

# NATURE BASED AND COMMUNITY- BASED SOLUTIONS



# A. Coastal Carbon Capture

## Technology Description

**Carbon removing sand** (made from mineral olivine) is added to coastal systems.

The sand gradually dissolves, and permanently **removes carbon dioxide**, increases ocean alkalinity, reduces ocean acidity, and counteracts coastal erosion.

This **accelerates** the rate of carbon capture (i.e., taking decades whereas natural processes take millions of years).

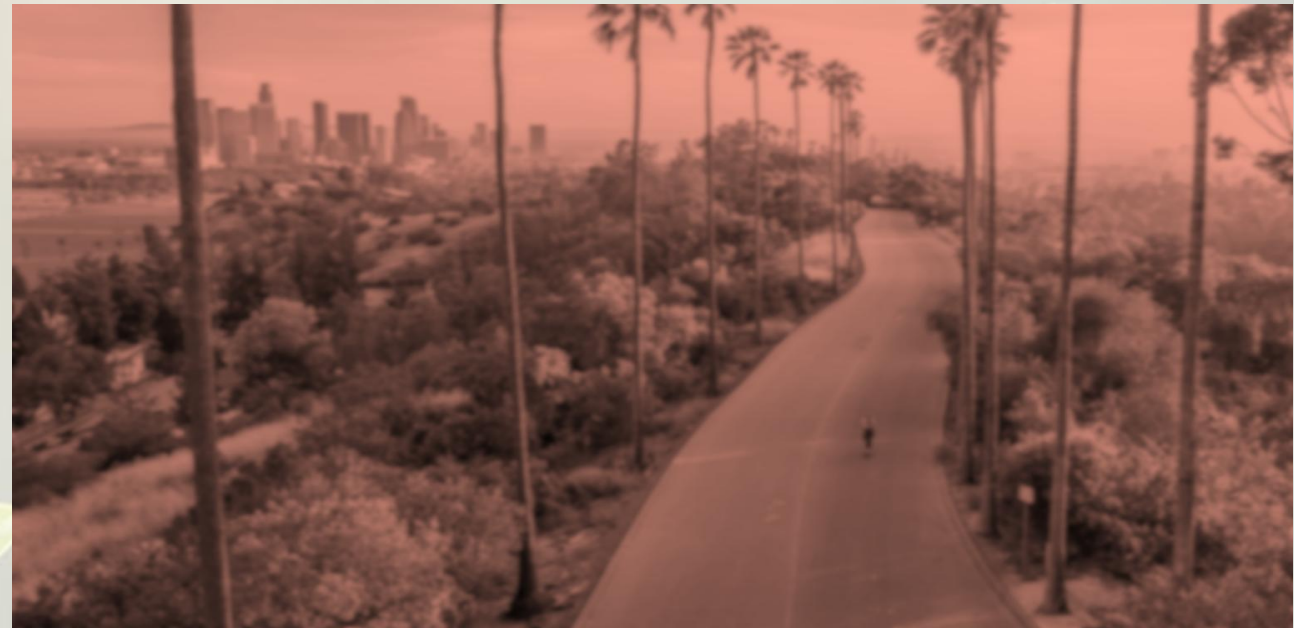


# B. Urban Re-Forestation Using AI Technology

## Technology Description

Urban Re-forestation via **tree planting lowers street level temperatures**, improves resident quality of life, and is valuable for adapting to extreme heat

Google's Environmental Insights Explorer platform uses AI and aerial imagery to identify existing tree coverage across regions. This points to at risk regions to target for urban reforestation.



# C. 3D Printed Coral Reefs

## Technology Description

**Modular 3D-printed reef structure** is made from clay and converted sargassum waste (i.e., an invasive algae in Caribbean). The material is **carbon-negative**.

The structures provide surfaces for coral polyps to colonize and chemically attract coralline algae to settle, **protecting coastal communities from erosion**.

The surface is algae-resistant, helping increase coral survival by up to 85 percent during bleaching events compared to concrete reef structures.



Image credit: WIPO, 2026

# D. Community-Based Solutions (Circular Economy/Food Waste)



## Technology Description

Local businesses within the community have **food surplus** that would otherwise go to waste and contribute to emissions.

**AI and mobile app connects** local food surplus donors with community volunteers of food charities.

Fresh food is delivered to community members experiencing food insecurity.

This **reduces food waste and related emissions** while providing **positive social impacts** for the community

