

November 2022

## Urban nature, biodiversity, and climate change in cities around the world

Mandy Ikert –C40 Head of  
Adaptation Implementation

#AFutureWithNature is possible,  
if we make it a priority today.

**Together, we can create cities that are  
greener, healthier and more resilient.**



Rosanna Wan

# The C40 Cities network

## 97 Global Cities

### A network of cities led by Mayors

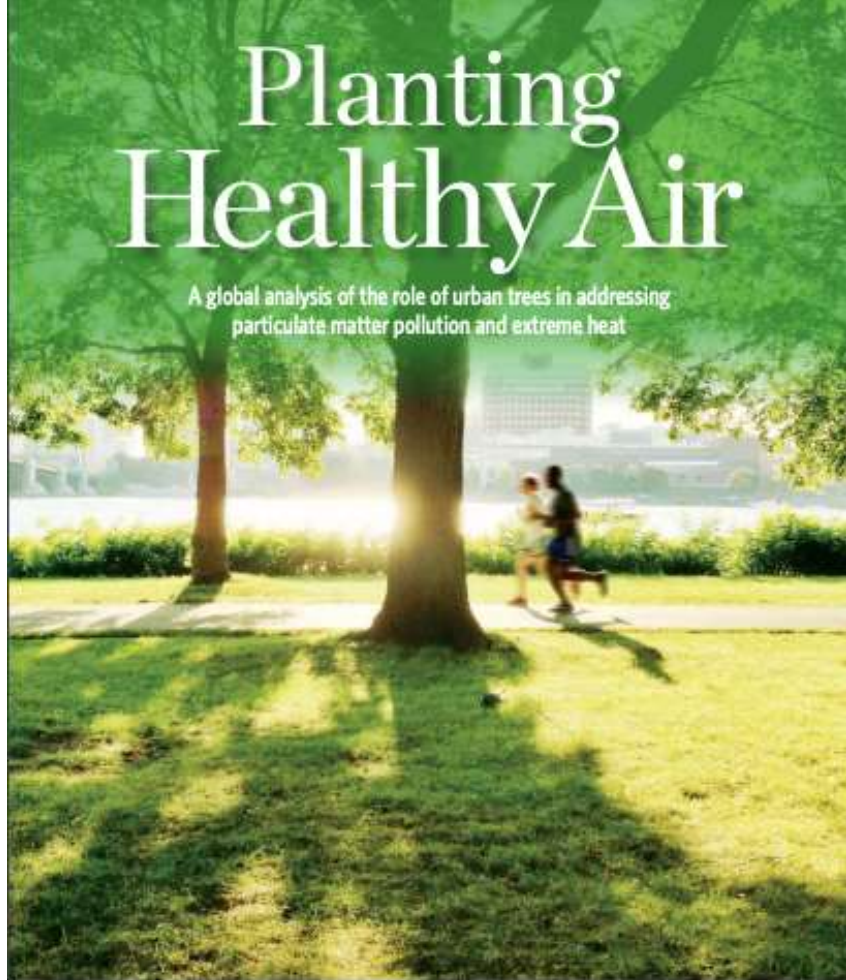
 **C40 cities represent**  
**700+ MILLION PEOPLE**  
 **25% of the global economy**

**AFRICA:** ABIDJAN – ACCRA – ADDIS ABABA – CAPE TOWN – DAKAR – DAR ES SALAAM – DURBAN (ETHEKWINI) – EKURHULENI – FREETOWN – JOHANNESBURG – LAGOS – NAIROBI – TSHWANE | **CENTRAL EAST ASIA:** BEIJING – CHENGDU – DALIAN – FUZHOU – GUANGZHOU – HANGZHOU – HONG KONG – NANJING – SHANGHAI – SHENZHEN – QINGDAO – WUHAN – ZHENJIANG | **EAST, SOUTHEAST ASIA & OCEANIA:** AUCKLAND – BANGKOK – HANOI – HO CHI MINH CITY – JAKARTA – KUALA LUMPUR – MELBOURNE – QUEZON CITY – SEOUL – SINGAPORE – SYDNEY – TOKYO – YOKOHAMA | **EUROPE:** AMSTERDAM – ATHENS – BARCELONA – BERLIN – COPENHAGEN – HEIDELBERG – ISTANBUL – LISBON – LONDON – MADRID – MILAN – OSLO – PARIS – ROME – ROTTERDAM – STOCKHOLM – TEL AVIV – WARSAW | **LATIN AMERICA:** BOGOTÁ – BUENOS AIRES – CURITIBA – GUADALAJARA – LIMA – MEDELLÍN – MEXICO CITY – RIO DE JANEIRO – SALVADOR – SÃO PAULO – SANTIAGO – QUITO | **NORTH AMERICA:** AUSTIN – BOSTON – CHICAGO – HOUSTON – LOS ANGELES – MIAMI – MONTRÉAL – NEW ORLEANS – NEW YORK – PHILADELPHIA – PHOENIX – PORTLAND – SAN FRANCISCO – SEATTLE – TORONTO – VANCOUVER – WASHINGTON DC | **SOUTH & WEST ASIA:** AHMEDABAD – AMMAN – BENGALURU – CHENNAI – DELHI – DHAKA – DUBAI – KARACHI – KOLKATA – MUMBAI



# Planting Healthy Air

A global analysis of the role of urban trees in addressing particulate matter pollution and extreme heat



Map E2. Return on investment of tree planting to reduce ambient temperatures for global cities.



# C40 MAYORS' AGENDA FOR A GREEN AND JUST RECOVERY



C40  
CITIES

**Health and wellbeing:  
Give space back to people  
and nature, rethink and  
reclaim our streets, clean  
our air and create liveable,  
local communities**

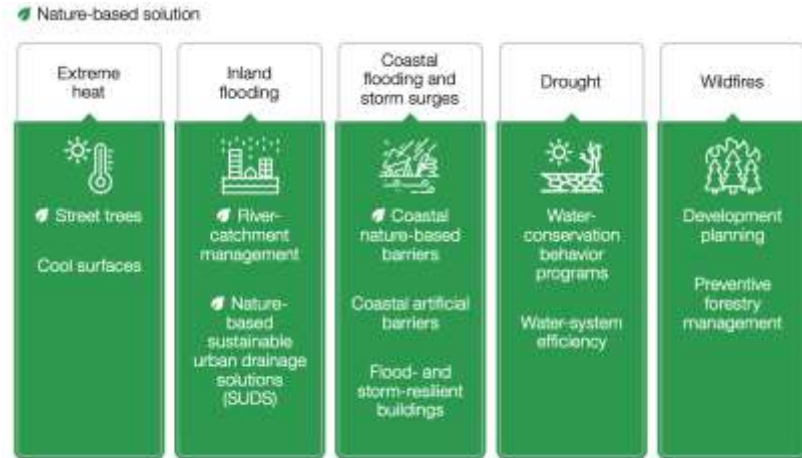


## **Action:** **Build with nature**

We will prioritise nature-based solutions (such as parks, green roofs, green walls, blue infrastructure and permeable pavements) to help reduce the risks of extreme heat, drought, flooding and vector- and water-borne disease while improving liveability and increasing physical and mental health.



- **Crisis-prepared Cities:** Developing and improving cities' climate **hazard responses** by building on learnings from COVID-19.
- **Climate-Ready Cities:** Harnessing the **environmental value of nature** and **mainstreaming** climate adaptation actions into the city governance, to protect communities from extreme weather events and changing climates.



- **Living Cities:** Prioritising adaptation measures that are implemented to **benefit the most vulnerable or marginalised**

## Signatories

Athens  
Austin  
Barcelona  
Berlin  
Bogotá  
Buenos Aires  
Chennai  
Copenhagen  
Curitiba  
Dhaka North  
Dhaka South  
Delhi  
Durban  
Freetown  
Guadalajara  
Haifa (non C40)  
Karachi  
Lima  
London  
Los Angeles  
Medellín  
Milan  
Montreal  
Mumbai  
New Orleans  
Paris  
Quezon City  
Quito  
Rio de Janeiro  
Rome  
Rotterdam  
Salvador  
San Francisco  
Seattle  
Stockholm  
Sydney  
Tel Aviv  
Tokyo  
Toronto

# C40 Urban Nature Accelerator

“To protect our communities from climate risk and help meet the goals of the Paris Agreement while improving overall health and wellbeing, our cities pledge to **increase and enhance nature in our urban environments that reduces climate risk and vulnerability**, supports wider ecosystem services, and is equitably distributed and publicly accessible, by 2030.”

## PATHWAY 1 QUALITY TOTAL COVER

### Heat & Water related risk



**30-40%** of the total built-up city surface area is:  
a.) **Green spaces** (e.g., street trees & urban forests, parks, building integrated vegetation)  
**and/ or**  
b.) **Permeable spaces** (e.g., pavements, infiltration trenches, swales, detention basins, regenerative urban agriculture)

## PATHWAY 2 EQUITABLE SPATIAL DISTRIBUTION

### Accessibility and connectivity



**70%** of the city population has access to a fit for purpose green or blue space within **15 minutes**<sup>7</sup> – equitably prioritised to maximise accessibility and connectivity to nature for the most vulnerable

# Declaration commitments

## WITHIN TWO YEARS, WE COMMIT TO:

- Make nature **goals public**
- Develop support and skills building programmes for **green jobs**
- Develop a process for **involving vulnerable and marginalized communities**
- **Map** current and expected **climate risks** and vulnerability
- Conduct a **gap analyses** and mapping to show where new greening is needed and opportunities for existing green spaces
- Accelerate action to **address governance barriers** to implementation
- Mobilize **access to investments** and resources that support the Declaration targets
- Publicly **report annually** on our progress

## WITHIN FIVE YEARS, WE COMMIT TO:

- **Implement** new or enhanced public green spaces and green streetscapes, in areas with the greatest impact on the most vulnerable
- **Complete a baseline natural vegetation inventory** and undertake natural capital accounting to raise awareness of the associated value of urban nature
- Develop **new inclusive governance frameworks**, practices and programmes
- Update our climate action plan adaptation actions to reflect our ambitious nature targets

**“In order to be effective, the ecological transition  
needs to be socially desirable”**

**Alexander Langer**





# SNAPSHOTS OF URBAN NATURE



A letter to nature in  
**MEDELLÍN**



A letter to nature in  
**DURBAN**



#AFutureWithNature

A letter to nature in  
**RIO DE JANEIRO**



A letter to nature in  
**COPENHAGEN**



#AFutureWithNature

A letter to nature in  
**PORTLAND**



A letter to nature in  
**MUMBAI**



#AFutureWithNature

A letter to nature in  
**AUCKLAND**



#AFutureWithNature

A letter to nature in  
**BARCELONA**



#AFutureWithNature

A letter to nature in  
**STOCKHOLM**



#AFutureWithNature

# Urban Nature Interventions Across Cities



Under Toronto's [Urban Forests Grants and Incentives programme](#) over 13,000 trees and shrubs will be planted



In Medellín, temperatures have reduced by 2°C as a result of planting more than 10,000 trees for the city's [Green Corridors](#) project.



Barcelona will subsidise [75% of the cost](#) of new green rooftops, creating urban allotments



In Mumbai, the government is making amendments to the 'Tree Act' to protect and conserve [mangrove trees](#)

In Durban (eThekweni) work has already begun to complete a [Transformative Riverine Management Programme](#)



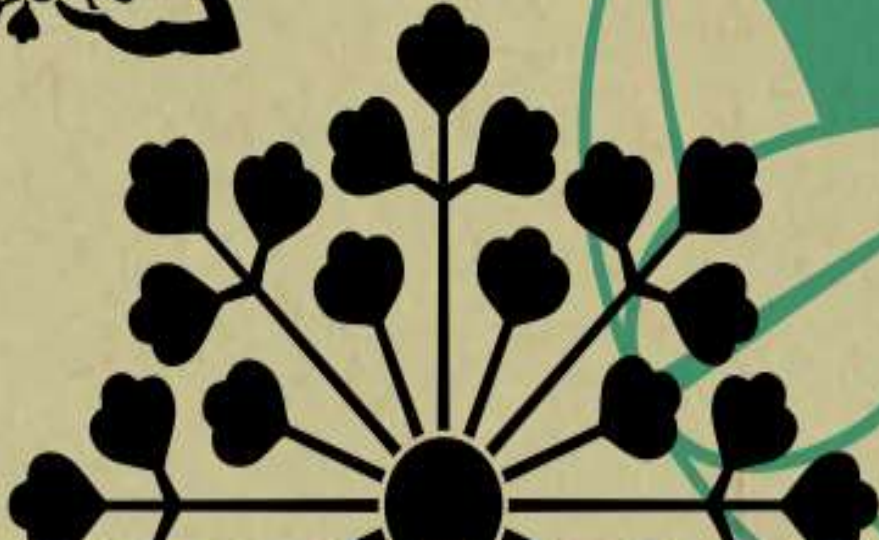
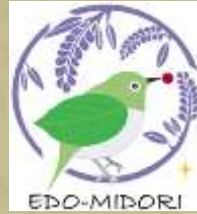
# Freetown



Berlin



# Tokyo



# Los Angeles



# Medellin

## 2 | Estructura para la clasificación de la oferta territorial

## 2.1/ Infraestructura Verde

## Infraestructura Verde Macro



### Infraestructura Verde Meso



### Infraestructura Verde Micro



## Infraestructura Verde Macro – Meso - Micro



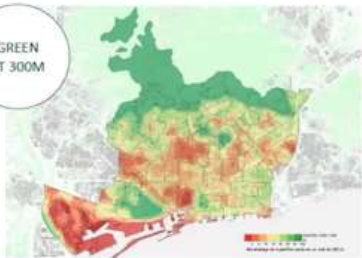
# Barcelona

## EQUITY

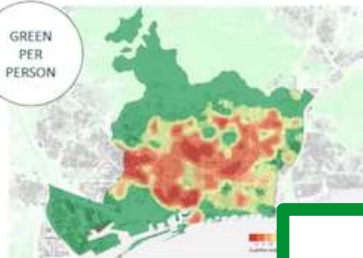
Proximity green and accessible to all people



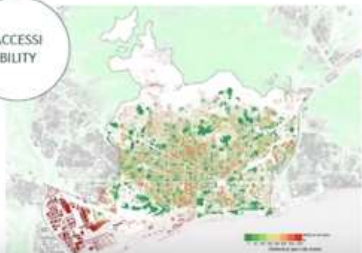
GREEN  
AT 300M



GREEN  
PER  
PERSON



ACCESSI  
BILITY

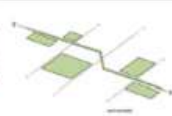


AREAS  
OF  
ACTION



## VERD DE CONNEXIÓ

Un sistema que configuri una xarxa



CAMINABILITAT  
VERDA

CONNECTIVAT  
EN VOL

CORREDORS  
VERDS  
ESTRUCTURANTS

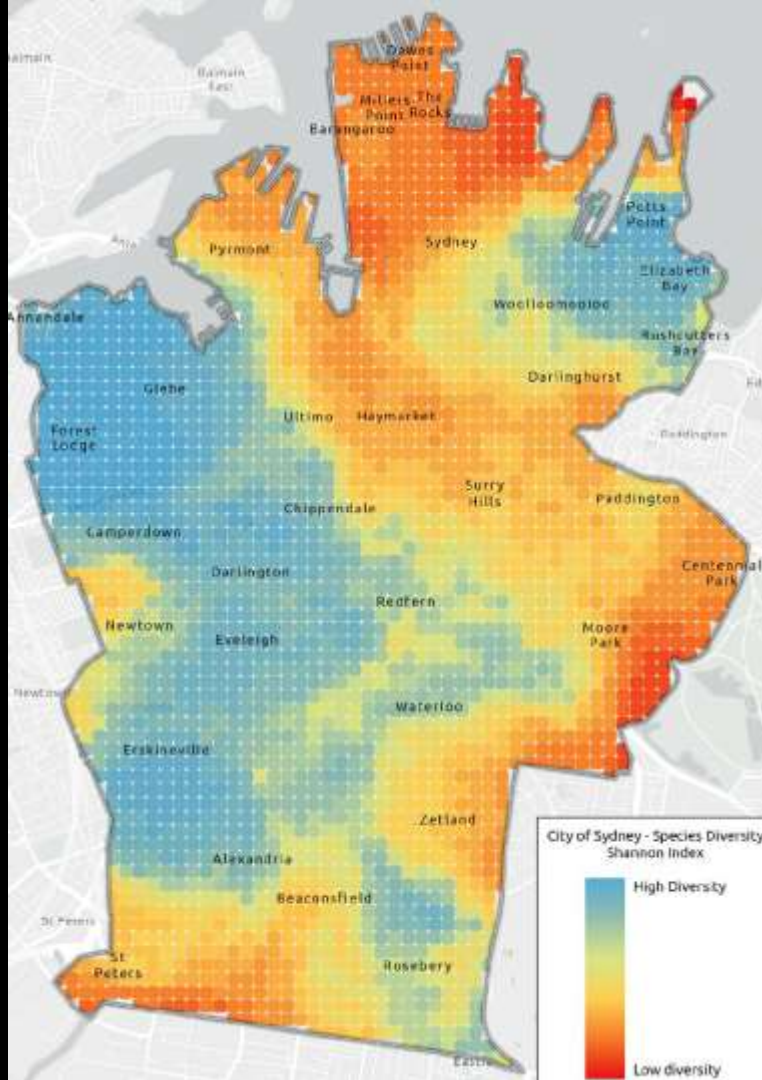
GREEN  
CONNECTIVITY IN  
FLIGHT  
Global routes  
calculation



### WHAT DO WE WANT?

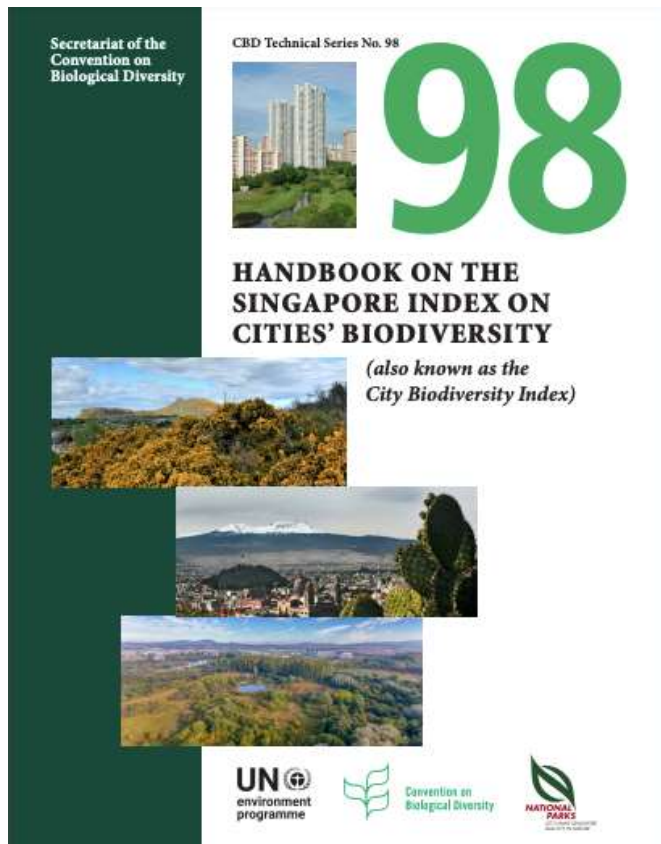
- +
- GREEN AREAS ACCESSIBLE FOR EVERYONE
- +
- PROVIDING ECOSYSTEM SERVICES,  
HEALTH AND CLIMATE ADAPTATION
- +
- PROTECTING NATURE IN THE URBAN FABRIC
- +
- TREE CANOPY
- +
- PERMEABLE SOIL
- +
- DIVERSITY OF GREEN SPACES
- +
- CONNECTIVITY
- +
- FUNCTIONALITY

# Sydney

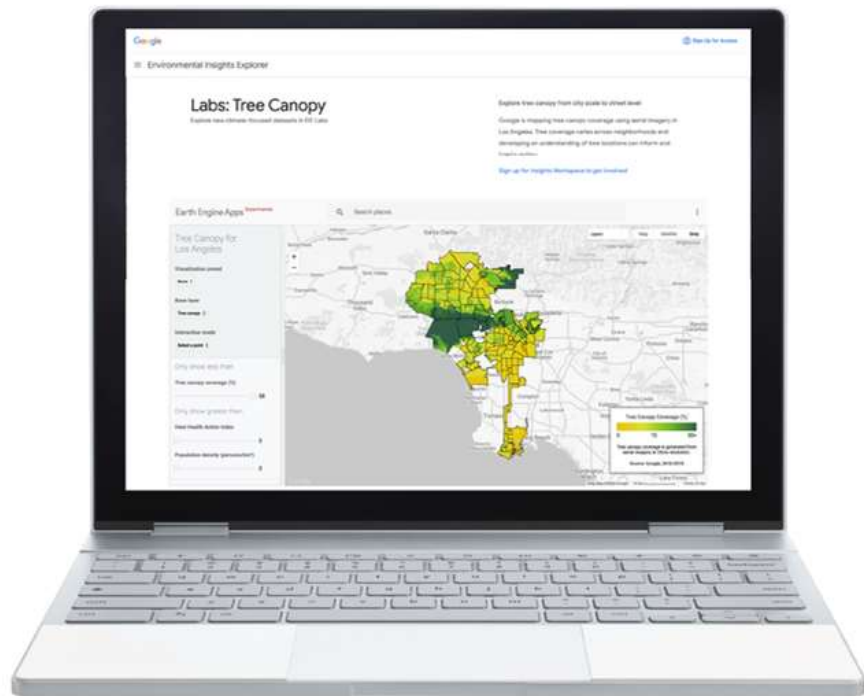


## Shannon Index

# Singapore & Buenos Aires



# Support from the Private Sector



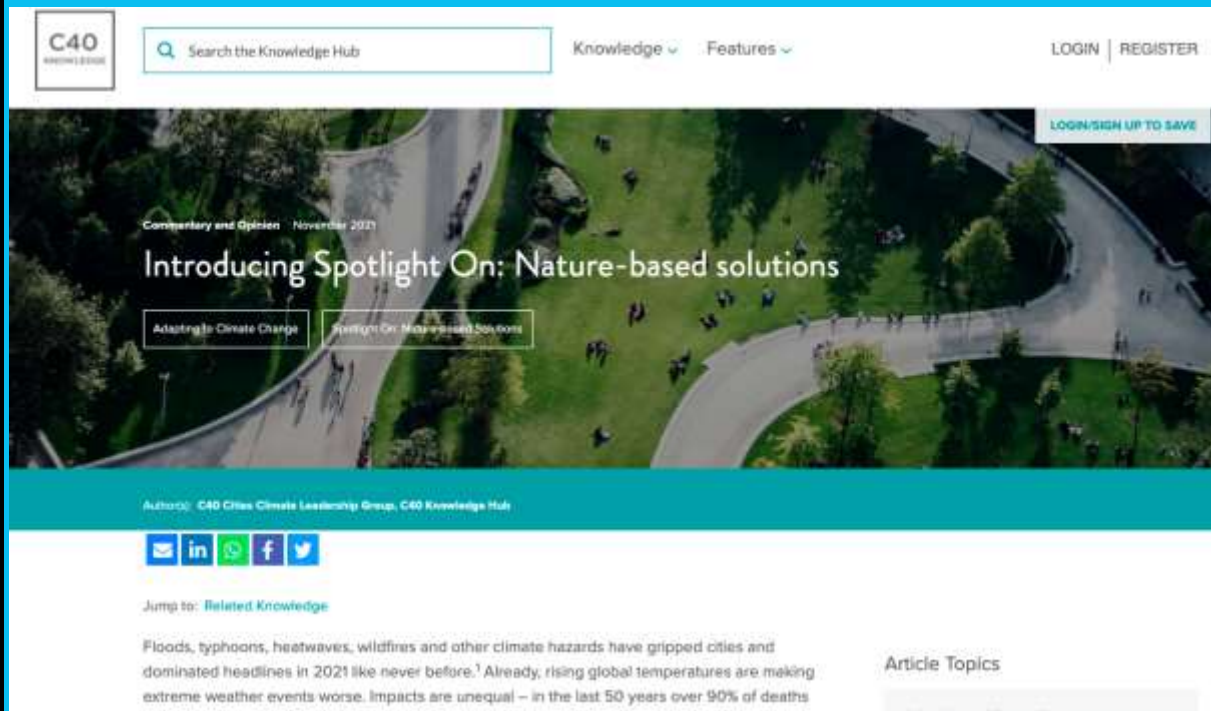
## Google Environmental Insights Explorer Tree Canopy Insights

Tree Canopy Insights within Environmental Insights Explorer combines AI and aerial imagery with Google Earth Engine's data analysis capabilities, to help cities see their current tree canopy coverage and plan future tree planting projects.

### What's to come

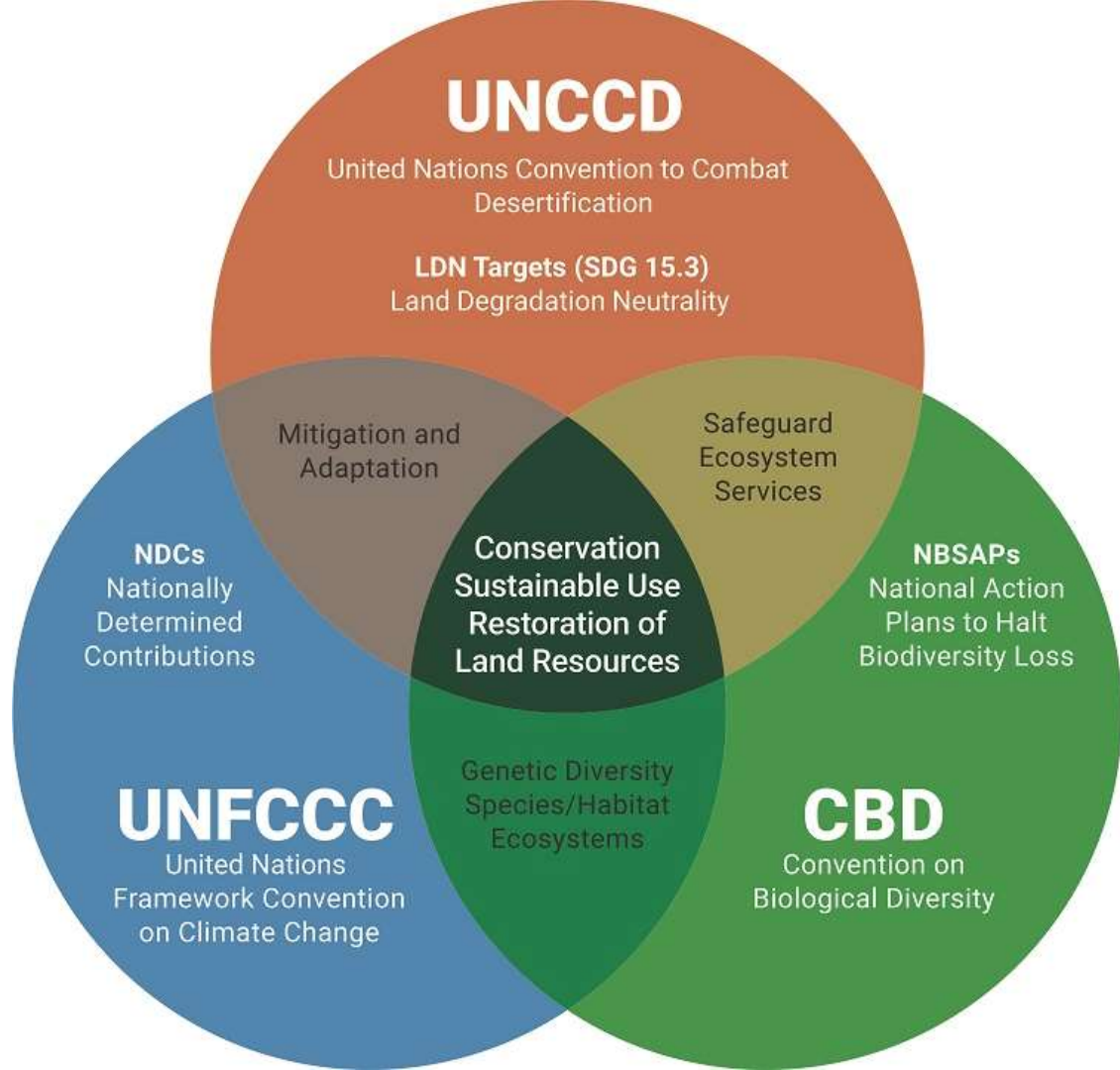
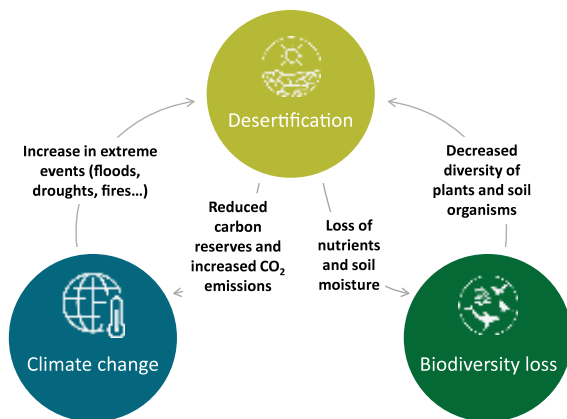
- Learning Lab
- Tree Canopy Lab 101
- Sessions grouped around common use cases

# Knowledge Resources



## Next Steps:

### Aligning the Rio Conventions





**Thank you**

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