



FIGEM

INTER-AMERICAN CEMENT
FEDERATION



Statistical Report | 2013



INTER-AMERICAN CEMENT
FEDERATION

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I. FOREWORD

Dear Member,

The General Direction at FICEM is proud in presenting to its associated organizations a statistical report featuring the cement industry figures about from around the globe, in general, and from Latin America and the Caribbean, in particular. This report was released for the first time three years ago.

The report summarizes figures from 2010, 2011 and 2012 available for publication. Among the contributors of information for this report are the cement and concrete institutes, associations and chambers in the Latin America; partner trade associations, including the European Cement Association (Cembureau); the Cement Sustainability Initiative (CSI); the Inter-American Construction Industry Federation (FIIC, for its name in Spanish); the International Monetary Fund (IMF); the World Bank; the Inter-American Development Bank (IDB); the Development Bank of Latin America (CAF); and the Global Cement Report by the International Cement Review (ICR).



The report covers indicators, figures related to the production, apparent consumption and per capita consumption of cement aggregated by country, among others. It also features economic indicators for Latin America and the Caribbean including GDP per capita, share of the construction industry as part of the GDP, and other statistics associated with urban housing and road infrastructure in the region.

Our objective is to have this statistical report published every two years, establishing it as a relevant source of information for the cement industry and a wide range of external audiences including the academy, and public and private organizations.

This effort is aligned with the appointment of FICEM as one of the 14 Cement Sustainability Initiative's (CSI) Communication Partners the around the globe - the CSI is a sector-project of the World Business Council for Sustainable Development (WBCSD)-. Consequently, the Federation has entered an agreement with the CSI to promote the participation in the GNR (Getting the Numbers Right) database among cement companies in Latin America. The GNR database records performance information about CO₂ emissions and energy consumption from the world cement industry.

The Federation's involvement has raised awareness among cement producers in the region, providing training for the quantification and reporting of CO₂ emissions and energy efficiency. The figures currently reported by the regional industry account for 68% of the total production in Latin America and the Caribbean.

The report consolidates some of the performance indicators for CO₂ emissions and energy efficiency up to 2011. The figures reveal the cement industry's engagement towards sustainability and the environment. These results have been accomplished thanks to the rise in the utilization of alternative fuels, which has diminished the industry's reliance on traditional fossil fuels while reducing carbon emissions.

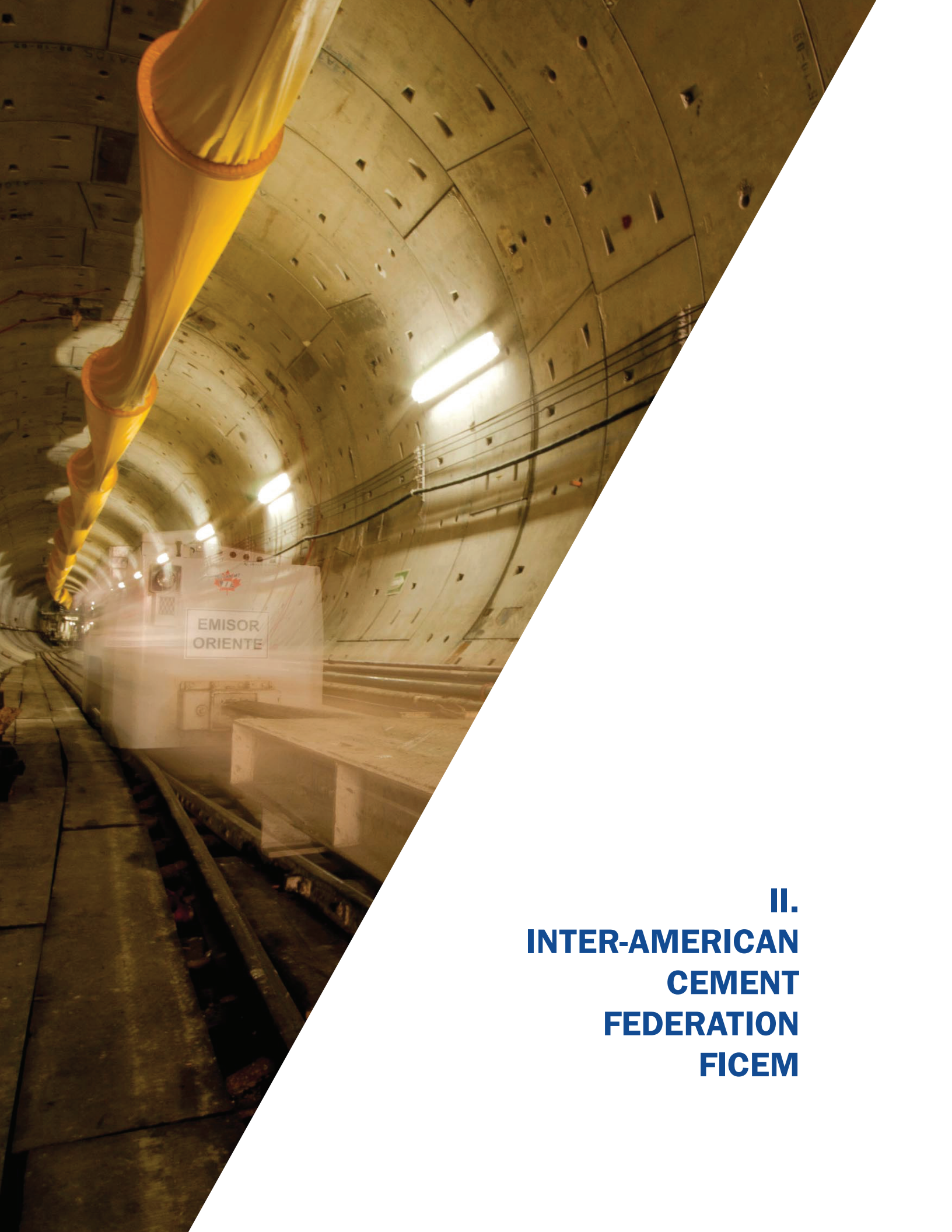
This report allows different stakeholders including cement manufacturers, trade associations, policymakers, the academy and NGOs, to learn about the industry's performance and its commitment with climate protection.

This is a publication under development, therefore, we kindly invite you to contact FICEM at ficem@ficem.org and share with us any questions about contents and figures.

Kind regards,



Gabriel M. Restrepo Santamaría
Chairman
Inter-American Cement Federation



II. INTER-AMERICAN CEMENT FEDERATION FICEM

INTER-AMERICAN CEMENT FEDERATION FICEM

Legally established in 2002, FICEM is an independent trade association that represents the cement industry in Latin America, the Caribbean, Spain and Portugal. Its origin dates back to 1973, when the Latin American Group of Cement and Concrete Institutes was created. In 1989, the initiative was renamed as FICEM, stepping further towards its consolidation through the merger with the Association of Cement Producers of the Caribbean in 2007.

Currently, the core objective of FICEM is to promote the industry's sustainability agenda and the sustainability of cement as a product, inspired by the guiding principles of the Cement Sustainability Initiative (CSI), a sector-project of the World Business Council for Sustainable Development (WBCSD).

The Federation actively participates in the global agenda for cement and concrete. It contributes in the collection of different regulation frameworks, trends and construction systems. It is also dedicated to create platforms for the exchange of good practices associated to social responsibility models and environment-friendly technologies, striving for the progress and welfare of the communities where its affiliated companies are active.

FICEM interacts with a wide range of international organizations, acting as a hub for the reception and dissemination of technical information, regulations and news; reaching 29 countries in Latin America, Spain, and Portugal, where 83 cement manufacturers, 11 technical institutes and 8 trade associations operate.

OBJECTIVES

- To promote the sustainable development of the cement industry.
- To strengthen the representativeness of the Latin American cement industry before multilateral organisms, public authorities and the society.
- To gather and share technical knowledge, regulations and good practices supportive of cement- and concrete-based construction systems.

THE CEMENT INDUSTRY IN IBERO-AMERICA AND THE CARIBBEAN TODAY

The Cement Industry in Latin America, the Caribbean, Spain and Portugal owns factories in 29 countries where 83 cement manufacturers have operations.

Out of these 29 countries, 14 have industry associations or technical institutes to represent the local industry, the remaining 15 lack of these types of organizations.

- 29 countries with local cement production
- 660 million inhabitants
- 83 cement manufacturing companies
- 328 production centers (including integrated manufacturing facilities and grinding centers)
- 11 technical institutes and 8 trade associations in 14 countries
- 200 million tons of annual cement production
- 5.6 % of global cement production





III. LATIN AMERICA AND THE CARIBBEAN: ECONOMIC INDICATORS

LATIN AMERICA AND THE CARIBBEAN: ECONOMIC INDICATORS

In the economic study published by the International Monetary Fund [Ref.1], the growth of the real GDP in Latin America and the Caribbean averaged 3% in 2012, that is, a decrease of 4.5% in comparison to the preceding year.

The decline of the economic performance was particularly sharp for some of the major economies in the region.

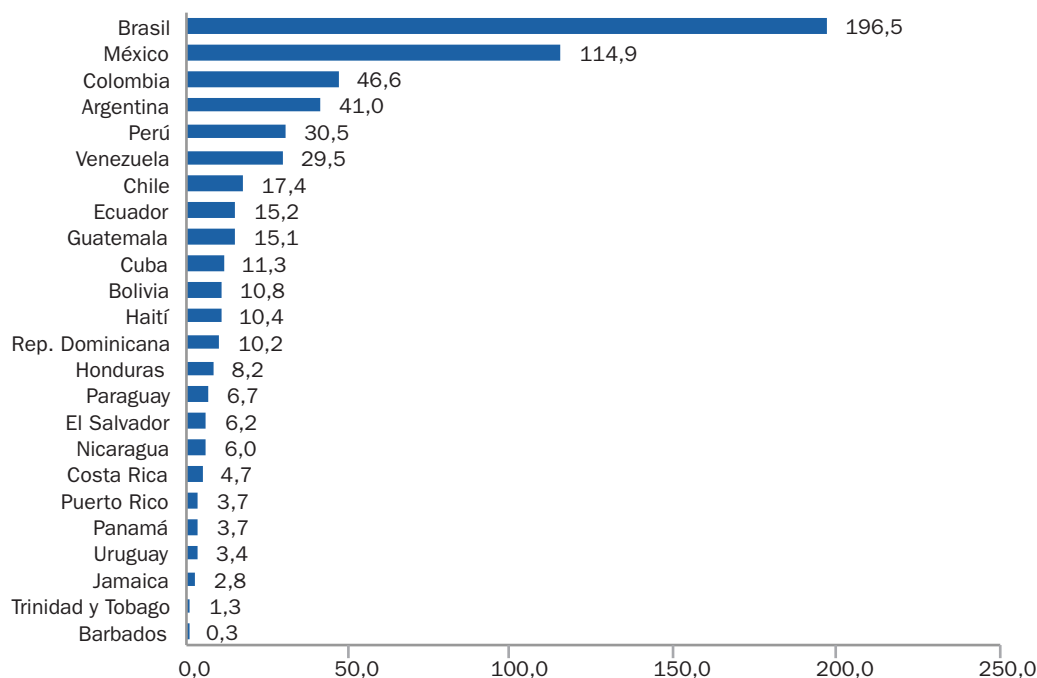
This downfall occurred, mainly, due to a strong decrease of private investments during the first semester of 2012 in Brazil

(already on its way back to an economic upsurge); and to diminishing investors' confidence and activity in Argentina.

The remaining of Latin America and the Caribbean reported remarkable growth, in most of the cases explained by a strong domestic demand which helped to off-set the negative effects of weakening exports.

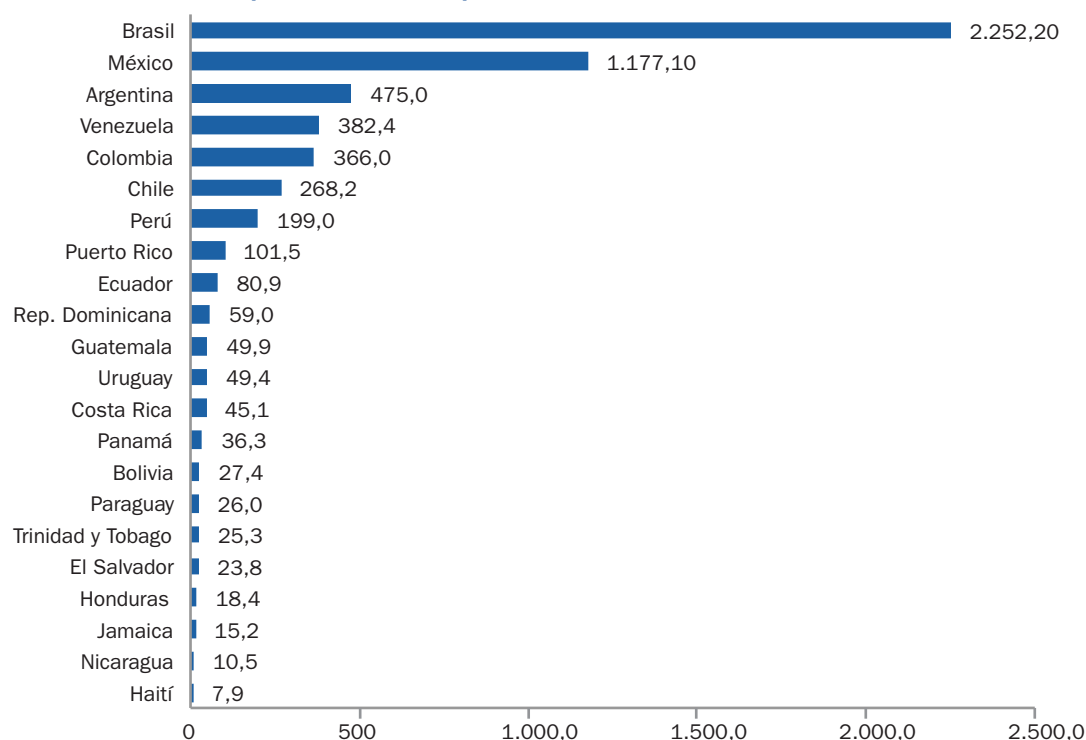
The expected growth for the region in 2013 is around 3.4%, driven by a more vigorous external demand and by the effects from reactivation policies introduced in some countries.

POPULATION 2012 (MILLIONS OF INHABITANTS)



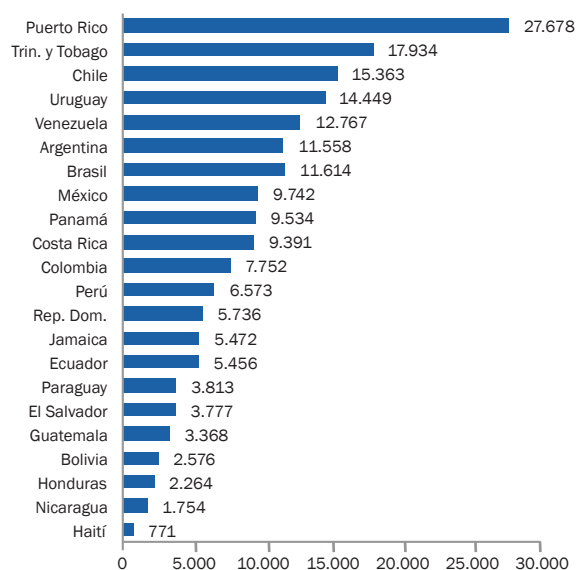
Source: IMF [Ref.1], World Bank [Ref. 2] and IBGE [Ref. 3]

TOTAL GDP 2012 (US\$ BILLIONS)

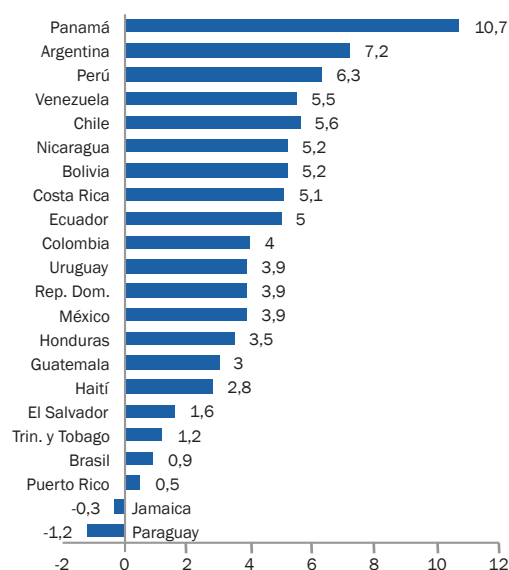


Source: IMF [Ref.1], World Bank [Ref. 2] and Brazil Central Bank [Ref. 4]

GDP PER CAPITA 2012 (US\$ CURRENT PRICES)



GDP GROWTH (% ANNUAL)



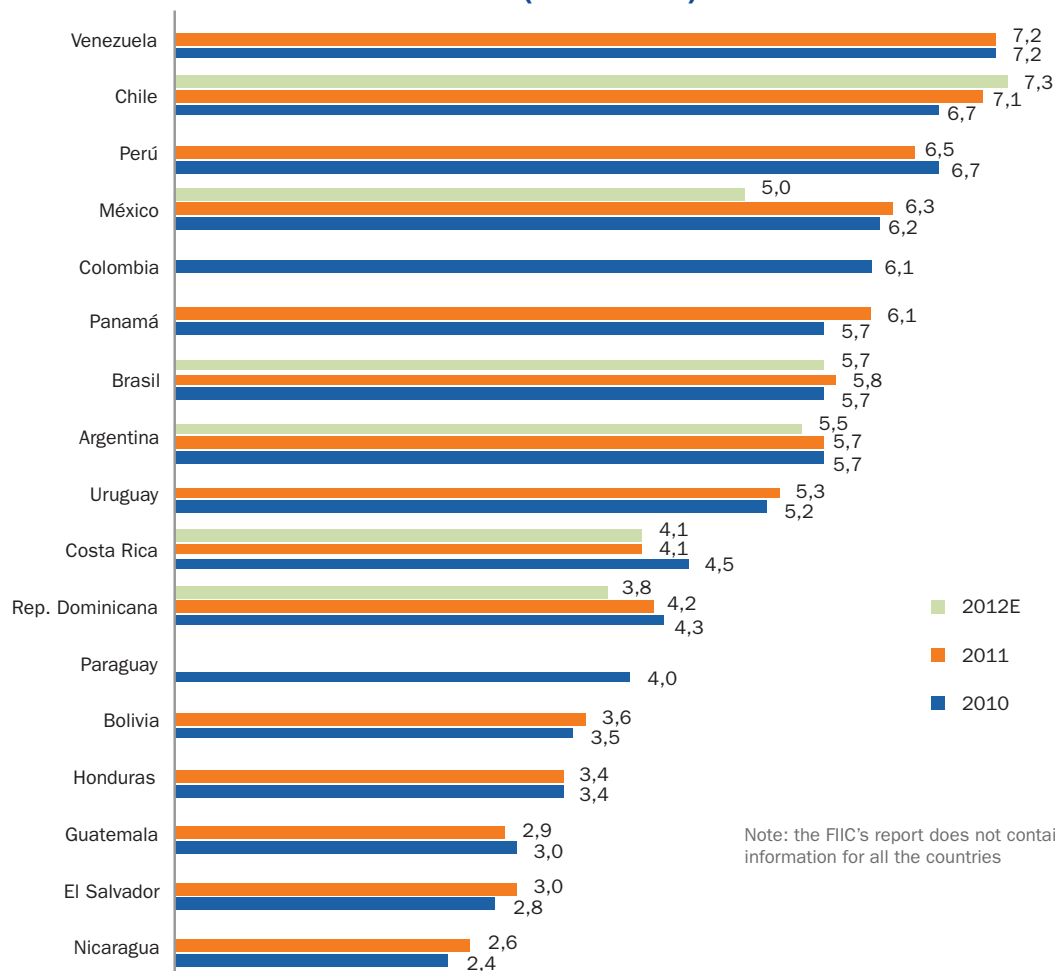
Source: IMF [Ref.1], World Bank [Ref. 2] and IPEA [Ref. 5]

SHARE OF CONSTRUCTION IN GDP

According to the report published by the Inter-American Construction Federation (FIC) and the information available up to 2011, the economic expansion the region has been experiencing in the latest years encourages the optimistic expectations held by the construction sector.

The increase of foreign direct investment and remittances in the region (particularly from Latin American immigrants working in the USA), rising commodity prices and, in general, the positive growth outlook for the region in the years to come favor a promising balance for the construction industry.

SHARE OF CONSTRUCTION IN GDP (% ANNUAL)



Source: FIC [Ref. 6] and IBGE [Ref. 3]

HOUSING DEFICIT

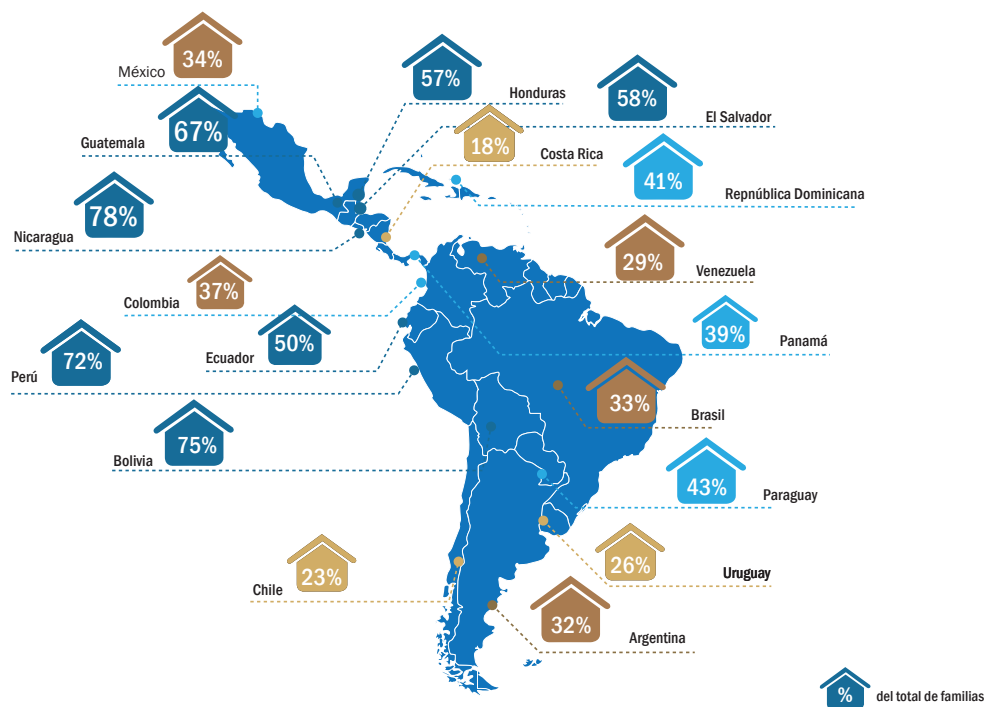
Currently, Latin America and the Caribbean are facing a significant housing deficit, currently on the rise. According to a study by the Inter-American Development Bank (IDB) [Ref. 7], every third family in Latin America and the Caribbean –that is, 59 million people– lives under inadequate housing conditions, in edifications built with precarious materials, or with no access to basic power and sanitation services.

Similarly, almost two out of the three million new families that appear in Latin American cities each year are forced to settle in illicit buildings and marginal areas due to an

insufficient supply of adequate, accessible homes. In order to increase the supply of adequate, accessible housing, the governments are called to improve land property regulations, amplify the access to financing options and mobilize private resources. According to the IDB, it is likely that economic growth will help to reduce the housing gap in the region, but this will not prove to be enough to close it.

Towards 2015, economic growth will allow the improvement of housing conditions for just 36% of the families currently living in substandard housing conditions.

¿HOW MANY FAMILIES LACK HOUSING OR ARE LIVING IN SUBSTANDARD HOUSING CONDITIONS?



Source: IDB [Ref. 7]

ROAD INFRASTRUCTURE IN LATIN AMERICA AND THE CARIBBEAN

The road network in Latin America and the Caribbean consists of, approximately, three million kilometers out of which, according to the Development Bank of Latin America (CAF), 20% are paved. [Ref. 8].

The CAF highlights severe disparities among countries: due to their smaller size, the Antilles, Barbados, Bahamas, Cuba, Dominica, Granada, Jamaica, Puerto Rico and Uruguay report road pavement rates over 50%. Other countries with a superior econo-

mic potential by far, but also larger land extension, report significantly lower road pavement rates. Brazil is a clear example of this paradigm, with a meager 15% of its road network paved. Halfway between these two extremes are countries like Chile, Argentina, Costa Rica, El Salvador, Guatemala, Mexico and Venezuela, ranging between 25% and 35% of paved roads. The least favored countries, with under 20% of their roads paved are Bolivia, Colombia, Ecuador, Guyana, Nicaragua and Paraguay.

ROAD NETWORK INDICATORS FOR LATIN AMERICA AND THE CARIBBEAN

INDICATOR	AVERAGE LATIN AMERICA AND THE CARIBBEAN
% of paved roads	21.8
Km of roads per Km ²	0.16
Km of paved roads per Km ²	0.03
Km of roads per 1.000 inhabitants	5.1
Km of roads per 1.000.000 GDP	0.60
Km of roads per 1.000 vehicles	29.33

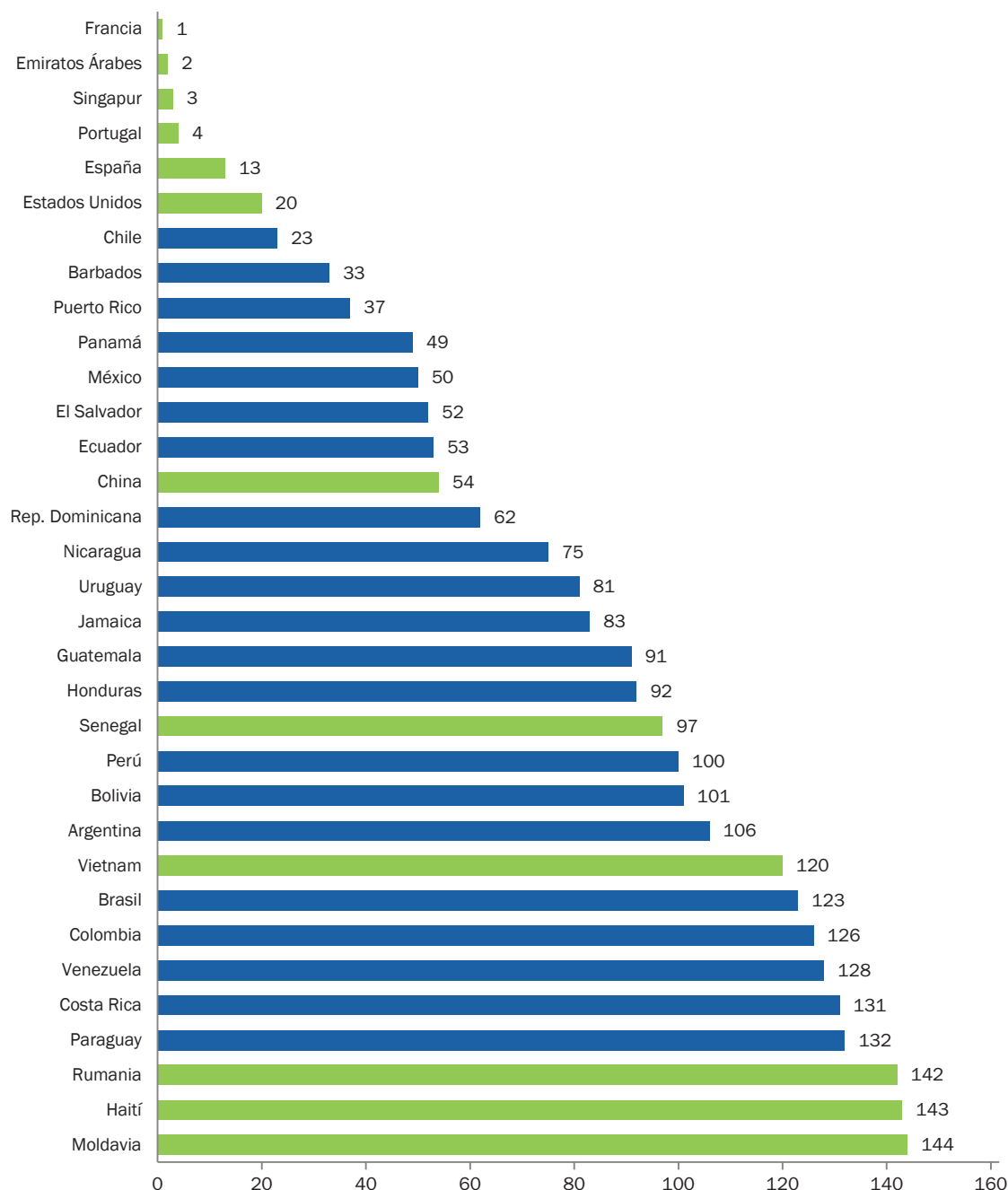
Source: CAF [Ref. 8]

ROAD NETWORK INDICATORS FOR LATIN AMERICA AND THE CARIBBEAN

The latest Global Competitiveness Report released by the World Economic Forum [Ref. 9] makes an assessment of the different factors influencing a country's economy, including the quality of road infrastructure in 144 countries. The following chart shows the classification obtained by Latin American countries compared against reference countries. Among the best ranked countries in the region are Chile, Barbados, Puerto Rico, Panama, Mexico, El

Salvador and Ecuador. In the case of Chile, the quality of the road infrastructure is comparable to the USA's, while Ecuador's road quality is comparable to China's. The group of least favored countries includes eight nations ranked between the 100th and 144th positions. This confirms the great challenge Latin America and the Caribbean face regarding the quality of their road infrastructures when compared against the highest international standards.

COUNTRY RANKING – QUALITY OF ROAD INFRASTRUCTURE



Source: World Economic Forum. [Ref. 9]



IV. FIGURES FROM THE CEMENT INDUSTRY IN LATIN AMERICA AND THE CARIBBEAN

OVERVIEW - PER CAPITA CEMENT PRODUCTION AND CONSUMPTION IN 2011



CEMENT PRODUCTION

- 0 - 1 million tons
- 1 - 5 million tons
- 5 - 10 million tons
- > 10 million tons

(1) International Cement Review

Sources: Cement Institutes, Chambers and Associations in Latin America [Ref. 10]
International Cement Review [Ref. 11]

OVERVIEW - PER CAPITA CEMENT PRODUCTION AND CONSUMPTION IN 2012



CEMENT PRODUCTION

- 0 - 1 million tons
- 1 - 5 million tons
- 5 - 10 million tons
- > 10 million tons

(1) Preliminary data
(2) Estimation by FICEM

Sources: Cement Institutes, Chambers and Associations in Latin America [Ref. 10]
International Cement Review [Ref. 11]

CEMENT PRODUCTION IN 2010, 2011 AND 2012

It is estimated that, in 2012, the production of cement in Latin America and the Caribbean reached 180 million tons. That is an increase of 5,10% which is, in turn, lower to the growth achieved in the immediately preceding year when cement production reported a growth of 6,26%.

In 2012, Brazil maintained its leadership in cement production followed by Mexico, Colombia and Argentina.

The important output rise in 2012 in Peru and Panama is also remarkable. Panama leaped from a growth rate of 18,44% in 2011 to 27,52% in 2012, while Peru's growth rate increased from 2,42% in 2011 to 15,86% in 2012. This expan-

sion is a result of the current dynamism in the construction sector in these countries.

In the case of Panama this expansion is associated to the public investment in infrastructure, including the enlargement of the Canal, the construction of the subway and the modernization of the road network, among others. In the case of Peru it is associated to the building of public and private works, housing projects and shopping centers.

Likewise, it is worth to mention the decrease by 21% of cement production in Trinidad & Tobago and Barbados in 2012.

CEMENT PRODUCTION (THOUSAND TONS)

PAÍS	2010	2011	2012
Argentina	10.423	11.592	10.716
Barbados	229	223	175
Bolivia	2.414	2.658	2.714
Brasil	59.117	64.093	68.809
Chile	4.417	4.650	5.044 ⁽²⁾
Colombia	9.505	10.779	10.925
Costa Rica	1.500	1.400	1.400 ⁽²⁾
Cuba	1.730	1.736	1.825
Ecuador	5.287	5.706	6.025
El Salvador	1.290 ⁽¹⁾	1.320 ⁽¹⁾	1.380 ⁽¹⁾
Guadalupe y Martinica	441	431	435
Guatemala	2.794	2.850	2.880
Haití	nd	nd	nd
Honduras	1.600	1.620	1.730 ⁽¹⁾
Jamaica	723	766	760
México	34.503	35.398	36.800 ⁽¹⁾
Nicaragua	600 ⁽¹⁾	700 ⁽¹⁾	730 ⁽¹⁾
Panamá	1.491	1.766	2.252
Paraguay	1.100 ⁽¹⁾	820 ⁽¹⁾	800 ⁽¹⁾
Perú	8.298	8.499	9.847
Puerto Rico	697	717	743
República Dominicana	4.100	3.800	4.000
Trinidad y Tobago	791	827	654
Uruguay	834	968	872
Venezuela	7.120 ⁽¹⁾	7.760 ⁽¹⁾	8.280 ⁽¹⁾
América Latina y el Caribe	161.004 ⁽³⁾	171.079 ⁽³⁾	179.796 ⁽³⁾

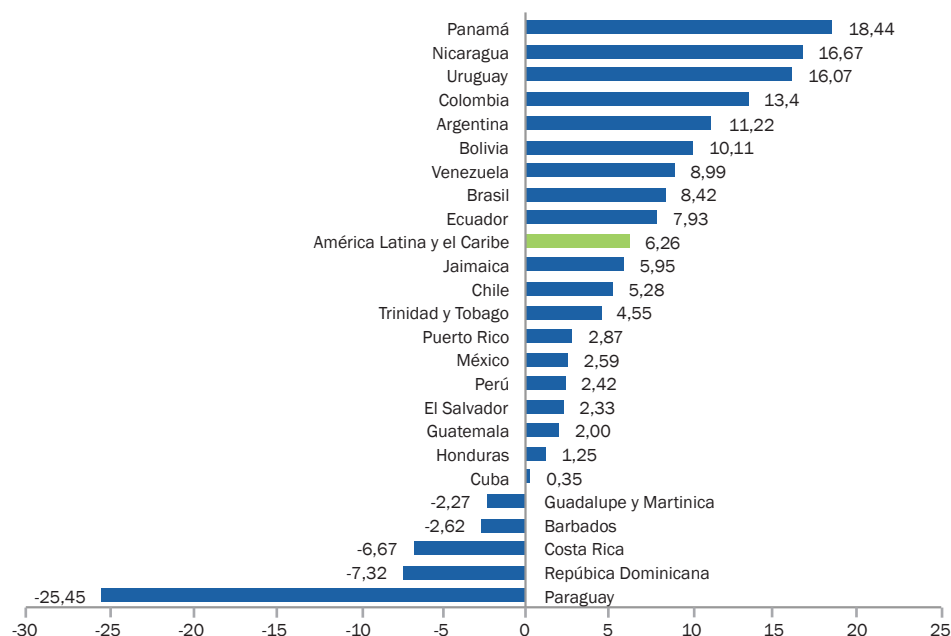
Sources: Cement Institutes, Chambers and Associations in Latin America [Ref. 10]

(1) International Cement Review [Ref. 11]

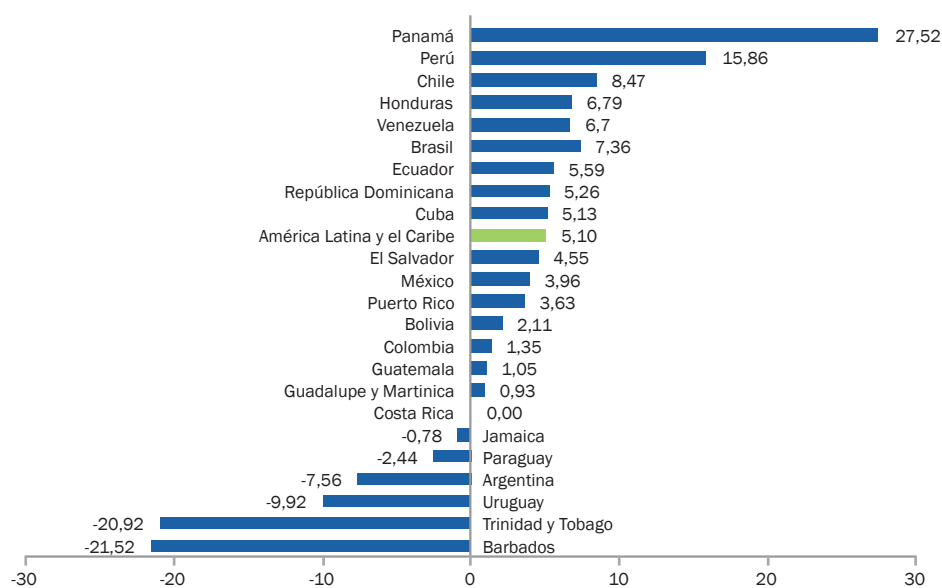
(2) Preliminary data

(3) Totals do not include Haiti

CHANGE IN CEMENT PRODUCTION 2011/2010 (%)



CHANGE IN CEMENT PRODUCTION 2012/2011 (%)



Sources: Cement Institutes, Chambers and Associations in Latin America [Ref. 10]
International Cement Review [Ref. 11]

CEMENT CONSUMPTION: 2010, 2011 AND 2012

In 2012, cement consumption in Latin America and the Caribbean rose by 4,96%, an inferior growth rate in comparison to the one registered in 2011 of 6,50%.

In 2012 the countries with a growth in cement consumption over 10% were Panama, Peru and Chile. In 2011 the amount of countries exceeding the 10% mark was larger (Haiti, Nicaragua, Uruguay,

Colombia, Chile, Panama and Argentina).

The greatest increase in consumption rates was registered by Panama and Peru. Panama went from 13,09% in 2011 to 32,89% in 2012, while consumption in Peru rose from 4,03% in 2011 to 15,14% in 2012.

Argentina's consumption growth declined from 11,69% in 2011 to 8,17% in 2012.

CEMENT CONSUMPTION (THOUSAND TONS)

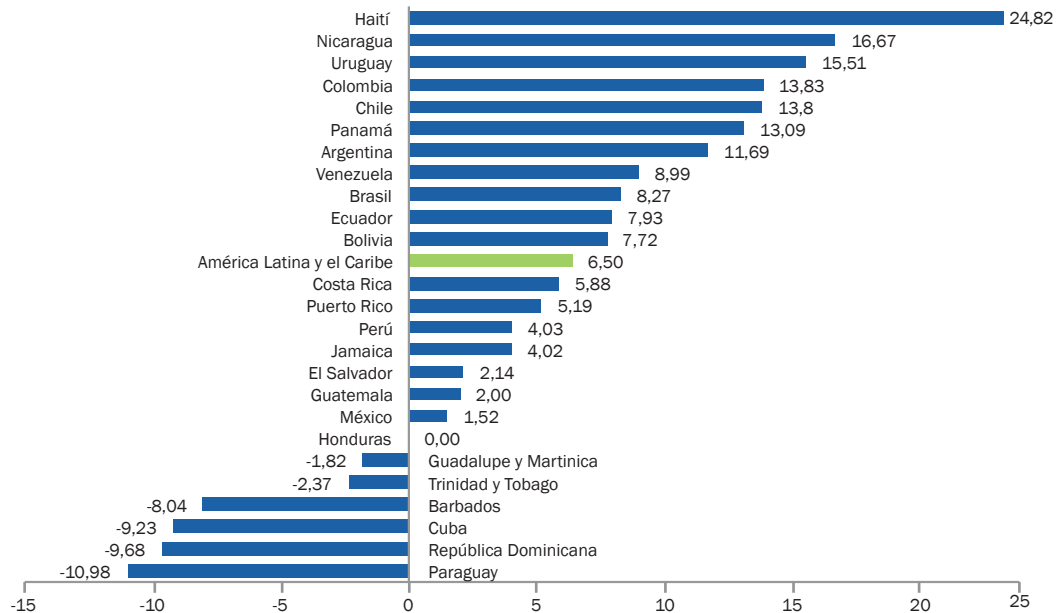
PAÍS	2010	2011	2012
Argentina	10.194	11.386	10.456
Barbados	112	103	98
Bolivia	2.449	2.689	2.915
Brasil	60.008	64.972	69.324
Chile	4.456	5.071	5.690 ⁽²⁾
Colombia	8.921	10.155	10.496
Costa Rica	1.275	1.350	1.350 ⁽²⁾
Cuba	1.430	1.298	1.372
Ecuador	5.287	5.706	6.025
El Salvador	1.400 ⁽¹⁾	1.430 ⁽¹⁾	1.480 ⁽¹⁾
Guadalupe y Martinica	440	432	434
Guatemala	2.794	2.850	2.880
Haití	1.120	1.398	1.388
Honduras	1.500 ⁽¹⁾	1.500 ⁽¹⁾	1.580 ⁽¹⁾
Jamaica	696	724	700
México	33.900	34.416	35.600 ⁽¹⁾
Nicaragua	600 ⁽¹⁾	700 ⁽¹⁾	730 ⁽¹⁾
Panamá	1.597	1.806	2.400
Paraguay	1.640 ⁽¹⁾	1.460 ⁽¹⁾	1.280 ⁽¹⁾
Perú	8.496	8.838	10.176
Puerto Rico	771	811	835
República Dominicana	3.100	2.800	2.600
Trinidad y Tobago	548	535	512
Uruguay	664	767	829
Venezuela	7.120 ⁽¹⁾	7.760 ⁽¹⁾	8.280 ⁽¹⁾
América Latina y el Caribe	160.518	170.957	179.430

Sources: Cement Institutes, Chambers and Associations in Latin America [Ref. 10]

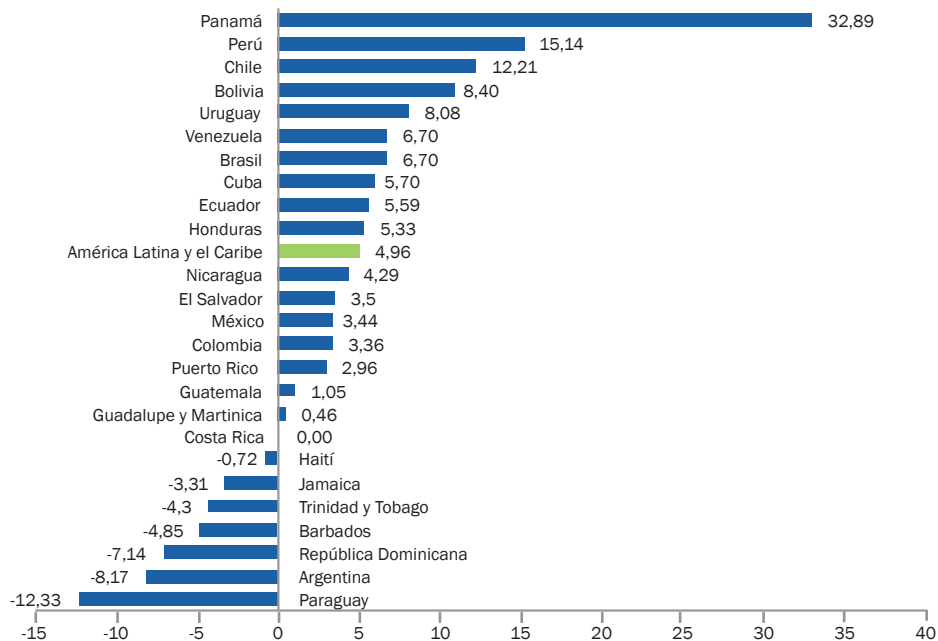
(1) International Cement Review [Ref. 11]

(2) Preliminary data

CHANGE IN CEMENT CONSUMPTION 2011/2010 (%)



CHANGE IN CEMENT CONSUMPTION 2012/2011 (%)



Sources: Cement Institutes, Chambers and Associations in Latin America [Ref. 10]
International Cement Review [Ref. 11]

PER CAPITA CEMENT CONSUMPTION: 2010, 2011 AND 2012

In 2012, estimated per capita cement consumption for Latin America and the Caribbean was 301 kg/hab.

In 2011, per capita cement consumption was particularly outstanding in Guadeloupe and Martinique (542 kg/hab), Panama (492 kg/hab), Trinidad & Tobago (405 kg/hab), Ecuador (386 kg/hab), Barbados (372 kg/hab) and Brazil (333 kg/hab).

In addition to the aforementioned countries, in 2012, new countries reported equally high per capita cement consumption volumes including: Peru (338 kg/hab), Chile (327 kg/hab) and Mexico (305 kg/hab).

In 2012, Panama's per capita cement consumption rose by 31% hitting 644 kg of cement per person. Peru's per capita cement consumption rose by 14%, Bolivia's and Chile's grew around 11%.

PER CAPITA CEMENT CONSUMPTION (KG/HAB)

PAÍS	2010	2011	2012
Argentina	254	281	256
Barbados	406	372	354
Bolivia	233 ⁽²⁾	252 ⁽¹⁾	280 ⁽²⁾
Brasil	311	333	353 ⁽³⁾
Chile	261	293	327 ⁽³⁾
Colombia	193 ⁽²⁾	217 ⁽¹⁾	226 ⁽²⁾
Costa Rica	279	292	290 ⁽³⁾
Cuba	127	115	122
Ecuador	365	386	388
El Salvador	226 ⁽²⁾	231 ⁽¹⁾	235 ⁽²⁾
Guadalupe y Martinica	551	542	544
Guatemala	194	193	191
Haití	120	139	138
Honduras	197 ⁽²⁾	191 ⁽¹⁾	199 ⁽²⁾
Jamaica	257	268	258 ⁽²⁾
México	301	299	305 ⁽²⁾
Nicaragua	104 ⁽²⁾	119 ⁽¹⁾	120 ⁽²⁾
Panamá	442	492	644
Paraguay	250 ⁽²⁾	222 ⁽¹⁾	194 ⁽²⁾
Perú	288	296	338
Puerto Rico	206 ⁽²⁾	227 ⁽¹⁾	223 ⁽²⁾
República Dominicana	350	278	258
Trinidad y Tobago	416	405	385
Uruguay	201	232	251
Venezuela	250 ⁽²⁾	265 ⁽¹⁾	277 ⁽²⁾
América Latina y el Caribe	276	289	301

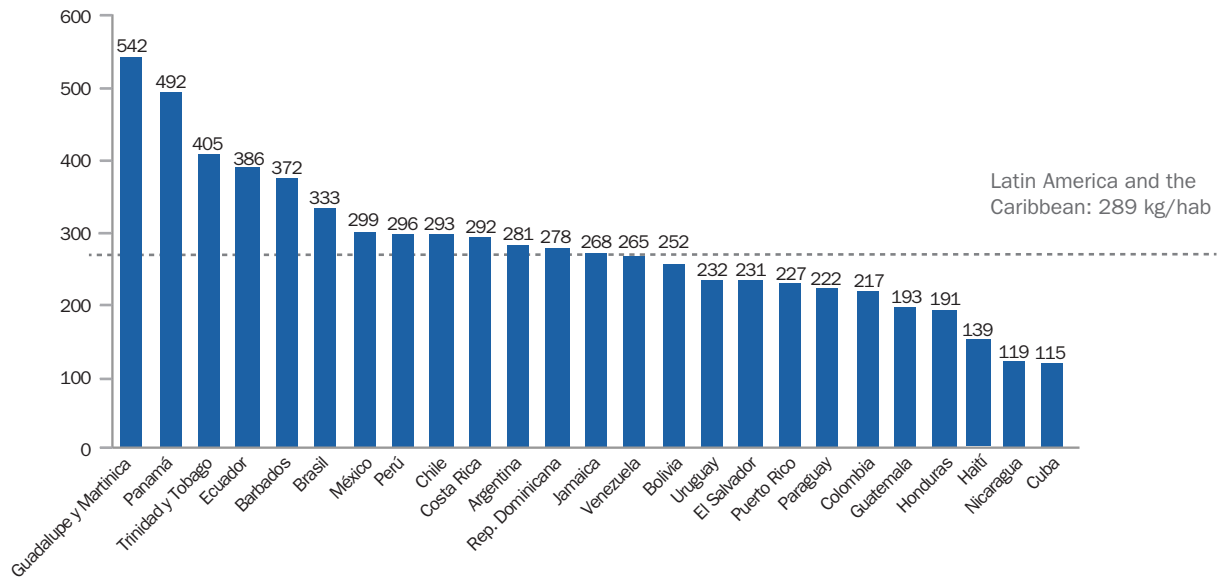
Sources: Cement Institutes, Chambers and Associations in Latin America [Ref. 10]

(1) International Cement Review [Ref. 11]

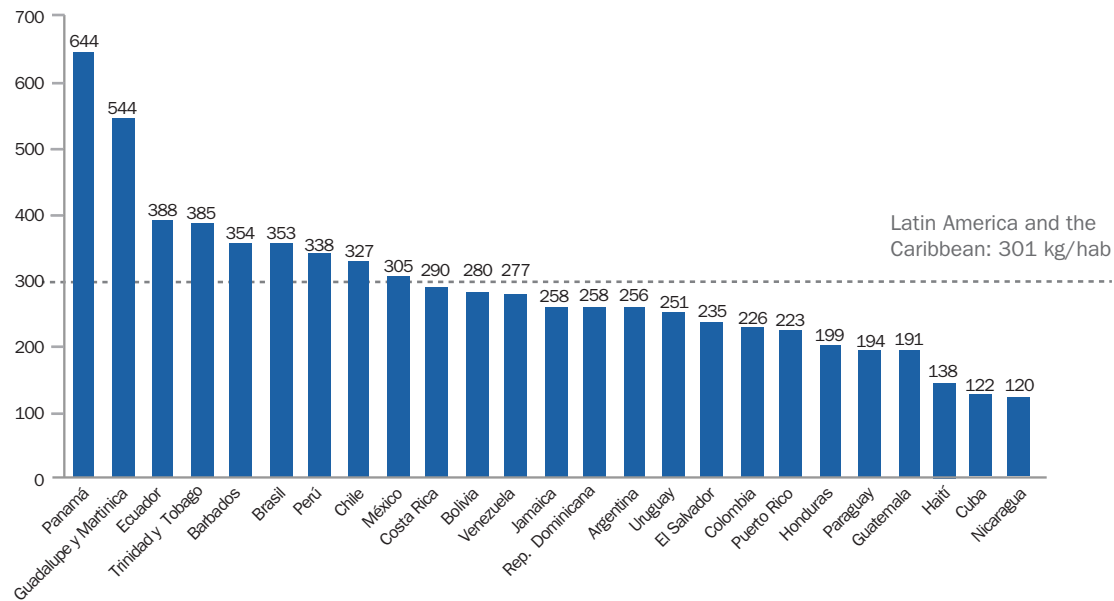
(2) Calculation by FICEM

(3) Preliminary data

PER CAPITA CEMENT CONSUMPTION 2011 (KG/HAB)



PER CAPITA CEMENT CONSUMPTION 2012 (KG/HAB)



Sources: Cement Institutes, Chambers and Associations in Latin America [Ref. 10]
International Cement Review [Ref. 11]



V. GLOBAL CEMENT INDUSTRY: FIGURES

GLOBAL ECONOMY

According to the IMF report [Ref. 2] on economic performance in the Americas, global economic growth decreased by 3,2% in 2012 compared to the 4% reported in 2011 due to policies introduced by some key economies which held back, to a great extent, economic and trade activities.

Deceleration was generalized at a global level, however dominant in Europe, where a combination of uncertainties regarding sovereign debts and the financial sector punished domestic demand. Emerging economies were also affected by weaker demand levels in developed countries, tighter policies and high uncertainty levels. [Ref. 2]

Another IMF publication about the global economic outlook [Ref. 12] states slow economic recovery is expected in 2013-2014. The forecast of economic development is 3,3% for 2013 and 4% for 2014.

Future economic growth will happen at different paces in different places. Emerging economies will continue leading the expansion, in the United States growth will gain momentum, while in Europe, recovery will be limited due to an ongoing overhaul of the public debt and finances. Global growth is expected to stabilize around 4,5% in the mid-term. [Ref. 12]

REAL GDP GROWTH (%)

	Forecast.			
	2011	2012	2013	2014
World	4,0	3,2	3,3	4,0
Developed economies	1,6	1,2	1,2	2,2
USA	1,8	2,2	1,9	3,0
Eurozone	1,4	-0,5	-0,4	1,1
Japan	-0,6	2,0	1,6	1,4
Emerging and development economies	6,4	5,1	5,3	5,7
China	9,3	7,8	8,0	8,2

Source: International Monetary Fund (IMF). [Ref. 12]

DEVELOPMENT OF CEMENT PRODUCTION

In its 2012 Activities Report [Ref. 13], CEMBUREAU estimates that global cement production for that year reached 2,6 billion tons, that is, an increase of 3% compared against the preceding year. In spite of the drop in China's yearly growth rate from 9,6% in 2011 to 3,6%, in 2012, China's share of global cement output rose from 56% in 2011 to 59,3% in 2012.

Excluding China, global cement production increased by 1,8%, a rate below the 2,8% achieved in 2011. In spite of the global economic downturn, the volume of cement production in the G20 emerging economies exceeded, by far, the volume produced in developed economies. In general terms, these countries reported a yearly growth of 3,3%, contrasting the drop of -0,9% in the G7 economies.

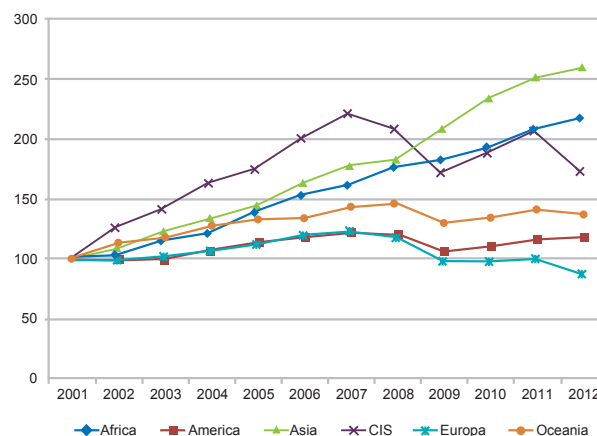
According to preliminary figures, the highest growth rates were reported in South Africa,

Indonesia, Brazil and India. Russia and Argentina, which registered high growth rates in previous years, were affected by a sluggish economic performance.

Among G7 countries, the recovery of cement production gained impulse in the United States and Japan, resulting in yearly growth rates of 9,1% and 6,1% respectively. In Canada, the production of cement grew at a moderate pace (1,6%). European G7 countries, on the other hand, suffered strong backslides in their annual growth rates.

In 2012, cement production in South America, Africa and Asia kept rising in comparison to previous years. These regions were accountable for growth rates of 3%, 4% and 80% respectively. CEMBUREAU countries represented approximately 6% of global output, the share of global output corresponding to EU members contracted to around 4,3%.

DEVELOPMENT OF GLOBAL CEMENT PRODUCTION BY REGION 2001-2012 (MILLION TONS, BASE 2001=100)



Source: The European Cement Association (CEMBUREAU). [Ref. 13]

CEMENT PRODUCTION AND CONSUMPTION BY REGION

According to the figures in the report by the International Cement Review [Ref. 11], cement production in Latin America and the Caribbean accounts for 4,7% of global production (estimations 2011 and 2012).

With 2,08 billion tons produced, China's cement output represents 57,2% of global cement fabrication. This figure is calculated to reach 2,22 billion tons in 2012.

Excluding China, cement production in Latin America and the Caribbean totaled 11% of

the global output in 2011 and 2012.

Estimated growth rates for the production and consumption of cement in Latin America in 2012 are 4,4% and 4,5%, respectively, below the rates of the preceding year, 7,0% and 6,9%. This performance is comparable to global performance which in 2012, altogether, recorded estimated growth rates for production and consumption around 5,3% and 4,2%, that is, a drop from the rates of 8,1% and 8,3% recorded in 2011.

CEMENT PRODUCTION AND CONSUMPTION BY REGION (MILLION TONS)

REGION	2010		2011		2012E ⁽²⁾	
	PRODUCTION	CONSUMPTION	PRODUCTION	CONSUMPTION	PRODUCTION	CONSUMPTION
Latin America & the Caribbean	161,150	159,390	172,460	170,370	180,110	178,120
North America ⁽¹⁾	77,470	79,980	79,000	81,030	86,530	90,390
Western Europe	243,090	221,770	253,380	230,420	230,500	207,800
Central Europe	26,990	26,520	28,170	26,540	27,290	25,280
Eastern Europe	84,900	82,820	94,500	94,470	102,210	102,870
North and East Africa	118,860	130,310	116,580	126,460	133,060	136,180
Central and South Africa	30,720	40,570	37,800	45,400	45,100	50,520
Middle East	169,040	167,090	176,620	176,730	188,070	181,810
Subcontinent India	276,840	273,920	293,750	293,500	302,200	303,520
North Asia	2.008,080	1.959,730	2.209,800	2.161,180	2.352,770	2.272,310
South Asia	157,420	156,450	166,560	165,910	172,610	173,850
Australasia	10,290	13,140	10,120	13,160	10,430	13,430
Total	3.364,850	3.311,690	3.638,740	3.585,170	3.830,880	3.736,080

(1) Mexico included in Latin America & the Caribbean

(2) Estimated values

Source: International Cement Review [Ref. 11]

DEVELOPMENT OF CEMENT PRODUCTION BY REGION

Even though demand for cement has been on a steady decline declining steadily since 2009 in North Asia, the report by the International Cement review [Ref. 11] indicates high growth rates for cement production in this same area between 2008 and 2012 (estimated). The evolution of the product's demand started at 15,2% in 2009, reported a growth rate of 12,8% in 2010, decreased to 10% in 2011 and is now at 6,5% for 2012.

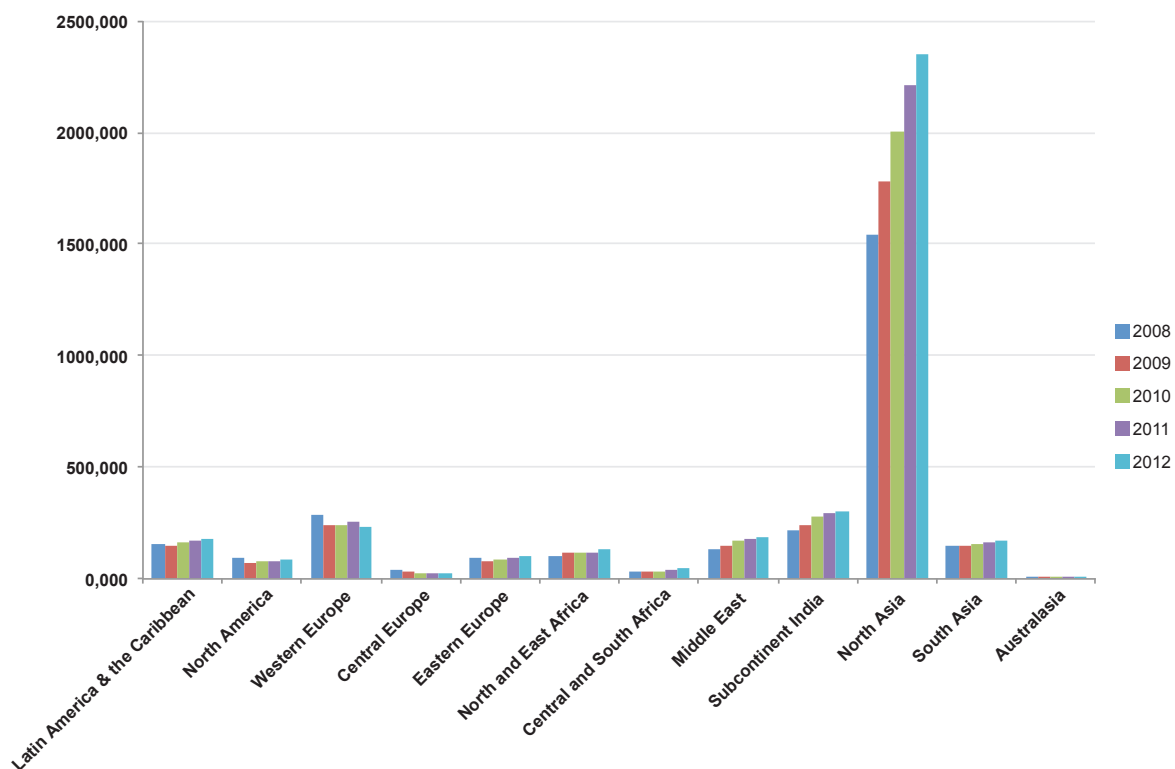
After the drop of 14,7% in 2009 in Western

Europe for cement production, and a slight stabilization in 2010 and 2011, the estimated reduction in the demand for cement is around 9% for 2012.

In North America, estimated growth in cement production is of 9% for 2012, lower than the previous year (10,3%).

Production growth in Latin America decreased from 7,0% in 2011 to 4,4% (estimated) in 2012.

CEMENT PRODUCTION BY REGION (MILLION TONS)

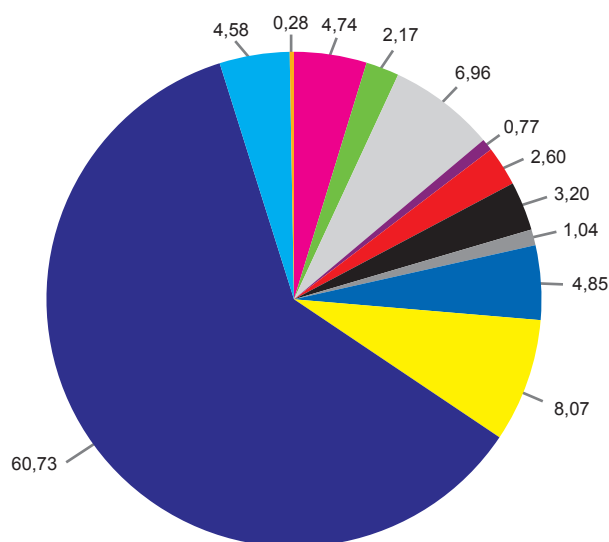


Source: International Cement Review [Ref. 11]

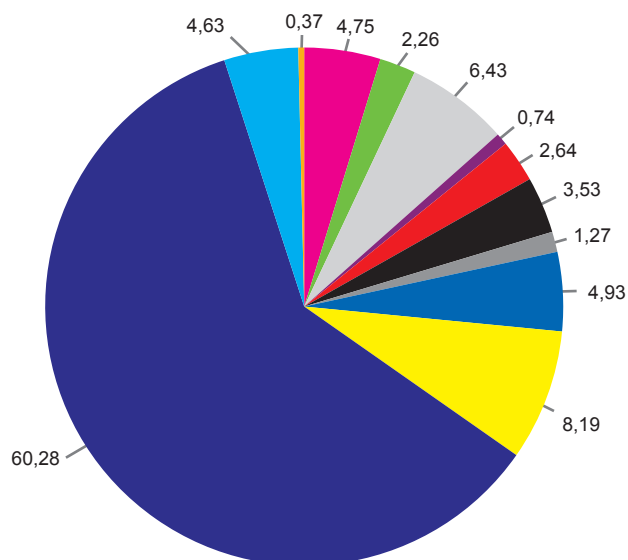
Latin America's share in total global cement production (3,6 billion tons in 2011) was 4,7%. In 2012 the continent is expected to hold this share, however, on an estimated total production volume of 3,8 billion tons of cement.

CEMENT PRODUCTION IN 2011: SHARE BY REGION (%)

- América Latina y el Caribe
- North America
- Western Europe
- Central Europe
- Eastern Europe
- North and East Africa
- Central and South Africa
- Middle East
- Subcontinent India
- North Asia
- South Asia
- Australasia



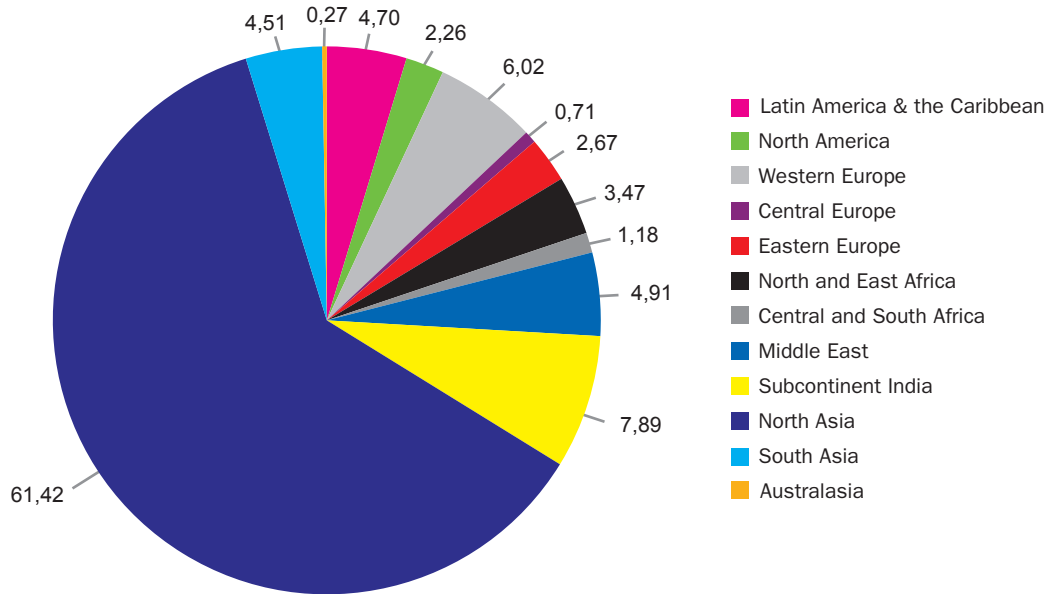
CEMENT CONSUMPTION IN 2011: SHARE BY REGION (%)



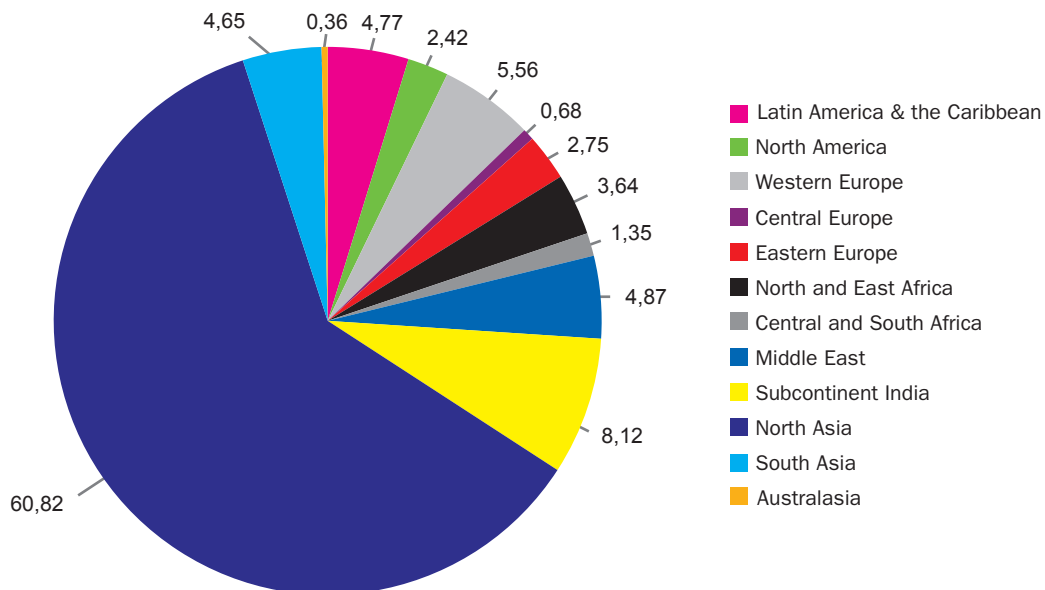
- Latin America & the Caribbean
- North America
- Western Europe
- Central Europe
- Eastern Europe
- North and East Africa
- Central and South Africa
- Middle East
- Subcontinent India
- North Asia
- South Asia
- Australasia

Source: International Cement Review [Ref. 11]

CEMENT PRODUCTION IN 2012: SHARE BY REGION (%)



CEMENT CONSUMPTION IN 2011: SHARE BY REGION (%)



Source: International Cement Review [Ref. 11]

CEMENT IMPORTS AND EXPORTS BY REGION

According to the report by the International Cement review, it is estimated that world cement exports in 2012 grew by 4,60%, and imports by 3,06%. For Latin America, in this same year, it is calculated that exports rose by 3,96% and imports decreased by 7,51%.

CEMENT EXPORTS AND IMPORTS BY REGION (MILLION TONS)

REGION	2010		2011		2012 ⁽²⁾	
	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS
Latin America & the Caribbean	3,300	5,180	3,790	5,990	3,940	5,540
North America ⁽¹⁾	4,570	7,930	5,200	8,070	5,910	8,500
Western Europe	46,540	18,360	43,390	18,210	42,790	17,180
Central Europe	5,050	4,870	6,160	5,150	6,520	4,330
Eastern Europe	5,253	7,320	5,280	7,750	5,360	9,940
North and East Africa	5,210	24,710	5,060	17,790	8,370	18,500
Central and South Africa	3,330	15,350	4,360	14,040	6,680	14,620
Middle East	22,430	19,830	27,500	20,350	28,760	19,680
Subcontinent India	15,590	20,530	14,210	24,330	14,040	27,110
North Asia	41,480	8,830	36,580	9,890	37,610	9,610
South Asia	23,090	13,400	22,730	13,780	22,290	14,800
Australasia	0,160	2,670	0,140	2,550	0,150	2,610
Total	176,003	148,980	174,400	147,900	182,420	152,420

Source: International Cement Review [Ref. 11]



**VI.
LATIN AMERICAN
CEMENT
INDUSTRY:
CO₂ EMISSIONS AND
ENERGY EFFICIENCY**

LATIN AMERICAN CEMENT INDUSTRY: CO₂ EMISSIONS AND ENERGY EFFICIENCY

The global cement industry is responsible for nearly 5% of global anthropogenic emissions of carbon dioxide, therefore, climate protection has always been at the core of the agenda at the Cement Sustainability Initiative [Ref.14].

FICEM is one of the CSI's Communication Partners around the world. In its role as Communication Partner, in 2009, FICEM entered an agreement with the Initiative to promote the participation of cement manufacturers in Latin America in the Getting the Numbers Right (GNR) database. This database collects the numbers from the global cement industry performance on CO₂ emissions and energy efficiency.

In addition to the former, FICEM was appointed

by the CSI to represent the Latin American cement industry as a member of the GNR Project Management Committee. This information enables different stakeholders including manufacturers, trade associations, policymakers, the academy and NGOs to learn about the industry's performance and its commitment towards climate protection.

In 2011 the coverage of the GNR database represented 25% of global cement production, for Latin America and the Caribbean this percentage accounted for 68% of the regional output. Between 1990 and 2011 cement production around the world by GNR participant companies increased by 75%, at Latin American GNR-reporting companies this growth was of 135%.

GNR COVERAGE 2011

WORLD	25%
LATIN AMERICA & THE CARIBBEAN	68%

COMPARED PERFORMANCE INDICATORS: 2010 AND 2011 (BASE YEAR = 1990)

Performance indicators evidence the industry's commitment towards the reduction of its carbon footprint and the development of evermore energy-efficient processes.

This has been possible thanks to the increasing use of alternative fuels, which have reduced energy dependency on traditional fossil fuels, while abating carbon dioxide emissions.

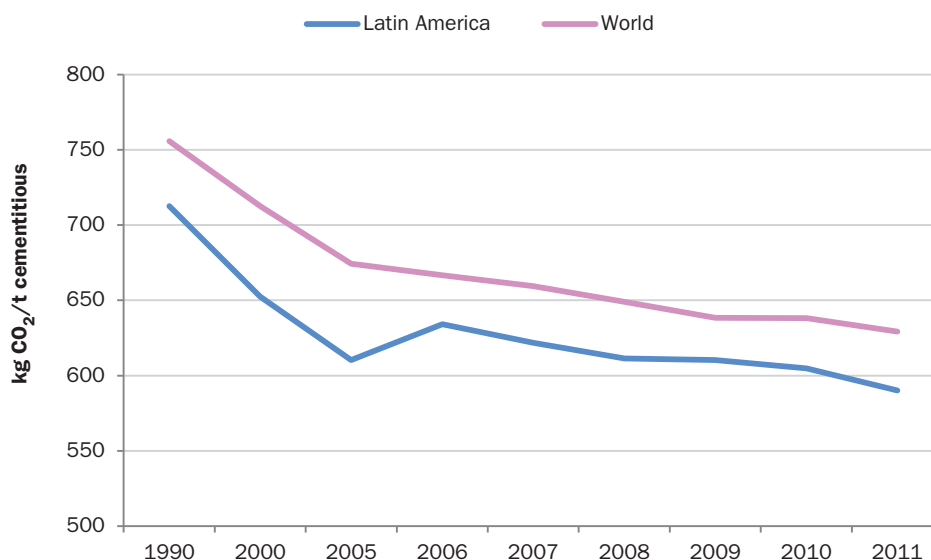
	1990		2010		2011	
	World	Latin America	World	Latin America	World	Latin America
Clinker production in GNR (Million tons)	421	41	634	77	665	82
Cementitious production in GNR (Million tons)	511	50	840	110	888	118
Gross specific CO ₂ emissions (Kg CO ₂ /ton cementitious)	761	709	654	613	646	601
Net specific CO ₂ emissions (Kg CO ₂ /ton cementitious)	756	713	638	605	629	590
Thermal energy consumption per ton clinker (MJ/ton clinker)	4.259	4.092	3.584	3.703	3.561	3.623
Electric energy consumption per ton cement (KWh/ton cement)	116	116	110	112	107	107
Volume of alternative fossil fuels (million tons)	2,4	0,1	13,4	1,3	12,8	1,4
Volume of biomass (million tons)	0,3	0,3	5,0	0,8	5,3	0,9

NET CO₂ SPECIFIC EMISSIONS

The latest CSI's GNR database report indicates that, the cement industry has lowered its specific net CO₂ emissions per ton of cementitious material I by 17% between 1990 and 2011 (from 756 kg/ton to 629 kg/ton).

The Latin American cement industry exhibits a similar behavior, with the same reduction rate as the global one: 17% (from 713 kg/ton to 590 kg/ton).

AVERAGE NET SPECIFIC CO₂ EMISSIONS PER TON OF CEMENTITIOUS PRODUCT



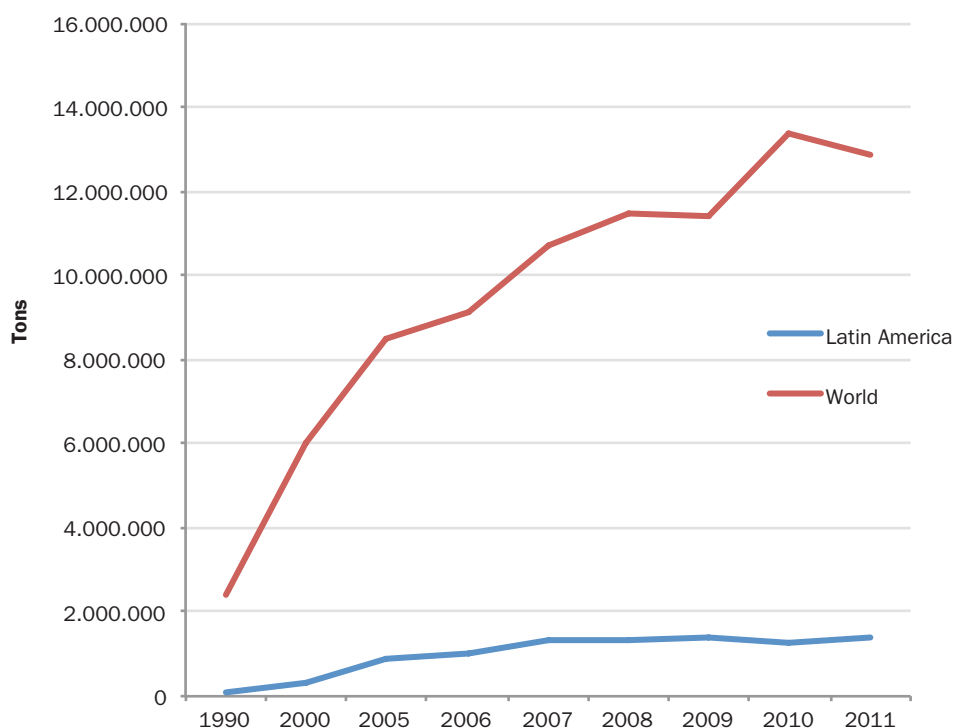
ALTERNATIVE FUELS

In 2011, GNR-reporting companies co-processed 12,8 million tons of alternative fossil fuels (waste oil, used tires, plastic, solvents, glue and resins, among others) and 5,3 million tons of biomass (rice, peanut and sunflower seed husk, bagasse from the sugar industry and residues from African palm nut, among others). In general, it is estimated that the cement industry

co-processed 20 million tons of alternative fuels.

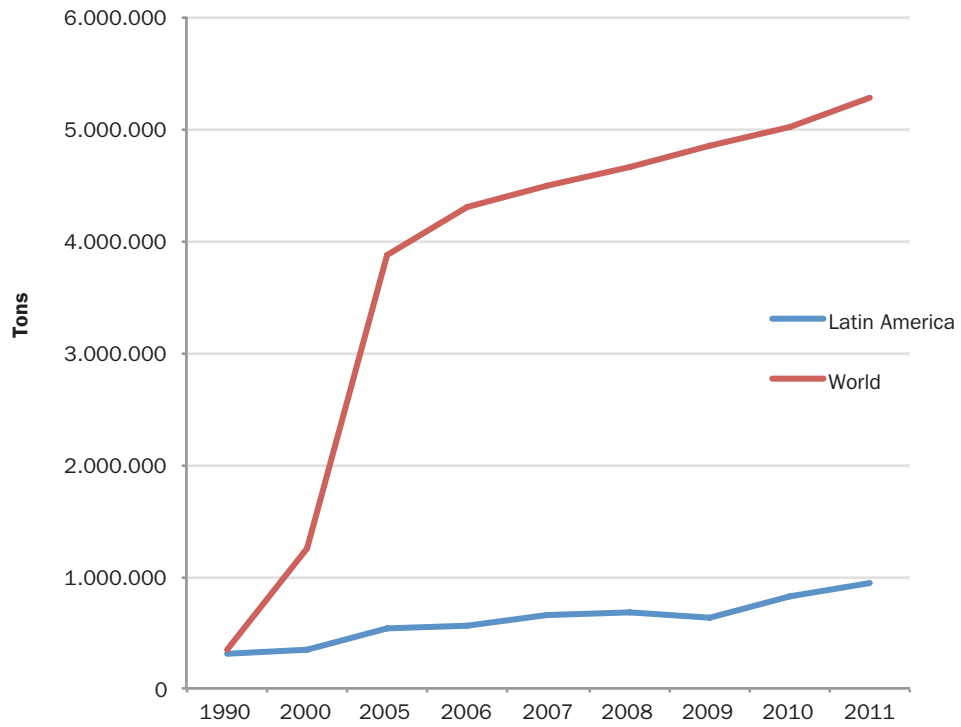
Out of the 929.835 tons of biomass co-processed in Latin America in 2011, 77% were co-processed in Brazil. This high share is consistent with the volume of cement production in this country, reported to GNR equivalent to 40% of the total output from Latin America and the Caribbean.

VOLUME OF ALTERNATIVE FOSSIL FUELS(1) (TONS)



(1) Waste oil, used tires, plastic, solvents, glue and resins, among others.

VOLUME OF BIOMASS (TONS)



THERMAL ENERGY CONSUMPTION

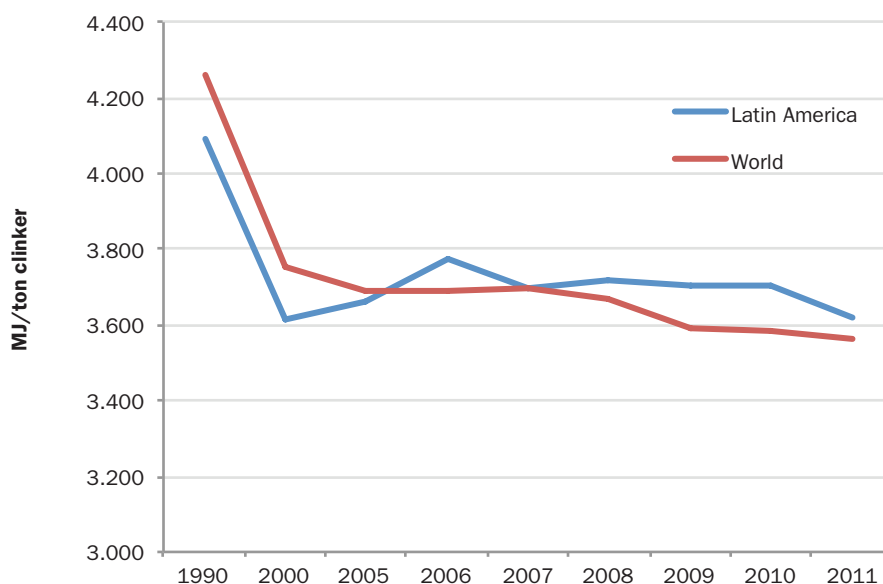
Between 2007 and 2010, thermal energy consumption per ton of clinker in Latin America remained basically unchanged, around 3.700 MJ/t clinker. In 2011, this figure decreased by 2,2% resulting in 3.623 MJ/t clinker.

In 2011, the amount of thermal energy in Latin America used to produce one ton of clinker slightly exceeded the world average,

by 1,7%. This small variation is a result of technology differences, like a more extended use of dry kilns with preheater and no precalciner, which are less efficient than kilns with an additional precalciner.

Nevertheless, the facts clearly demonstrate that Latin America has entered in a process to improve its energy efficiency, the same way industrialized countries have.

THERMAL ENERGY CONSUMPTION PER TON OF CLINKER



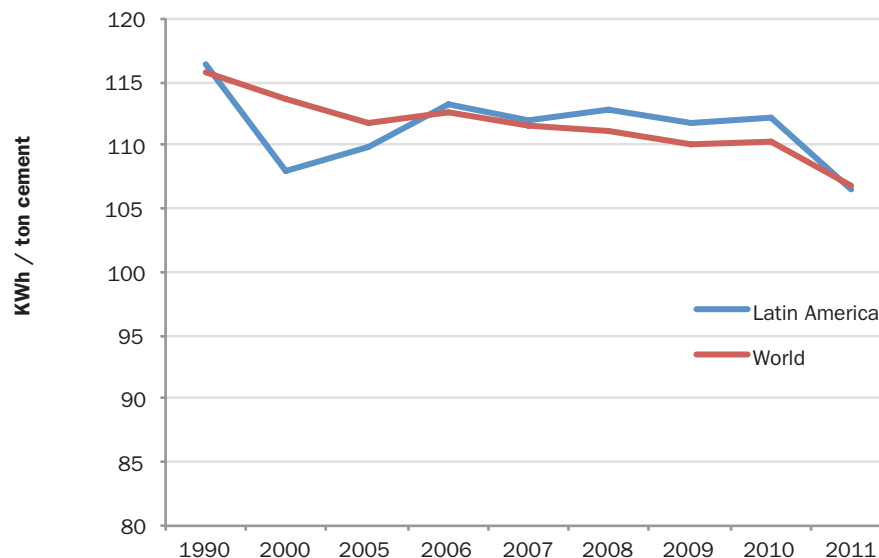
ELECTRIC ENERGY CONSUMPTION

Between 2006 and 2010, electric power consumption in the Latin American cement industry was slightly higher than the world average by 1%.

In 2011, the consumption of electric power utilized to produce a ton of cement matches

the world average: 107 kWh per ton of cement. Together with thermal energy consumption for the production of clinker, this figure proves the good capacity of the Latin American industry and its migration towards more efficient technology.

ELECTRIC POWER CONSUMPTION PER TON OF CEMENT



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