

# Evolution of Renewable Energy Generation

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# World Development Indicators Dataset

This study is performed using the **World Development Indicators** Dataset from the World Bank.

The primary World Bank collection of development indicators, is compiled from officially-recognized international sources. It presents the most current and accurate global development data available, and includes national, regional and global estimates. It contains over a thousand annual indicators of economic development from hundreds of countries around the world.

# Motivation

**Fact:** Our planet is facing a critical global problem: **climate change**.

**Evidence:** “*Scientific evidence for warming of the climate system is unequivocal.*”  
- Intergovernmental Panel on Climate Change

**Cause:** Climate change results from natural processes and more recently due to human activities through our emissions of greenhouse gases.

**Effect:** more frequent wildfires, longer periods of drought in some regions and an increase in the number, duration and intensity of tropical storms.

CARBON DIOXIDE

↑ 412 parts per million

GLOBAL TEMPERATURE

↑ 1.9 °F since 1880

ARCTIC ICE MINIMUM

↓ 12.8 percent per decade

ICE SHEETS

↓ 413 Gigatonnes per year

# Research Questions

This study focuses on the following questions:

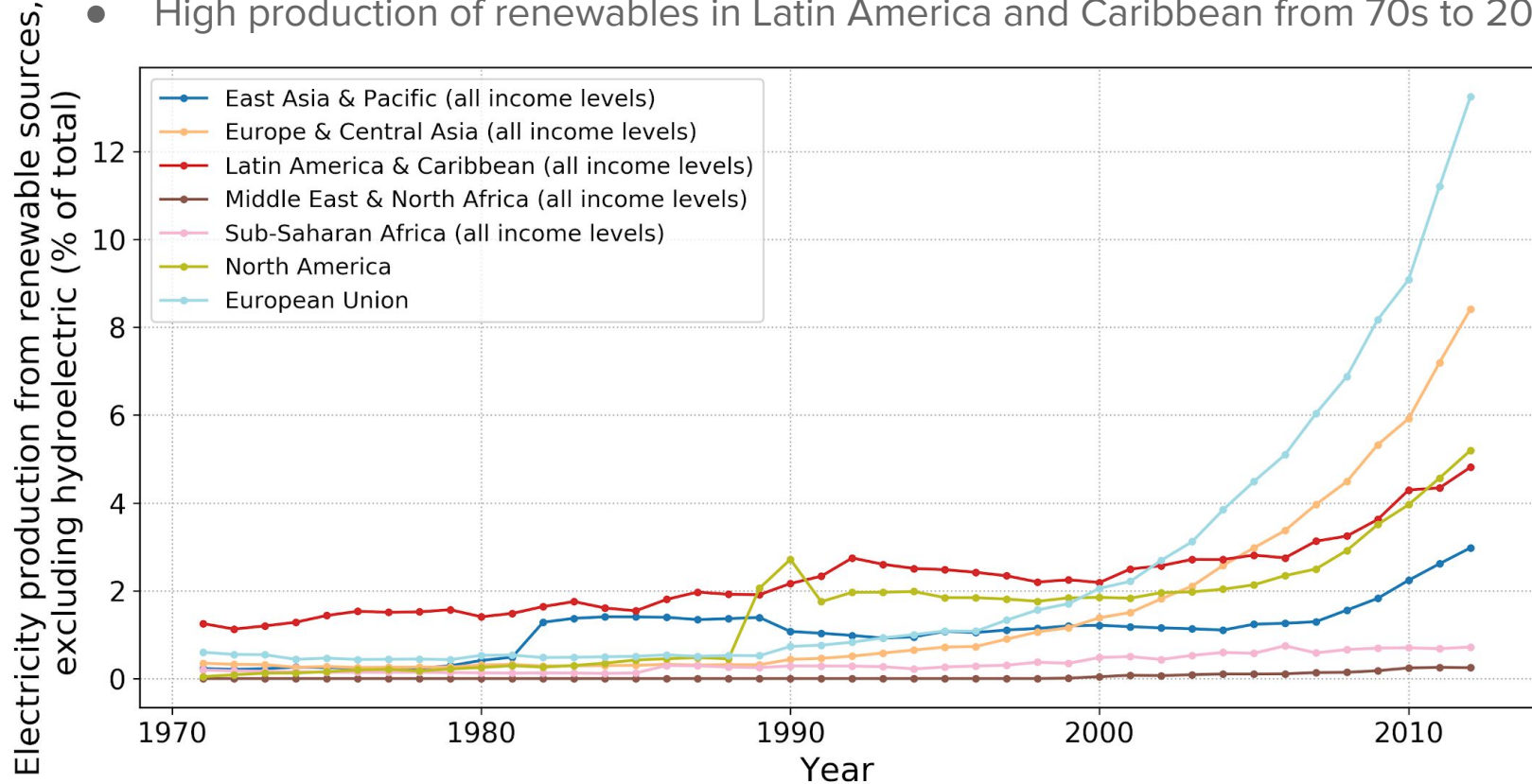
What were the actions taken by the different governments worldwide in response to global climate change?

More specifically: how much effort was given through time in the generation of energy from renewable sources?

How did the development of renewable energy sources impact on the CO<sub>2</sub> emissions?

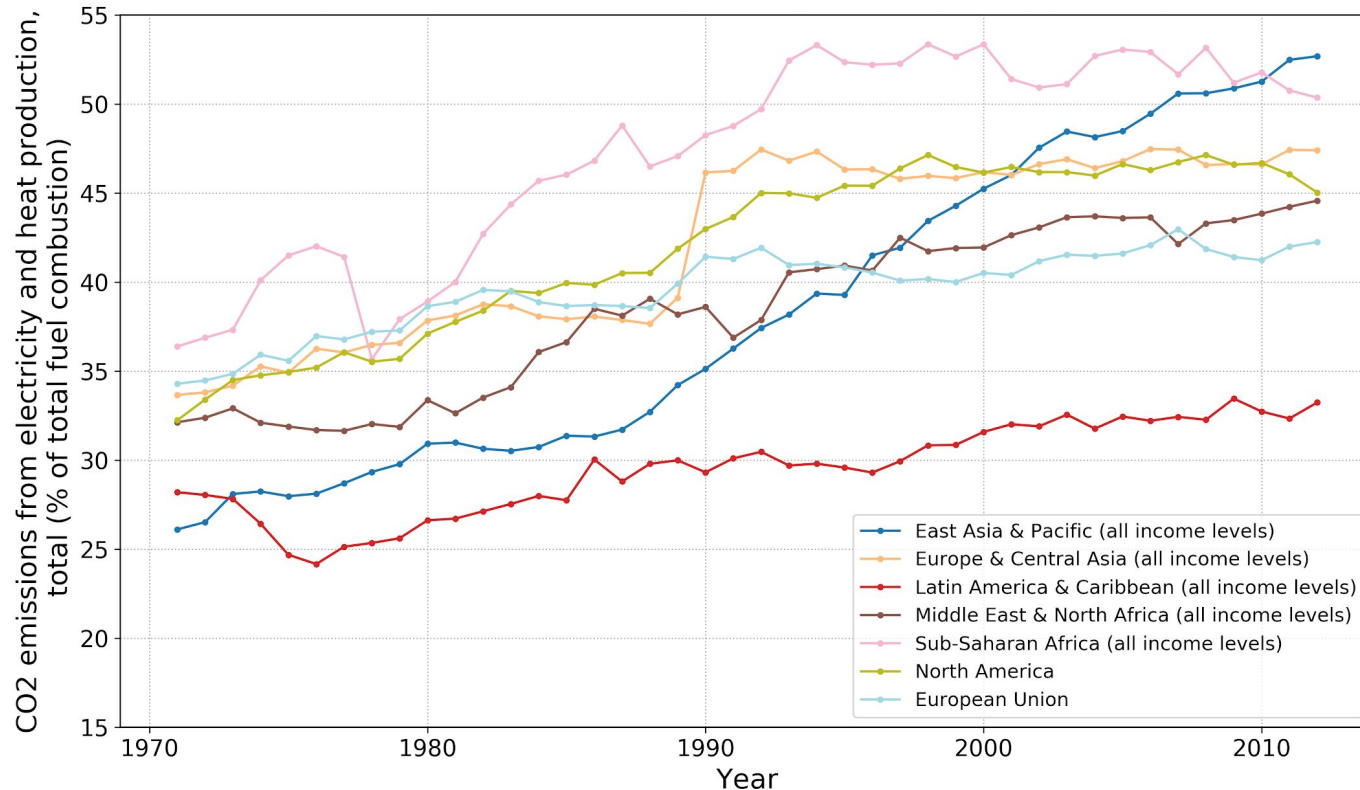
# Evolution of Renewables Generation

- Exponential growth of generation in European Union since 1995
- High production of renewables in Latin America and Caribbean from 70s to 2010s



# Evolution of CO2 emissions from production

- Stabilization of CO2 emissions in EU since 1995 compared to growth of 5 pts 70s-90s
- Lowest CO2 emissions in Latin America and Caribbean compared to others



# Findings

- According to the World Bank, the production of electricity from renewable energies increased significantly in most of the countries worldwide in the last five years.
- An exponential growth is observed in Europe since 1995 with about 12 pts increase in the percentage of energy produced from renewables over the last 20 years.
- The increase in renewable energy production leads to a stabilization of the CO2 emissions from electricity and heat production.

# Acknowledgements

This analysis was performed thanks to the [open-source data from Kaggle](#) on the World Development Indicators dataset obtained from the World Bank. It contains over a thousand annual indicators of economic development from hundreds of countries around the world.

The valuable information on global climate change presented in the motivations is shared by NASA, additional details are given on [their website](#).