



Enabling Environment and Policy Framework for Climate Finance: The Case of Nicaragua

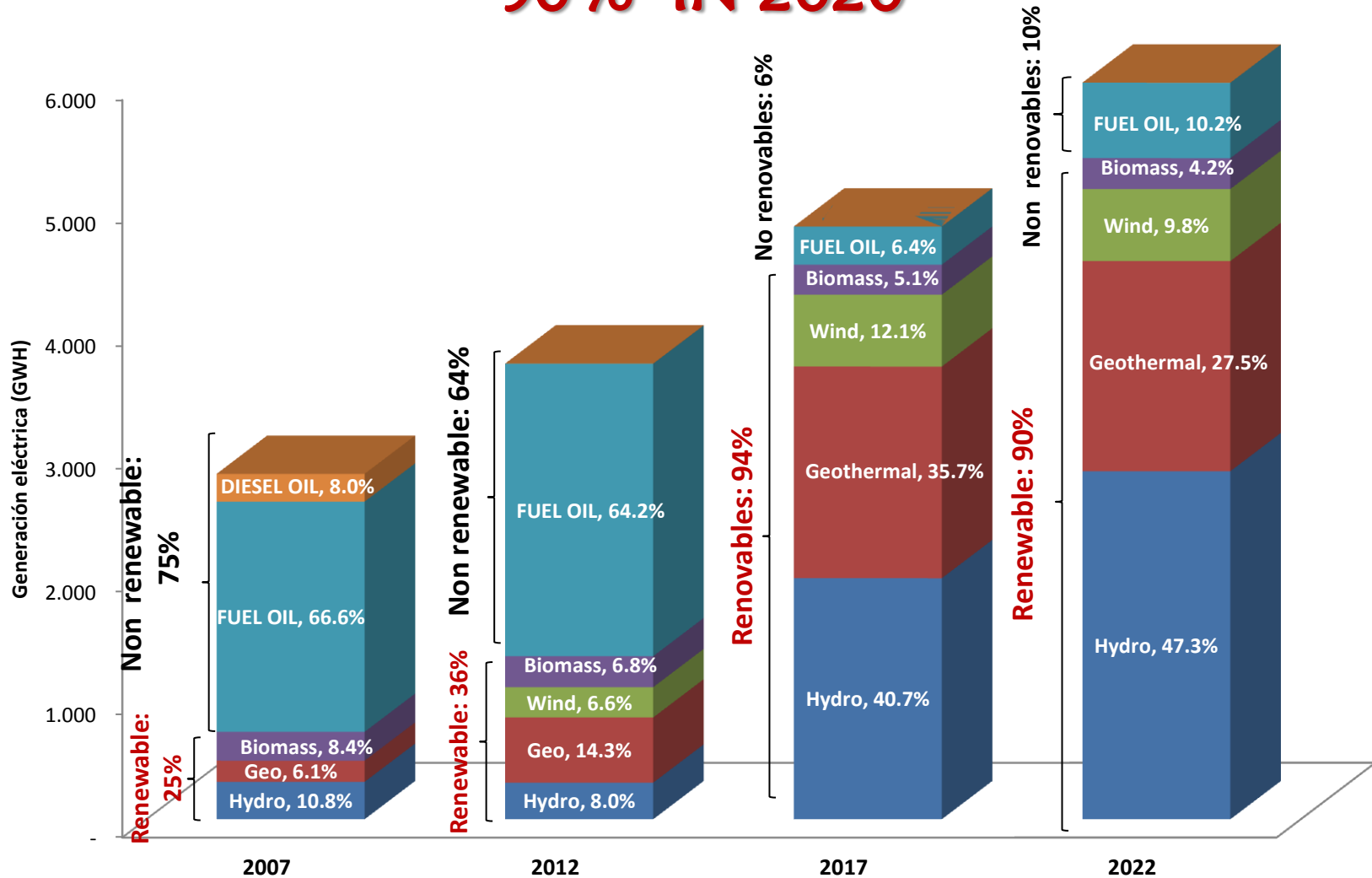
Dr. Paul Oquist

Member of the Standing Committee of Climate Finance
for Latin America and the Caribbean (Nicaragua)

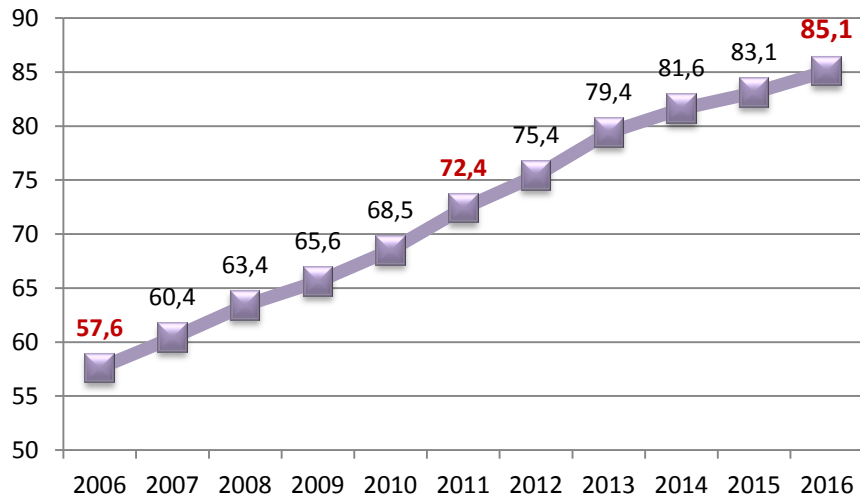
Minister-Private Secretary for National Policy,
Presidency of the Republic of Nicaragua

Incheon, Republic of Korea, 11 September, 2013

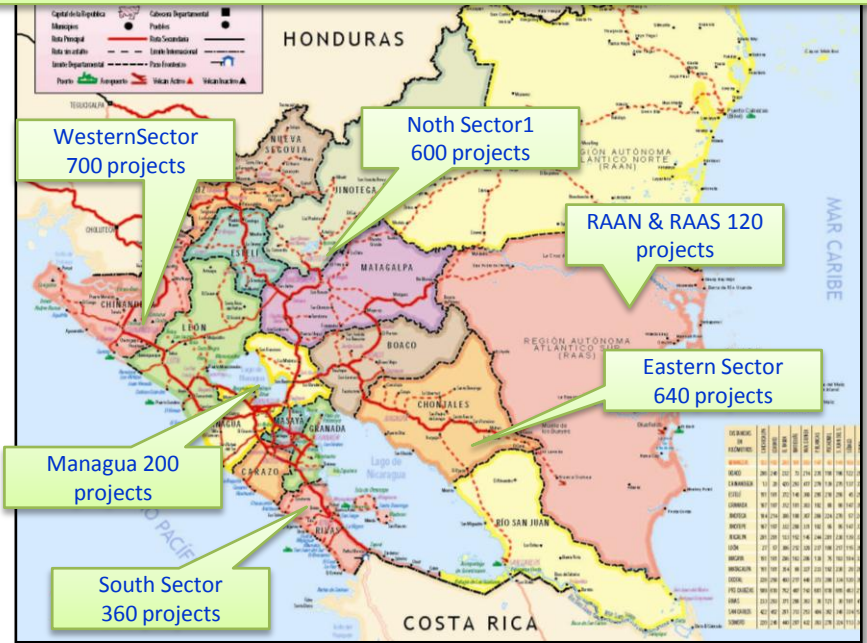
EXPANSION AND TRANSFORMATION OF THE ENERGY MATRIX: 25% RENEWABLE IN 2007 TO 90% IN 2020



Increase in the coverage of electricity service in Nicaragua (%)

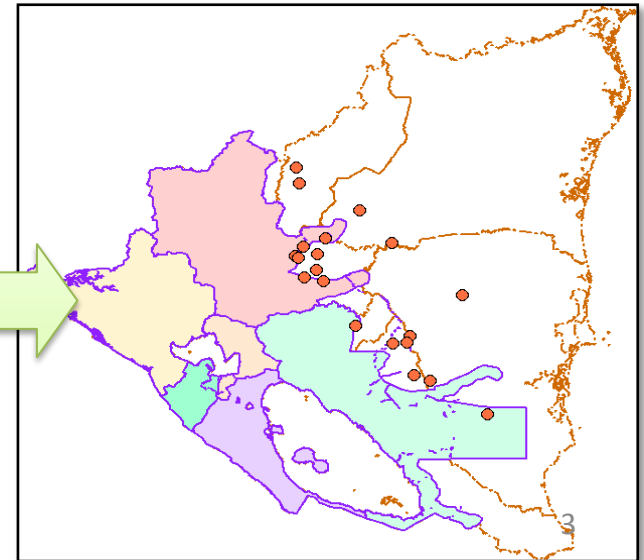


Rural Electrification by Extension of Networks



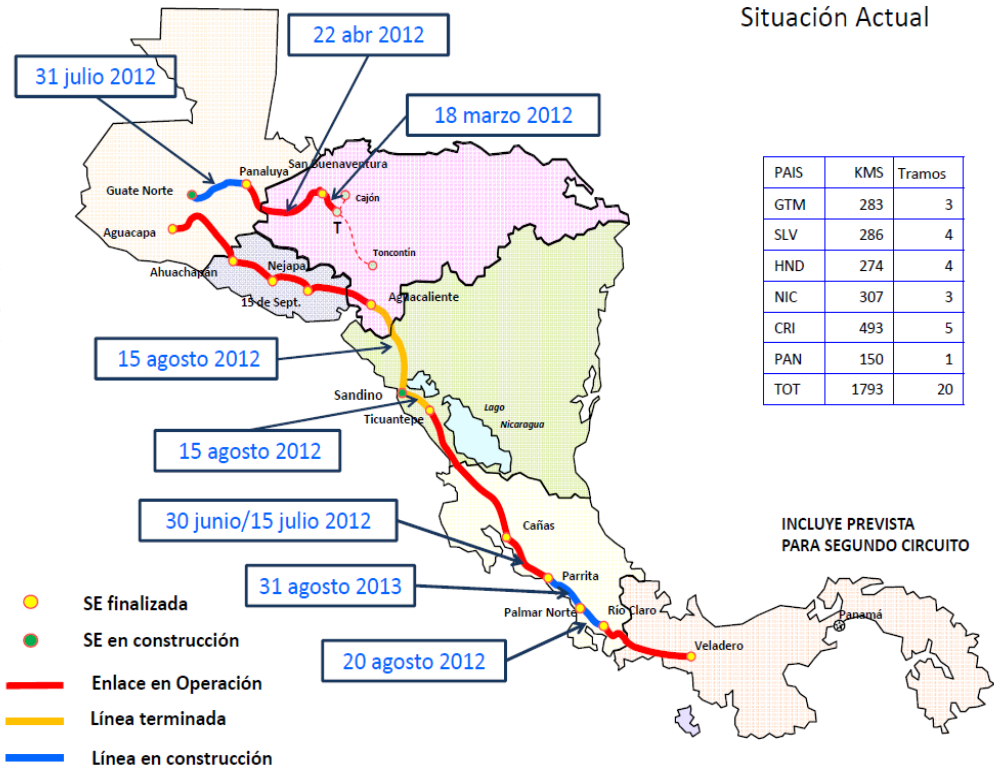
NATIONAL PRIORITIZED RESEARCH PROJECT ON LOW COST RENEWABLE ENERGY FOR ISOLATED COMMUNITIES AND TOWNS

Sites in studies for **Small Hydroelectric Plants (SHP)**



SIEPAC PROJECT

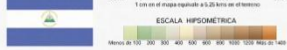
DESCRIPCION DEL PROYECTO LINEA SIEPAC PRIMER SISTEMA DE TRANSMISION REGIONAL



NICARAGUA'S ENERGY PROJECTS

MAPA DE LA REPÚBLICA DE NICARAGUA

ESCALA 1 : 525,000



GEOHERMAL

San Jacinto-Tizate (72MW)
Casita-San Cristóbal
(35MW)
(107MW; US\$ 585.59 mill)

SOLAR PANELS MICRO AND SMALL HYDROELECTRIC PROJECTS FOR ISOLATED AREAS

**TUMARÍN HYDROELECTRIC
PLANT, RAAS
253 MW; US\$ 1,100 Billion
(2018)**

San Jacinto-Tizate



**Solar Project in La
Trinidad, Diriamba**



**Eolo (Rivas) (44MW,
US\$105.9 mill)**
**Blue Power (Rivas)
(40MW, US\$110mill)**
**ALBA Rivas (Rivas)
(40MW, US\$87 mill)**
(124 MW; US\$ 302.9 million)



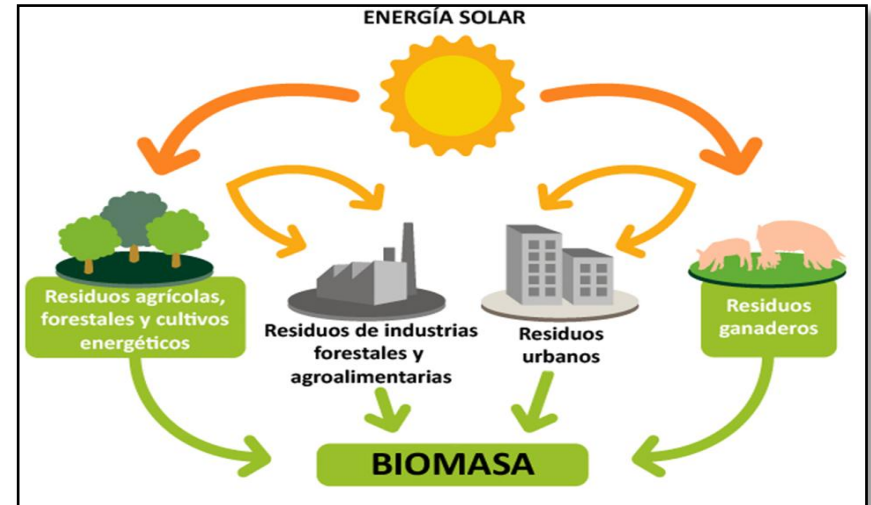
Other Hydroelectric Projects:

Larreynaga(17.2 MW, US67.9 mill)
Hydropantasma (12MW, US\$37.4 mill)
El Diamante (5MW, US\$13.4 mill)
(34MW, US\$118.7 million)



BIOMASS

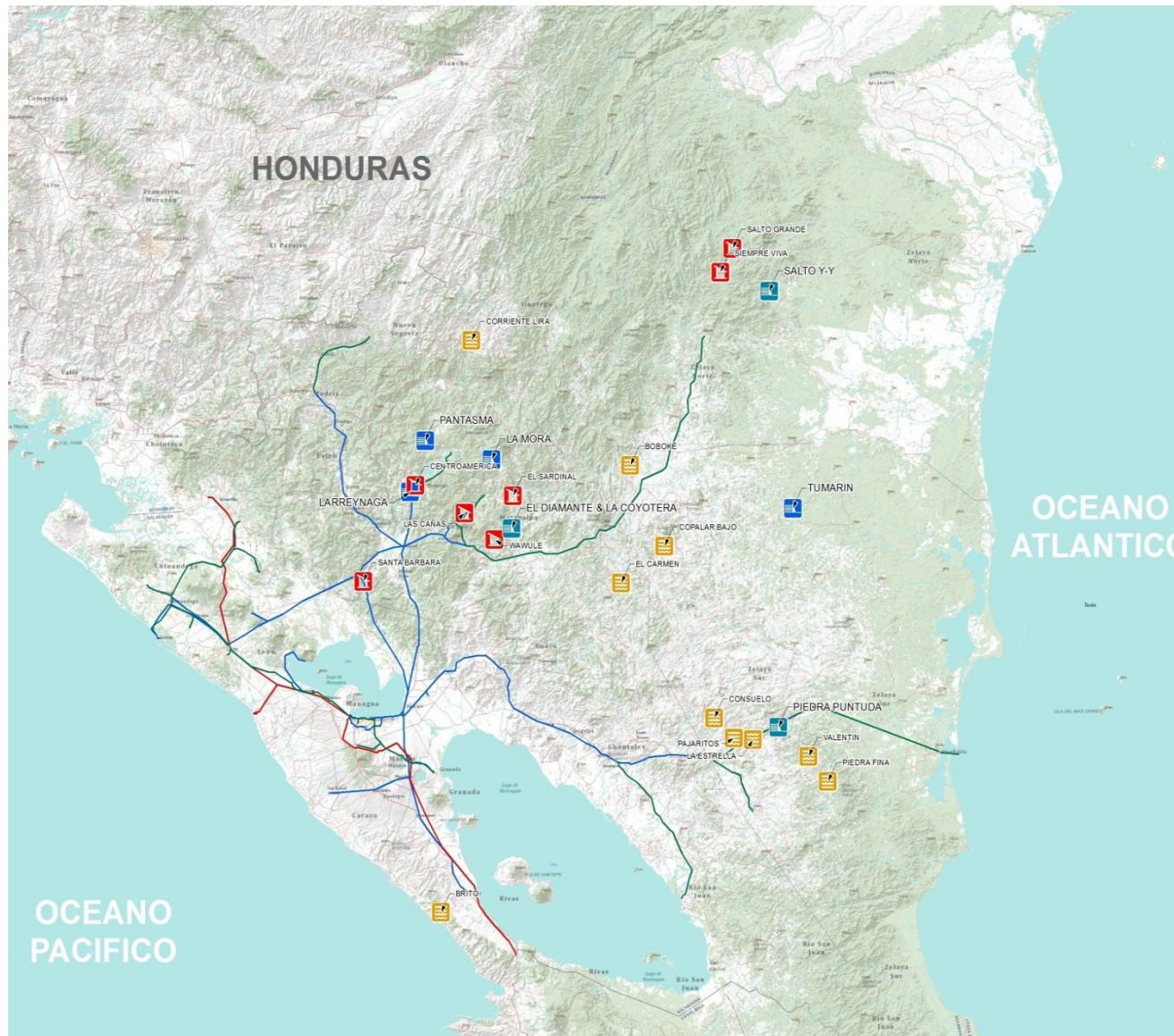
- Projects based on agribusiness residue s and urban waste:
Electricity, ethanol,
 - Sugarcane
 - Palm Oil
 - Urban waste for energy and diesel



*in season

- **Ingenio Nicaragua Sugar Estates** (Current): 30 MW
 - **Ingenio Monterrosa** (Current): 30MW
 - **CASUR –Benjamín Zeledón Sugarmill** (2015): 24MW; US\$24.8 millions
 - **Montelimar Sugarmill** (2016): 30MW; US\$27.8 millions
- 2012-2016: 54MW* y US\$52.6 Millones**
TOTAL: 114 MW

INVESTMENT OPPORTUNITIES IN HYDROPOWER



Centrales en Operación

- Santa Bárbara
- Centroamérica
- Las Cañas
- El Sardinal
- El Wawule
- Siempre Vivas
- Salto Grande



Proyectos en Construcción

- Pantasma
- Larreynaga
- Tumarín



Proyectos con Licencia

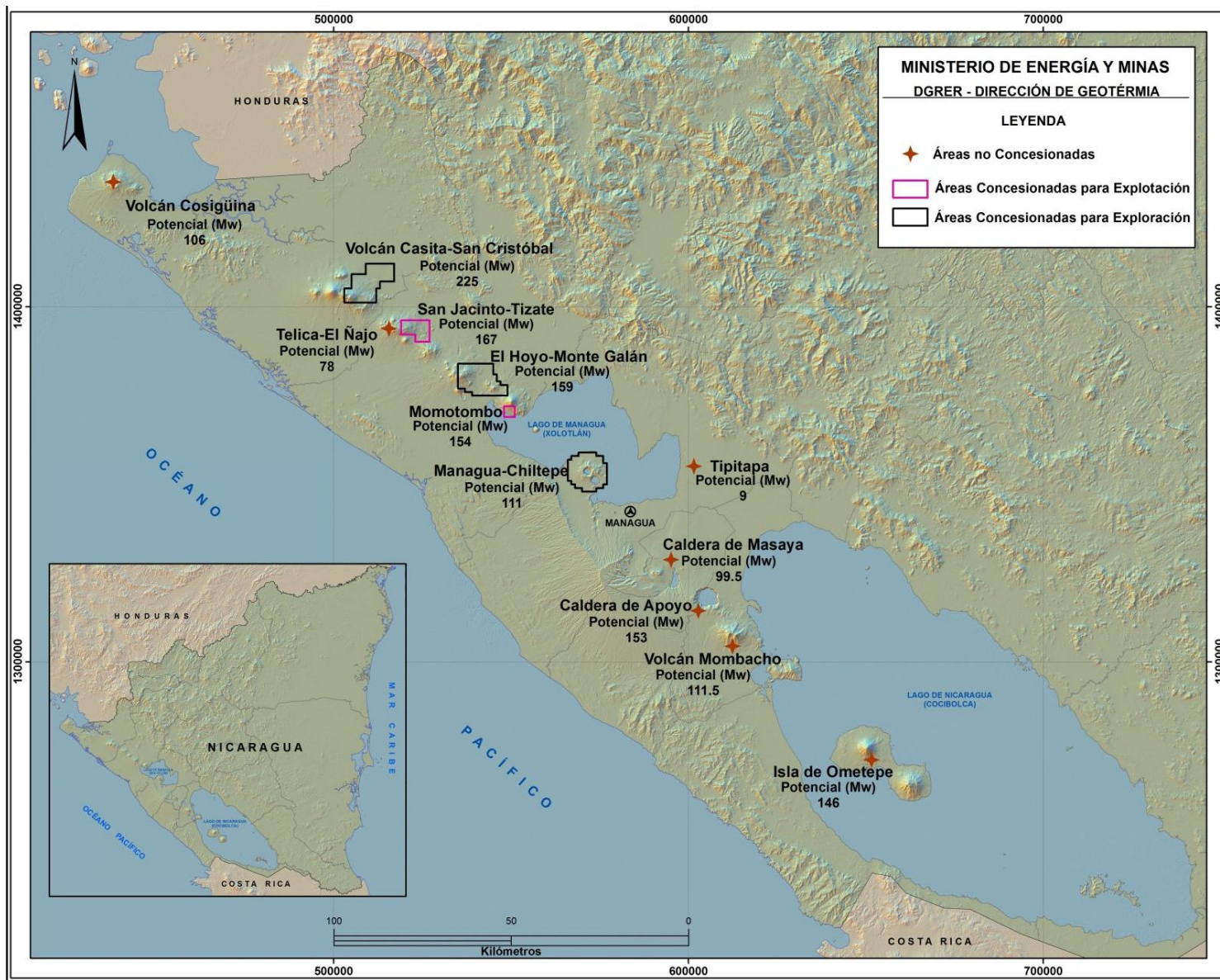
- Salto Y-Y
- Piedra Puntuda
- El Diamante



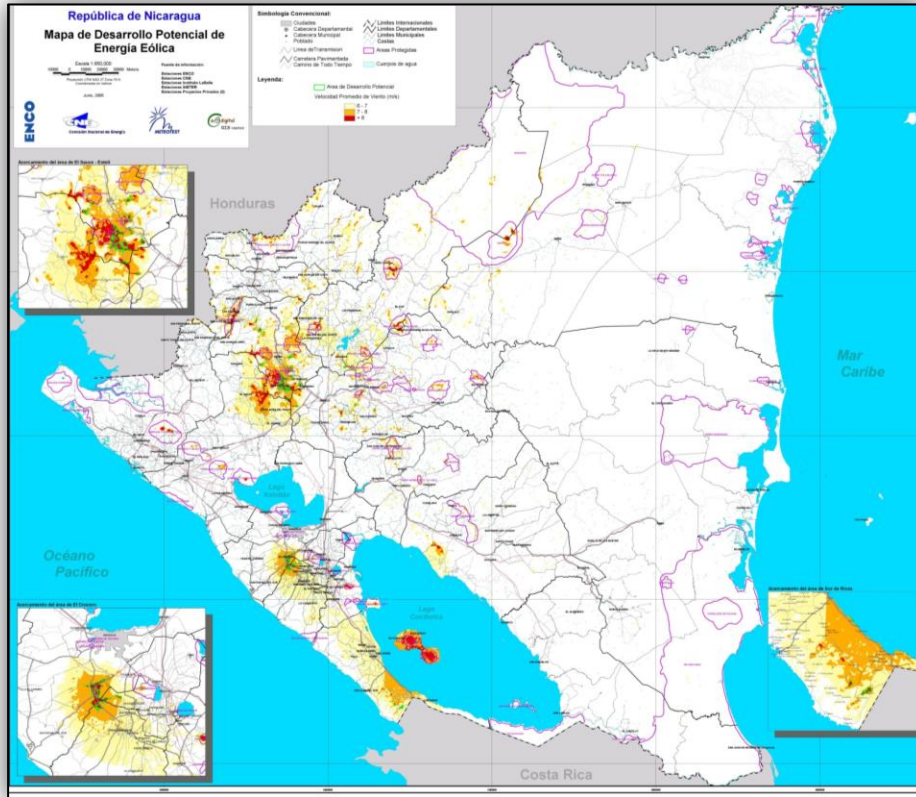
Proyectos Candidatos

- Boboké
- Copalar Bajo
- Consuelo
- Pajaritos
- La Estrella
- Valentín
- Piedra Fina
- Brito
- Corriente Lira

GEOTHERMAL POTENTIAL ESTIMATED AT 1,500 TO 2,000 MW



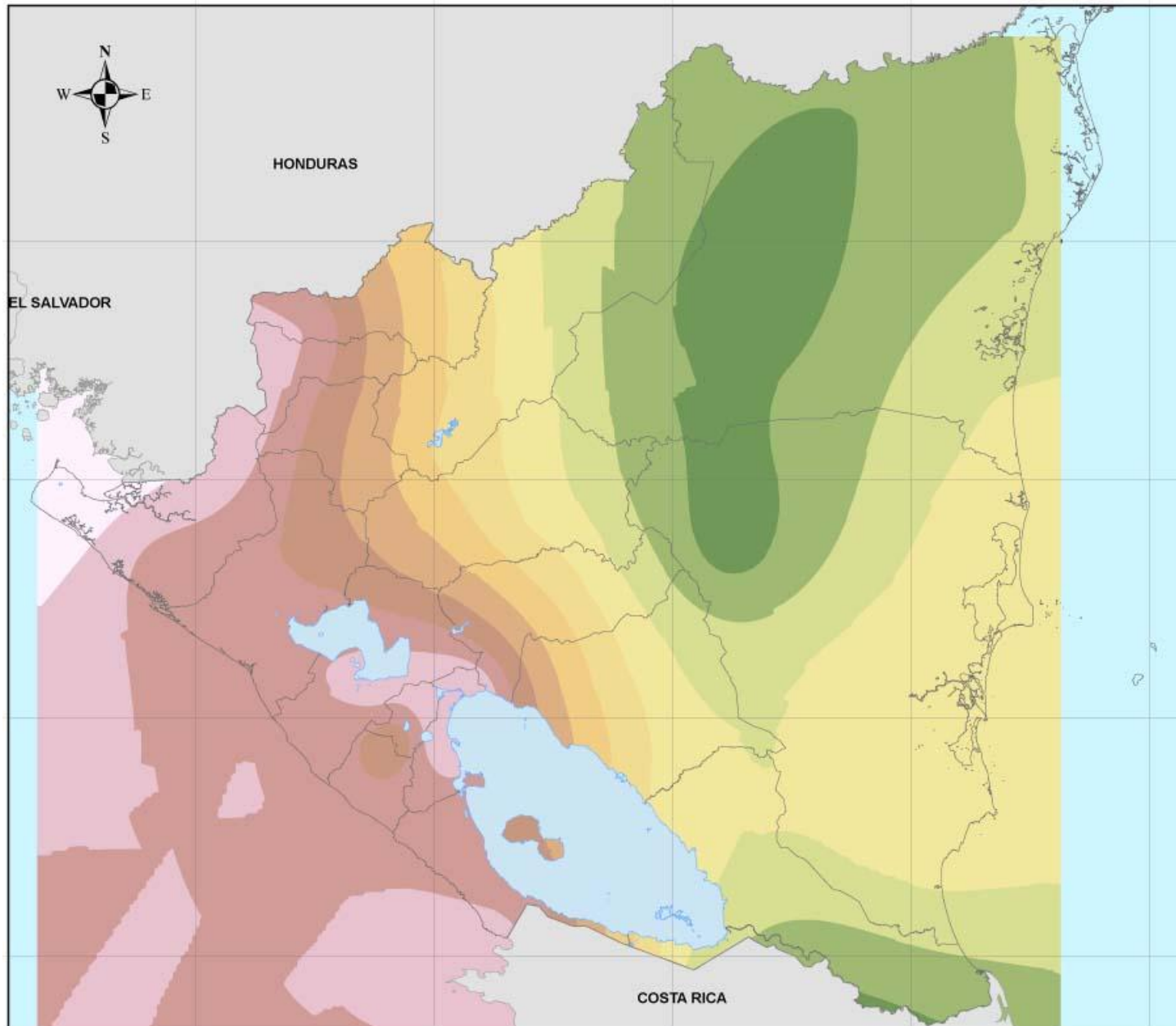
WIND POTENTIAL IN NICARAGUA



INVESTMENT OPPORTUNITIES IN WIND PROJECTS



MAP OF SOLAR RADIATION IN NICARAGUA



MINISTERIO DE ENERGIA Y MINAS

RADIACION GLOBAL (Wh/m² día) Año de Referencia

Radiación Global

Dark Green	4,098.382813 - 4,278.580519
Green	4,278.58052 - 4,396.641085
Light Green	4,396.641086 - 4,527.129079
Yellow-Green	4,527.12908 - 4,663.830787
Yellow	4,663.830788 - 4,819.173637
Orange	4,819.173638 - 4,980.730201
Light Orange	4,980.730202 - 5,129.859337
Brown	5,129.859338 - 5,254.133617
Dark Red	5,254.133618 - 5,347.339327
Light Red	5,347.339328 - 5,490.254749
White	5,490.25475 - 5,682.879883

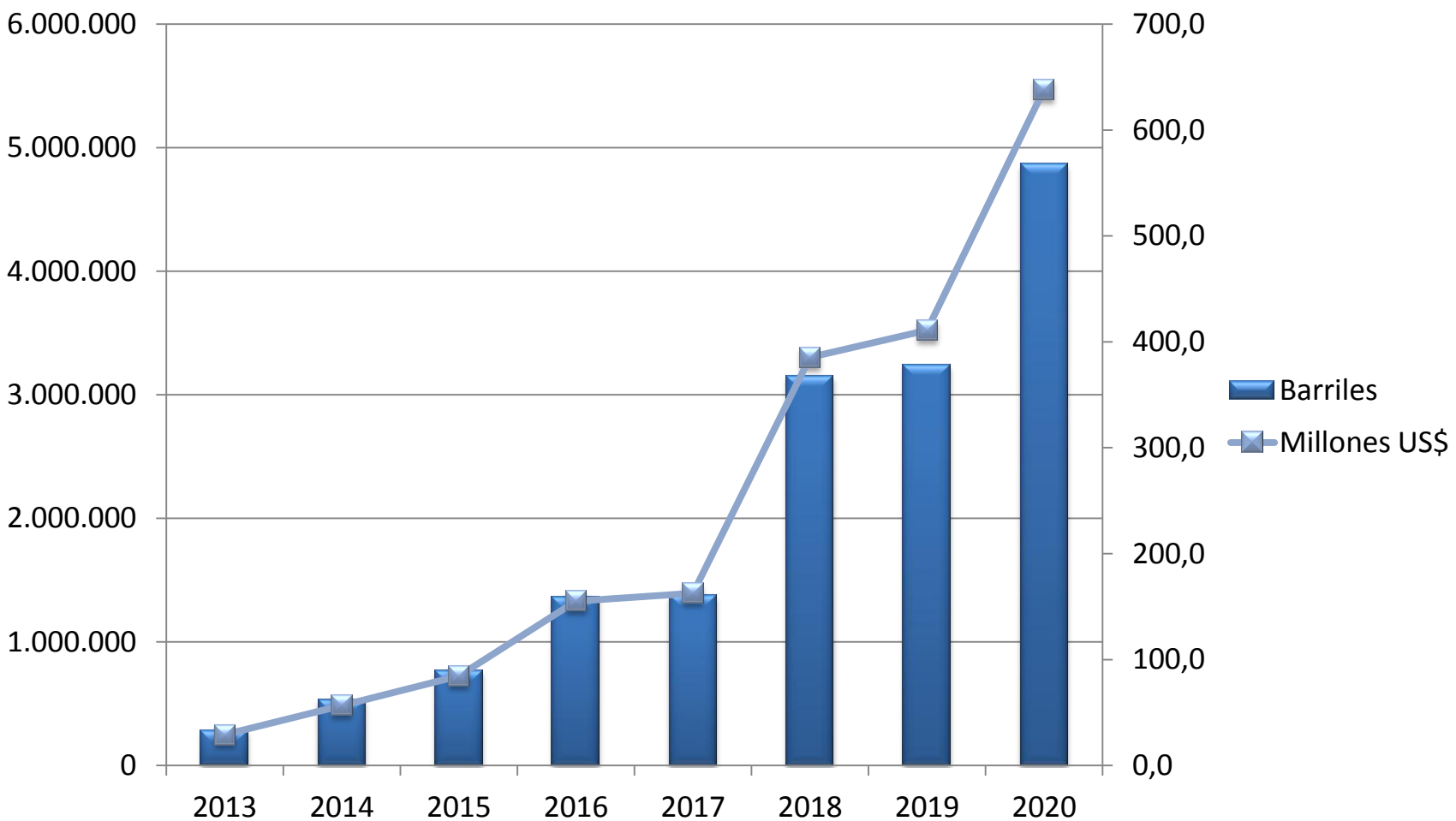
UBICACION DE ESTACIONES ACTINOMETRICAS DE MEDICION



50 25 0 50 Kilometro

Fuente: Mapas Solares de Nicaragua
Estación Actinometrica: Vadstena
Universidad Centroamericana (U.C.A)
Julio López de La Fuente SJ

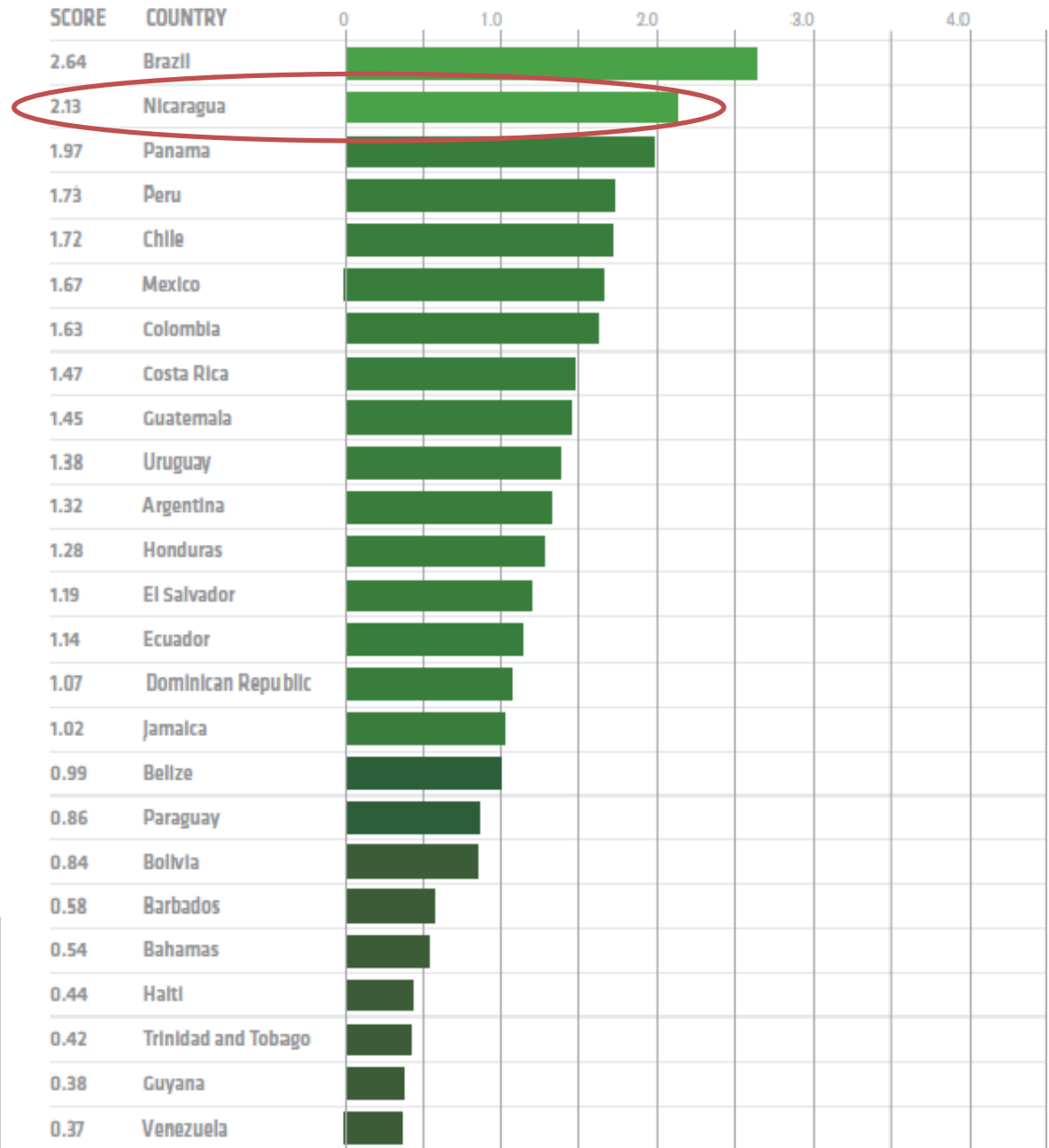
SAVING BY REDUCING OIL IMPORTS DUE TO RENEWABLE ENERGY PROJECTS 2013-2020



OVERALL CLIMATESCOPE SCORES

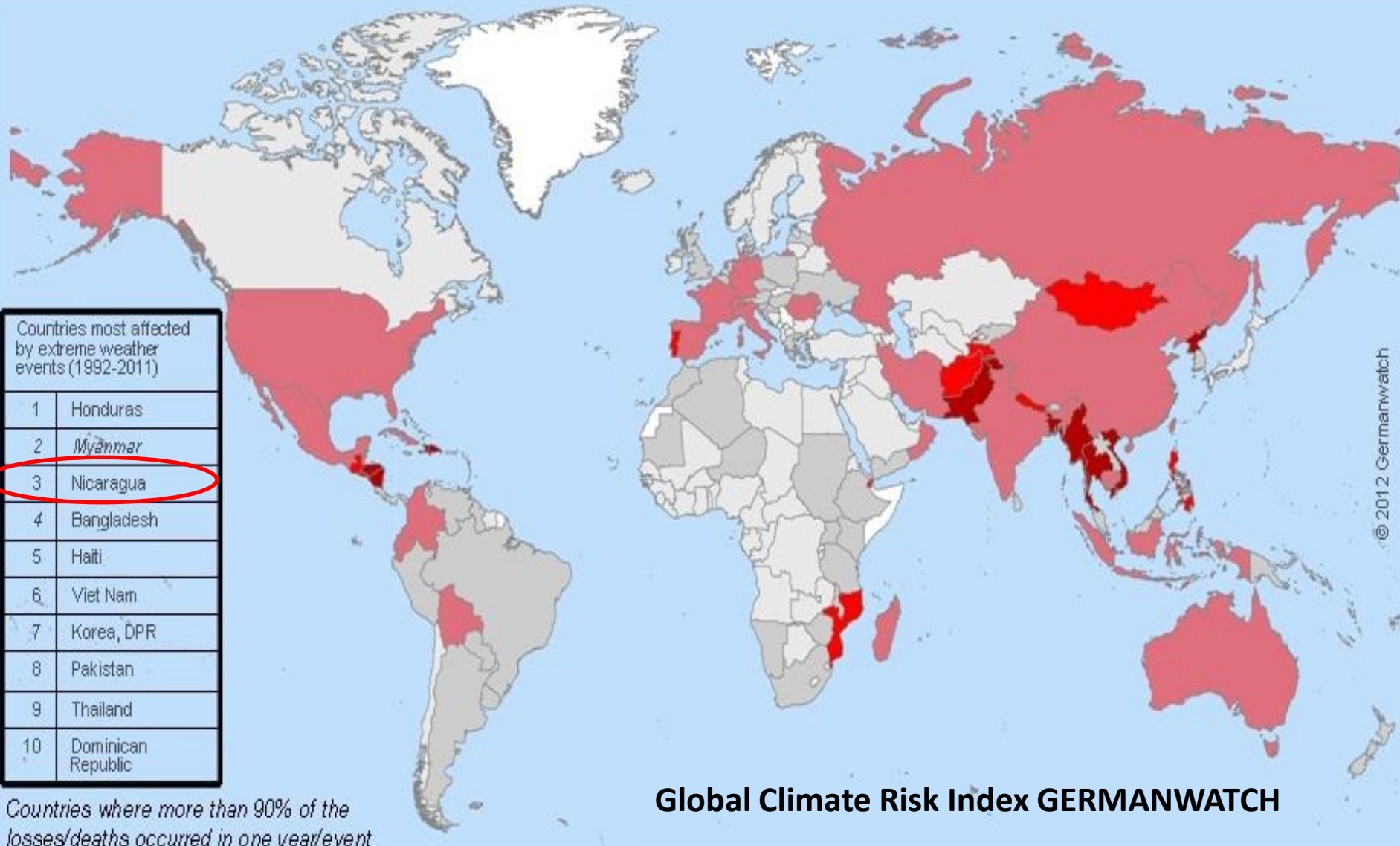
Ranking and Scores by Country

- Brasil presenta la puntuación más alta con 2.64.
- Nicaragua ocupa el segundo lugar con una puntuación total 2.13, en gran medida debido a que encabezó la lista en términos de inversiones en energía limpia y disponibilidad de microcréditos verdes.
- Panamá fue tercero con una marca de 1,97, gracias a un importante esfuerzo en la gestión de las emisiones de gases de efecto invernadero y por tener un marco facilitador acogedor.



Colors show range for overall score

0.0-1.00 1.01-2.00 2.01-3.00 3.01-4.00 4.01-5.00



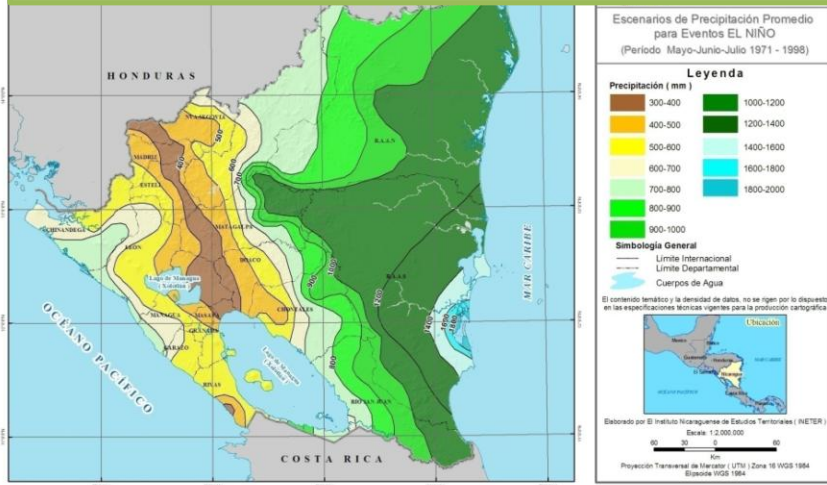
© 2012 Germanwatch

Climate Risk Index: Ranking 1992 – 2011



CLIMATE CHANGE EFFECTS

EL NIÑO: AVERAGE PRECIPITATION (May-July)



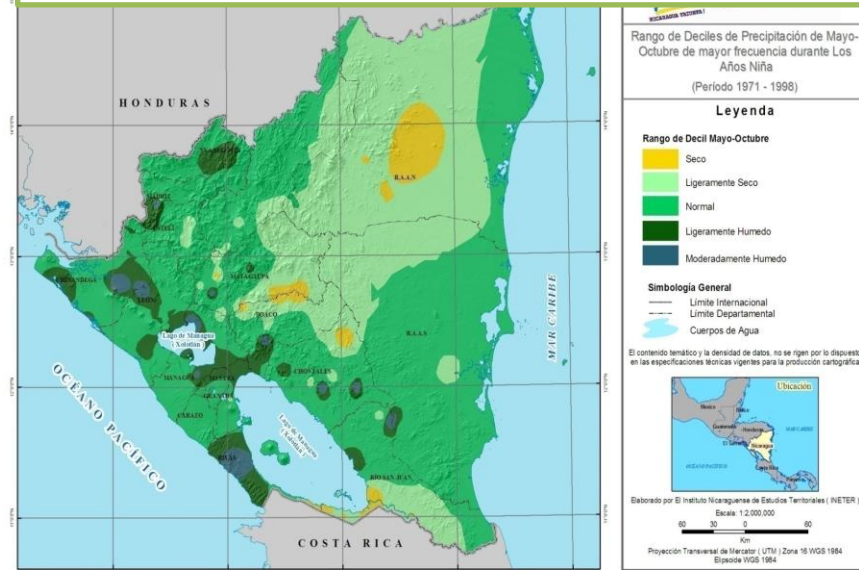
LOSSES 2005-2012

- 560,000 Mz. of basic grains
- 9% of the area planted
- US\$ 206.3 million average annual loss
- 3.52 percentage points of GDP

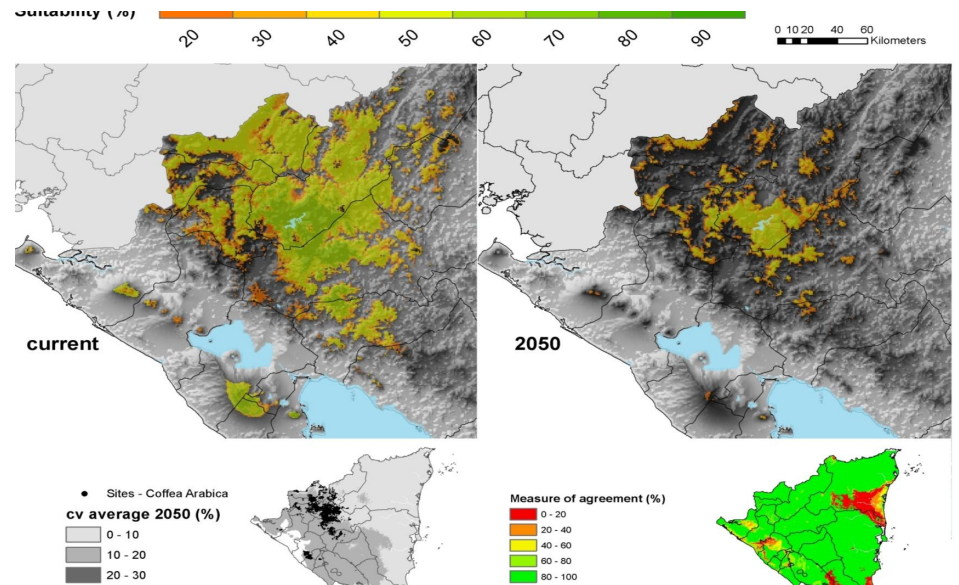
HURRICANES



LA NIÑA: RANGE OF PRECIPITATION DECILE (May-October)



CHANGE IN THE SUITABILITY OF COFFEE FOR THE YEAR 2050



Suitability (%)



20

30

40

50

60

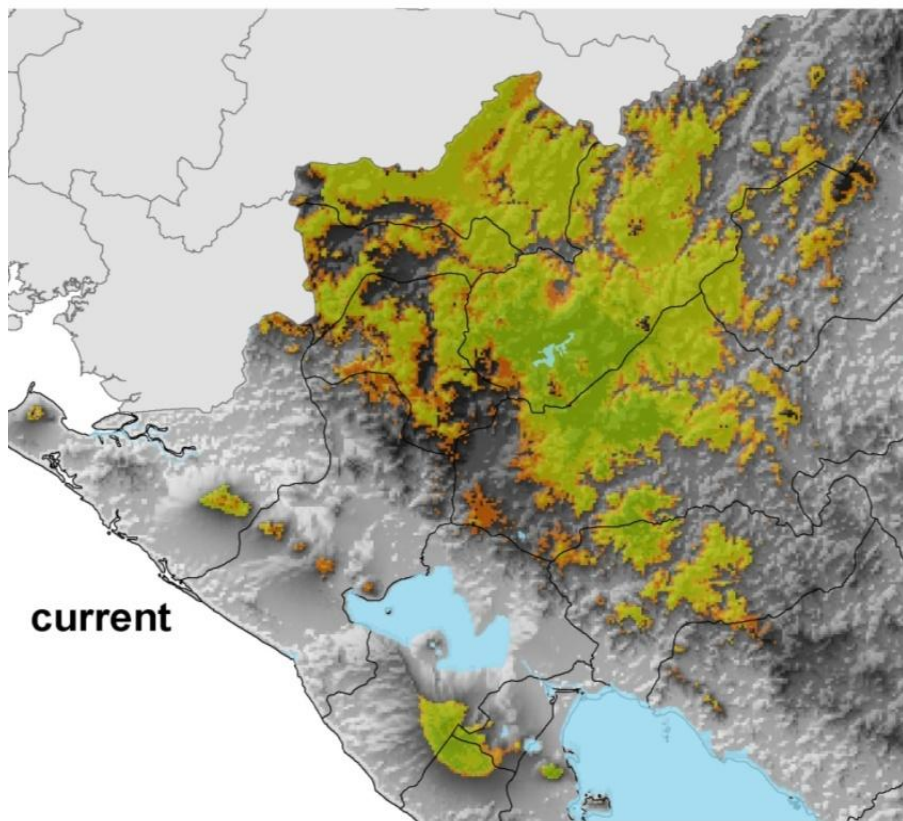
70

80

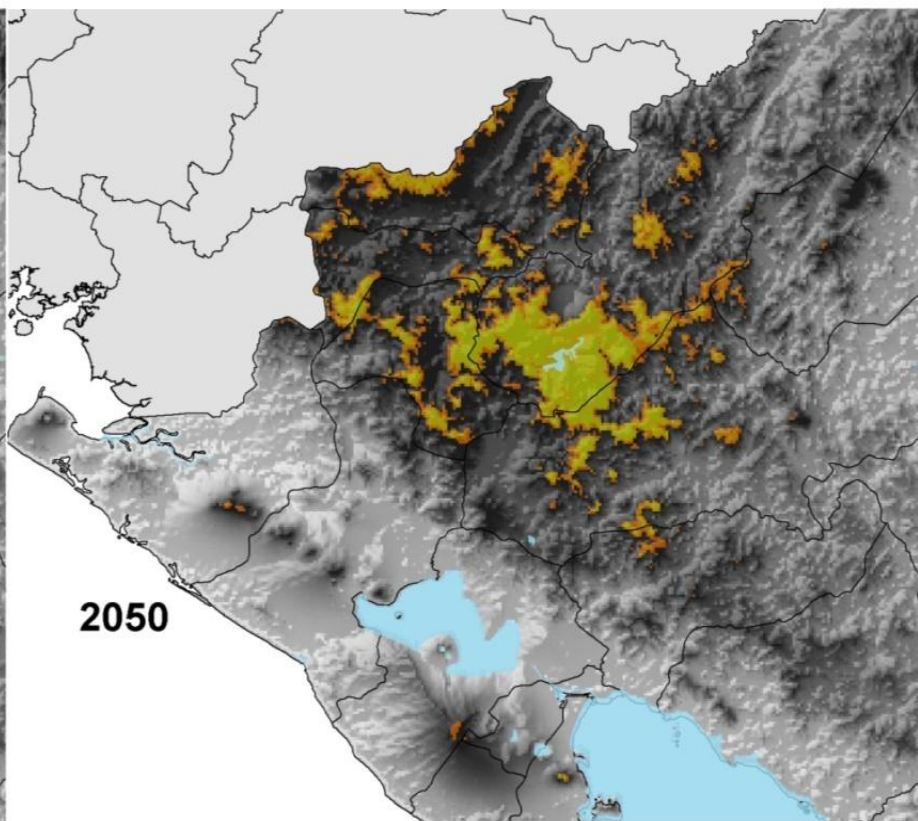
90

0 10 20 40 60 Kilometers

N



current



2050

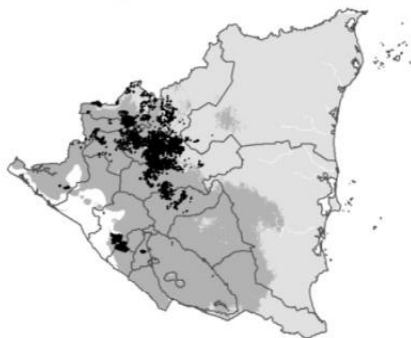
● Sites - Coffea Arabica

cv average 2050 (%)

0 - 10

10 - 20

20 - 30



Measure of agreement (%)

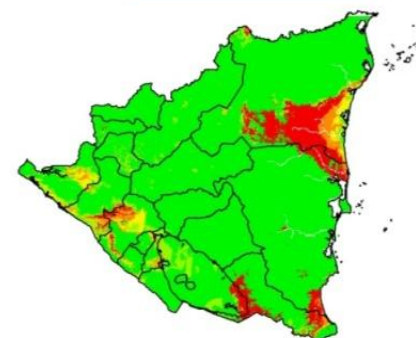
0 - 20

20 - 40

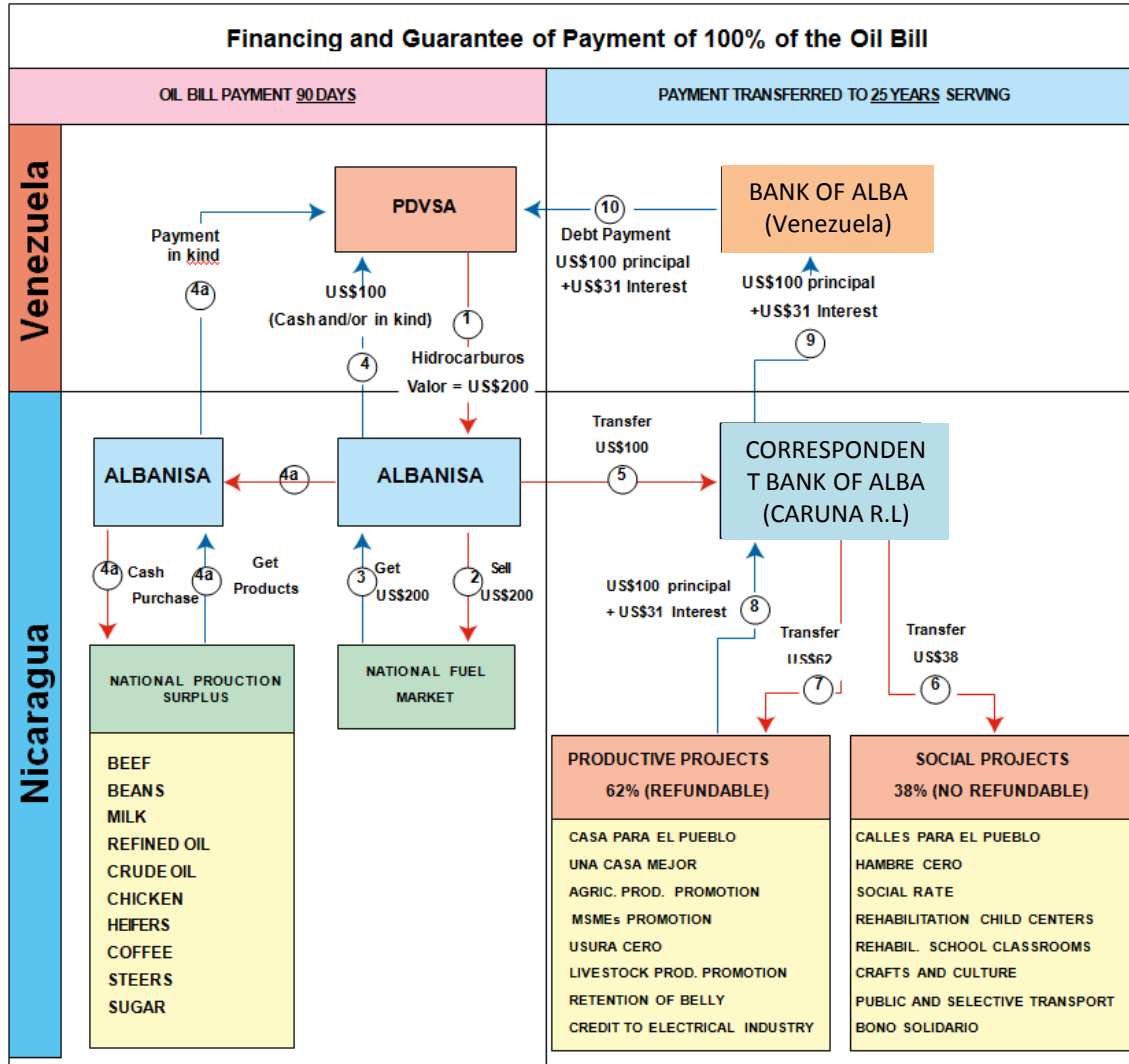
40 - 60

60 - 80

80 - 100



PETROCARIBE MECHANISM



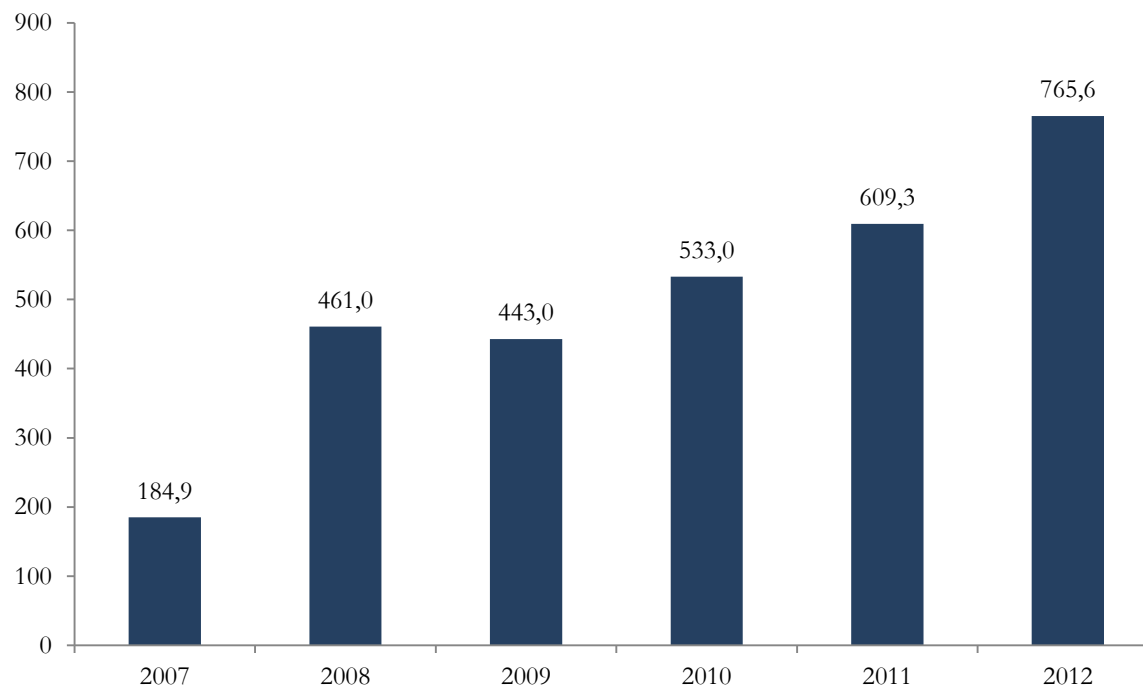
- ✓ Nicaragua has a guaranteed supply 100% of its oil needs, with 25 years deferred payment with two-year grace period and 2% interest than half of the oil bill.
- ✓ With half deferred funds invested 62% in socio-productive projects that stimulate the economy and allow the returns to amortize payments in the form and time.
- ✓ The other 38% is used to fund social projects not returnable, fully or partially.

PETROCARIBE ACCORD FINANCING

PETROCARIBE/ALBA-TCP (millions de dollars)

	2007	2008	2009	2010	2011	2012
Annual	184.9	461.0	443.0	533.0	609.3	765.6
Acumulated	184.9	645.9	1,088.9	1,621.9	2,231.2	2,996.8

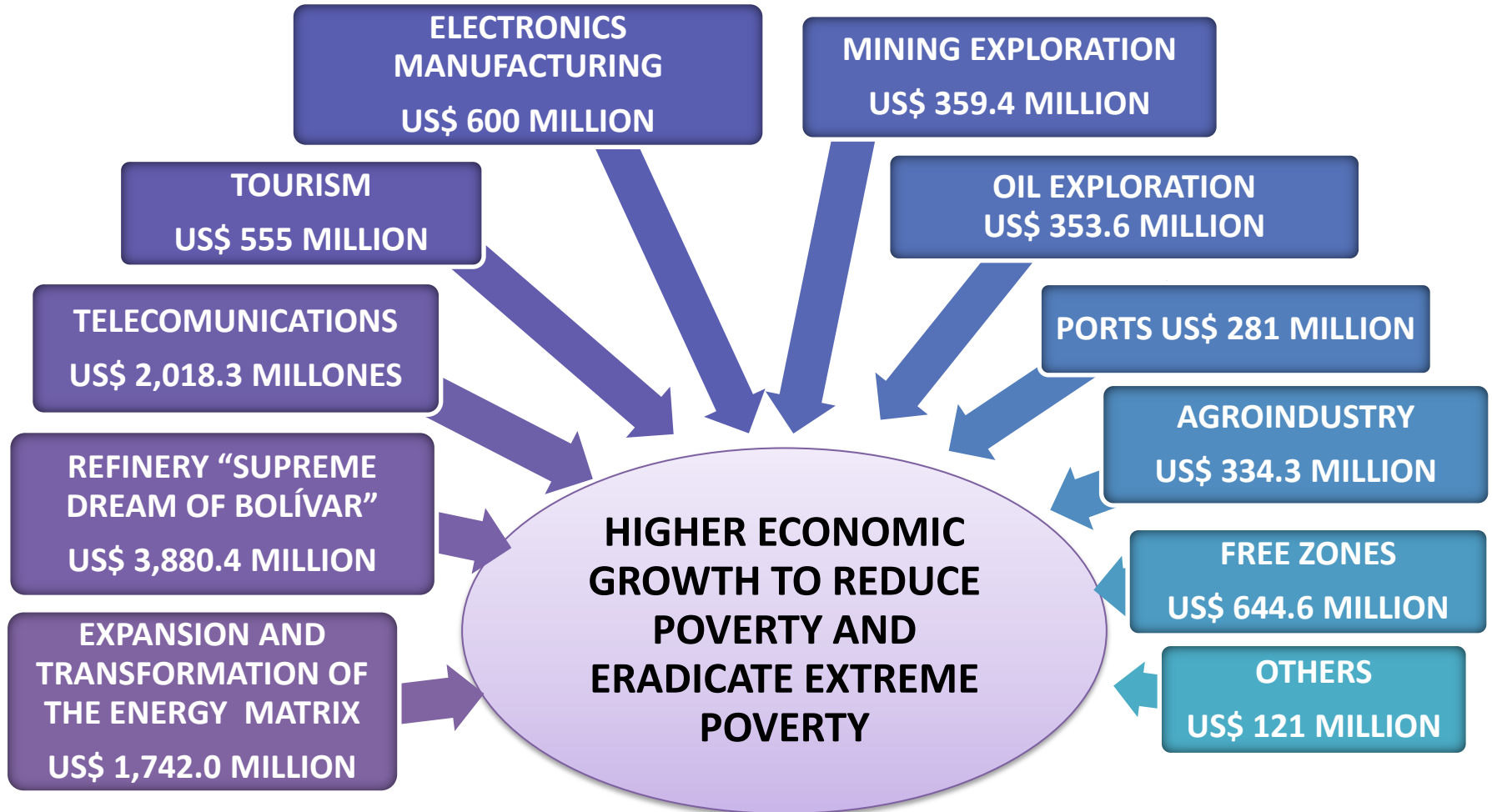
PETROCARIBE/ALBA-TCP OIL ACCORDS (millions USD)



Fuente: BCN

INVESTMENT PORTAFOLIO

US\$ 10.9 BILLION IN 2012-2016



THE GRAND INTEROCEANIC CANAL OF NICARAGUA US\$ 40 BILLION:

Wet and Dry Canal, Airport, Railway, Free Zones in the Caribbean and Pacific, and Pipeline

CANAL ROUTES



Gobierno de Reconciliación y Unidad Nacional
¡El Pueblo, Presidante!
NICARAGUA TRIUNFA!

ALTERNATIVAS PARA EL GRAN CANAL INTEROCÉANICO Y LÍNEA FERREA EN NICARAGUA

LEYENDA

- Ruta Alternativa 1
- Ruta Alternativa 2
- Ruta Alternativa 3
- Ruta Alternativa 4
- Ruta Alternativa 5
- - - Ruta Alternativa 6
- Ferrocarril
- Límite Internacional
- Límite Departamental
- Red Vial
- Cuerpos de Agua
- Cabecera Departamental

INSTITUTO NICARAGÜENSE DE ESTUDIOS TERRITORIALES

Preparado por el Instituto Nicaragüense de Estudios Territoriales (INETER).
Compilado por métodos digitales en Marzo 2012. Managua, Nicaragua.

ESCALA 1:2,000,000

0 50 100 Km
1 cm en el mapa equivale a 20 km en el terreno

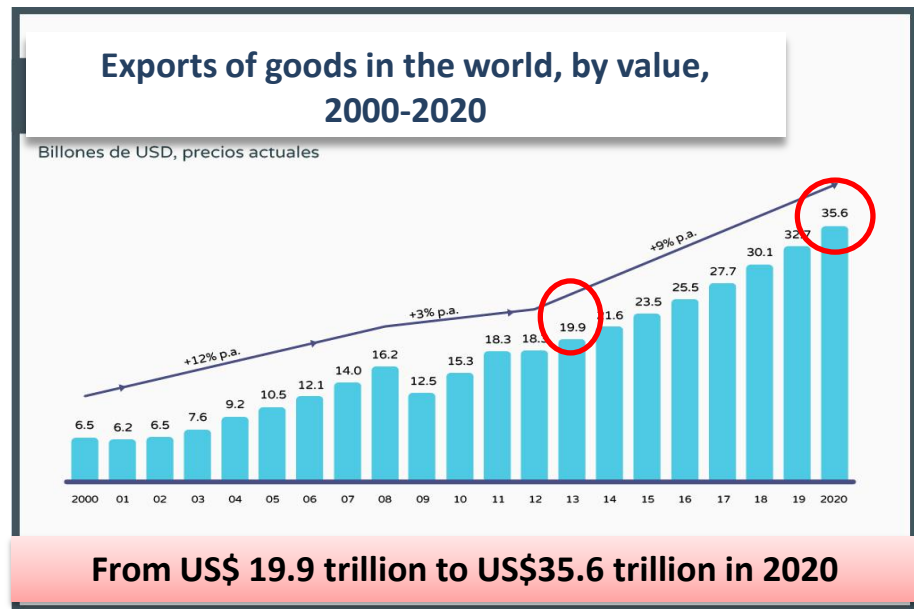
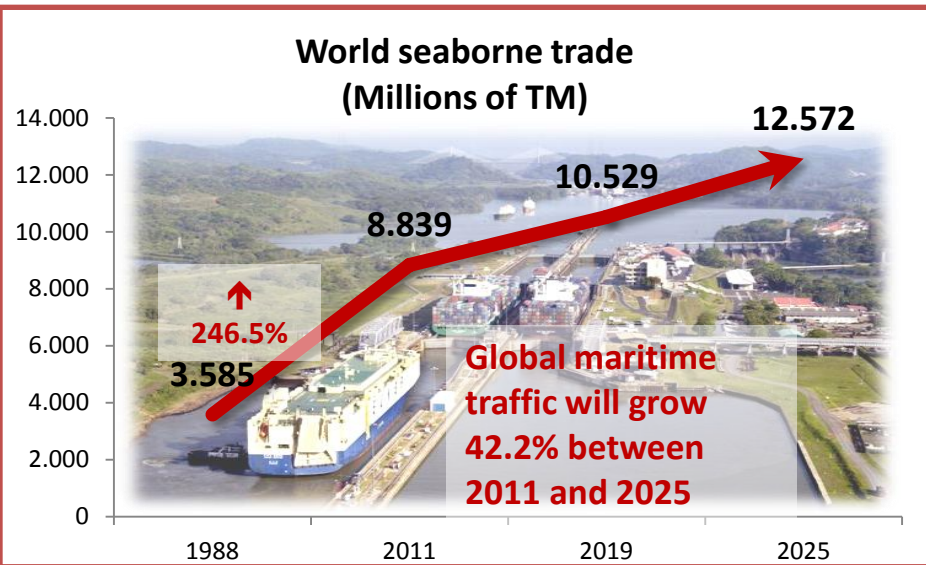
ELIPSOIDE WGS84
PROYECCIÓN TRANSVERSA DE MERCATOR
DATO HORIZONTAL WGS84
IMPRESO POR INETER, Marzo de 2012

Fuente: Secretaría Privada del Poder Ciudadano para Políticas Nacionales.
El contenido temático y la densidad de datos, no se rigen por lo dispuesto en las especificaciones técnicas vigentes para la producción cartográfica.

Wet and dry Canal, Airport, Railway, Free Zones in the Caribbean and Pacific, and Pipeline

THE WORLD NEEDS A LARGER CANAL

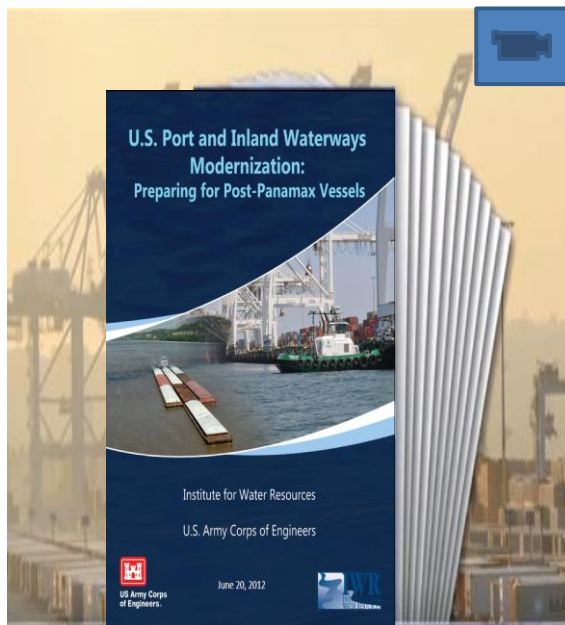
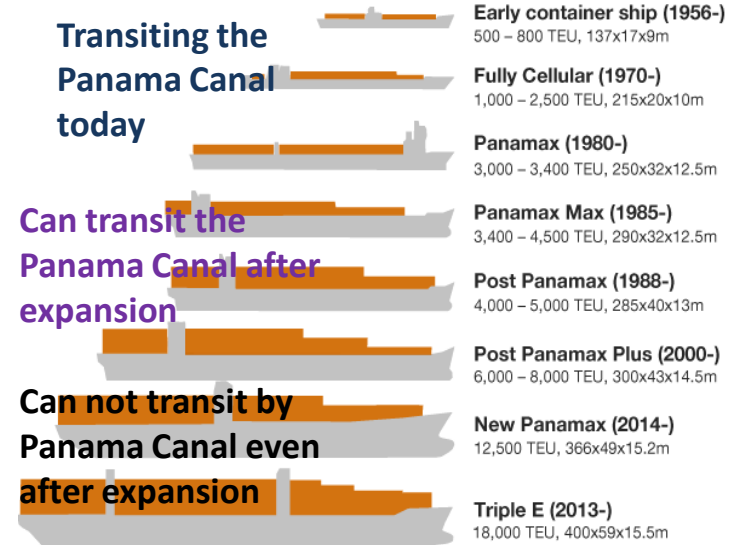
TRIPLE E TYPE SHIPS DOMINATE WORLD SEABORNE TRADE



Source: HKND-Group.com

Evolution of container ships

TEU: twenty-foot equivalent units, length x width x depth below water in metres



By 2030 post-Panamax vessels could represent 62% of the total TEU capacity of the container vessel fleet, 30% of all vessels and 60-70% of world trade

Vessels of 10,000 TEUs and over accounted for 48 percent of the order book as of October 2011. It is evident that large ships are displacing smaller ships in all trade routes due to cost efficiencies of larger ships

US Army Corps of Engineers, 2012

Adapted with permission from The Geography of Transport Systems, Jean-Paul Rodrigue

BUQUES DE CONTENEDORES DEL TIPO MAERSK TRIPLE E

- 400 metros de largo , 59 metros de ancho y 73 metros de altura
- Calado demasiado profundo para canal de Panamá

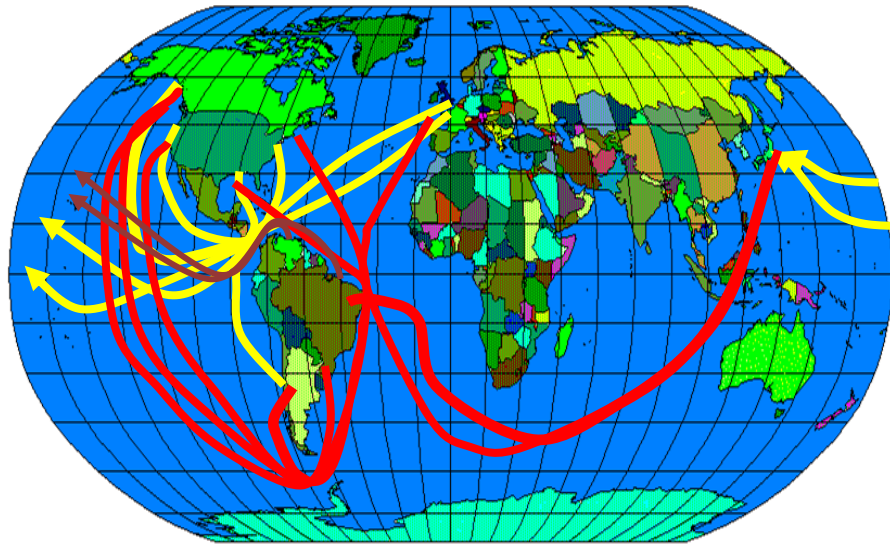
**20-30% REDUCTION IN
COST OF METRIC
TONNE SHIPPED**

**50% REDUCTION
IN GREEN HOUSE
GAS EMISSIONS
PER TONNE**



DISEÑO DE BUQUE MAERSK TRIPLE E

WORLD SEABORNE TRADE



Time saving by the Nicaraguan Canal: Up to 12 trips instead of 9

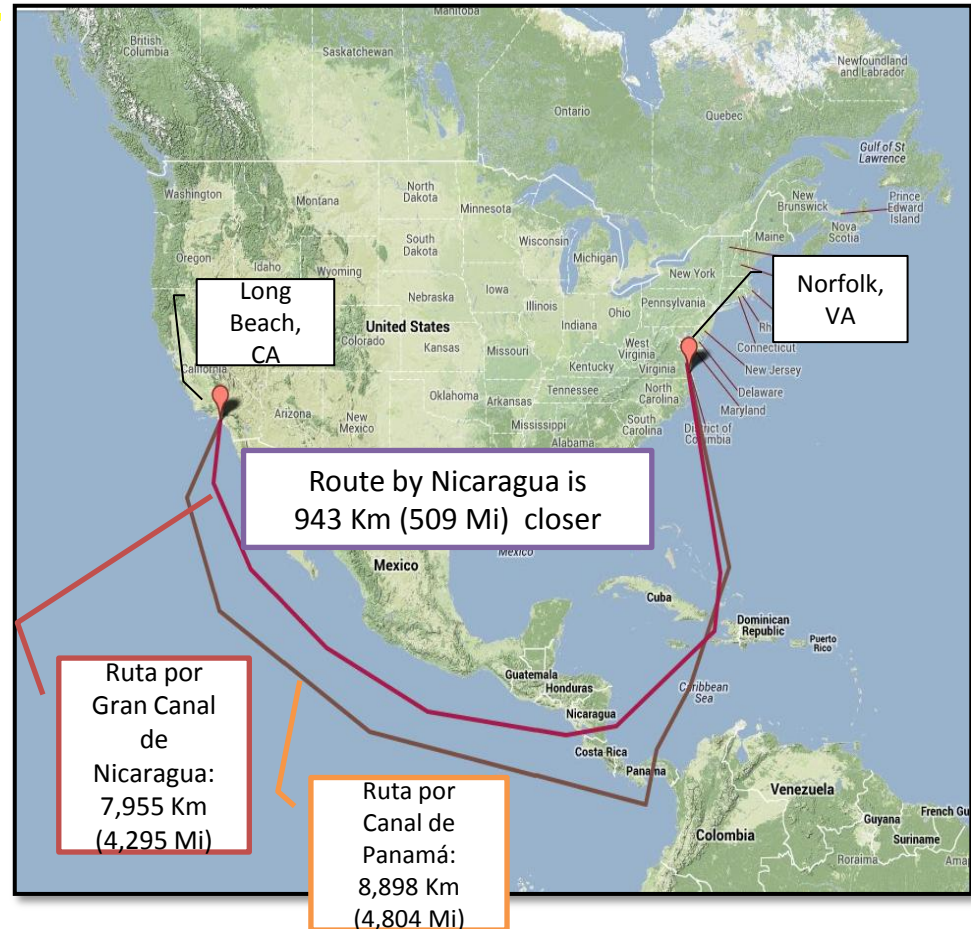
- Venezuela-Japan: 14.4 days
- New York-Japan: 10.9 days
- Chile-Netherlands: 11.4 days
- Chile-New York: 11.1 days
- Brazil-California: 4 days

Monetary saving by the Nicaraguan Canal: Up to US\$ 2 million per round trip

GEOGRAPHICAL PROXIMITY

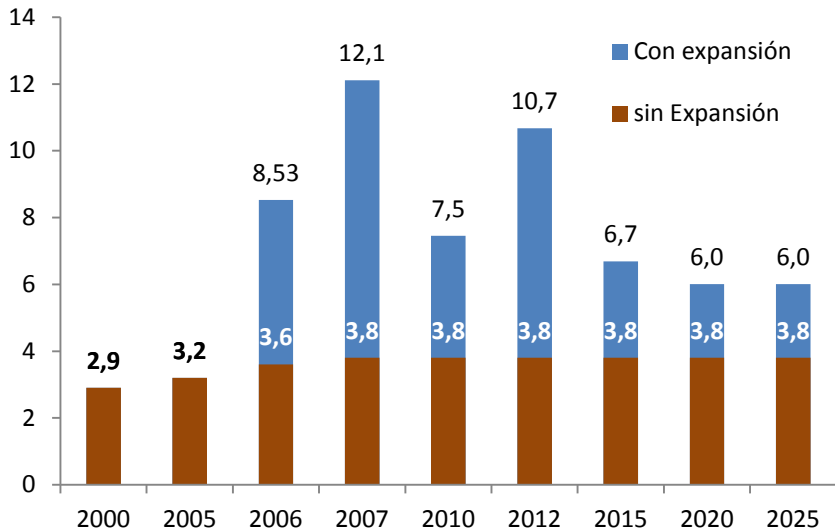
Norfolk – Long Beach route

(Distances between Panama Canal and Grand Canal of Nicaragua)



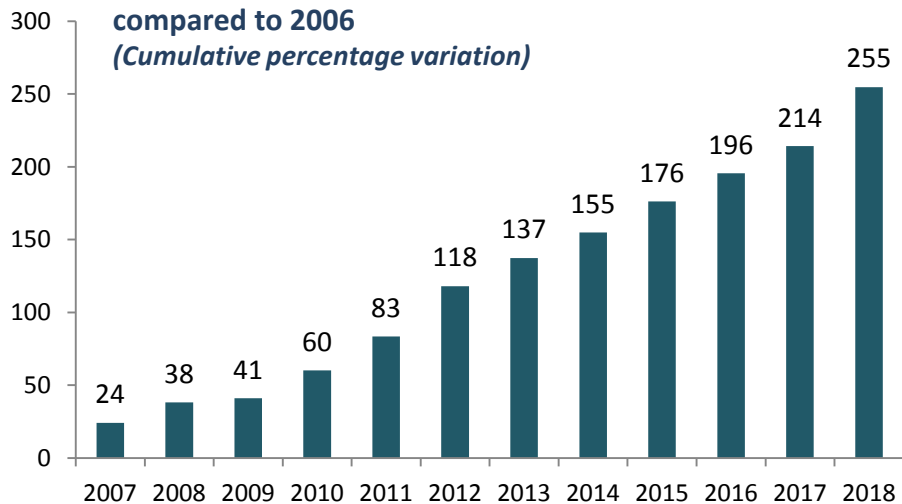
PANAMA CANAL EXPANSION: MAIN IMPACTS ON ECONOMY

GDP Panama: Actual data and projections with and without Expansion (Percentage Points)



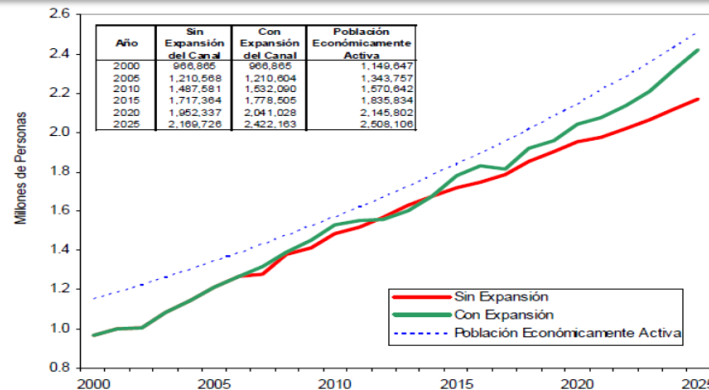
Source: PCA, ECLAC & IMF

Panama: Government income increase compared to 2006 (Cumulative percentage variation)



Source: Ministry of Economy of Panamá & IMF

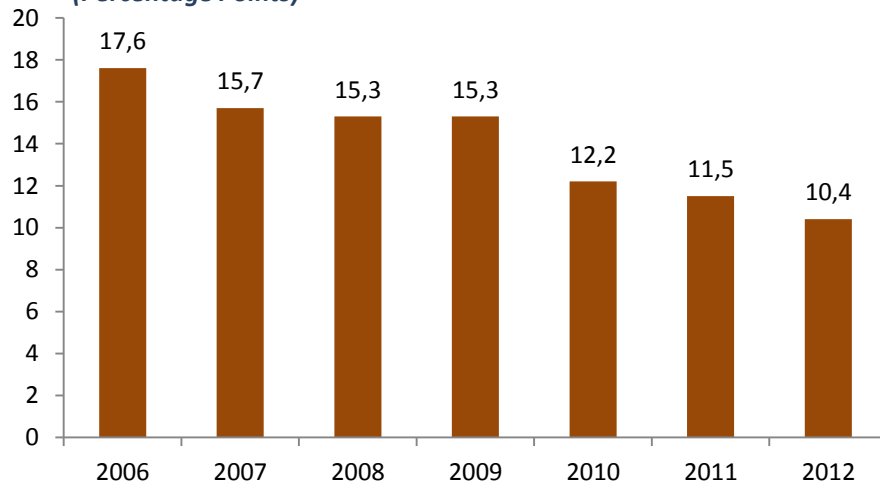
Employment trends with and without expansion of the Canal



Fuente: Preparado por Intracorp con base en información proporcionada por la Autoridad del Canal de Panamá y la construcción de un

2025: 252,437 new additional employments

Extreme Poverty in Panama (Percentage Points)

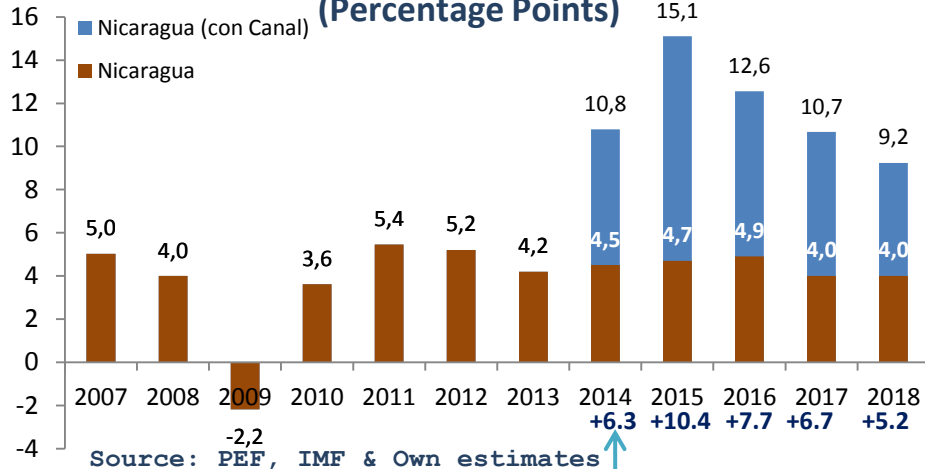


General poverty was reduced from 38.3% in 2006 to 25.8% in 2012

INTEROCEANIC GRAND CANAL OF NICARAGUA: MAIN ECONOMIC IMPACTS EXPECTED IN NICARAGUA

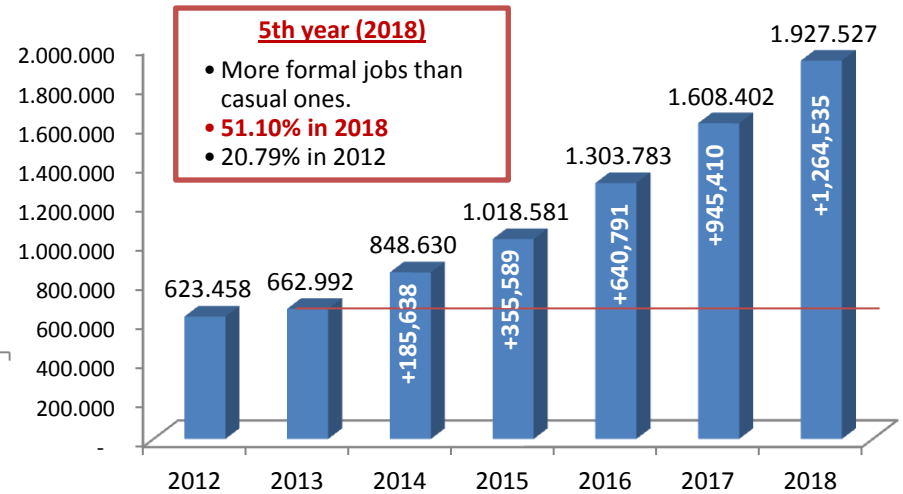
Nicaragua's Economic Growth with and without Canal

(Percentage Points)



Begins construction

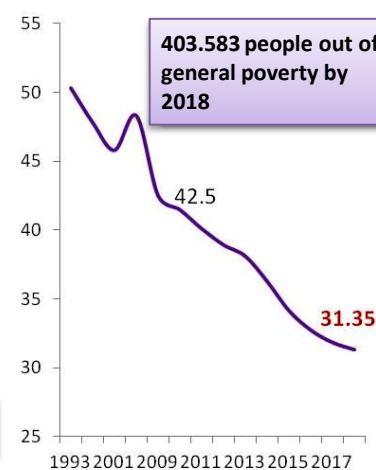
FORMAL EMPLOYMENT IN NICARAGUA 2012-2018



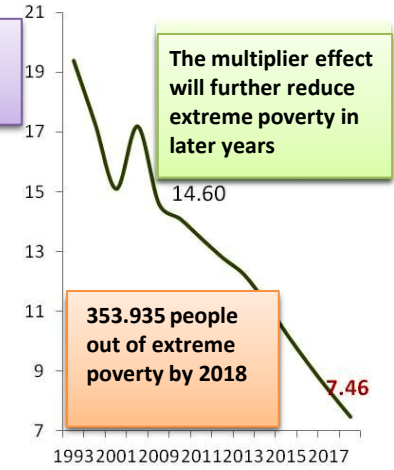
The increase in revenue, would be a source of funding to fight poverty.



General Poverty in Nicaragua (Percentage points)



Extreme Poverty in Nicaragua (Percentage points)

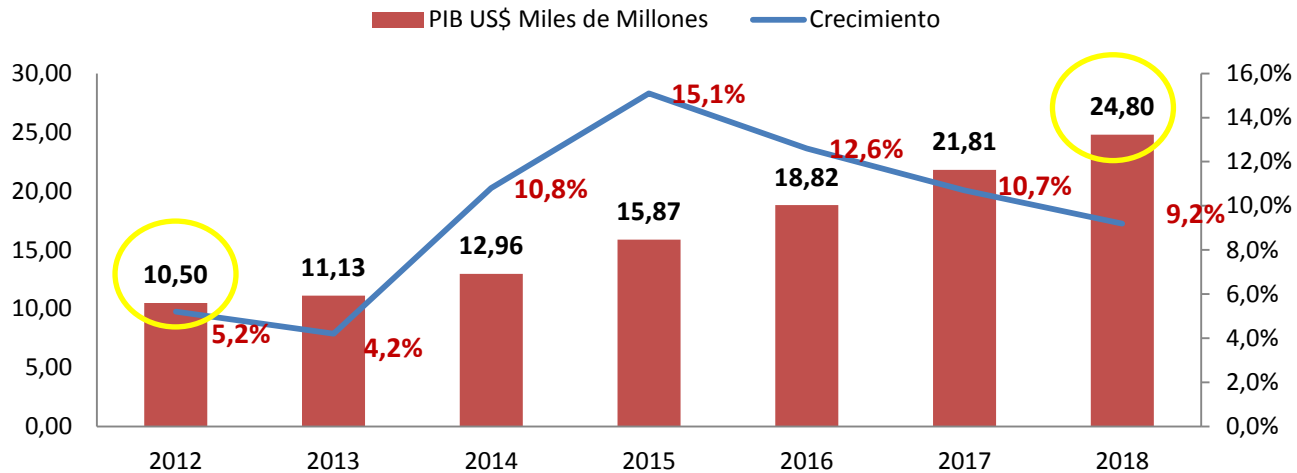


Fuente: INIDE (1993-2009) & Estimaciones Propias

We are working with ECLAC to estimate the effects of the Grand Interoceanic Canal on all sectors of the Nicaraguan economy, on Central America and South America.

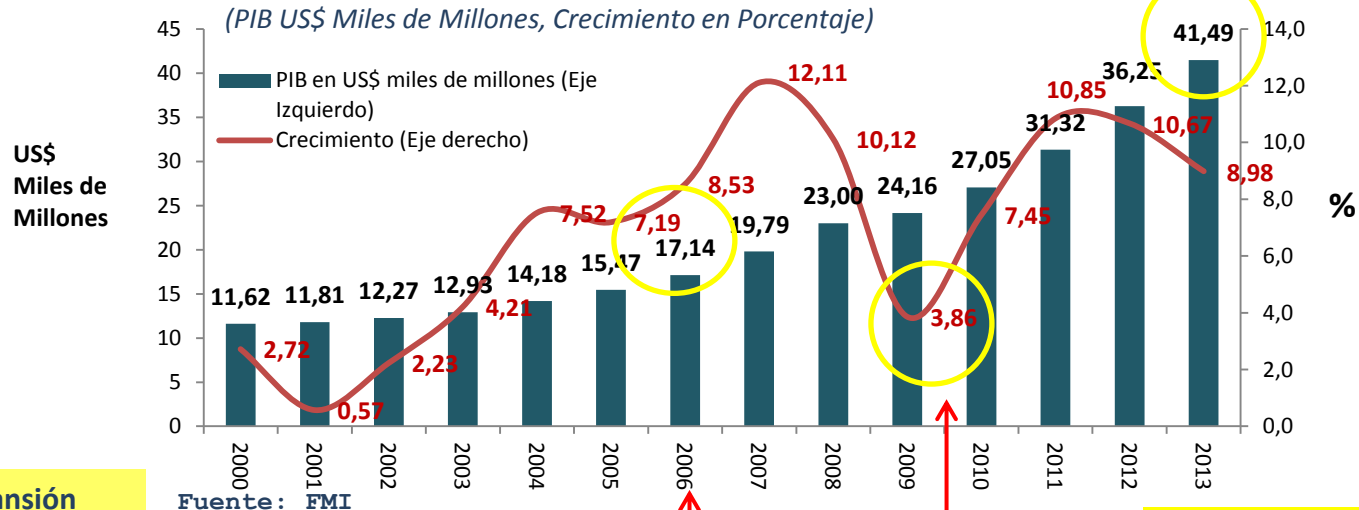
GDP GROWTH: PANAMÁ AND NICARAGUA

GDP growth of Nicaragua with Canal



GDP growth of Panamá with Canal Expansion

(PIB US\$ Miles de Millones, Crecimiento en Porcentaje)

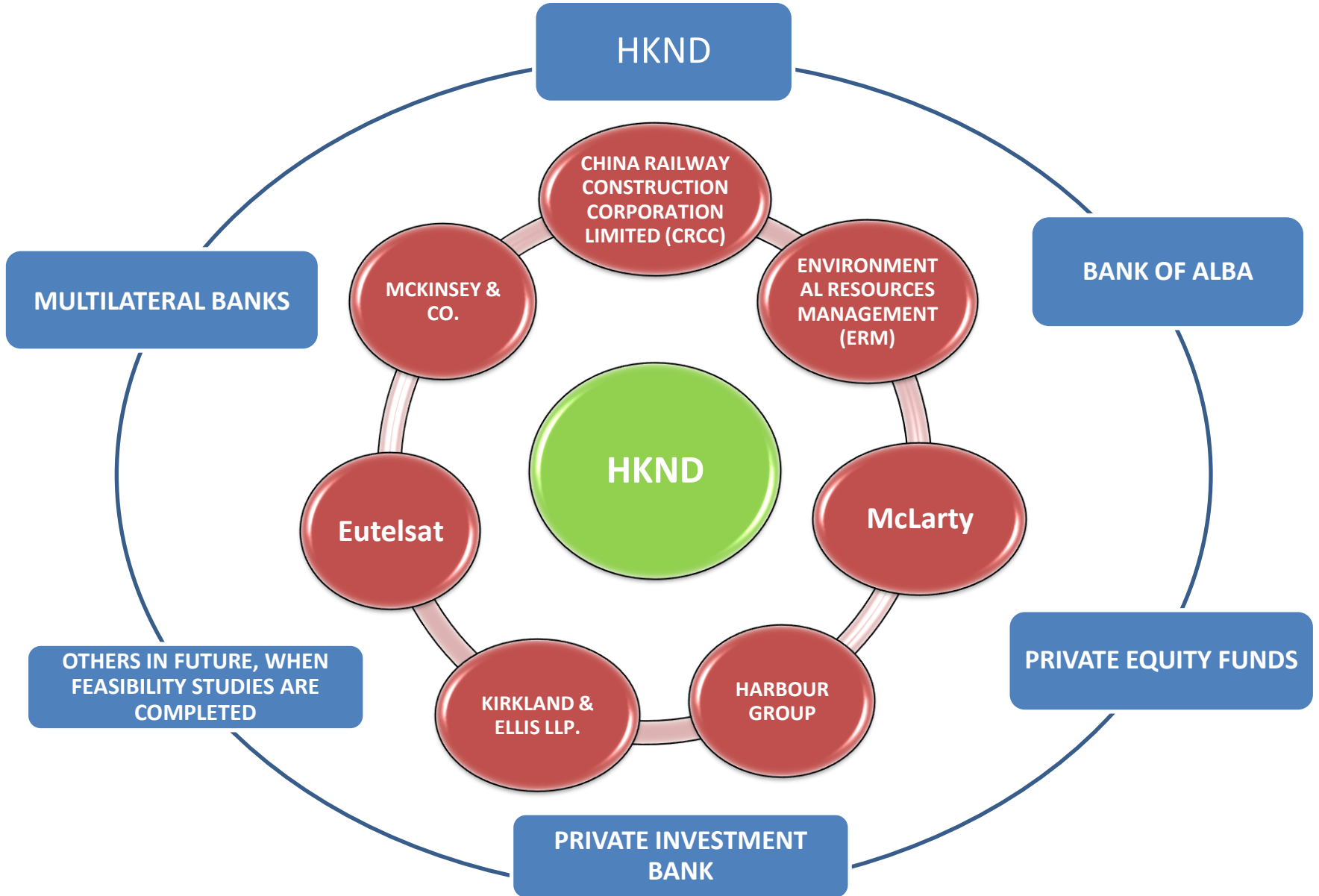


Expansión announcement

Fuente: FMI

Economic crisis

COMPANIES CONTRACTED BY HKND



FIRMS CONTRACTED BY HKND



Second largest state-owned construction company in China;

Sixth construction contractor in the world;

Railways, highways, buildings, municipal utilities, water services, electricity, bridges, tunnels and airports, etc.



Most prestigious consulting firm in the world.

100 offices in 50 countries and 17,000 employees worldwide;

Clients: AT & T, BBC, General Electric, Johnson & Johnson, Siemens, Home Depot, Bank of England, Mitsubishi, the city of Chicago, the UK Government, the Government of Mexico and Taiwan.



Fifth global environmental and social consulting firm, ranked by EHS Journal.

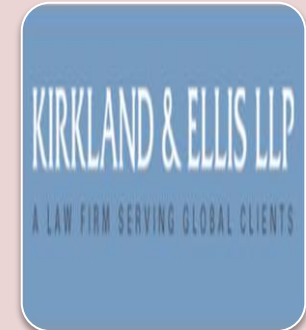
More than 140 offices in 39 countries, and more than 5,000 workers.

It has worked with more than 50% of the Fortune Global 500.



High-level intervention; Advice on government relations around the world.

Founded in 1998. Its President and CEO is Thomas "Mack" McLarty, former Chief of the White House Staff during the Clinton Administration.



Most prestigious firm in Chicago. Fifth most prestigious law firm in USA. Ninth largest firm by revenue in the world.

Offices in Chicago, Hong Kong, London, LA, NY, Munich, Shanghai and Washington, DC. Clients: General Motors, Motorola, Apple, Intel, Samsung Electronics, Siemens.

FIRMS CONTRACTED BY HKND



Public relations firm based in Washington DC.

Management, critical public relations and communications consultancies.

Clients:
Biotechnology Industry, Pfizer, Shure, Revolution Health Group.

Founded in 2001 by Joel Johnson.

Public Relations with economic media (Blommborg, Financial Times, others).

104 countries on five continents.

Access to resources of the best public relations firms in the world.

Eutelsat based in Paris, founded in 1977.

31 communications satellites.

4,500 television channels and 1,000 radio stations.

Other services: fixed and mobile telecommunications, TV share markets, corporate networks, and broadband markets for Internet service

CEO is Michel de Rosen.

Civil Engineering, based in Belgium;

It specializes in hydraulic locks and canals, including feasibility assessment and conceptual design.

Worked locks for the Panama Canal expansion; Antwerp, Belgium; Seville, Spain.

MEC Mining, Australia.

Open pit mining and civil engineering.

Design of excavations, disposal area, assistance in equipment selection, cost estimation and planning.

From *Financial Times* article:

“The public face of the U.S. \$ 40 billion to boost relations between China and Latin America”

FINANCIAL TIMES
ft.com > world > asia-pacific >
China

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July 1, 2013 12:29 pm Share Clip Reprints Print Email

Public face of \$40bn project to boost China-Latin America links

By Kathrin Hille in Beijing and John Paul Rathbone in London



Wang Jing denies any association with the Chinese government

It is one of the largest proposed infrastructure projects in the world. The feasibility study alone is set to cost \$900m. And when complete, the Nicaragua Canal, should lower transport costs for shipping oil from Latin America to China.

The \$40bn project certainly does not lack for ambition. Neither, it seems, does Wang Jing, the public face of the newly-registered Hong Kong company, HKND Group, which this month won approval from Nicaragua's Congress to build and operate the 50-year concession to link the country's Atlantic and Pacific coasts.

The approval came despite environmentalist opposition

VIDEOS

Army ousts Egypt's Islamist president

FT WORLD

00:00 02:34

Army ousts Egypt's Islamist president

Beijing tries to contain ethnic unrest

Malaysia PM rejects election claims

中國銀行
BANK OF CHINA

RMB: New Choice
Bank of China,
Your Premier Bank of RMB Services.

“It is one of the largest proposed infrastructure projects in the world. Only the feasibility study would cost \$ 900 million. And when finished, the Nicaragua Canal should reduce transportation costs for shipping oil from Latin America to China.

“At this time, 4,000 people, including McKinsey staff, British environmental consultancy ERC, the U.S. firm Kirkland, and research institutes belonging to the CRC, who are working on the feasibility study. Mr. Wang said that HKND could cover with its own funds, the operating cost up before the start of the works, scheduled for late 2014”

POLICY FRAMEWORK:

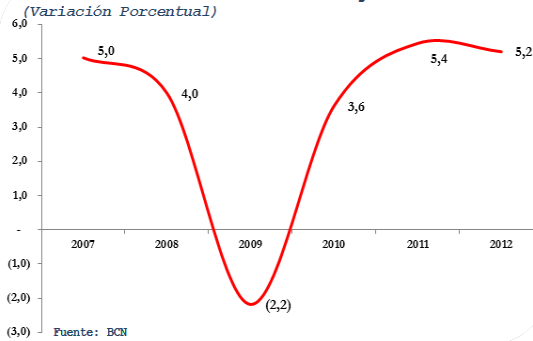
NATIONAL HUMAN DEVELOPMENT PLAN 2007/2016

OBJECTIVE:

**ECONOMIC GROWTH WITH
MACROECONOMIC STABILITY,
JOB CREATION,
POVERTY AND INEQUALITY REDUCTION**

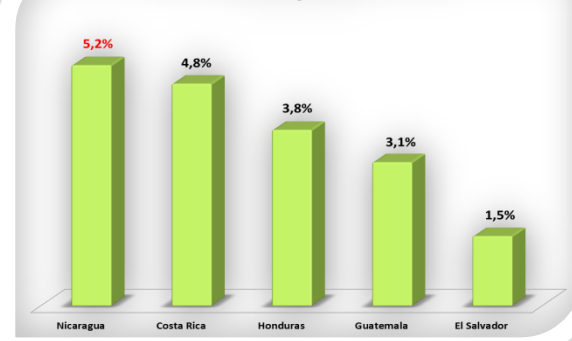
Economic growth and macroeconomic stability

Crecimiento Económico en Nicaragua 2007-2012



• Economic growth above 5% in 2011 and 2012

Crecimiento Económico 2012 en Centroamérica



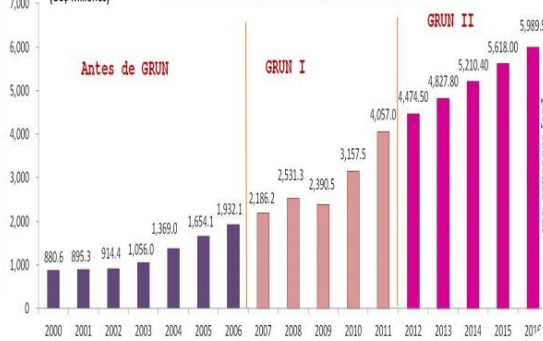
Nicaragua leading economic growth in Central America

IPC Nacional Enero 2010- diciembre 2012



1 digit inflation

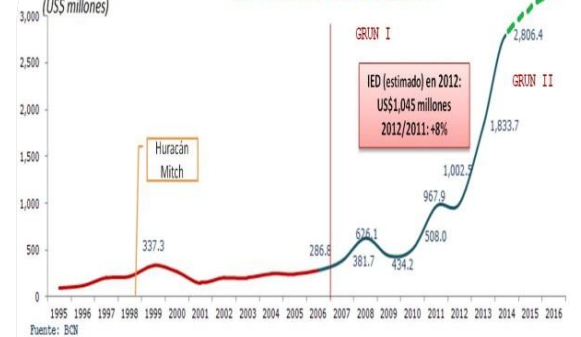
Exportaciones Totales (US\$ Millones) DINAMISMO EXPORTADOR



High export growth: +19% in 2012/2011
Exports doubled between 2012 and 2006

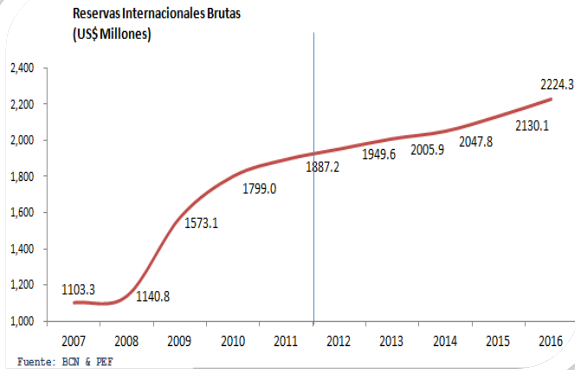
Inversión Extranjera Directa (US\$ millones)

AUGE INVERSIONISTA

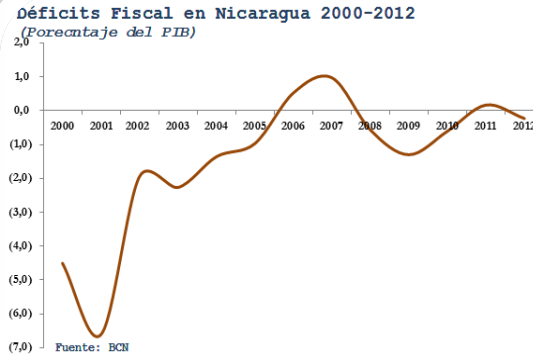


Investment record: More than 3 times that in 2006

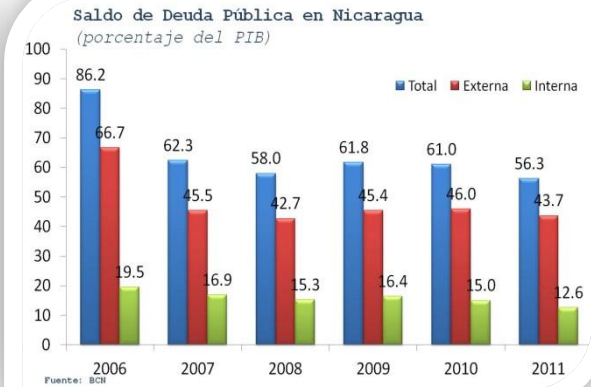
Fiscal stability Increased work



High International Reserves: 2.4 times the monetary base, allows free exchange and currency stability



Sustainable fiscal deficit



Constant reduction of national debt



More work: 48.2% more than in 2006



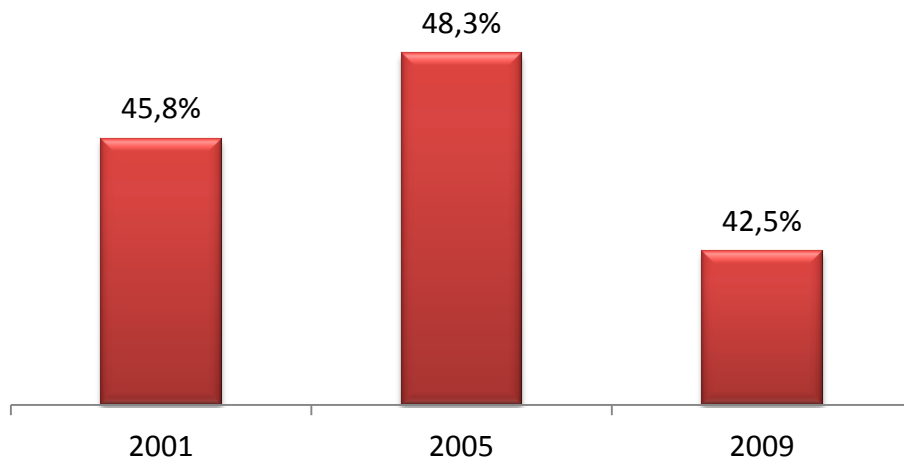
Formal employment growth: 52.8% more people registered than in 2006



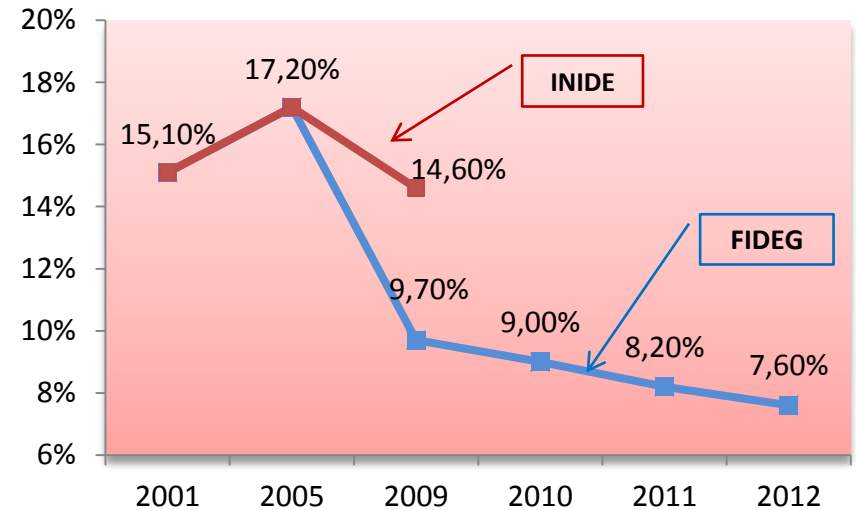
Fewer unemployment

POVERTY REDUCTION

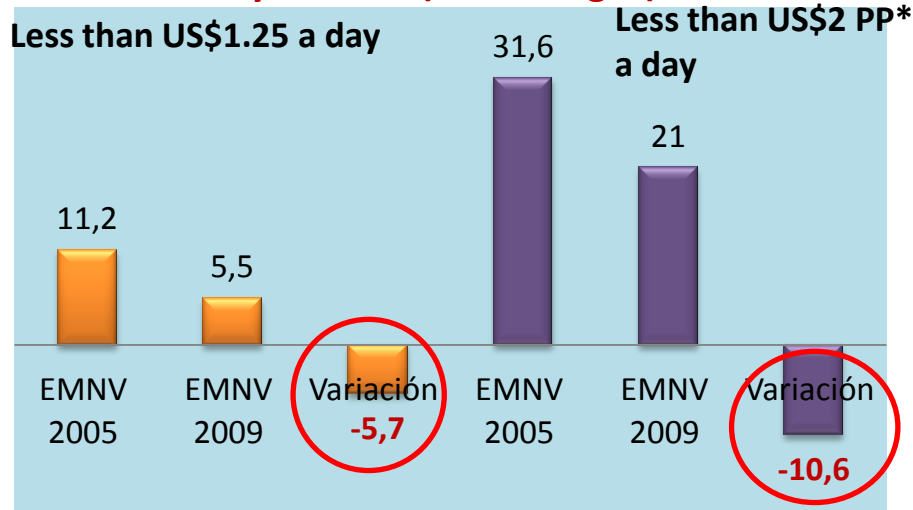
General poverty measured by consumption



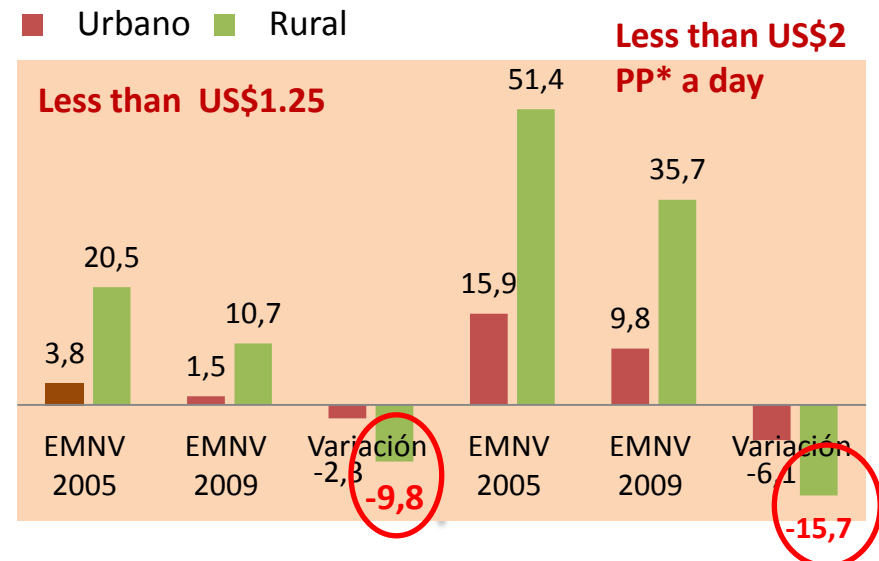
Extreme poverty measured by consumption



General and extreme poverty measured by income (Percentages)

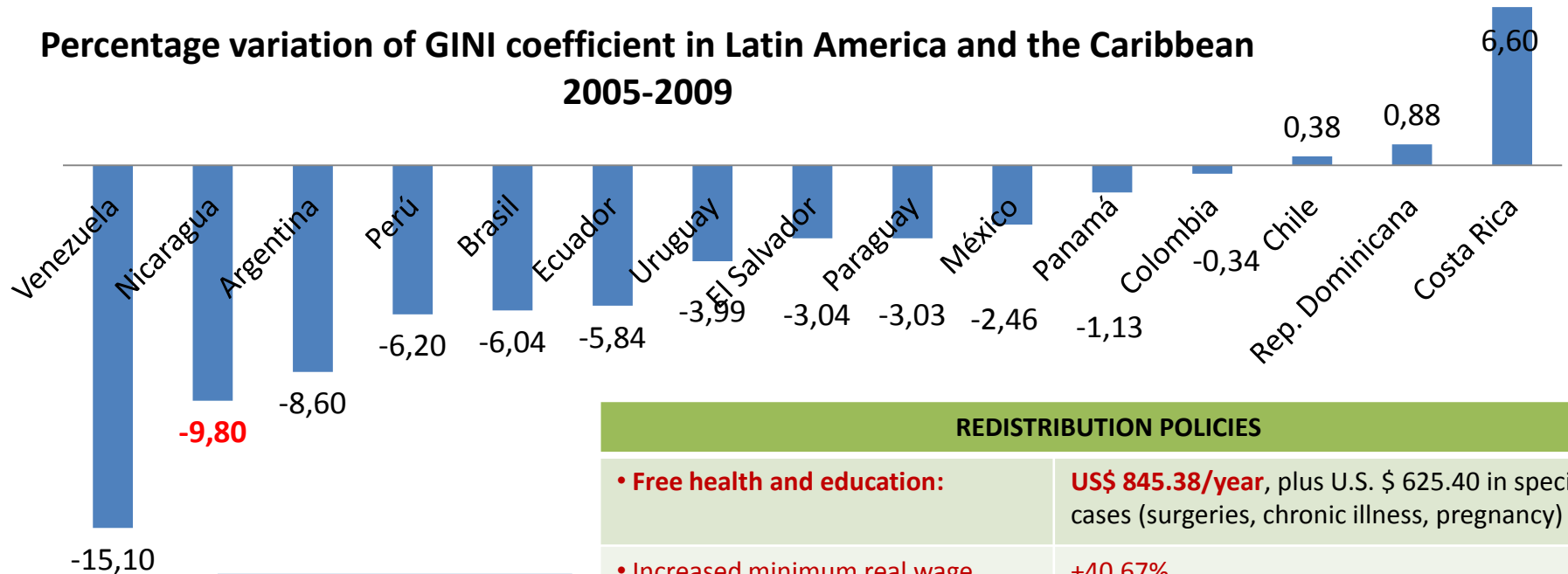


Greater reduction in rural zones



INEQUALITY REDUCTION IN NICARAGUA AND LAC

Percentage variation of GINI coefficient in Latin America and the Caribbean
2005-2009



Source: ECLAC

GINI income in Nicaragua	
2005	0.51
2009	0.46

GINI consumption	
2005	0.41*
2009	0.37*
2010	0.35**
2011	0.34**

*INIDE; **FIDEG

REDISTRIBUTION POLICIES

• Free health and education:	US\$ 845.38/year, plus U.S. \$ 625.40 in special cases (surgeries, chronic illness, pregnancy)
• Increased minimum real wage	+40.67%
• Subsidies:	US\$ 1,110.40/year
▪ Public Transportation:	US\$ 321.08/year
▪ Drinking water:	US\$ 53.51/year
▪ House electricity:	US\$ 160.54/year
▪ ENABAS Food:	US\$ 200.68/year
▪ Christian Socialist and Solidarity Bonus:	US\$ 374.59/year
• Capitalization of poor families:	
▪ Zero Hunger:	Until US\$ 1,500.00, average: US\$710.00
▪ Zero Usury :	US\$ 250.00

MAYOR EQUIDAD DE GÉNERO

Unión Interparlamentaria sobre el porcentaje de mujeres en los Parlamentos del mundo

Cuba y Nicaragua son los únicos países latinoamericanos entre los 10 primeros del mundo con mayor participación de mujeres en sus parlamentos nacionales.

Nicaragua pasó del 18.5% en 2006 al 42.3% en 2012

LOS 10 PRIMEROS PAÍSES

RWANDA	(56.3%)
ANDORRA	(50.0%)
CUBA	(45.2%)
SUECIA	(44.7%)
SEYCHELLES	(43.8%)
FINLANDIA	(42.5%)
NICARAGUA	(42.3%)
SUDÁFRICA	(42.3%)
HOLANDA	(40.7%)
ISLANDIA	(39.7%)

Nueva Ley: 50%-50% en Asamblea Nacional (llevará a Nicaragua al segundo lugar mundial) y para alcaldes, vice alcaldes y concejales

Índice Mundial de Brecha de Género 2012
-Foro Económico Mundial-

Puesto	País
1	Islandia
2	Finlandia
3	Noruega
4	Suecia
5	Irlanda
6	Nueva Zelanda
7	Dinamarca
8	Filipinas
9	Nicaragua
10	Suiza
11	Holanda
12	Bélgica
13	Alemania
14	Lesoto
15	Letonia
16	Sudáfrica
17	Luxemburgo
18	Reino Unido
19	Cuba
20	Austria

Nicaragua sube del lugar 90 en 2007, al número 9 en 2012

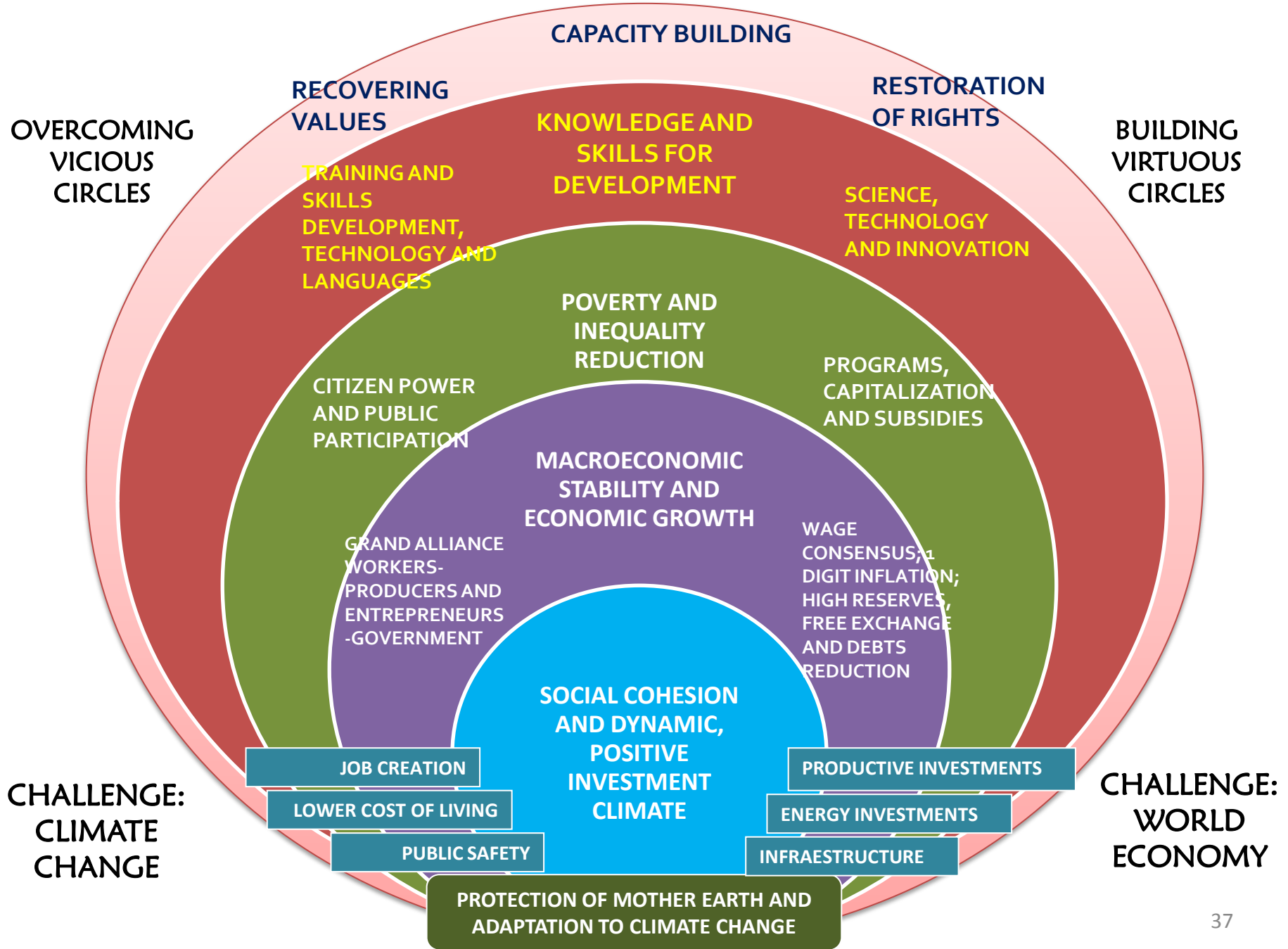
ENABLING ENVIRONMENT

MODEL BASED ON CHRISTIAN VALUES, SOCIALIST IDEALS
AND SOLIDARITY PRACTICES

OVERCOMING EXCLUSION AND THE VISCIOUS CIRCLES
THAT TRAP FAMILIES IN POVERTY AND COUNTRIES IN
UNDERDEVELOPMENT BY CONSTRUCTING INCLUSION
AND VIRTUOUS, SYNERGYSTIC CIRCLES THAT GENERATE
SOCIAL COHESION

Major Challenge: Always human development

MODEL BASED ON CHRISTIAN VALUES, SOCIALIST IDEALS AND SOLIDARITY PRACTICES



SURVEY OF COST OF LIVING IN LATIN AMERICA: MANAGUA IN NICARAGUA (POSITION 213) ONE OF THE CITIES WITH LOW COST OF LIVING

Posición Mundial entre 214 ciudades

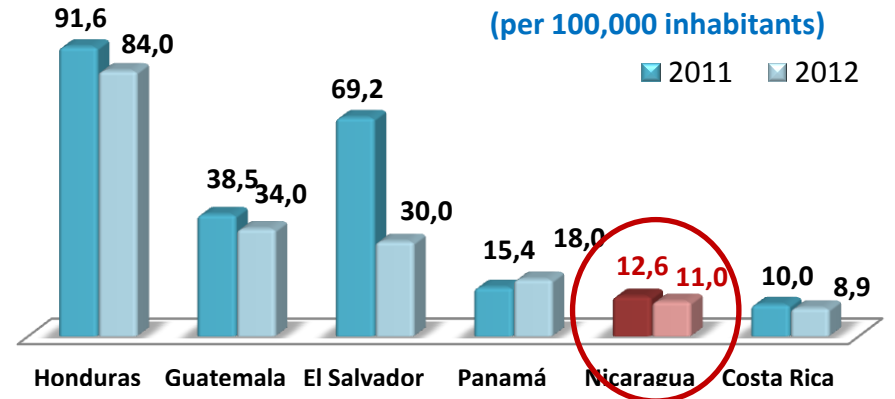
2011	2010	CIUDAD	PAÍS
10	21	Sao Paulo	Brasil
12	29	Rio de Janeiro	Brasil
33	70	Brasilia	Brasil
51	100	Caracas	Venezuela
53	45	La Habana	Cuba
63	66	Bogotá	Colombia
75	123	Santiago	Chile
127	129	Montevideo	Uruguay
138	135	Lima	Perú
146	129	San Juan	Puerto Rico
148	166	Ciudad de México	México
159	161	Buenos Aires	Argentina
165	183	San José	Costa Rica
168	169	Ciudad de Guatemala	Guatemala
183	193	Monterrey	México
196	194	Quito	Ecuador
199	201	San Salvador	El Salvador
204	204	Asunción	Paraguay
208	204	Tegucigalpa	Honduras
212	211	La Paz	Bolivia
213	212	Managua	Nicaragua

FUENTE: MERCER

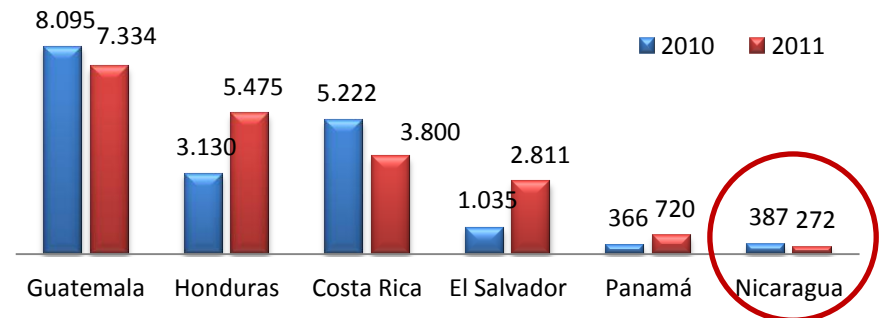


THE BEST PUBLIC SAFETY IN CENTRAL AMERICA

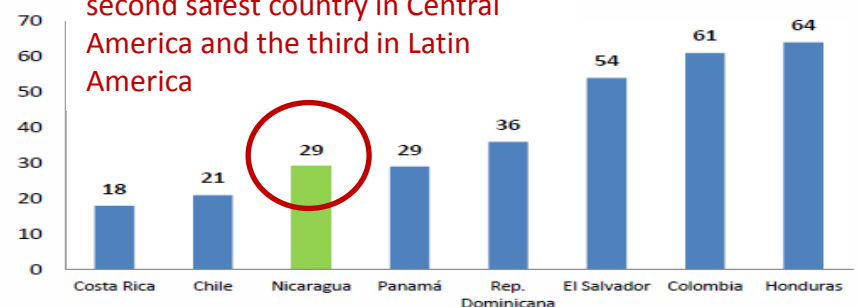
Homicide Rates in Central America (per 100,000 inhabitants)



Vehicular theft in Central America



Safety Index 2012: Nicaragua is the second safest country in Central America and the third in Latin America



Source: Economist Intelligence Unit (EIU), 2012 Security Risk Report