



## Suitability of key Central American agroforestry species under future climates: an Atlas

### Description

The [atlas](#) provides habitat suitability maps for 54 species that are widely used in Central America for shade in coffee or cocoa agroforestry systems. The 54 species represent 24 fruit species, 24 timber species and 6 species used for soil fertility improvement. Suitability maps correspond to the baseline climate (1960-1990) and 2050 climates predicted for Representative Concentration Pathways (RCP) 4.5 and 8.5. Habitat was classified as suitable in future climates if a minimum of 12 out of 17 downscaled Global Circulation Models predicted suitable climates. Details of the methodology of ensemble suitability modelling with the [BiodiversityR](#) package are provided in the [atlas](#).

The atlas was developed to support climate change oriented initiatives for diversification and conservation of forest genetic resources across Central America. Farmers, scientists and technicians can use the atlas to identify suitable and vulnerable areas for shade species and develop strategies for climate change adaptation.

### Coordinate system

+proj=longlat +datum=WGS84 +no\_defs +ellps=WGS84 +towgs84=0,0,0

### Extent

Longitudes: -101, -77      Latitudes: 6.791667, 22

### Scale

0.0416667 degrees = 2.5 minutes

### Authors

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## Donors

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## Suitability maps for fruit species

Anacardium occidentale	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
Annona cherimola	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
Artocarpus altilis	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
Averrhoa bilimbi	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
Averrhoa carambola	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
Bactris gasipaes	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
Byrsonima crassifolia	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
Chrysobalanus icaco	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
Chrysophyllum cainito	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
Citrus sinensis	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
Cocos nucifera	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
Eugenia stipitata	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
Genipa americana	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
Mammea americana	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
Mangifera indica	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
Manilkara zapota	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
Melicoccus bijugatus	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
Persea americana	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
Pouteria sapota	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
Psidium friedrichsthalianum	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
Psidium guajava	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
Spondias mombin	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
Spondias purpurea	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
Syzygium malaccense	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>

## Suitability maps for timber species

<i>Albizia saman</i>	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
<i>Alvaradoa amorphoides</i>	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
<i>Anacardium excelsum</i>	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
<i>Andira inermis</i>	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
<i>Astronium graveolens</i>	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
<i>Carapa guianensis</i>	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
<i>Cassia grandis</i>	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
<i>Cedrela odorata</i>	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
<i>Cordia alliodora</i>	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
<i>Cordia collococca</i>	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
<i>Dalbergia glomerata</i>	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
<i>Diphysa americana</i>	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
<i>Enterolobium cyclocarpum</i>	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
<i>Handroanthus ochraceus</i>	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
<i>Hymenaea courbaril</i>	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
<i>Maclura tinctoria</i>	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
<i>Pachira quinata</i>	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
<i>Pentaclethra macroloba</i>	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
<i>Platymiscium dimorphandrum</i>	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
<i>Roseodendron donnell-smithii</i>	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
<i>Schizolobium parahyba</i>	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
<i>Swietenia macrophylla</i>	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
<i>Tabebuia rosea</i>	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
<i>Terminalia oblonga</i>	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>

### Suitability maps for soil fertility improvement species

<i>Erythrina berteroana</i>	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
<i>Gliricidia sepium</i>	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
<i>Inga jinicuil</i>	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
<i>Inga oerstediana</i>	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
<i>Inga punctata</i>	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>
<i>Inga vera</i>	<a href="#">baseline</a>	<a href="#">RCP45</a>	<a href="#">RCP45 change</a>	<a href="#">RCP85</a>	<a href="#">RCP85 change</a>