)		Population (nos.)	TGA (acres)	Tree cover(acres)	Tree cover (%)	Technical potential (acres)	Technical potential (plot nos.)	Tree cover of TGA (%)	Tree cover per 1000 people (acres)
Marudampallam	79.84	11.1	2,024	1,151	22	2%	288	22	2	11
Marudhangudy	79.67	11.23	2,279	1,299	59	5%	17	4	5	26
Maruthur	79.58	11.05	13,402	500	86	17%	10	4	17	6
Mathur	79.77	11.08	2,342	985	40	4%	10	2	4	17
Mayiladuthurai	79.65	11.11	60,622	2,783	395	14%	22	6	14	7
Mekkirimangalam	79.56	11.07	3,958	481	42	9%	9	1	9	11
Melagalangam	79.53	11.01	183	82	7	9%	0	0	9	40
Melaiyur	79.81	11.15	8,704	1,524	269	18%	59	12	18	31
Melaiyur	79.58	11.07	3,503	291	32	11%	3	1	11	9
Melaiyur	79.72	11.13	1,054	578	47	8%	0	0	8	45
Melanallur	79.65	11.18	899	902	62	7%	0	0	7	69
Melaparuthigudi	79.64	11.28	-	12			0	0	0	
Memathur	79.73	11.07	2,677	1,590	84	5%	29	5	5	31
Mozhaiyur	79.68	11.15	523	918	22	2%	31	6	2	43
Mudhalaimedu	79.77	11.35	1,568	1,198	240	20%	35	6	20	153
Mudikandanallur	79.75	11.12	3,745	769	190	25%	10	1	25	51
Mudikandanallur	79.58	11.21	293	378	27	7%	3	1	7	93
Mukkarumbur	79.76	11.09	1,530	726	47	6%	0	0	6	31
Murugamangalam	79.57	11.13	725	301	57	19%	9	2	19	78
Muthur	79.71	11.06	1,020	610	17	3%	1	1	3	17
Nadukkarai Keelapathi	79.74	11.12	2,438	485	109	22%	3	2	22	45
Nadukkarai Melpathi	79.73	11.14	-	450	2	0%	47	8	1	inf
Nakkambadi	79.6	11	2,655	659	72	11%	4	1	11	27
Nalladai	79.75	11.01	2,793	1,447	141	10%	43	11	10	50
Nallanayakipuram	79.73	11.32	5,080	1,070	86	8%	43	10	8	17

Settlement	Location (long/lat.)		Population (nos.)	TGA (acres)	Tree cover(acres)	Tree cover (%)	Technical potential (acres)	Technical potential (plot nos.)	Tree cover of TGA (%)	Tree cover per 1000 people (acres)
Nallathukudi	79.67	11.09	11,393	773	225	29%	13	5	29	20
Nallavur	79.55	11.01	2,507	676	62	9%	0	0	9	25
Namasivayapuram	79.58	11.17	3,157	1,063	116	11%	4	3	11	37
Nangur	79.78	11.18	3,784	1,517	158	10%	35	5	10	42
Narasinganatham	79.72	11.06	1,020	835	22	3%	2	1	3	22
Natham	79.7	11.15	2,007	912	89	10%	5	3	10	44
Neivasal	79.56	11.16	258	213	7	3%	0	0	3	29
Nemmeli	79.7	11.23	2,153	950	47	5%	23	6	5	22
Neppathur	79.8	11.21	4,285	1,197	67	6%	142	13	6	16
Nidur	79.64	11.15	4,829	927	62	7%	56	9	7	13
Odhavanthangudy	79.75	11.29	1,296	639	89	14%	23	4	14	69
Olayampudur	79.7	11.28	105	427	10	2%	0	0	2	95
Pachaiperumanallur	79.75	11.28	941	861	94	11%	21	4	11	100
Pagasalai	79.74	11.18	1,171	1,195	79	7%	51	11	7	68
Palaiyur	79.57	11.02	5,394	1,013	138	14%	2	1	14	26
Palayagudalure	79.56	11.05	1,946	339	35	10%	1	2	10	18
Pandaravadai	79.65	11.05	8,335	595	64	11%	10	4	11	8
Pandaravadaimappadugai	79.62	11.12	1,526	698	22	3%	3	1	3	15
Pandur	79.6	11.15	2,253	1,289	136	11%	2	1	11	60
Pannangudy	79.75	11.31	794	726	10	1%	39	9	1	12
Parasalur	79.73	11.1	9,130	1,470	148	10%	71	12	10	16
Pattamangalam	79.64	11.09	27,677	737	74	10%	13	4	10	3
Pattavarthi	79.63	11.22	1,066	803	42	5%	6	3	5	39
Perambur	79.69	11.03	2,398	1,206	146	12%	0	0	12	61
Peravur	79.55	11.04	4,537	647	74	11%	0	0	11	16

Settlement	Location (long/lat.)		Population (nos.)	TGA (acres)	Tree cover(acres)	Tree cover (%)	Technical potential (acres)	Technical potential (plot nos.)	Tree cover of TGA (%)	Tree cover per 1000 people (acres)
Perumalkoil	79.59	11.06	167	455	7	2%	5	1	2	44
Perumangalam	79.68	11.21	2,279	746	20	3%	6	3	3	9
Peruncheri	79.66	11.05	2,120	975	35	4%	8	3	4	16
Pillaiperumalnallur	79.84	11.07	7,282	2,043	143	7%	519	31	7	20
Ponmasanallur	79.66	11.18	42	477	27	6%	0	0	6	650
Ponnur	79.59	11.13	932	800	47	6%	18	2	6	50
Porumbur	79.63	11.02	5,275	1,275	79	6%	3	2	6	15
Pudupattinam	79.81	11.37	20,402	6,314	158	3%	934	41	3	8
Puduthurai	79.77	11.23	1,254	858	17	2%	112	4	2	14
Puthur	79.7	11.29	2,299	527	44	8%	10	3	8	19
Radhanallur	79.82	11.24	481	713	5	1%	242	6	1	10
Radhanallur	79.79	11.16	6,152	2,107	452	21%	19	5	21	74
Ramachandrankoilpathu	79.78	11.11	255	366	12	3%	1	1	3	48
Sattanathapuram	79.73	11.22	5,477	1,314	74	6%	46	4	6	14
Semangalam	79.73	11.16	2,315	1,494	52	3%	54	10	3	22
Sembanarkoil	79.74	11.11	4,892	339	67	20%	14	4	20	14
Sembathaniruppu	79.76	11.16	3,659	1,341	284	21%	32	7	21	78
Semmangudy	79.76	11.25	1,902	563	25	4%	35	7	4	13
Sengudi	79.61	11.06	1,426	603	35	6%	0	0	6	24
Senniayanallur	79.57	11.07	3,292	275	37	13%	1	1	13	11
Serudiyur	79.68	11.09	1,568	665	86	13%	1	1	13	55
Serugudi	79.59	10.98	321	49	10	20%	0	0	20	31
Serugudy	79.76	11.29	188	254	10	4%	13	1	4	53
Sethur	79.66	11.19	1,881	1,089	114	10%	31	7	10	60
Sethur	79.7	11.02	1,707	1,376	47	3%	52	4	3	27

Settlement	Location (long/lat.)		Population (nos.)	TGA (acres)	Tree cover(acres)	Tree cover (%)	Technical potential (acres)	Technical potential (plot nos.)	Tree cover of TGA (%)	Tree cover per 1000 people (acres)
Siddamalli	79.62	11.25	1,187	753	40	5%	110	1	5	33
Sirkali	79.73	11.25	27,990	3,328	217	7%	182	31	7	8
Sitharkadu	79.62	11.1	13,191	823	124	15%	31	5	15	9
Sivanaragaram	79.54	11.01	67	63	2	3%	0	0	4	37
Sothiyakudi	79.69	11.3	1,693	1,274	227	18%	29	6	18	134
Srikantapuram	79.58	11.01	945	449	37	8%	0	0	8	39
Talainayar	79.66	11.22	2,927	1,171	82	7%	0	0	7	28
Talainayar II Bit	79.65	11.2	3,324	900	114	13%	16	4	13	34
Thalaiyudaiyarar Koil Pathy	79.79	11.13	5,593	1,710	178	10%	59	8	10	32
Thandavankulam	79.82	11.31	10,431	3,128	79	3%	925	27	3	8
Thathangudi	79.67	11.03	6,730	1,112	126	11%	25	3	11	19
Thennampattiam	79.85	11.22	4,411	2,051	72	4%	743	27	3	16
Thillaividangan	79.76	11.24	397	483	10	2%	31	5	2	25
Thillaiyadi	79.81	11.03	5,386	1,438	59	4%	98	20	4	11
Thiruindalur	79.65	11.13	11,727	1,149	198	17%	39	5	17	17
Thirukkadaiyur	79.81	11.07	8,876	1,949	52	3%	87	20	3	6
Thirukkalacheri	79.81	11	7,842	1,379	208	15%	9	20	15	26
Thirukkarukavur	79.78	11.24	4,285	950	54	6%	108	8	6	13
Thirumangalam	79.58	11.14	1,688	666	96	14%	6	1	14	57
Thirumannancheri	79.58	11.13	1,986	400	47	12%	5	1	12	24
Thirumullaivasal	79.83	11.25	22,701	4,390	213	5%	892	60	5	9
Thirunagiri	79.79	11.22	5,895	2,167	72	3%	200	17	3	12
Thirunelkondacheri	79.64	11.07	397	467	15	3%	26	4	3	37
Thiruppangur	,79.68	11.19	1,547	938	40	4%	33	8	4	26
Thiruvalaputhur	79.62	11.21	2,843	858	121	14%	3	2	14	43

Settlement	Location (long/lat.)		Population (nos.)	TGA (acres)	Tree cover(acres)	Tree cover (%)	Technical potential (acres)	Technical potential (plot nos.)	Tree cover of TGA (%)	Tree cover per 1000 people (acres)
Thiruvaly	79.77	11.2	4,411	1,438	158	11%	48	9	11	36
Thiruvengadu	79.81	11.17	14,172	2,337	163	7%	97	18	7	12
Thiruvidakazhi	79.79	11.04	2,709	1,668	44	3%	89	12	3	16
Thiruvillaiyattam	79.74	11.04	1,896	1,077	79	7%	7	2	7	42
Thittai	79.76	11.23	4,620	862	44	5%	82	11	5	10
Tholuthalangudi	79.59	11.08	4,727	536	89	17%	2	1	17	19
Thulasenthirapuram	79.59	11.08	111	145	2	1%	0	0	2	22
Tiruchampalli	79.75	11.09	1,992	1,160	72	6%	6	2	6	36
Tiruchitrambalam	79.54	11.18	668	806	35	4%	83	4	4	52
Tiruvaduthurai	79.54	11.05	1,512	588	27	5%	0	0	5	18
Tiruvalangadu	79.55	11.07	2,348	281	47	17%	0	0	17	20
Udayayarkoil Pathy	79.79	11.1	5,434	928	62	7%	24	9	7	11
Uluthakuppai	79.68	11.14	3,700	867	94	11%	6	1	11	25
Umayalpathy	79.77	11.26	376	793	44	6%	5	1	6	118
Uthirangudi	79.77	11.03	3,697	635	72	11%	30	5	11	19
Vadarengam	79.65	11.28	589	798	30	4%	0	0	4	50
Valluvakudi	79.68	11.25	355	819	5	1%	3	1	1	14
Vanadirajapuram	79.59	11.11	975	955	35	4%	2	1	4	35
Vanagiri	79.85	11.12	9,307	1,923	99	5%	439	23	5	11
Varadampattu	79.63	11.2	2,446	834	64	8%	4	3	8	26
Varisaipathuvadagal	79.78	11.25	2,362	524	37	7%	8	3	7	16
Vayalur	79.52	10.97	143	49	7	14%	0	0	15	52
Vellalar agaram	79.66	11.13	3,324	960	69	7%	6	2	7	21
Vettangudy	79.81	11.28	7,672	4,242	420	10%	894	62	10	55
Vilagam	79.73	11.01	726	743	22	3%	96	8	3	31

Settlement	Location (long/lat.)		Population (nos.)	TGA (acres)	Tree cover(acres)	Tree cover (%)	Technical potential (acres)	Technical potential (plot nos.)	Tree cover of TGA (%)	Tree cover per 1000 people (acres)
Villandhidasa Samuthiram	79.72	11.26	3,491	1,000	82	8%	40	9	8	23
Villiyanallur	79.56	11.1	2,700	1,004	133	13%	11	3	13	49
Villiyanallur	79.63	11.18	2,927	1,497	146	10%	13	5	10	50
Visalur	79.78	11.03	1,594	770	27	4%	18	10	4	17

Note:

1. A plot that crosses a settlement boundary is counted as two plots. Thus, the total number of plots under settlement-wise analysis is higher than the district total.
2. The data used for the analysis had inherent disparities, causing slight differences in the overall settlement and district boundary.

To view the interactive map with the settlements: **Click here**

07 RECOMMENDATIONS

Co-locate forest and water harvesting
Forest and woodland can harmoniously be co-located with water harvesting structures such as tanks, or percolation pits etc. Based on this analysis 19% or 3,128 acres of land with technical suitability for forestation is having good water harvesting potential. Unused lands that have good water harvesting and forestation potential may be prioritized and forestation can be co-located with water harvesting interventions.

Prioritize lands within or close to towns
A special attention may be given to unused lands within a town or within a certain circumference of a town. If such lands could be put under tree cover they would serve as green and blue zones and thereby provide essential ecological and temperature regulating services. This will also increase the attractiveness of the liveability of the town and it may also help curbing urban sprawl.

Planting riparian forests
A riparian forest is an area of land adjacent to a stream, lake, or wetland that contains a combination of trees, shrubs, and/or other perennial plants. Riparian forests can deliver a number benefits including filtering nutrients, pesticides, and animal waste from agricultural land runoff; stabilizing eroding banks; filtering sediment from runoff; providing shade, shelter, and food for fish and other aquatic organisms; protecting cropland and downstream habitats from flood damage etc. The district authority may develop a program that specifically supports the installation of riparian forest buffers on public and private lands.

Prioritize unused lands with high technical potential and low tree cover for forestation
Settlements that have areas identified for forestation (lands with technical potential) that are relatively larger in comparison with the existing tree cover area, may be prioritized for forestation efforts, as they have a greater untapped potential. To help prioritize these efforts, the untapped potential and the ratio of technical potential areas to the existing tree cover are presented in the table showing the settlement-wise analysis.

08 SUMMARY

In Mayiladuthurai district, 1,107 plots of unused lands with a total area of 16,237 acres have been identified to meet the technical criteria for forestation. The majority of these lands (more than 900 plots) are of sizes between 2.5 and 20 acres; 26 plots are of sizes greater than 100 acres, which together can act as a greater carbon sink than the smaller plots. However, these large plots only meet the low criteria. The best lands identified for forestation efforts meet the medium criteria, with a total of 18 acres. No unused lands were found to meet the highest criteria, as no areas were found suitable to build forest corridors. This could be due to the district being largely an agricultural state, with a relatively low and well spread-out tree cover.

The settlement-level analysis re-iterates the generally low tree cover percentage in most settlements. And as a large number of suitable unused lands for forestation are found closer the coast, the untapped potential for forestation is high in settlements located there. Thus, forestation efforts maybe prioritized in these regions to facilitate in meeting the district's target. Overall, the analysis indicates that most settlement have met only about half their total tree cover potential.

The technical potential lands only meet 22% of the district's target of 73,749 acres. However, the total unused lands identified for the district makes up only 29,104 acres, which is 40% of the target. If all the unused lands are to be forested, the total tree cover of the district would be a maximum of 18% of the district's TGA. Thus, the district has little scope of meeting the state-based target of 33% of tree cover.

09 REFERENCES

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6. Ministry of Environment, Forest & Climate Change (MOEF). 2017. State of Forest Report 2017. Available at: https://fsi.nic.in/forest-report-2017 (accessed on 4th June 2022)

Links to interactive maps:

- https://www.aurovilleconsulting.com/wp-content/uploads/Lila/Mayiladuthurai/Forest/Features.html
- https://www.aurovilleconsulting.com/wp-content/uploads/Lila/Mayiladuthurai/Forest/Landcover.html
- https://www.aurovilleconsulting.com/wp-content/uploads/Lila/Mayiladuthurai/Forest/Landsuitability.html
- https://www.aurovilleconsulting.com/wp-content/uploads/Lila/Mayiladuthurai/Forest/Competinguse.html
- https://www.aurovilleconsulting.com/wp-content/uploads/Lila/Mayiladuthurai/Forest/top15lands.html
- https://www.aurovilleconsulting.com/wp-content/uploads/Lila/Mayiladuthurai/Forest/settlementlevel.html

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