



# Skills for inclusive societies GREENING SKILLS

INSTITUTO NACIONAL DE  
APRENDIZAJE / COSTA RICA

---

## Latin America and the Caribbean, one region and many realities

Population, surface area, climate and geographical conditions make Latin America and the Caribbean a heterogeneous region. The countries of the region are linked by strong historic and cultural ties, but at the same time, their differences in terms of evolution and the diversity of influences they received make their current conditions and situations very different.

Dividing Latin American and the Caribbean into sub-regions is somewhat artificial considering political, economic and cultural aspects and also their variation in size and population. For the purpose of this report, a hybrid grouping has been adopted based primarily on geographical criteria, which allow us to visualize certain trends and synthesize complex situations to some extent.

To stop the larger countries hiding the smaller ones statistically, Brazil and Mexico, which together represent over 50 per cent of the area and population of the region, have been separated.

Argentina, Chile, Paraguay and Uruguay have been grouped as the 'Southern Cone', representing 20 per cent of the region's territory. Another 25 per cent of the surface area brings together a set of Intermediate-sized continental countries ranging from Suriname to Bolivia. These are countries from the west-northwest of South America, the so-called 'Andean-equatorial arc'.

Naturally, the 'Central America' group ranges from Guatemala to Panama (three per cent) while 'the Caribbean' group includes all islands (almost one per cent of the territory studied, but seven per cent of its population).





## Urbanization 1

Almost 80% of Latin America's population lives in cities, making this the world's most urbanized developing region.

3 Almost 2/3 of the region's GDP is produced in urban areas, where services and industry are concentrated.



4 111 million people live in run-down shantytowns



1950 2  
320 cities

With at least 20,000 inhabitants



2000  
cities

Half a century later



5 Percentage of urban residents living in poverty



## 6 EQUALITY



Nearly 52% of income is concentrated in 20% of the urban population

## 7 INEQUALITY

Of citizens consider inequality in their cities to be very high

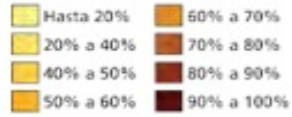
Employment opportunities in Latin America  
The lack of jobs is sizeable and informal employment abounds among youth and women



Latin American Megacities  
of the region's population lives in enormous cities - the highest percentage of megacitydwellers worldwide



Latin America and the Caribbean. Urbanization rate, 1950 and 2010







## Development and Environmental Objectives in the City

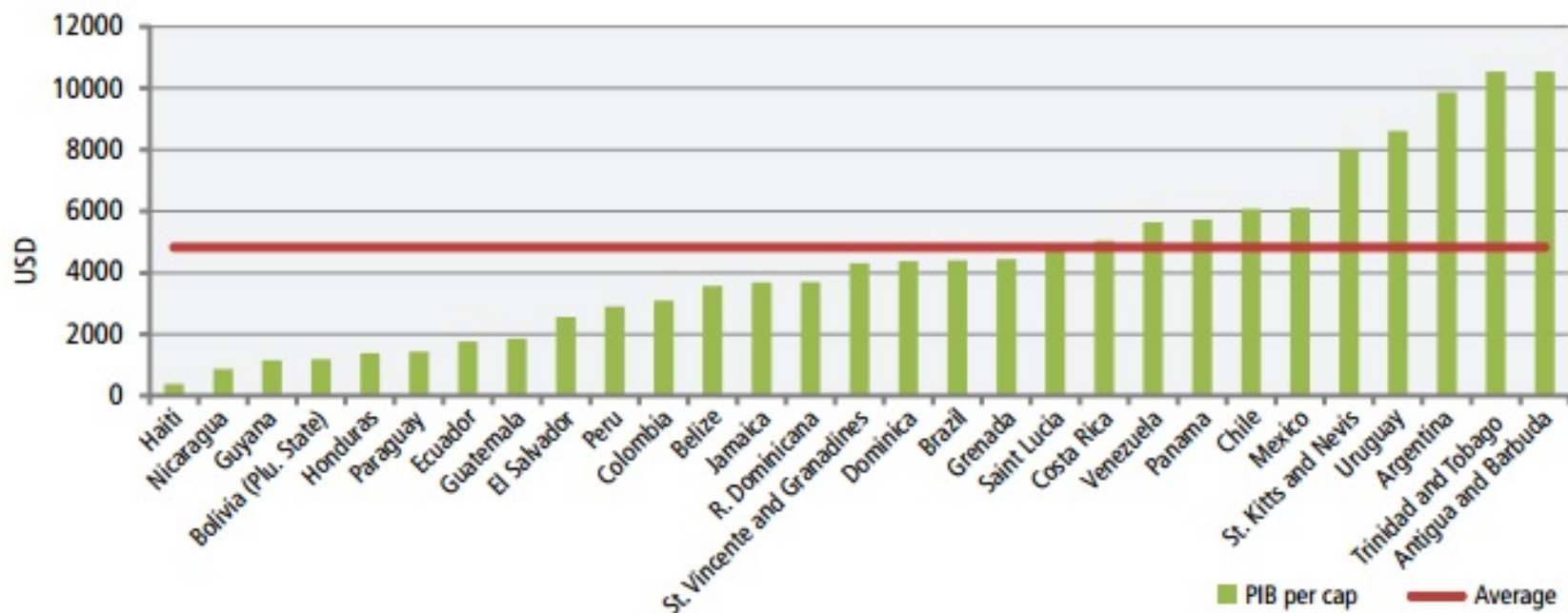
The MDGs, established in 2000 to achieve better living conditions, include specific targets for ensuring environmental sustainability. This is aimed at satisfying human needs without

compromising the ability to meet future needs. They also provide well established indicators to assess progress on achieving goals. Several of these indicators are directly related to living in cities.

Goal	Indicators
7A Integrate the principles of sustainable development into country policies and programmes, and reverse the loss of environmental resources	7.1 Proportion of land area covered by forests
	7.2 Carbon dioxide emissions (total, per capita for each dollar PPA of GDP)
	7.3 Consumption of substances that deplete the ozone layer
	7.4 Proportion of fish stocks within safe biological limits
	7.5 Proportion of total water resources used
7B Reduce biodiversity losses, achieving, by 2010, a significant decrease in the rate of loss.	7.6 Proportion of terrestrial and marine protected areas
	7.7 Proportion of species threatened with extinction

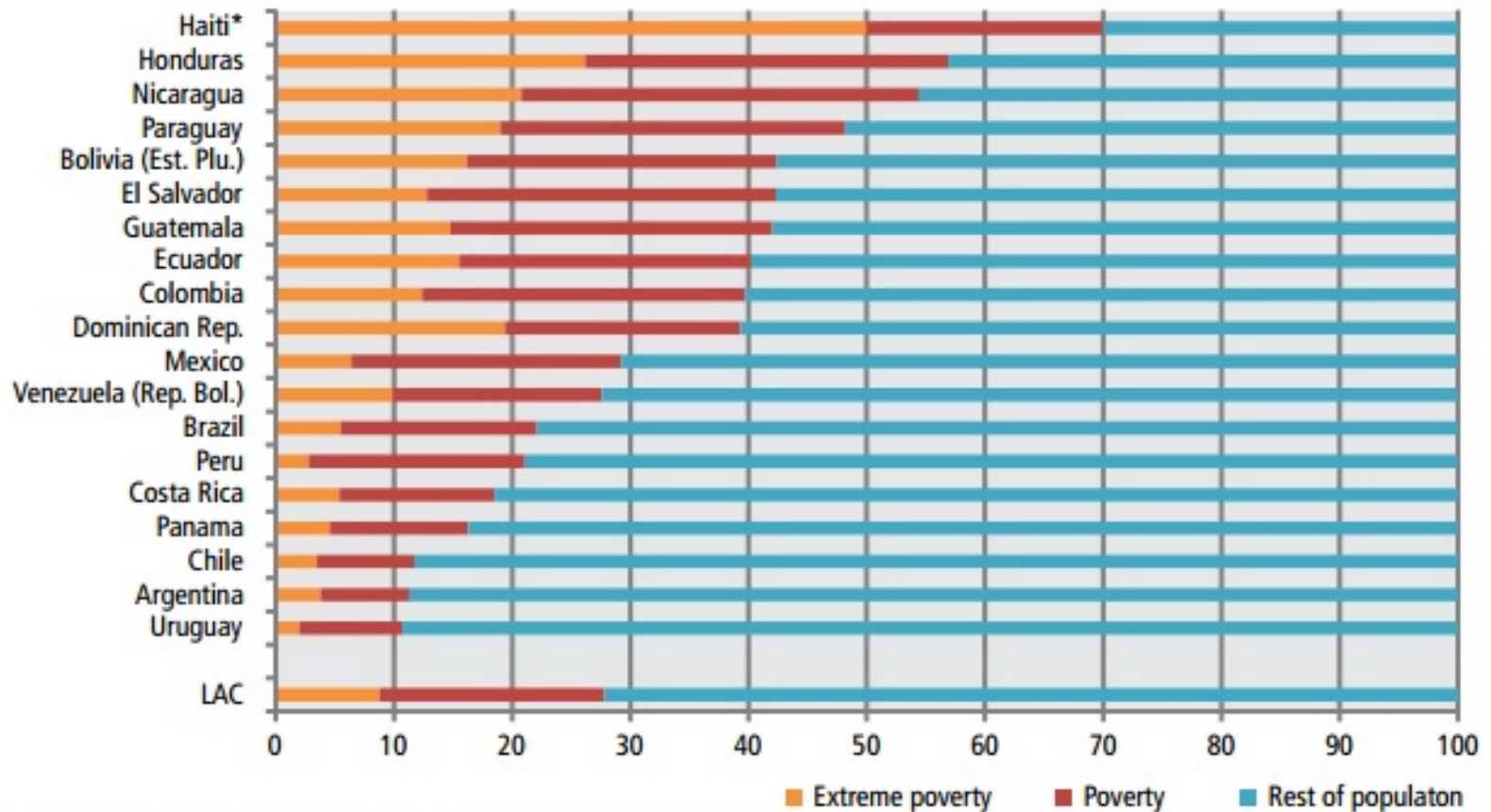
Source: United Nations, Millennium Development Goal indicators at [http://mdgs.un.org/unsd/mdg/Host.aspx?Content=Indicators per cent2fOfficialList.htm](http://mdgs.un.org/unsd/mdg/Host.aspx?Content=Indicators%20OfficialList.htm)

## Latin America and the Caribbean. Countries' GDP per capita, 2010



Source: Compiled with data from the World Bank National Accounts. Consulted July 2011.

## Latin America and the Caribbean. Urban poverty rates<sup>a</sup>, 2009



\* Data for Nicaragua are for 2005, for Guatemala 2006, for Bolivia and Honduras 2007, for Mexico 2008. Data for Haiti and Venezuela are the national and extreme poverty rates.

Source: ECLAC (2010a).

Presented at Global Forum on  
14-16 October 2014  
Organized by UNESCO-UNEVOC



Latin America and the Caribbean. Percentage of urban population living in poverty and extreme poverty, 1990-2010

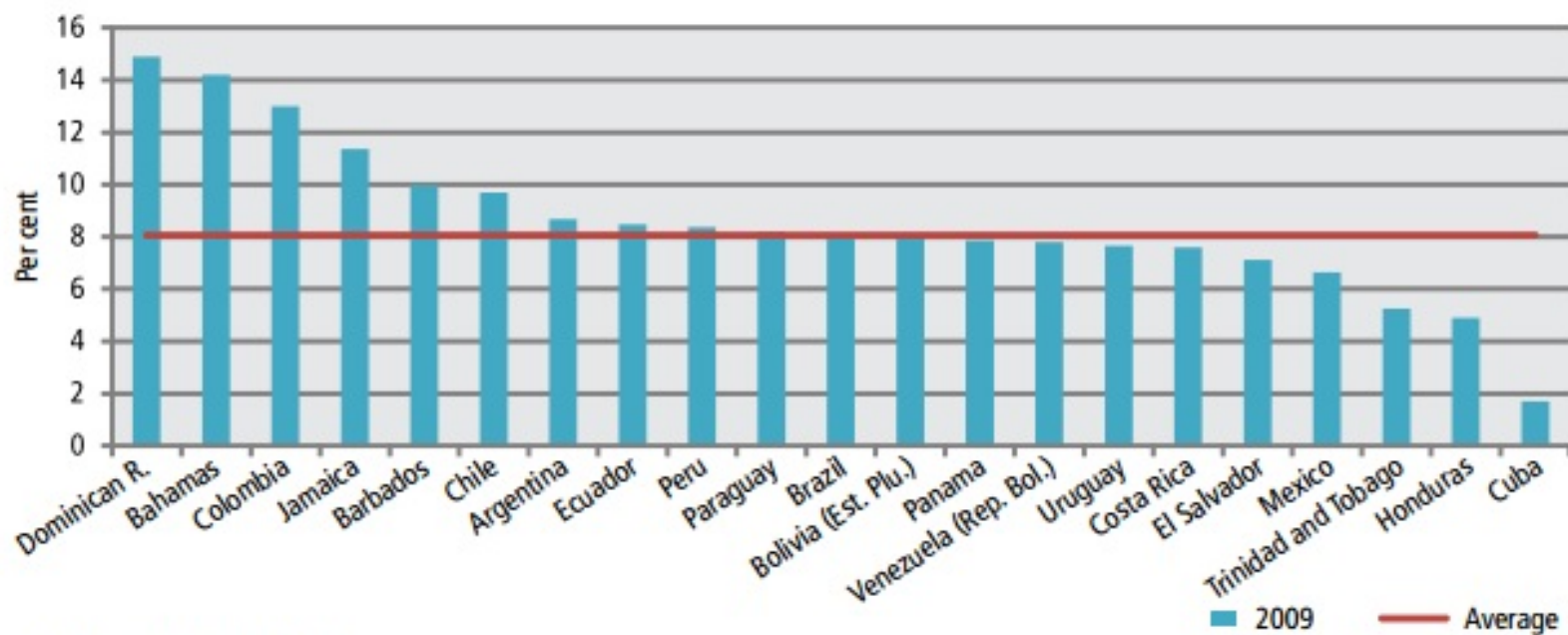
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Argentina					16					24			45		29	26	21			11	9	
Bolivia					52			52		49			52		54			42				
Brazil	41			40			31			33		34	34	36	34	33	30	27	23	22		
Chile	39				27		22		21		20			19		14					12	
Colombia		53			45			45		51			49	47	46	45			40	40	39	
Costa Rica	25				21			19		18			18		19	20	18	18	16	19	17	
Ecuador	62				58			56		64			49		48	45	40	39	39	40	37	
El Salvador						46		44		39		39			41					42	41	
Guatemala									49				45				42					
Honduras	70				75			73		72			67	63			59	57		55	56	
Mexico					37		46		39		32		32		33	29	27		29		32	
Nicaragua				66					64			64				54						
Panama		31			24			23		20			26		22	22	20	19	17	16	15	
Paraguay					50		46			49		50			58	53		54	50	48	47	
Peru								34		36		42		60	37	37	31	26	24	21	19	
Dominican Rep													42		52	45	42	43	42	39	40	
Uruguay	18				10			10		9			15		21	19		18	14	11	9	
Venezuela (Rep. Bol.) <sup>a</sup>	39				47			48		49			49		45	37	30	29	28	27	28	
LAC	41				39			36		37			38			34	31	29	27	27	26	

<sup>a</sup> After 1997 data for Venezuela correspond to national poverty.

Source: CEPALSTAT. On the basis of special tabulations of household surveys in respective countries. For details on the areas included and methodological details, see: <http://websie.eclac.cl/sisgen/ConsultaIntegrada.asp>

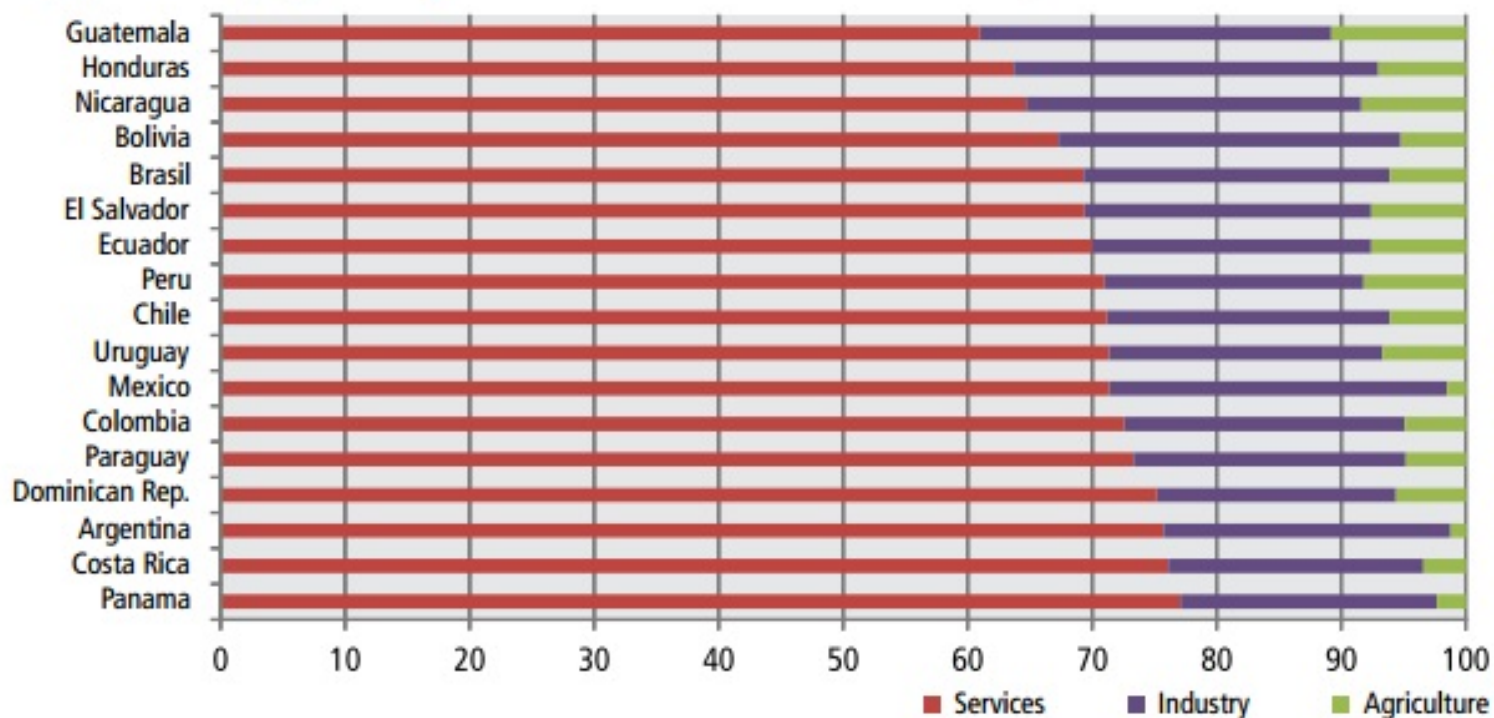


## Latin America and the Caribbean. Urban unemployment rate, 2009



Source: Labour Outlook. 2010, ILO.

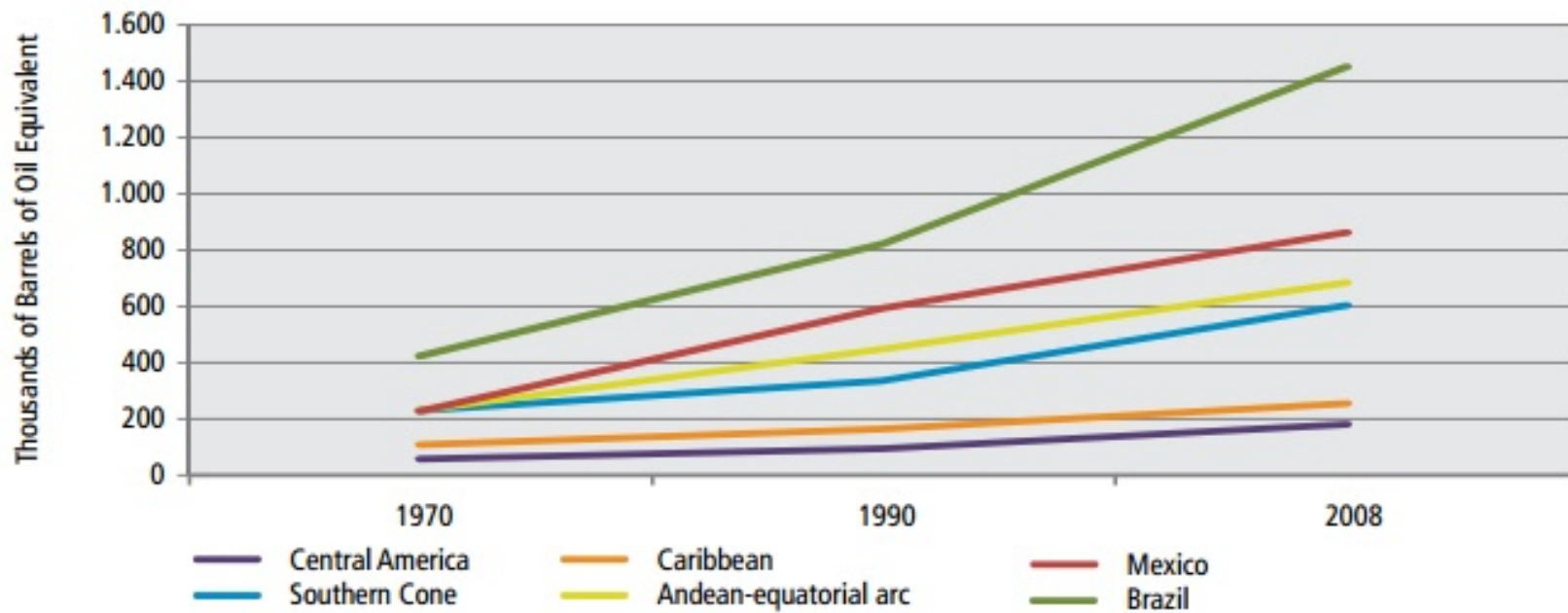
### Urban population employed in major economic sectors in selected countries, circa 2009\*



\* Data for Nicaragua from 2005, for Guatemala (2006), Bolivia and Honduras (2007) and Mexico (2008).

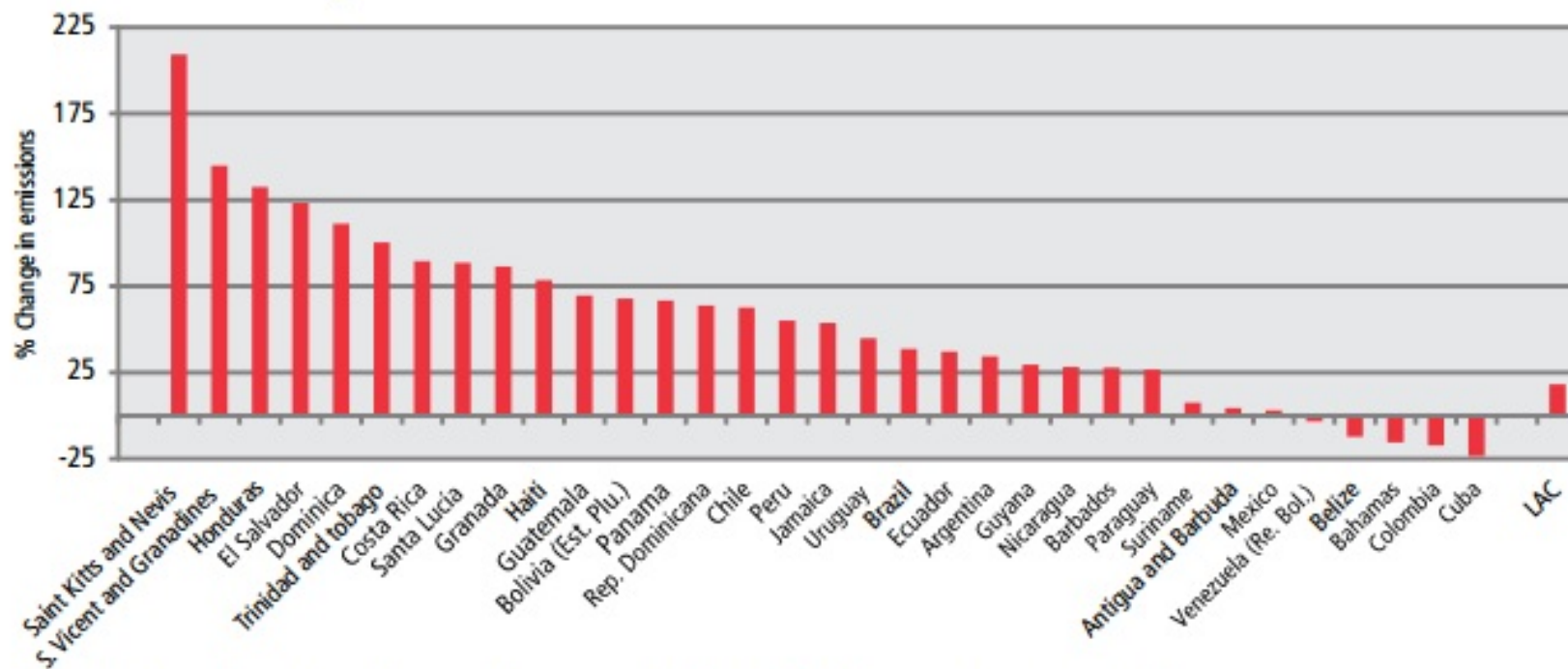
Source: CEPALSTATS. Economic Commission for Latin America and the Caribbean, Statistics and Economic Projections Division. Social Statistics Unit. Accessed July, 2011

Total Energy Consumption by Sub-regions and Large Countries, 1970-1990-2008 (Thousands of Barrels of Oil Equivalent)



Source: Based on data from ECLAC. Environmental indicators for Latin America and the Caribbean, 2009. Accessed October, 2011.

Urban Variations<sup>a</sup> in CO<sub>2</sub> Emissions, Selected Countries, 1990-2007 (%)

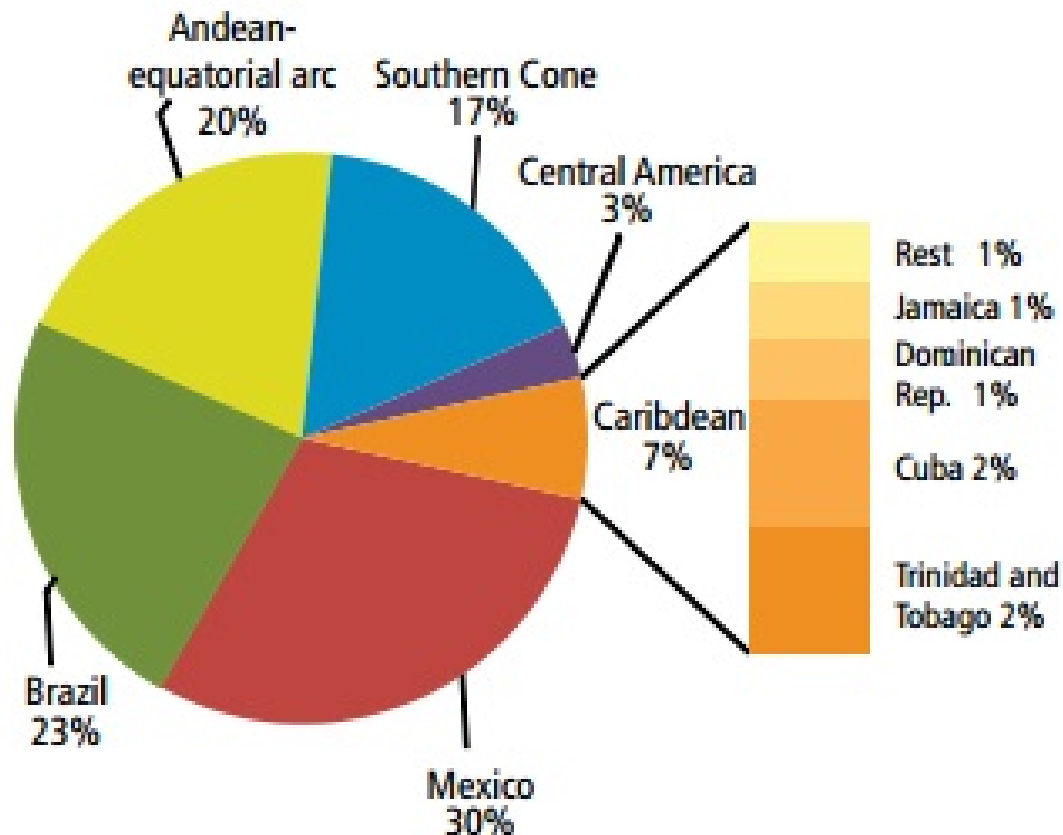


<sup>a</sup> Calculations based on estimates of emissions (tons per capita) from fossil fuel burning and cement production.

Source: Based on data from ECLAC. *Environmental Indicators for Latin America and the Caribbean, 2009.*



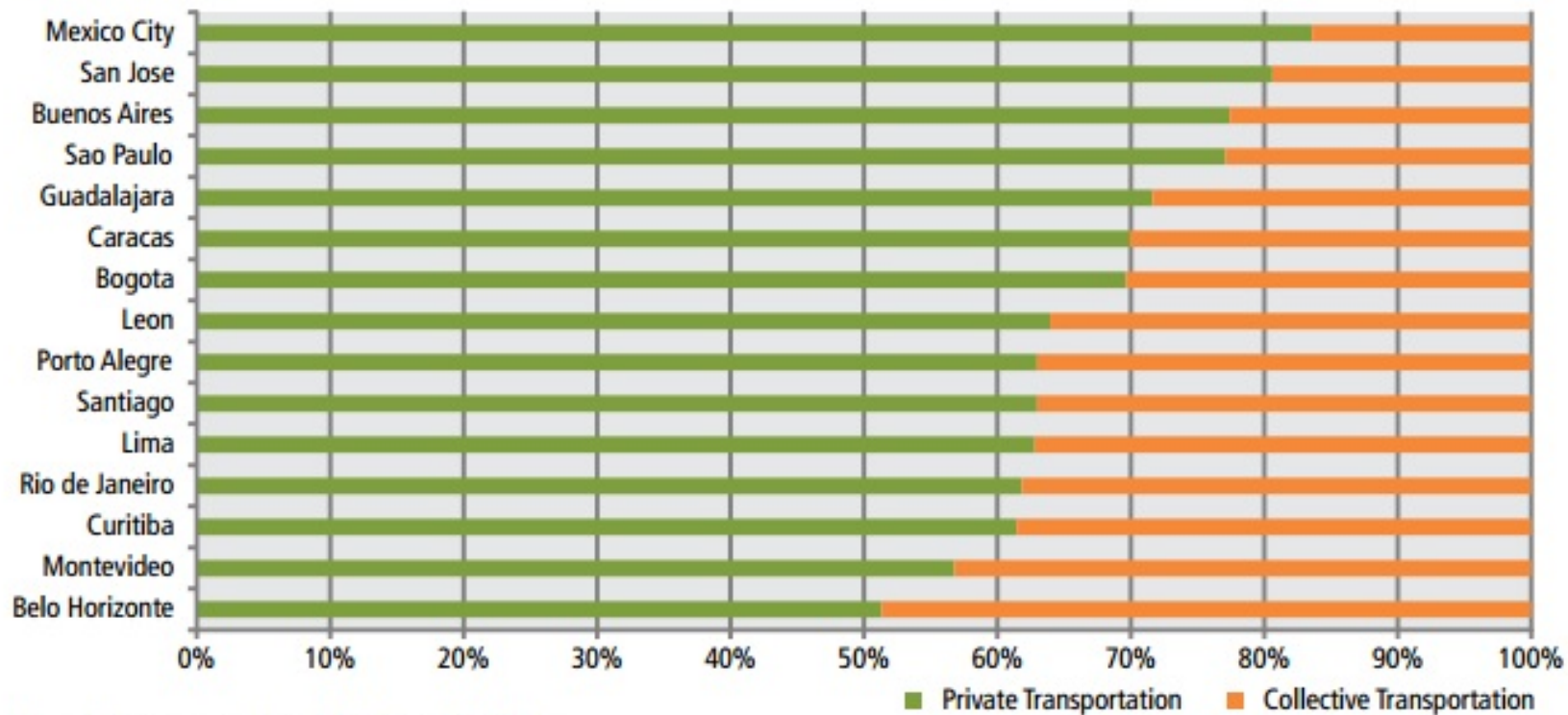
## Domestic Shares in Regional GHG Emissions from Urban Areas (Urban GHG)<sup>a</sup>, 2007



<sup>a</sup> This approximation sums contributions from fossil fuel burning and cement production, two activities closely linked to urban areas. For the exact composition of each group, see Chapter One.

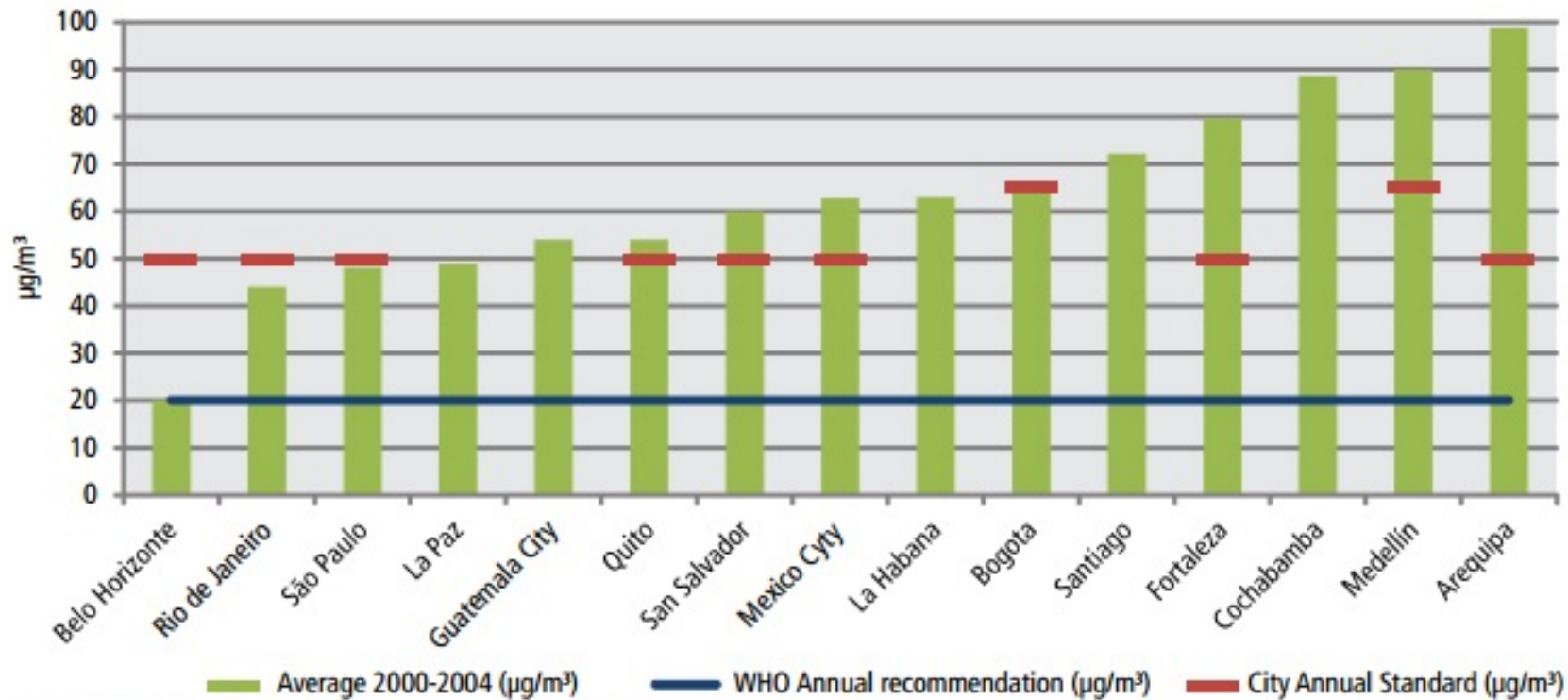
Source: Compiled with data from ECLAC. *Environmental indicators for Latin America and the Caribbean, 2009*. Accessed October, 2011.

Emissions of CO<sub>2</sub> of Private and Collective Transport, 2007 (Percentage of Tons per Day)



Source: Observatory on Urban Mobility, CAF (2009)

Particulate Matter Concentrations (PM<sup>10</sup>) in the Environment in Selected Cities, 2000-2004 Averages

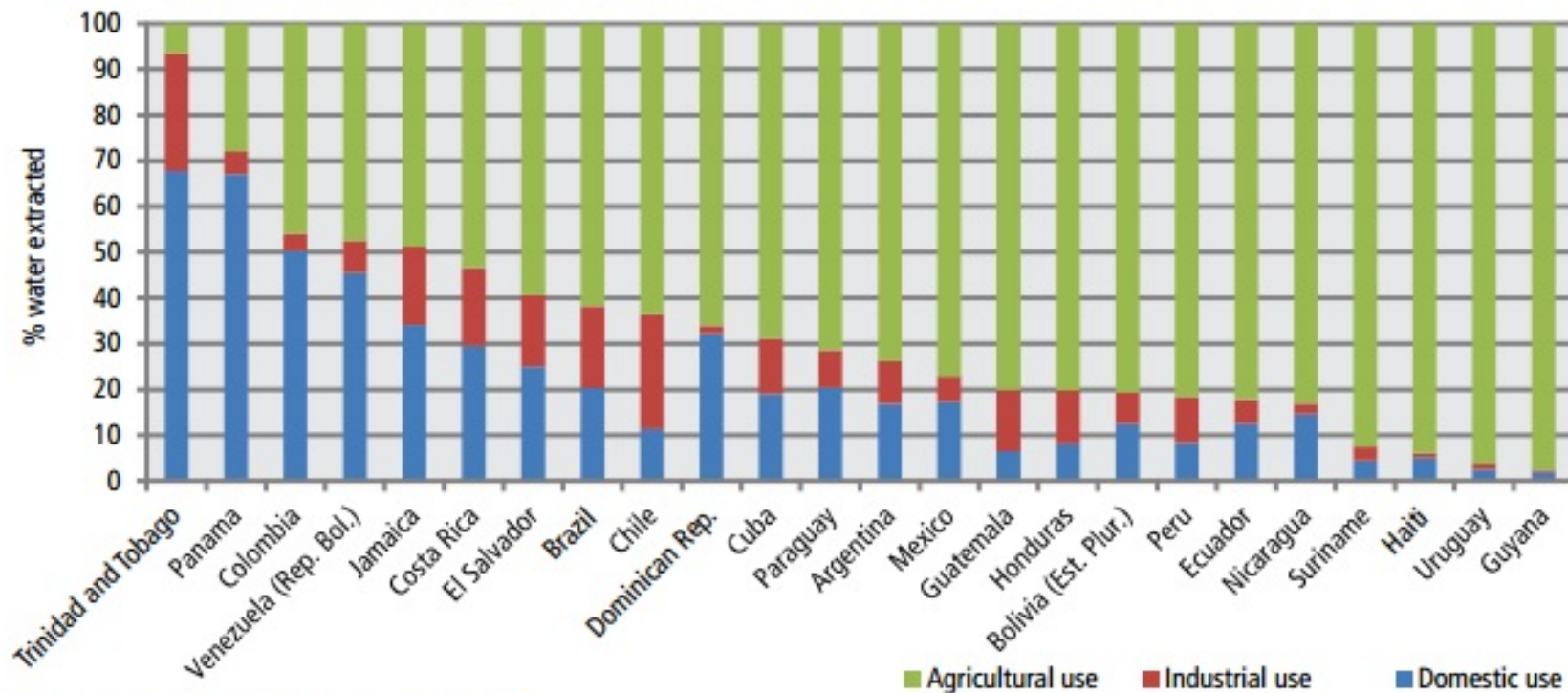


Source: ECLAC. Statistics factsheet. Environmental indicators for Latin America and the Caribbean, 2009

“Latin America and the Caribbean have reached the Millennium Development Goals on water supply. Currently, 92 per cent of the urban population has piped water and the figure rises to 98 per cent if we include other water sources. However, there are significant shortfalls in service quality. Estimates show that 40 per cent of the treated water is lost due to infrastructure malfunction, leaks and misuse, while pricing policies do not always cover running costs and rarely benefit the poor”



Figure 2.1  
Extraction of Water Resources by Economic Sector\*



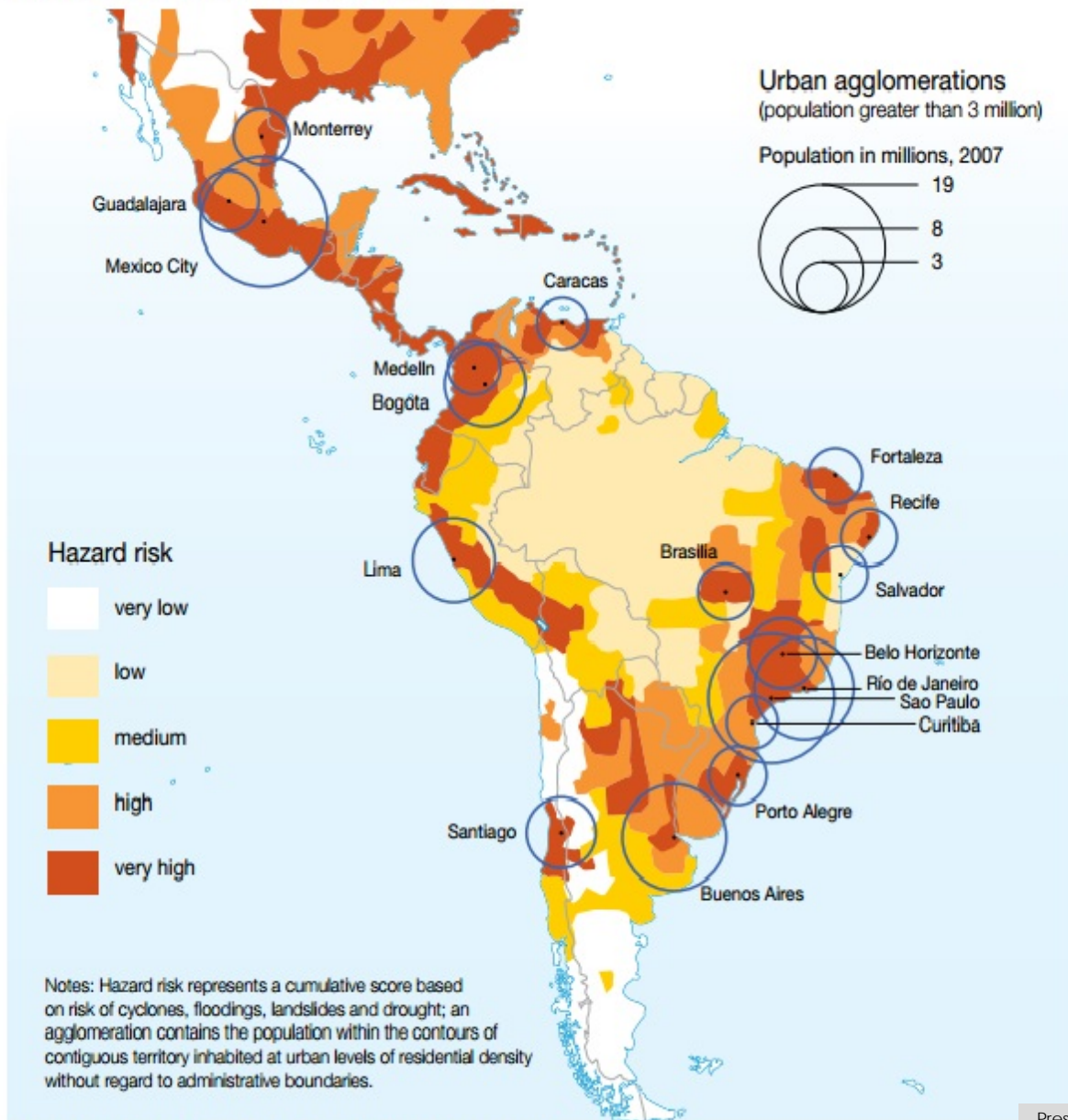
\* Data for latest year available between 1998-2002.

Source: Based on data from ECLAC, Statistics factsheet. Environmental indicators for Latin America and the Caribbean, 2009

“Seventy-four million people (16 per cent) still do not have adequate sanitation in cities. In general, the situation is slightly better in larger cities than in smaller ones, but less than 20 per cent of wastewaters and sewage is treated before discharge, resulting in health and environmental hazards

Each urban inhabitant in the region generates nearly one kilogram of solid waste per day, an amount that has been increasing”

## Vulnerability of Large Cities to Climate Hazards, 2010



Source: Nieves López Izquierdo, associate consultant at UNEP /GRID-Arendal.

Presented at Global Forum on  
14-16 October 2014  
Organized by UNESCO-UNEVOC

### Accumulated Impact of Disasters, by Type of Disaster and Affected Areas, 1970-2009 (USD billions)

	Economic	Social	Infrastructure	Environment	Others	Debris removal and cleaning	Emergency expenses	Total
Climatological	137.064	22.829	49.361	1.582	1.916	649	1.460	214.863
Geophysical	34.363	59.551	33.899	257	2.526	2.587	1.289	134.475
Geophysical Climatological	3.105	1.133	2.996	44	52	0	0.9	7.332
<b>Total</b>	<b>174.534</b>	<b>83.514</b>	<b>86.257</b>	<b>1.884</b>	<b>4.494</b>	<b>3.236</b>	<b>2.751</b>	<b>356.672</b>
<b>Percentage</b>	<b>48.9%</b>	<b>23.4%</b>	<b>24.2%</b>	<b>0.5%</b>	<b>1.3%</b>	<b>0.9%</b>	<b>0.8%</b>	<b>100%</b>

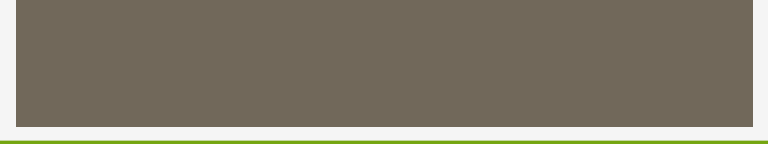
Source: Disaster Impact Assessments carried out by the Unit for Social and Economic Assessment of Disasters ECLAC between 1972 and 2009. Published in Zapata, R. (2010)



### Losses Associated with Disasters (Number of Individuals and Households), 1970-2009

	Muertos	Heridos	Desaparecidos	Hogares destruidos	Hogares dañados	Personas afectadas	Población en 2009
Argentina	3,377	22,470	810	53,973	141,381	23,271,305	40,164,561
Bolivia	1,190	1,133	254	6,249	8,200	832,980	10,187,067
Chile	3,184	6,811	640	101,877	278,087	8,052,836	19,983,720
Colombia	35,898	26,447	2,812	183,106	681,404	22,688,062	45,103,268
Costa Rica	516	51	62	8,796	50,800	32,405	4,509,290
Ecuador	3,019	2,535	1,228	12,074	58,875	1,293,799	14,032,233
El Salvador	4,541	15,087	535	180,227	202,701	343,817	7,124,374
Guatemala	1,953	2,789	1,113	20,941	105,985	3,339,301	14,009,133
Mexico	31,442	2,882,359	9,273	432,812	2,781,635	59,882,327	106,116,969
Panama	339	1,292	39	13,534	70,678	345,782	3,304,461
Peru	40,994	65,675	9,136	438,376	398,237	2,218,035	29,330,481
Venezuela	3,015	379	1,059	56,285	158,288	2,932,101	28,143,584

Source: EIRD (2011).

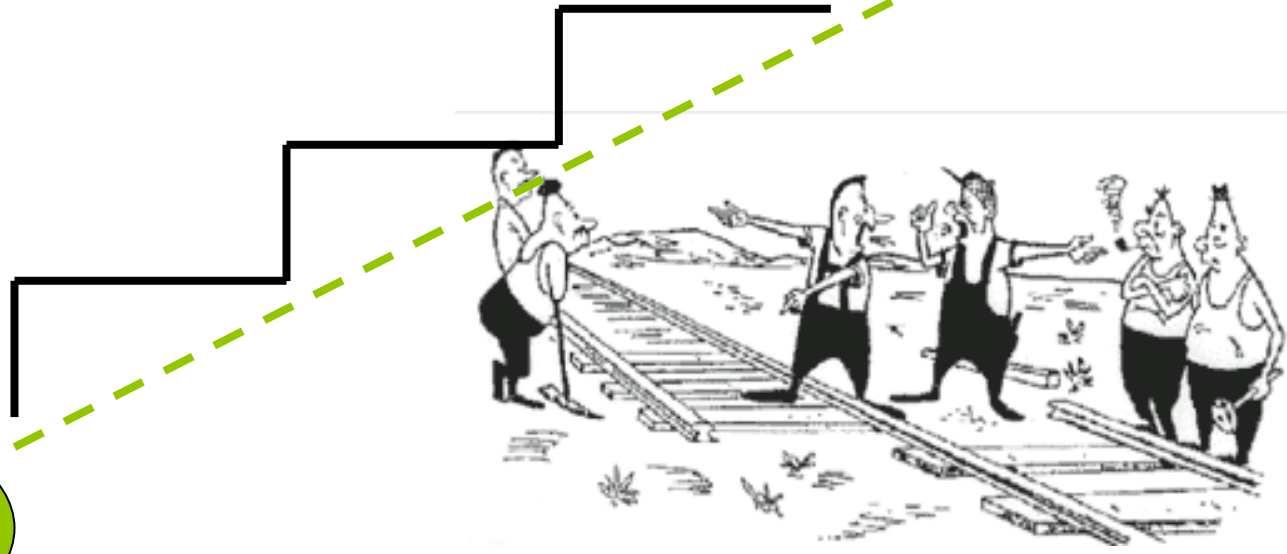


↑  
**COMPETITIVITY**

○  
Current  
Picture

○  
Future  
picture

→  
**TIME**



# What kind of skills do we need?

- ❑ Renewable and clean energy
- ❑ Alternative fuels
- ❑ Carbon footprint
- ❑ Management of solid and liquid waste
- ❑ Reusing waste
- ❑ Enviromental management

## Some programs which green skills are required

- ❑ Organic producer
- ❑ Forester (Silvicultor)
- ❑ Water treatment operator (drinking water / wastewater)
- ❑ Environmental Risk Manager
- ❑ Watershed Manager
- ❑ Installer and repairer of wind systems
- ❑ Installer and repairer of photovoltaic systems
- ❑ Recovery of usable materials
- ❑ Cleaner production module
- ❑ Environmental responsibility module

## Some programs which green skills are required

- ❑ Operator of reusable materials in collection centers
- ❑ Pools operator
- ❑ Operator of wastewater treatment in Environmental Management
- ❑ Operator of drinking water systems for community water
- ❑ Implementing environmental management systems



## Some programs which green skills are required

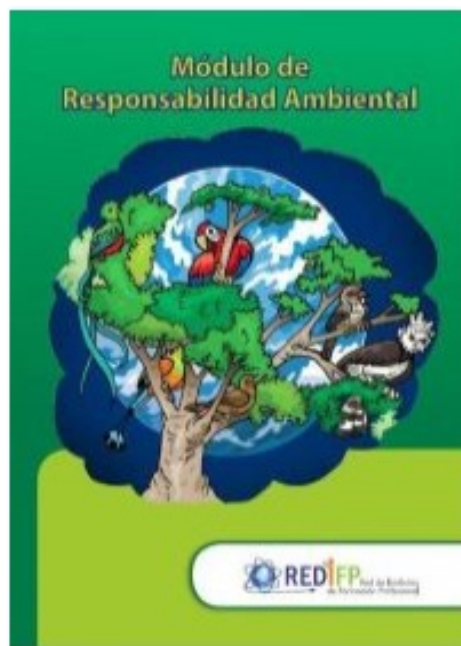
- ❑ Basics concepts for solid waste management
- ❑ Pollution of water and air
- ❑ General guidelines for an environmental management system in the company according to ISO 14000
- ❑ Management of hospital solid waste centers for health
- ❑ Guidelines for the implementation of environmental management programs for institutions

## Some programs which green skills are required

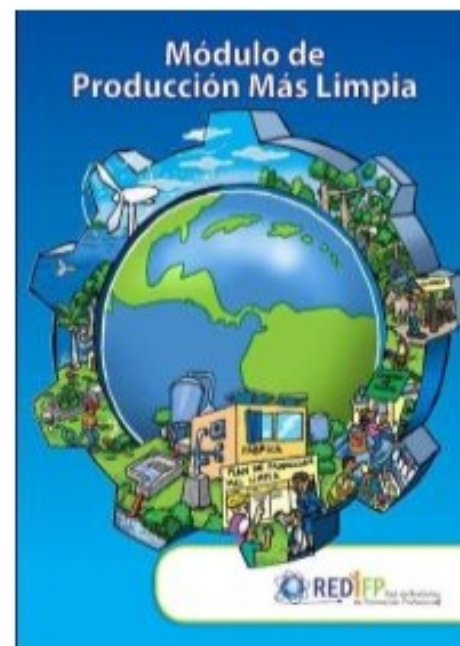
- ❑ Waste management in automotive workshops
- ❑ Environmental Management for the Printing Industry
- ❑ Foundations for the management of solid waste in the wood furniture industry and related materials
- ❑ Basic Principles on septic systems

# Some programs which green skills are required

## Módulos transversales



Módulo de Responsabilidad Ambiental



Módulo de Producción más Limpia



# Good practices in the LAC Region

- ❑ Latin American Network of Fair and Sustainable Cities. The network already comprises more than 37 observatories or local authority entities in nine countries (Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru and Uruguay)
- ❑ Cochabamba, Bolivia. Community sewage treatment Plant. "Aguateros" in Paraguay. Wells drilling to serve the community.
- ❑ Community-based cleaning Services in Puerto Lempira, Honduras

# Good practices in the LAC Region

- ❑ 'Green Exchange', programme in partnership with farmers, by which low-income families receive food in exchange for recyclable waste. i.e. Curitiba, Brazil
- ❑ 'Green Mortgage', additional amounts up to the original loan amount for purchasing technologies that reduce the consumption of water, gas and electricity. i.e. Mexico. The number of 'green' mortgages granted rose from 121,000 in 2009 to more than 376,000 in 2011, totalling 667,000 in its first three years.
- ❑ Oxygen sale. Costa Rica, Colombia.



EL MANEJO DE LOS  
RESIDUOS EN COSTA RICA 2013

¡¿DÍAY JACINTO?!

