

Costa Rica: A Global Leader in Sustainable Tourism and Renewable Energy”

Balancing Nature, Community, and Innovation





- Costa Rica is internationally acclaimed for its sustainability-driven policies, making it a global leader in eco-tourism and renewable energy.
- The nation's unique strategy seamlessly integrates tourism and renewable energy, driving sustainable development.
- Its commitment to preserving nature and fostering green energy has won international recognition, setting benchmarks for global sustainability.
- **More Than 98 Percent of Costa Rica's Energy Is Renewable—Here's How**
- **This Central American country has an ambitious plan to reach climate neutrality by 2050**

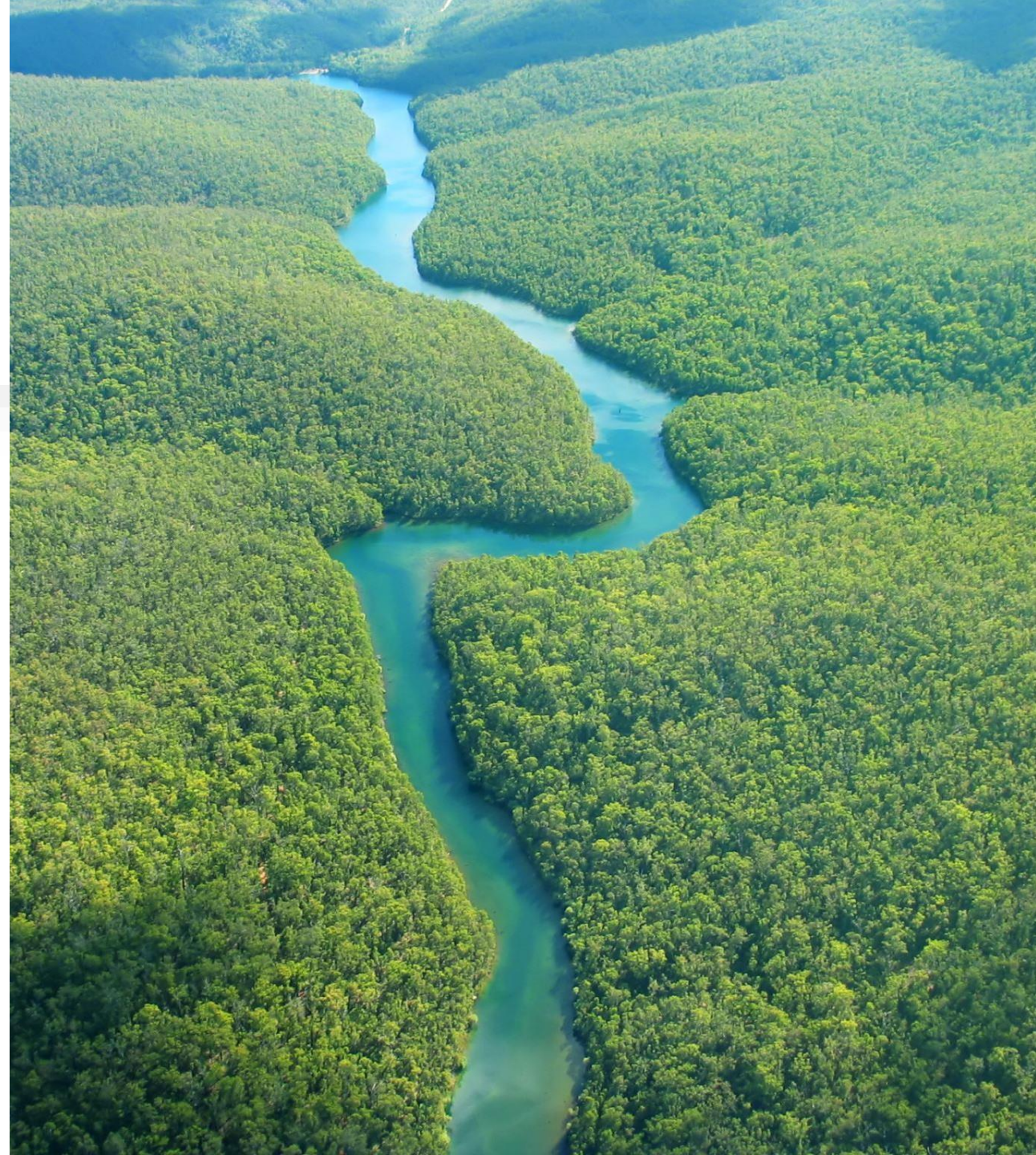
They Did it

- Each year, thousands of people flock to Costa Rica's northern highlands to enjoy the country's largest landlocked waterbody:
- Lake Arenal. Situated beneath the majestic Arena Volcano and surrounded by lush, forested hillsides and pasture lands, its 33-square miles of blue waters are frequented by kayakers, paddleboarders, and wind surfers.
- And while the lake has been a natural treasure for many millions of years, it wasn't always quite as large.
- During the 1970s, the Costa Rican Institute of Electricity constructed Presa Sangregado Dam at the lake's western end, tripling Lake Arenal's size while also creating a renewable energy source powerful enough to generate 12 percent of the country's electrical power.
- <https://youtu.be/cuCHb4BtVpk> - renewable energy
- <https://youtu.be/GkzEqdk1k24>- tourism



Ecotourism: The Cornerstone of Costa Rica's Sustainable Development

- Costa Rica's ecological wealth is preserved through an extensive network of national parks and protected areas, covering **over 25% of its landmass**.
- In 2006, more than **54% of international tourists** visited these areas, reflecting its global reputation as an eco-friendly destination.
- The **Bandera Azul Ecológica** (Ecological Blue Flag) program ensures environmental quality, particularly along coastlines, supporting sustainable tourism growth.
- In Costa Rica, sustainability is a way of life.
- The country has long been a pioneer in protecting its plentiful natural resources, including its biodiverse cloud forests and rainforests, golden and black sand beaches, and active volcanoes' vibrant ecosystems.
- Today, it's on a mission to become the first carbon neutral country on the planet. With renewable energy sources already making up nearly 93 percent of Costa Rica's electricity, the country is well on the way to reaching that goal.





Economic Impact of Tourism and renewable energy projects

- **Content:**
 - Tourism is a cornerstone of Costa Rica's economy, contributing approximately **8% to its GDP**.
 - In 2023, the nation hosted **2.75 million international visitors**, with **75% traveling for leisure and eco-tourism**.
 - A significant **68% of visitors** are drawn to its pristine beaches, lush rainforests, and eco-resorts, showcasing its success in sustainable tourism.
 - Into 022. The renewable energy sector contributor approximately US\$500 million to the economy through domestic electricity generation and export of the same.
 - Cost savings : they dependency on the fossil fuel has has been reduced and in that manner, Costa Rica has been able to say \$300 million annually in fuel imports alone.

How Are They Doing It?



- At just 19,730 square-miles, Costa Rica is roughly the size of West Virginia. Despite its relatively small footprint, the country's high concentration of rivers, dams, and volcanoes provide a plethora of renewable energy resources.
- After the end of Costa Rica's civil war in the late 1940s, the country abolished its army, opting to invest its budget instead on environmental conservation, education, and health.
- Around the same time, its government created the Costa Rican Electricity Institute to tap into its renewable natural resources, diversifying between green energy technologies like geothermal energy—deriving power from heat beneath the earth's surface—as well as wind power, solar power and the use of biomass, a renewable organic material that comes from plants and animals.

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Strategies for Carbon Neutrality

Costa Rica has employed a comprehensive approach to achieve carbon neutrality through various strategies:

1. Renewable Energy Investments: Costa Rica has focused on utilizing its natural geography, which is conducive to hydropower and wind energy and the energy profile is not only characterised by renewable energy, which is nearly hundred percent but a low carbon footprint also. It is a mix of all three types, hydroelectric, wind, and solar.

2. Government policies promoting green energy

- Payment for Environmental Services (PES) and reforestation efforts
- Carbon sequestration and emissions reduction initiatives
- Prioritisation of environmental policies since 1990 and shinning sustainability in national development plans
- National decarbonisation plan 2018–2050. This wrote by outlines clear path to achieve net zero emissions by 2050 through electrification, energy efficiency, and sustainable land uses.
- Public private collaboration: local in International NGO as well as Private entities, have partner together or transfer of technology and funding of renewable energy projects

Wind Energy - 17.3%

Strategic locations like Guanacaste Province

- Major wind farm projects and their impact
- Contribution to local employment and grid stability

Costa Rica has been able to harness its strong wind current, specially in the areas like Goa province, we are several wind forms contribute substantially to the natural grid.



Hydropower in costa Rica- 67.%

Backbone of Energy Generation

- River networks and rainfall contribute to sustainable energy
- Key Hydroelectric Plants and their capacity
- Environmental impact and community benefits

Hydropower Dependency: The heavy reliance on hydropower makes Costa Rica vulnerable to climate change effects such as droughts, which can impact water availability and power generation.

Solution: Continued diversification of renewable energy sources, such as expanding solar and wind energy capacity.



Solar and Biomass Energy

1.7%

- Rising investment in solar projects
- Emerging role of biomass for community-level electrification



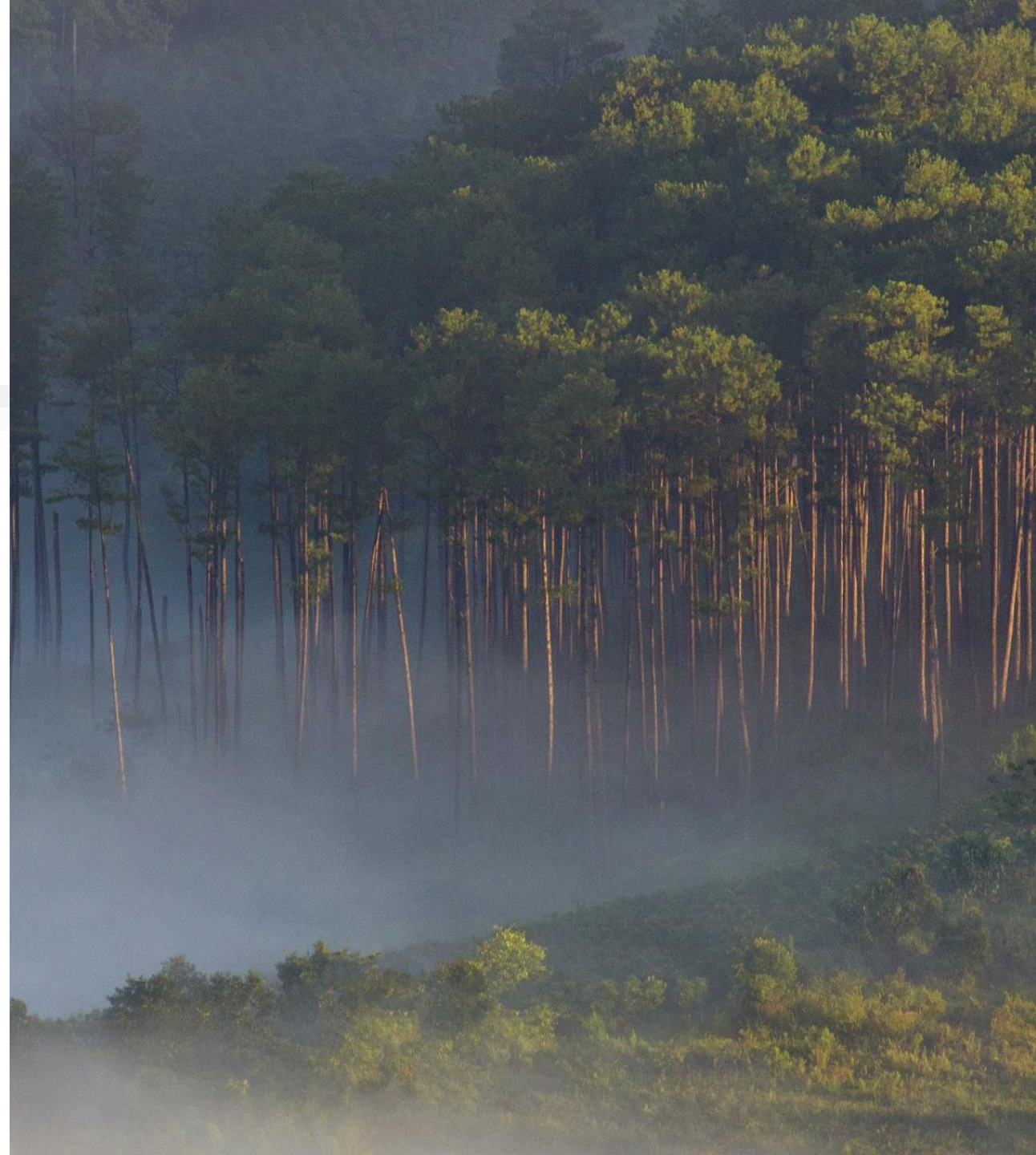
Geothermal Energy: 13.5%

- Utilization of volcanic regions for energy
- Environmental benefits and sustainability aspects
- Role in reducing carbon emissions



Reforestation and land management

- Reforestation initiatives have played key role in carbon sequestration
- Forest cover increased from 26% over 50% reversing decades of a deforestation. This has been supported by policies such as payment for environment, environmental services.(PES program.)
- Carbon sequestration: as per data given by World Bank, Costa Rica deforestation efforts of 7000,000 tons of a carbon dioxide



Challenges and Future Outlook for tourism and energy demand

- As tourism and energy demands grow, Costa Rica must balance development with environmental preservation.
- **Challenges:**
 - Managing mass tourism to prevent ecological strain.
 - Enhancing renewable energy infrastructure to meet growing demand.
 - Maintaining leadership in regenerative tourism and sustainability.
 - The heavy Reliance on the hydro power makes Costa Rica vulnerable to climate change, effect such as rots, which can impact water availability and power generation
 - While Costa Rica has attracted significant investments, but continued funding is necessary to upgrade the infrastructure and support the new technologies roping in every day, so most of the public private partnership and access to green financing may be required





Future Plans:

- Achieving **carbon neutrality by 2050**.
- Expanding **smart grids** and **renewable energy projects**.-technological innovation
- Promoting **community-based conservation** to protect natural heritage.
- Electrification of Transport: • The government aims to electrify 70% of the vehicle fleet by 2030, with incentives for electric vehicle (EV) adoption and investments in EV charging stations.
- Renewable Energy Expansion: • Continued investment in solar and wind energy projects, alongside innovations in energy storage, will ensure a resilient and sustainable energy supply
- Costa Rica is positioning itself as a leader in the sustainable practice, sharing its expertise with the other nations through collaborative projects and the partnership