THE MAYA FOREST

The Maya Forest constitutes one of the largest tropical forest areas in the Americas. It provides significant environmental services, including carbon sequestration and biodiversity, as well as vital forest resources for rural communities. While this region has long been subject to deforestation, frontiers of forest loss have changed over time. In the last decade, deforestation has shifted from southern to north-western Petén (Guatemala), and has increasingly advanced over north-eastern Campeche and southern Quintana Roo (Mexico)[1, 2]. Deforestation drivers have also changed. If cattle ranching and slash-and-burn were the main drivers in the past, commercial farming (small-scale but especially large-scale) now plays an increasingly important role[3, 4].

Drivers of deforestation

- **Cattle ranching**: Extensive cattle production causing forest degradation and clearance of primary forests and secondary vegetation[3, 4] in certain regions. This is linked with land speculation, drug trafficking[5] and even money laundering[6].
- **Smallholder farming**: Link to expansion of traditional smallholder agriculture, including shifting cultivation, and extensive cattle production[4, 5], but also increasingly to cash crop production[4, 6].
- **Large-scale agriculture**: Expansion of intensive cropland production (oil palm and soybean, particularly in Mexico) over pastures but in certain regions, such as northern Campeche[4, 5], and southern Petén[3, 9], over forests.
- **Fires**: Fire is associated with deforestation, as it is often used as a tool to clear land (in both subsistence and commercial farming)[1, 2], but also because large-scale fires affect large areas in the region[3, 9] and may facilitate permanent land-use conversion from forest to agricultural land[12].
- **Logging**: Industrial logging is less important than in the past[1, 2]. Negative environmental effects are associated with illegal logging[14, 15] as well as with some cases of unsustainable community forestry[16].
- **Fuelwood and charcoal**: Selective logging for fuelwood and charcoal is common in the region[11, 18]. Under some circumstances, these practices are related to forest degradation[16].
- **Urban expansion**: Growing urban centres and tourist developments have led to deforestation in some regions, such as in coastal Yucatan[11, 14].

### Key Facts

<table>
<thead>
<tr>
<th>Country/Region</th>
<th>Area 2000</th>
<th>Area 2018</th>
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<tbody>
<tr>
<td>Belize, Guatemala and Mexico</td>
<td>13.4Mha</td>
<td>10.2Mha</td>
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<tr>
<td>Humid and sub-humid tropical forests</td>
<td>5.1Mha</td>
<td>2.4Mha</td>
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</tbody>
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### Main outcomes

Protected areas along with secure collective land tenure regimes have proven effective in containing deforestation[8, 9]. Persisting deforestation has been associated with land speculation and encroachment of public land[10]. Agricultural intensification incentives can, under some circumstances, be effective in halting deforestation, but lack environmental safeguards and sufficient integration with environmental policies[7, 9]. Efforts at ensuring value chain sustainability through voluntary standards or other mechanisms have been insufficient.

### Recommended future actions

- Strengthen inclusive and participatory governance arrangements and improve capabilities for effective protected areas management.
- Secure land tenure or resource rights for rural communities.
- Strengthen and scale up community forestry projects, which have been shown to be linked to low deforestation rates, and reverse unsustainable timber extraction in community lands where it is still occurring.
- Improve the linkage between agricultural intensification incentives, positive livelihoods and environmental outcomes.
- Monitor and improve value chain sustainability.
- Evaluate the effect that current public policies and infrastructure plans are having or will have in the region, such as:
  - The Mexican federal programme Sembrando Vida, which is incentivizing reforestation of degraded lands with milpa and fruit trees – it has been suspected that some well-conserved areas might purposefully be degraded in order to access such incentives.
  - The Tren Maya, which seeks to connect various cities of the Peninsula and will also create a new population and tourist centre, which might impact forest cover.
  - The Mirador Basin Project within the Maya Biosphere Reserve, which proposes increasing tourism access and infrastructure (hotels and trains) and changes to the current scheme of land management.

### Underlying causes

The shift from collective (sometimes customary) to more individual land tenure regimes has been associated with land purchases by large-scale producers and greater levels of deforestation[18, 20]. In some regions, organized crime has fuelled sales of forested land for cattle ranching and, to a lesser extent, large-scale agriculture[4]. Additionally, in certain regions of the Maya Forest, the government has been promoting farming of certain cash crops, like oil palm, which might lead to forest loss and degradation[22, 24].
Key responses

Protected areas
Conservation areas protect over 5.8Mha of tropical rainforest from conversion to cattle ranching and agriculture. Some of these areas have proven effective[10, 11], while others face increasing threats[12].

Recognition of IPLCs
The Maya Forest has large areas titled as indigenous and local community lands, particularly in Mexico. This is associated with low deforestation rates, particularly where forests are managed collectively[8, 10].

Agricultural intensification
In order to prevent the expansion of the agricultural frontier, government subsidies have increasingly fostered agricultural intensification[13, 14], but not always with sufficient safeguards to prevent deforestation[15, 16].

Payment for environmental services
PES programmes have been partially effective at temporarily halting deforestation in the Maya Forest[16, 17], but their coverage has been limited.

Community forestry
Community forestry is associated with lower deforestation rates across the Maya Forest[18]. The number of communities successfully managing their forest resources is still limited as constraints sometimes outnumber opportunities in forest management[19, 20].

REDD+ projects
Several REDD+ projects have been implemented in the region. Recent studies point to mixed results, both at environmental and at social level[21, 22].

Voluntary standards
Environmental certification has become increasingly common for certain commodity crops such as palm oil. There is, however, little information on their effectiveness in containing deforestation in the context of the Maya Forest.

References