

Stories of Climate Change and Migration – 21st June 2017

The view from Masaya, Leicester's twin city in Nicaragua (topical and positive)



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Nicaragua - a small Central American country



- Same size as England & Wales but population only 6m
- Nicaragua is at no.110 out of 177 countries on the Human Development Index
- 2nd poorest country in Western Hemisphere
- 48% of population live below the poverty line
- 42% rural/agricultural economy

Leicester Masaya Link Group

- Established 1986 as solidarity link with formal twinning in 1987
- After Rio 1992, focus on North-South Co-operation around Agenda 21
- Environmental and cultural projects
- Disaster relief – earthquake, hurricane
- Sustainable Development projects
- Educational remit with ESD focus – schools and communities
- Global Learning Library



Nicaragua and Climate Change

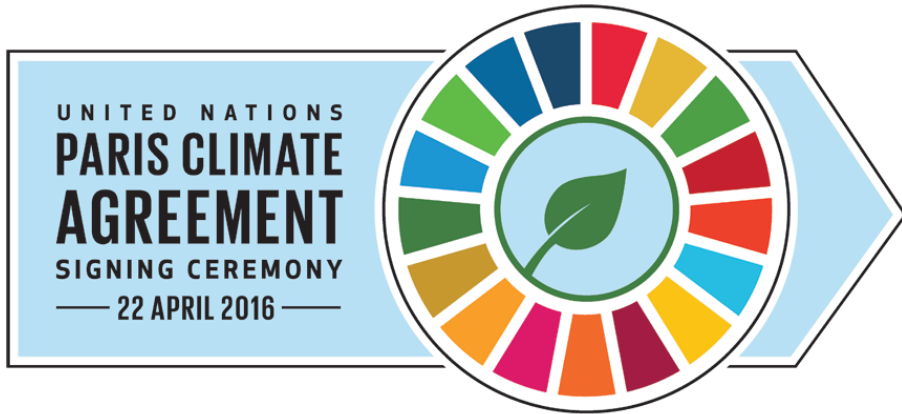
Carbon emissions

- **World** 27bn metric tonnes
- **UK** 600m metric tonnes
- **Costa Rica** 6m metric tonnes
- **Nicaragua** 4m metric tonnes

Despite Nicaragua producing less than 0.03% of global emissions it bears the brunt of climate change



Nicaragua didn't sign the Paris Climate Agreement....



Yet it came **4th on a list of countries most affected** by climate change between 1996 and 2015 (Global Climate Risk Index).

- 2010 **UNDP study predicted 4 major impacts** across Nicaragua if climate change continues at current rate



1. Recurring **drought** in the pacific region
2. Dramatic impact on **agricultural production**.
3. National **food insecurity** particularly in rural population
4. Increase in **migration** from rural to urban areas in search of work

Climate Change Conundrum

1. DROUGHT (and floods)

- 2012–2015 – worst drought in 44 years
- Disappearance of 60% surface water supplies
- Human and economic loss
- Damage to infrastructure and biodiversity



2. LOSS OF AGRICULTURAL PRODUCTION and FOOD INSECURITY

- Insecure water sources due to extreme weather
- Declining productivity for personal consumption (maize, beans, coffee)
- Livestock deaths
- Loss of income and farmers unable to pay back debts



3. RURAL TO URBAN MIGRATION

- Increasing numbers of people migrating to urban areas in search of work and security



4. ENERGY POVERTY

- 50% of population have no electricity
- Electricity prices highest in Central America
- No fossil fuels (imports from Venezuela)
- Firewood is biggest current energy resource



5. DEFORESTATION

- Highest incidence of deforestation in the world
- c40% of country is still forest
- Limited understanding of the connection between deforestation and climate change



- Nicaragua only contributes 0.03% to global emissions
- Average temperature rose from 25°C in 1971 to 26.5°C in 2016.

Climate Change Mitigation

Local Challenges

Deforestation
and loss of
biodiversity



Droughts,
floods,
hurricanes

Energy
Poverty



40%
Agricultural
Economy



Rural - urban
migration



Climate
Change

IMPACT



Sustainable Solutions

Water
Harvesting
and storage



Tree planting and
soil conservation



Renewable
Energy



Organic
Farming



Zero
Hunger



MITIGATION



Small Scale Projects for Climate Change Adaptation

- LMLG collaborates with the **Association for Integrated Community Development**, a small NGO working in rural Masaya
- **Focus on organic agricultural methods to**
 - improve production
 - ensure more sustainable incomes
 - reduce environmental damage
 - encourage community participation and set up micro credit systems
 - Build capacity
- Works with more than 200 families
 - step by step improvements to address multiple needs – water, housing, energy



WATER - The 'Raindrop' Project



- Tanks to store piped and rainwater for subsistence farmers
- Originally to grow crops in dry season, diversify produce, improve family diet and income
- Now **crucial resource** when rains are delayed



AGRICULTURE - Agroselva and Vista Alegre

Extending skills in organic farming

- Horticulture and medicinal plants
- Composting, reforestation, soil and water conservation
- Organic fertilisers and pest control
- Small animal breeding
- Now training young people to encourage them to stay and contribute to rural economy



DEFORESTATION - 'Trees for Life'

- Educational project in Primary school
- Raising awareness of climate change and link with deforestation
- Planting indigenous trees on school grounds
- Involving local community and planting trees in homes



coo|earth
keeping carbon where it belongs

ENERGY - Proyecto Sol and Agro Solar

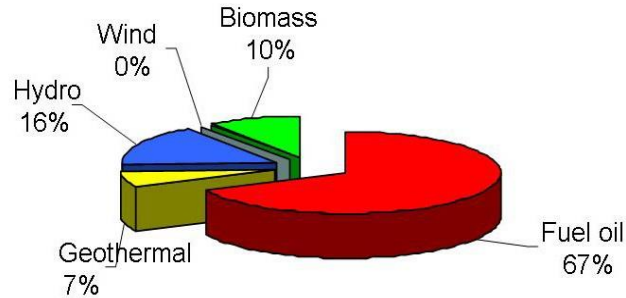


- Nearly half the population lack electricity mainly rural areas remote from the grid
- Illegal and dangerous connections
- 220 families now have basic solar panel installation (light and sockets)
- Solar irrigation scheme
- Before-and-after study funded by Leicester Council and e.on
- **No fossil fuels but enormous renewable sources**



Government policies and investment in renewables

Electricity generation 2007

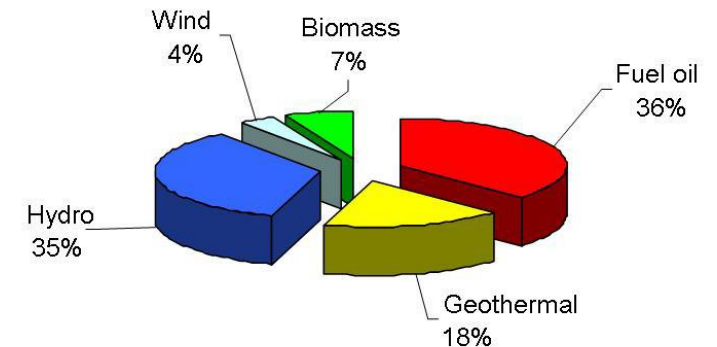


- In 2007, Nicaragua 67% dependent on oil for electricity
 - related problems of energy poverty and security
- Since 2007 aim to reduce dependence on oil
 - Tougher stance with Fenosa (eg on prices and regulation)
 - New electricity plants financed by Venezuela
 - Significant investment in renewables (40% by 2012)

• Energy Plan from 2012

- Positive political will to harness huge renewable energy sources
- Increase wind, hydro and geothermal
- **Solar seen as relevant only in rural areas**

Electricity generation 2012

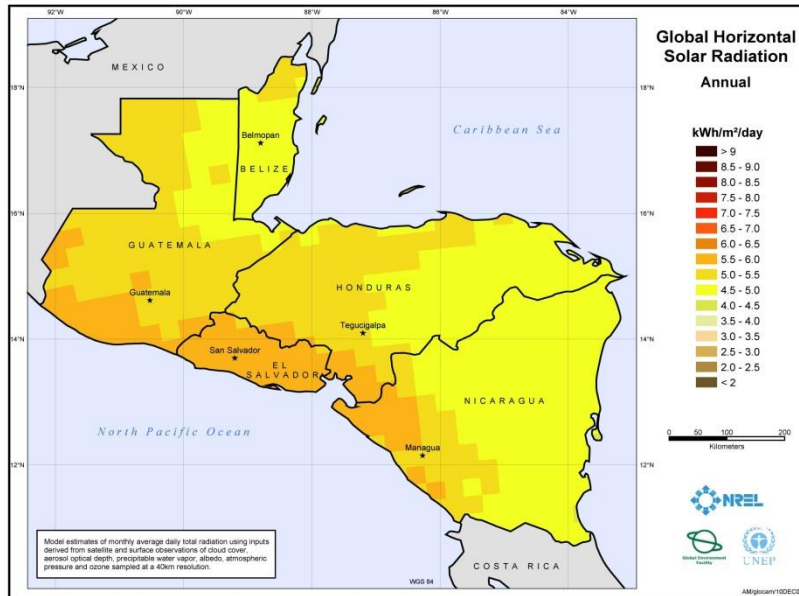


Rapid and significant changes

Harnessing Nicaragua's abundant potential sources of renewable energy

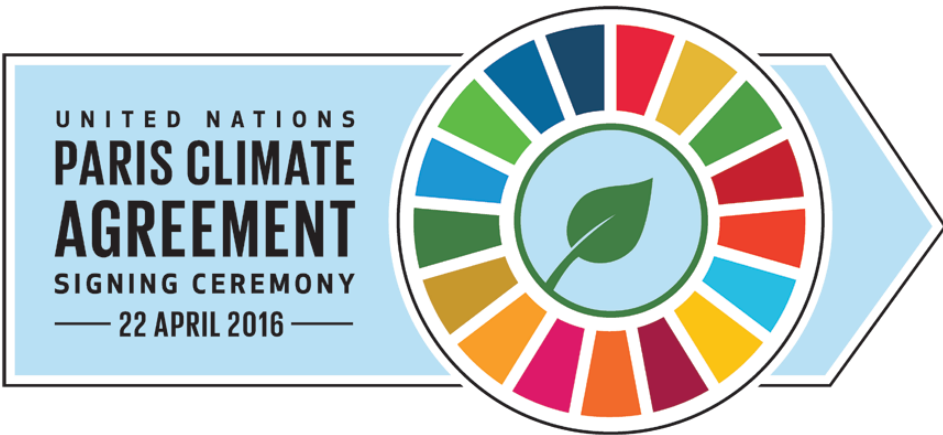
- 2007 – 25% from renewables
- **2014 – 52%**
- **AIMING FOR 90% RENEWABLE ENERGY BY 2020**

- **Solar** is seen as increasingly viable
- **Wind farms** in Rivas (Southern Nicaragua) and on western edge of lake Nicaragua (generate over 40kw (towards national capacity of 600kw)



The government's 'green revolution' has been praised as '**a model for the world on the shift to green energy**' by Luis Alberto Moreno (president of the Inter-American Development Bank)

Nicaragua didn't sign the Paris Climate Agreement.....



- Not because it wants to burn more fossil fuels but **because the country already gets more than half of its energy from renewable resources (90% by 2020).**
- The goal of the Agreement is to restrict temperature increases by 2100 to a maximum of two degrees Celsius more than before the global industrial age - and aim for 1.5C if possible.
- During negotiations, Paul Oquist (Nicaragua's Minister for Public Policy) said
 - there was a total **mismatch** between what the **document said was needed** and **what signatories proposed to do about protecting the climate**
 - he had reservations about the level and **voluntary** commitment made by individual countries in their pledges.
 - much **more action** is required.



The Paris Agreement did not go far enough

“If Nicaragua, the second poorest country in the Americas can make these advances, surely the West and the rest of the large emitters can begin increasing their levels of ambition now, in order to save us from a 3C global average temperature rise.”

Dr Paul Oquist Nicaraguan Minister for Public Policy