



**Cámara Mexicana de la  
Industria de la Construcción**



# **North American Construction Federation**

**(NACF)**

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**Gustavo Arballo**  
**CMIC National President**

**Annual Meeting**  
**2016**

**July 13 -16**  
**Deadwood, South Dakota**  
**USA**



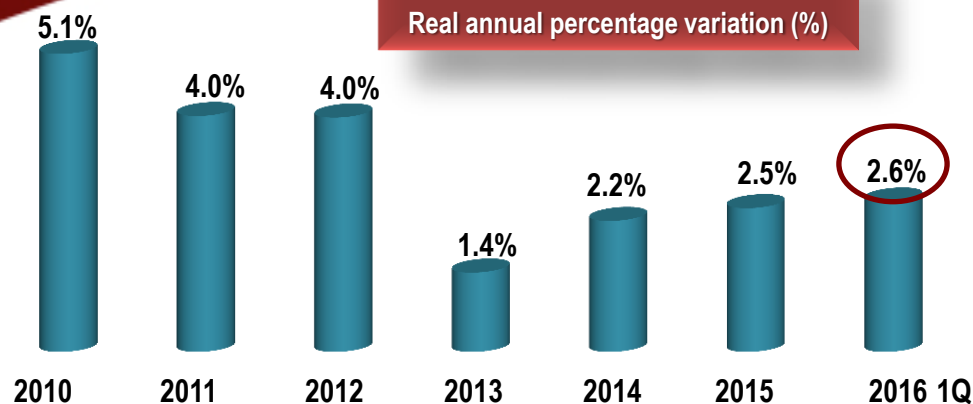
**Cámara Mexicana de la  
Industria de la Construcción**

## **2. Overviews**

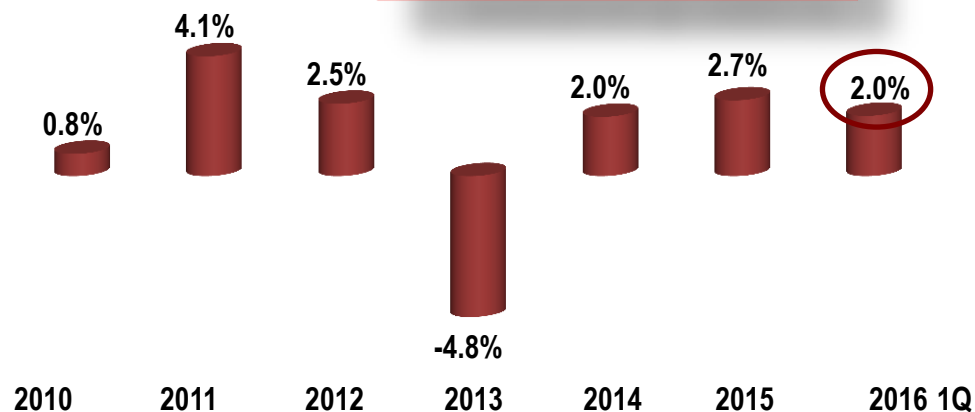
**Industry Outlook, Political Update and Association  
Activities & Priorities**

## 2.1.1 Economic Activity

**Overall National GDP**  
Real annual percentage variation (%)



**GDP in Construction**  
Annual percent age variation (%)



**Economic indicators for Mexico.**

Variable	2016 e	2017 e
<b>Economic Growth</b> (% annual)	2.2% - 3.2%	2.6% - 3.6%
<b>Nominal GDP</b> (Trillions of dollars)	1.1	1.2
<b>Construction Growth</b> (% annual)	2.3%	2.9%
<b>GDP in Construction</b> (Billions of dollars)	76.7	85.0
<b>Construction Jobs</b> (Millions of jobs)	6.1	6.2
<b>Inflation</b> % (Dec.-Dec.)	3.0%	3.0%
<b>Exchange Rate</b> (pesos for 1 US dollar, average annual)	\$18.0	\$17.2

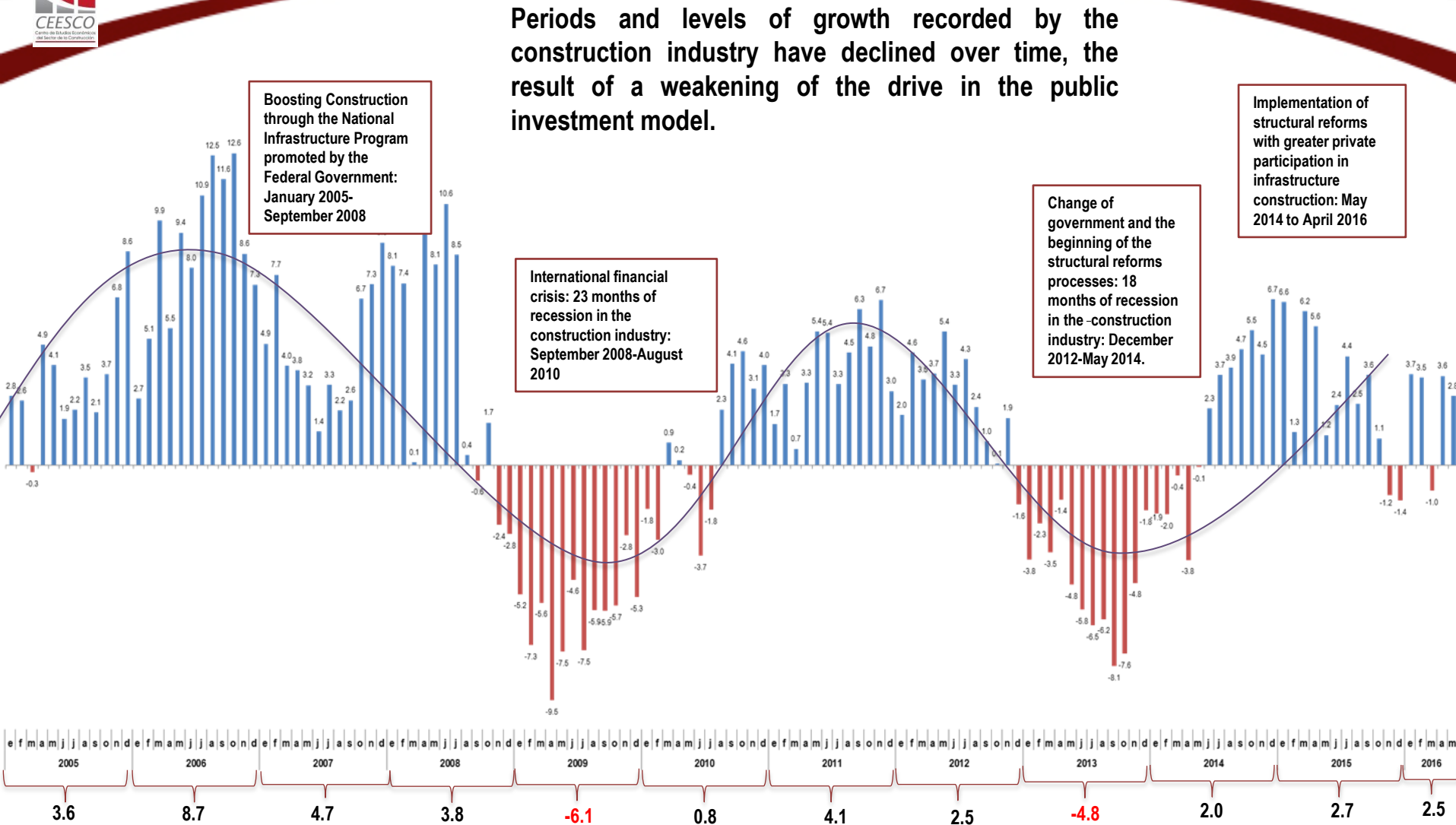
e: Estimate

# 2.1.2 Economic Cycle of Construction in Mexico

January 2005 to May 2016



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## 2.1.3 New Regulations to Enhance Participation of Afores (Pension Funds) in Financial Instruments for Infrastructure Development

### Strategies for boosting private investment in infrastructure projects.

SB1: Less risky portfolio (over 60 years).

SB4: Portfolio with increased risk (under 36 years).

#### Previous portfolios

Structured Instruments in the Current Investment Regime

a) CKDs

b) FIBRAs

c) REITs

d) CBs de Activos

#### Investment Instruments:

SB: Basic Siefore;

REIT's: Investing in Real Estate Development

CBs: Asset Securities Certificates

BORHIS: Mortgage Backed Securities Certificates

ABS: Active Stock Market

TFOVIS: Mortgage Bonds FOVISSTE

CEDEVIS: INFONAVIT Housing Certificates

CERPIS: Certificates for the Promotion of Infrastructure

CKD's: Capital Development Certificates

#### New and Modified portfolios

Structured Instruments		SB1	SB2	SB3	SB4
-CKDs -CERPI 1/	Previous	5%	15%	20%	20%
	Current	0%	Unchanged		
FIBRAS		SB1	SB2	SB3	SB4
-FIBRAs -REITs -FIBRA -E	Previous	-	-	-	-
	Current	5%	10%	10%	10%
Securitized Instruments		SB1	SB2	SB3	SB4
-BORHIS -TFOVIS -CEDEVIS -CBs de activos reales -Otros ABS	Previous	10%	15%	20%	30%
	Current	Unchanged			

## Scenario A

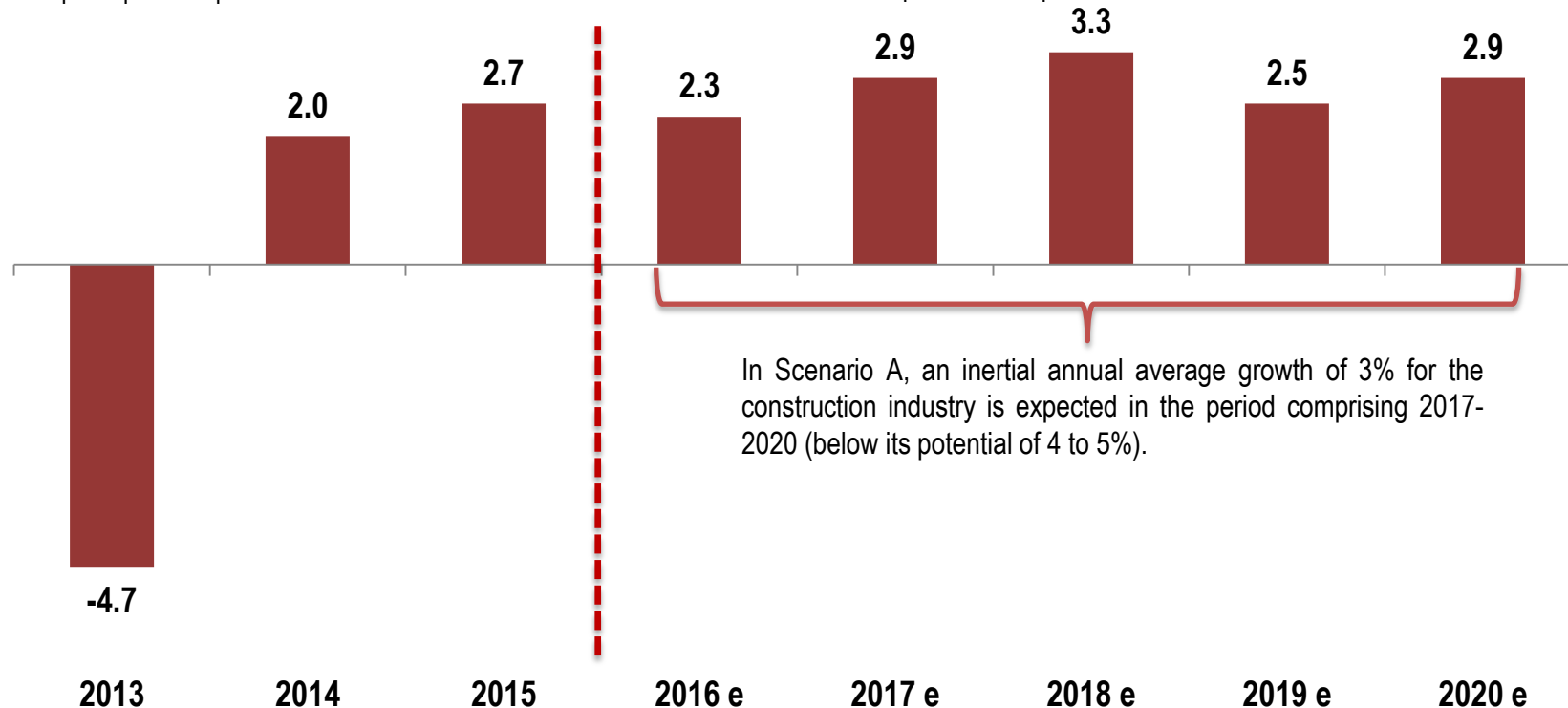
**Factors that would slow the growth of the construction industry:**

- Continued instability and external volatility.
- Lack of maturation in structural reforms.
- A larger cut in the National Infrastructure Program (PNI) would certainly limit options in infrastructure development.
- Less participation in public investment levels.






## Scenario B

**Factors that would drive the Construction Industry to achieve its growth potential (4 to 5% per year):**

- Successful maturing of structural reforms.
- Greater private participation in infrastructure financing (APP's, CKD'S CERPIS, FIBER, CIEN, Etc.).
- An economic environment with greater certainty.
- Improvement in public finances.



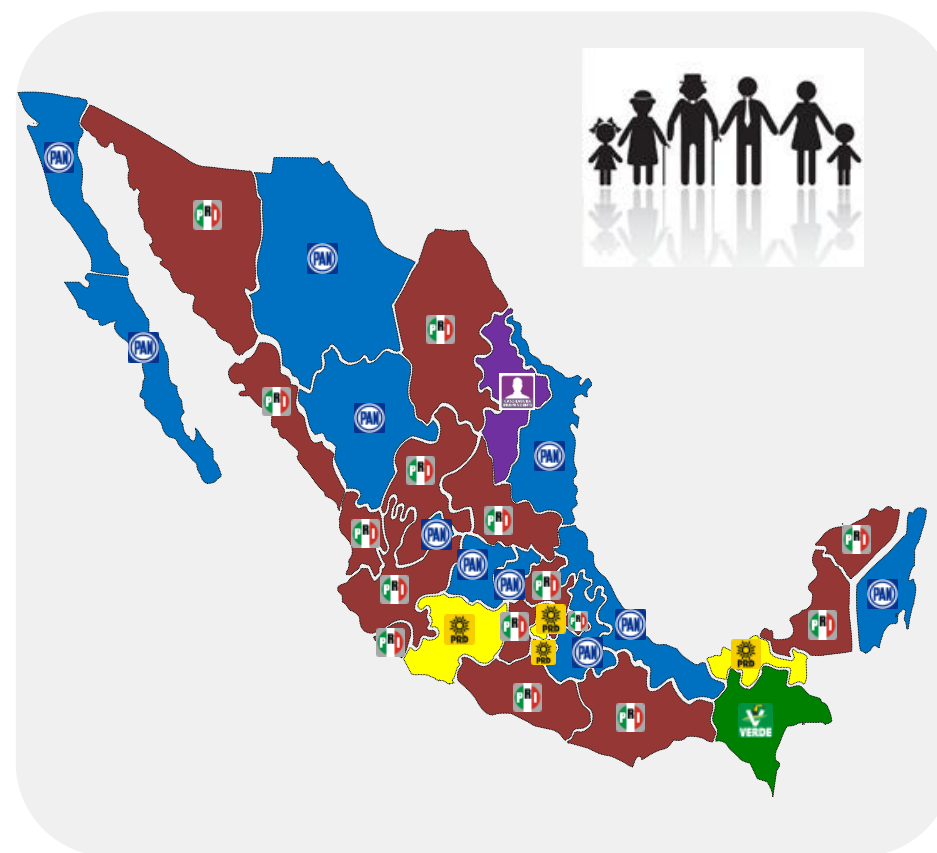
## 2.2.1 Political Environment

Party	Prior to the Elections of June 5, 2016			After the Elections of June 5, 2016		
	No. of States before Election	% of States	% of the populatio n	No. of States after Election	% of States	% of the populati on
 Institutional Revolutionary Party I (PRI)	<b>20</b>	62.5%	57.6%	<b>15</b> ↓	46.9%	45.3%
 National Action Party I (PAN)	<b>6</b>	18.8%	19.2%	<b>11</b> ↑	34.4%	31.6%
 Democratic Revolution Party (PRD)	<b>4</b>	12.5%	14.7%	<b>4</b> =	12.5%	14.6%
 Ecologist Green Party of Mexico(PVEM)	<b>1</b>	3.1%	4.3%	<b>1</b> =	3.1%	4.3%
 Independent Candidate	<b>1</b>	3.1%	4.2%	<b>1</b> =	3.1%	4.2%
<b>Total</b>	<b>32</b>	<b>100.0%</b>	<b>100.0%</b>	<b>32</b>	<b>100.0%</b>	<b>100.0%</b>

### Political Map of Governorships.






(After the elections of June 2016)

Total Population 2016: 122 Million





## 2.2.3 Political Environment

	Parties	Number of Representatives	Percentage (%)
	Institutional Revolutionary Party	203	41%
	Partido Acción Nacional	108	22%
	Democratic Revolution Party	56	11%
	Ecologist Green Party of Mexico	47	9%
	National Regeneration Party (Morena)	35	7%
	Citizen's Movement	26	5%
	New Alliance Party	10	2%
	Social Encounter	8	2%
	Labor Party	6	1%
	Independents	1	0%
	<b>Total</b>	<b>500</b>	<b>100%</b>

### LXIII Legislature Structure of the House of Representatives

2016

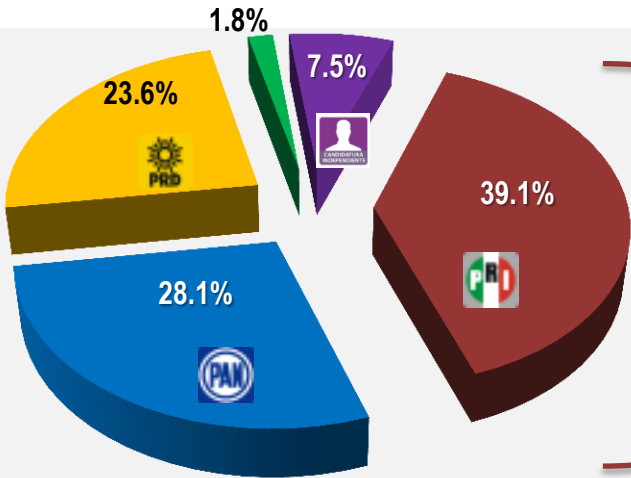




# 2.2.2 Political Forces and Economic Weight

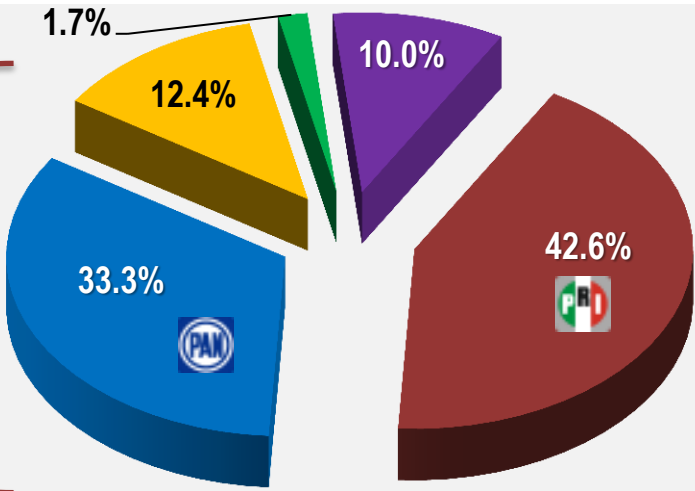


(PRI)
(PAN)
(PRD)
(PVEM)
Independent Candidate



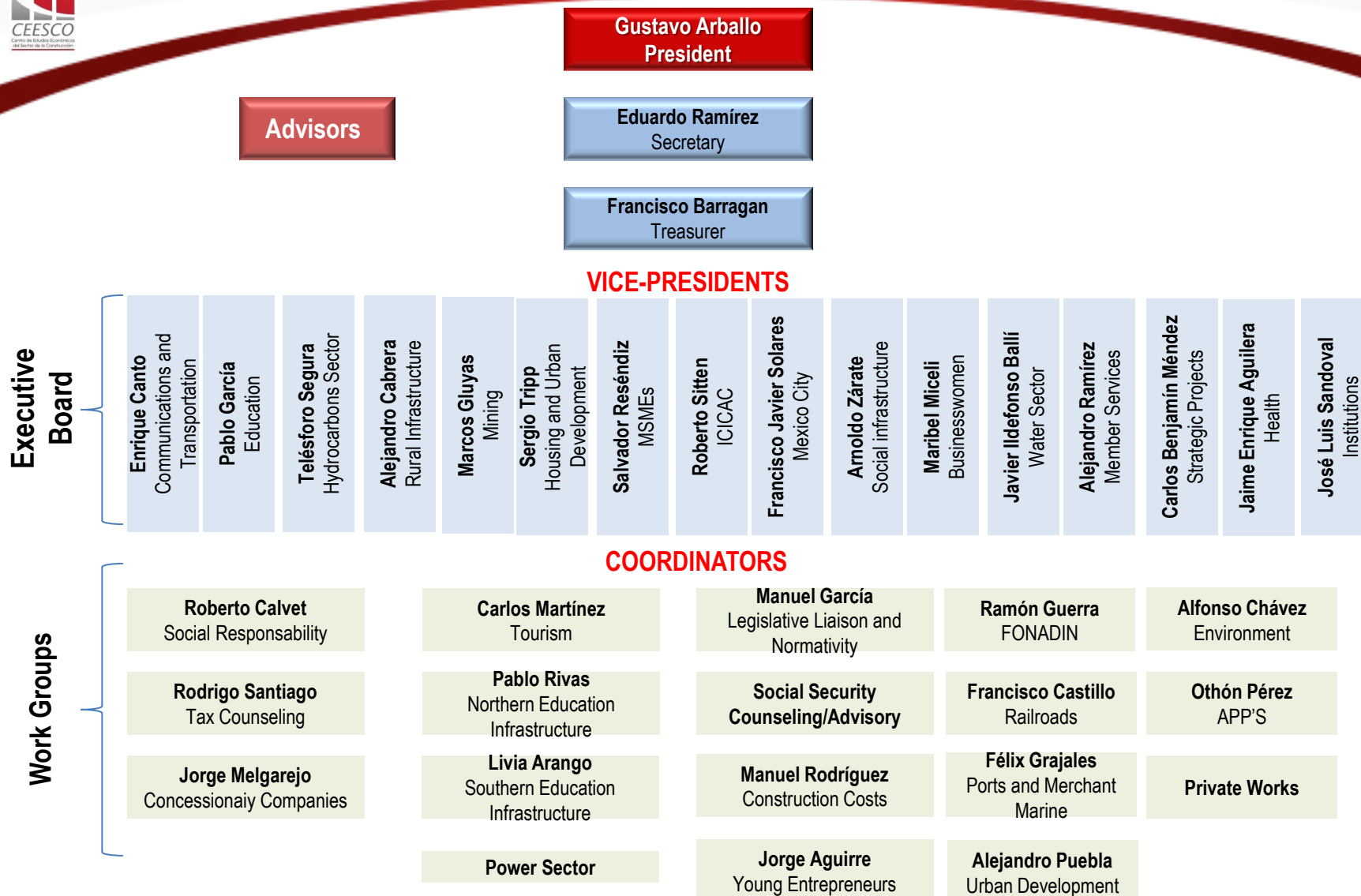
**GDP 2014:**  
One trillion dollars

**GDP in Construction 2014:**  
77.1 billion dollars



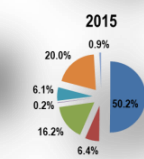
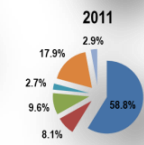
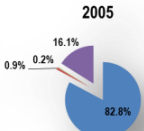
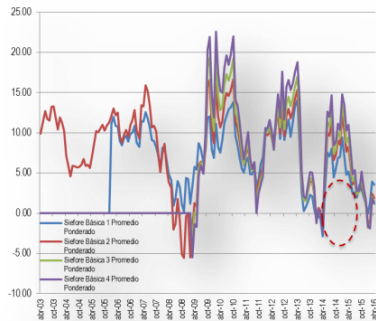
(PRI)
(PAN)
(PRD)
(PVEM)
Independent Candidate

## 2.3.1 Organizational Restructuring





## Economic analysis and sector perspectives



	Rendimiento nominal anual (Abril de 2016 / Abril 2015) (A)	Inflación Anualizada (Abril 2016 / Abril 2015) (B)	Rendimiento Real C=(A/B)
Siefore Básica 1	3.57		1.00
Siefore Básica 2	1.90	2.54	-0.06
Siefore Básica 3	1.43		-1.08
Siefore Básica 4	1.20		-1.31



## Transparency and accountability





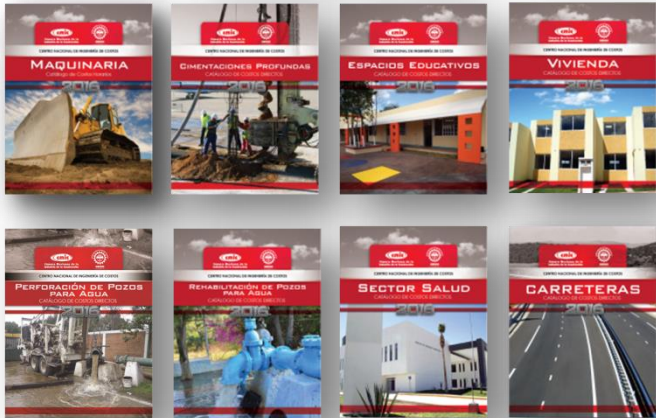
## Objetivo:

Be an entity for consultation and achieve national and international positioning of CMIC by generating valuable and useful information for construction companies, consultants, supervisors, the three levels of government, the private sector, educational institutions, among others.





## Cost catalog



## Professional Services Chart





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## **3. Specific Topics**





### Objectives:

- Represent and offer support to young entrepreneurs in construction who recently opened a company and have the vision to grow.
- Promote the business activities of these young people in the construction sector by offering services.

### Misión:

- Strengthen these young companies through training and certification to generate competitiveness, opening business opportunities in the private and public sectors.

### Visión:

- Consolidate young companies in the Construction Industry.







### **Actions:**

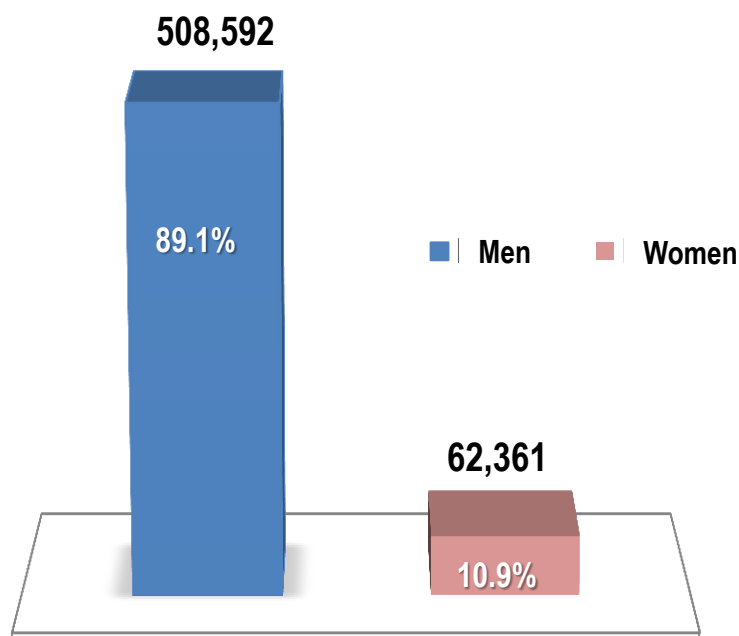
- **Management of Public and Private Construction Projects**
- **Participation in Bids**
- **Benefits with Suppliers and Service Providers**
- **Meetings with top level government officials, heads of agencies and institutions, as well as heads of transnational companies and industrial parks.**
- **Implement new construction technologies and software through CMIC's institutions: ICIC,ITC,FIC.**



### 3.1.1.2. Efforts to promote Diversity among members.



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According to the results of the 2014 economic census, of those working in the construction sector 89.1% are men and 10.9% are women.

Faced with this situation and looking for integration in the Construction Industry, CMIC has established the CMIC Coordination of Women Entrepreneurs, which will promote the Development and participation of Women in construction Projects of Public and Private Works, through Innovation, Training, Cutting Edge Technology and Equality.



### 3.1.1.2. Efforts to promote Diversity among members.



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## Actions



### Curso

Conviértete en una operadora  
Certificada en Retroexcavadora

Inicia en Julio

### Requisitos:

Mujeres interesadas en aprender trabajos de obra o  
se dedique a trabajos de construcción y operarios.  
-18 a 40 años - Estatura mínima 1.50 mts.  
Saber conducir - Estudios mínimos secundaria

### Informes:

TERESA LERMA  
tel 8190 2027 ext: 302/303  
teresa.lerma@cmic.mx



Av. Dr. Ignacio Morones Prieto 1101 Ofc.  
Tall. Nuevo Regenera, Monterrey, N.L.  
C.P. 64000 - Tel. 8190 2027 - 8190 2106  
Delegación Nuevo León - mirones@cmic.mx

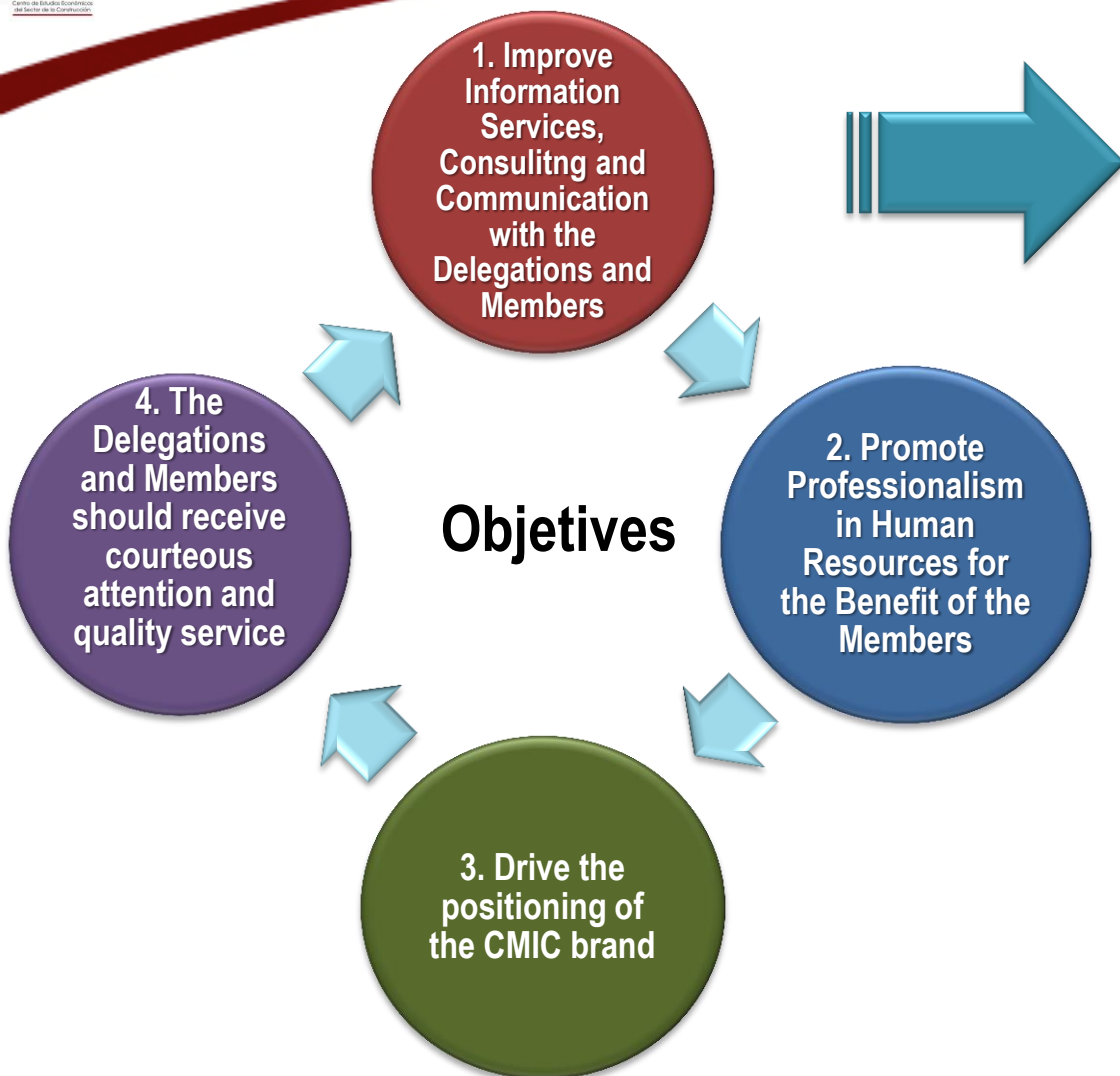
## Training



Start up of workshops in CMIC Mobile  
Classrooms, for Women Entrepreneurs  
in Electricity and Finishings trades in  
the state of Nuevo Leon.

Signing of CMIC Agreement with  
Woman CEO in Federal Congress

### 3.1.1.3. Other Strategies for Strengthening CMIC



#### **Actions:**

1. Generate a suitable Information Prototype for members of the Chamber.
2. Train and Keep Current Human Capital in all areas of the Institution.
3. Implement a strategic Marketing Plan for by regions, considering the diversity of the markets and their performance.
4. Take advantage of the TIC's to increase and streamline services.

Support the representative offices in offering services.



# 3.1.2 Link Businesses with the Institution



A fundamental activity of our organization, involves direct participation of Construction businesses in local and national development planning, through Mixed Committees and Work Groups.

## Mixed Committees and Working Groups:

**SCT**

- Comisión Mixta SCT-CMIC
- Comisión Mixta SCT (DGC)-CMIC
- Comisión Mixta SCT (DGCC)-CMIC
- Comisión Mixta SCT (DGST)-CMIC

**PEMEX**

- Comisión Mixta Nacional PEMEX-CMIC,
- Grupo de Trabajo de Normatividad PEMEX-CMIC)

**CENAGAS**

**Pro México**

**SECTUR**

**FONATUR**

**AMDETUR**

**CONAGUA**

**INIFED**

**SEDATU**

**INFONAVIT**

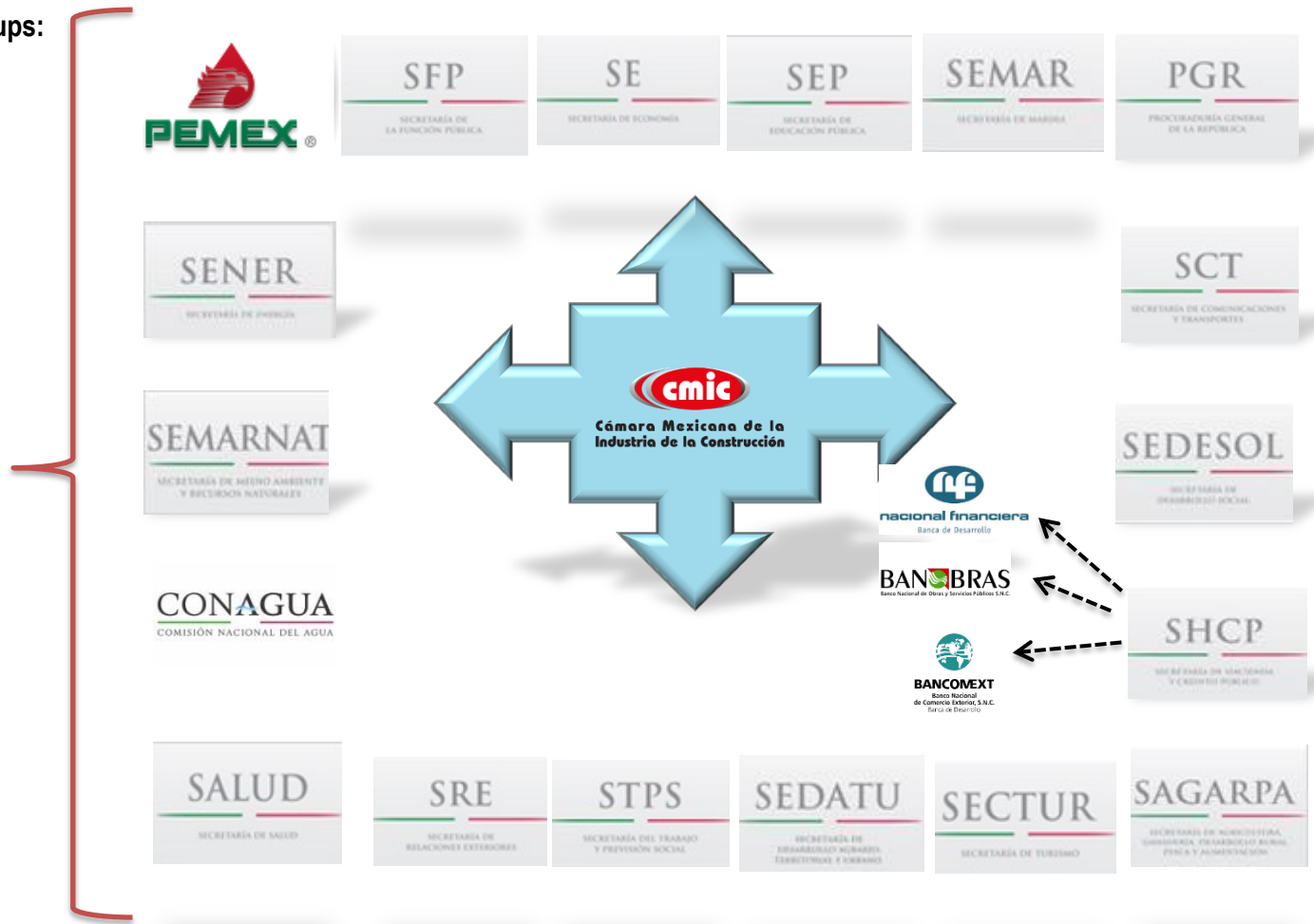
**CONAVI**

**SHF**

**FONHAPO**

**SECTOR MINERO**

**SEMARNAT**



### 3.1.2 Strengthen the Connection of Business Entrepreneurs with the Institution



Platform for developing companies and entrepreneurs.

Areas of opportunity to strengthen the relationship of CMIC with affiliated companies.

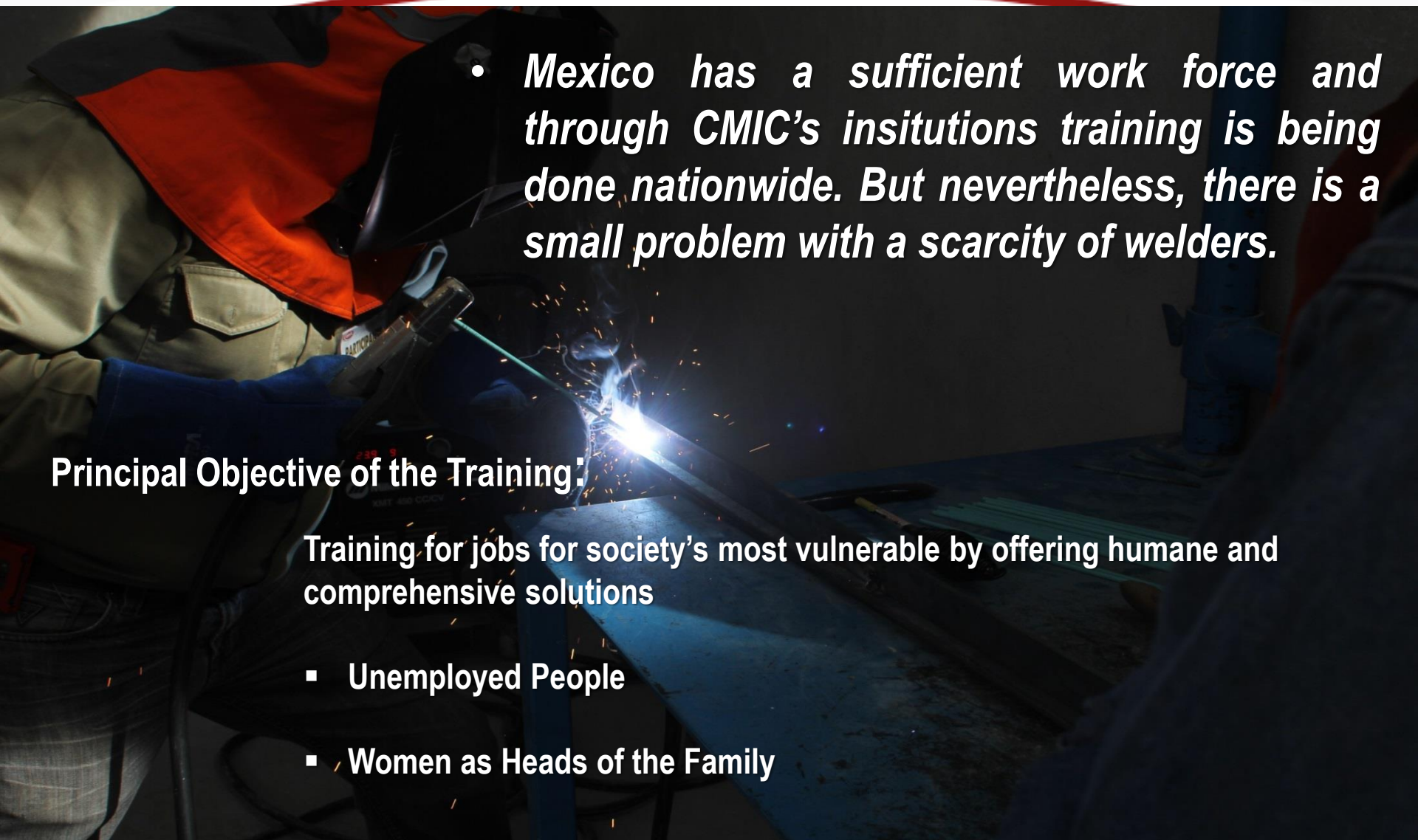
Promote the culture of partnerships and association strategies for more participation from construction companies.

Promote more business opportunities for construction companies in private sector work.

Expand business opportunities for construction companies in international business.

Provide assistance in legal, judicial and work related issues for construction companies.

Strive to strengthen and support the Micro, Small and Medium construction companies.

- 
- *Mexico has a sufficient work force and through CMIC's institutions training is being done nationwide. But nevertheless, there is a small problem with a scarcity of welders.*

#### Principal Objective of the Training:

Training for jobs for society's most vulnerable by offering humane and comprehensive solutions

- Unemployed People
- Women as Heads of the Family



## 3.2.1. d Training Program for Working with Values

### Courses

### Implementation



ICIC National  
Central Office D.F

Regional Delegations ICIC



Classrooms



Mobile Units

# 3.2.1. e Training Program for Working with Values



## Statistics

## Proof

Year	Women	Men	States
2012	875	1,565	4
2013	6,780	8,119	14
2014-oct.	4,963	5,960	13
2015 abril-dic.	18,261	8,788	14
<b>Subtotal</b>	<b>30,879</b>	<b>24,432</b>	
<b>Total 55,311</b>			
<b>932,563 Man - hours trained</b>			



## 3.2.2 Efforts to address Shortages in the Work Force

### Training



### Formation



### Keeping Current



### Certification



### 3.2.2 Efforts to address Shortages in the Work Force

- *Inspirational and Innovative*
- *Cutting edge processes in Teaching -Learning*
- *Command of advanced technology*
- *Links with the Industry*
- *Unlimited and Visionaries*
- *Self –directed and collaborators*
- *Transformation process*

## Characteristics of the Instructors





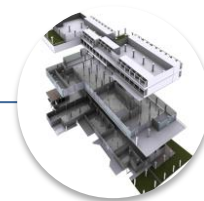
## 3.2.2 Efforts to address Shortages in the Work Force

### *Markets to Serve*

- *Heavy Construction*
- *Urban Construction*
- *Industrial Construction*
- *Comprehensive Development of Middle and Top Management*



### 3.3.1 Continuous Improvements (BIM, lean, IPD, etc.)



BIM

**Building Information  
Modeling**



LEAN  
CONSTRUCTION

**Lean Construction**



SUSTAINABLE  
CONSTRUCTION

**Sustainable Construction (LEED,  
Efficiency Energy, Environmental  
Impact)**

# BIM México FORUM

Building Information Modeling

In the setting of the BIM FORUM Mexico, the following was done:

- The first BIM Regulation in Mexico (in public consultation).
- Continuing promotion in Mexican universities of “BIM Teachings”.
- A graduate course to **Build BIM Managers**. Currently two graduate courses are being given and two more are about to begin.
- ITC has given eight graduate BIM courses since 2013
- Three BIM seminars were done in 2016.
- FIC will validate specialized BIM offices to work on the new Mexico City Airport
- Every day there are more clients asking for BIM; New Mexico City Airport, IMSS (Mexican Social Security Institute), Liverpool, Torre Koi (276m), etc.





## 3.3.1 Lean Construction



- FIC is promoting a Lean Philosophy through specialized graduate courses.

### LEAN COURSES GIVEN

2 Graduate Courses in 2015

2 Graduate Courses in the first semester of 2016

A new special LEED course was designed for contractors of the New Airport, which grants one point in building certification when they participate. This course is in process.

### 3.3.1 Sustainable Construction



- INCREASE THE CAPACITIES OF THE COMPANY TO PARTICIPATE IN THE LARGE SUSTAINABLE CONSTRUCTION MARKET

#### LEED COURSES GIVEN

Four courses in 2015

Three courses in the first semester of 2016

# Variety in LEED courses



Introductory  
Course LEED V4



Study Group V4



Study Group  
AP BD+C



Energy Efficiency



LEED Course v4  
on line



LEED course for  
Contractors

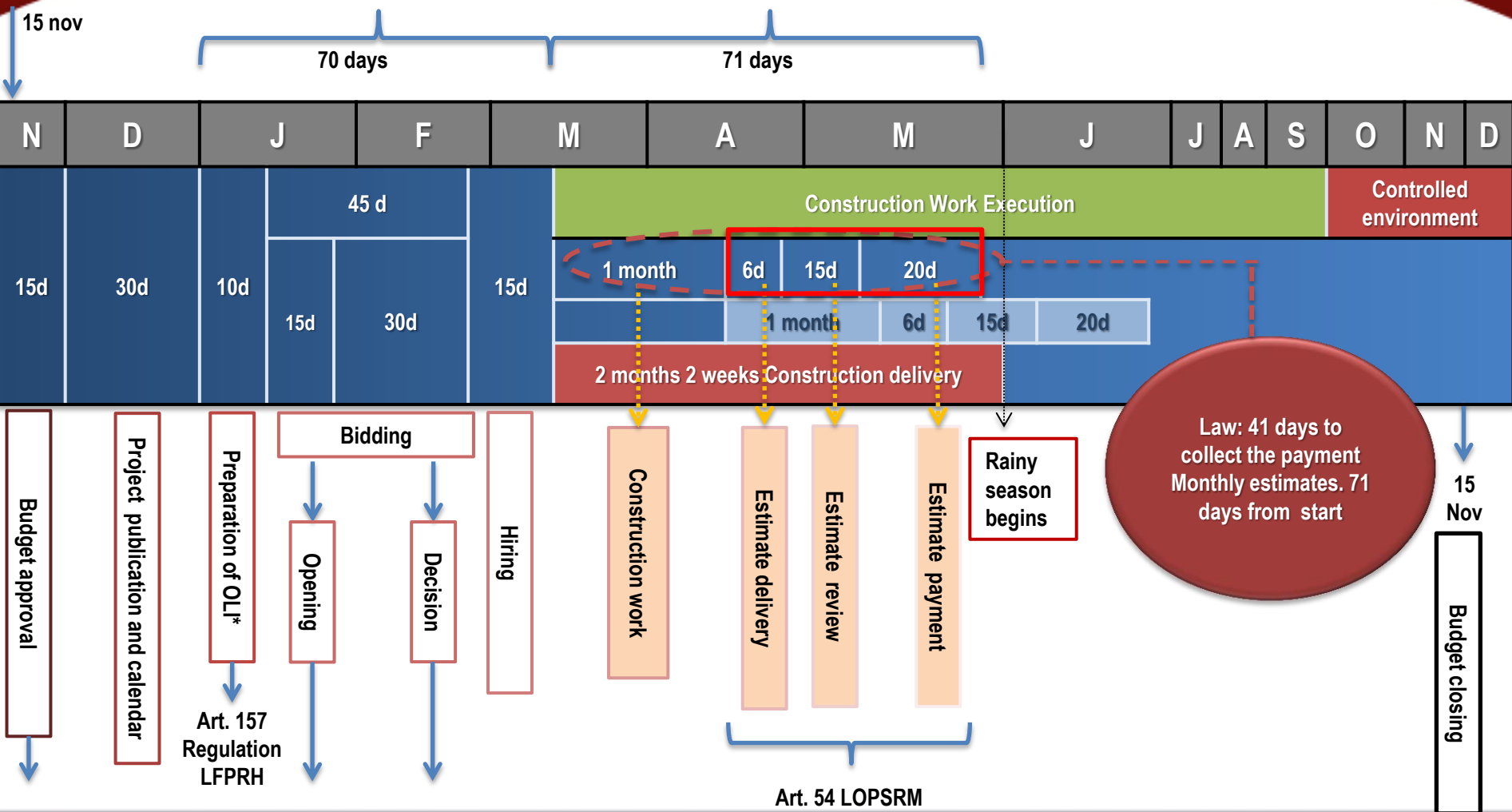
# 3.3.2 Legislation for prompt payment

Has some progress been made on this question.?



## The Law Establishes:

### Contracting process and execution of the works



### 3.3.2 Legislation for prompt payment

*Has some progress been made on this question.?*



Problematics

- Complex global scene
- Instability in financial markets
- Collapse in raw material prices
- Volatility in the Exchange Rate
- Delay in the maturation of structural reforms

\* Preventive adjustments in Federal Public Administration expenses

\* Delay in distribution of public resources

\* Lack of flow in payments for construction companies.



Results

## 3.3.2 Legislation for prompt payment

*Has some progress been made on this question.?*

### INIFED Case



**The National Agreement of the Mixed Committee was signed between INIFED-CMIC in the headquarters of SEP (Secretariat of Education)**

- Establish the Act Of State Mixed Committees INIFED - INIFE- CMIC
- Management meetings and video conferences with Presidents and Delegation Vice Presidents of CMIC's Educational Infrastructure.
- Management meetings and video conferences with Presidents and Delegation Vice Presidents of CMIC's Educational Infrastructure
- Implementation of regulations in educational matters, with participation from the School Sub-committee work groups.

**Hire affiliated companies in the public works for the Program "Schools at 100".**

- Debt from the program "Dignified Schools" for the amount of MX\$207.5 M to 470 CMIC affiliated companies and debt of MX\$108 M from the "New Guerrero Plan" of INIFED to 93 CMIC affiliate companies.
- Management meetings to follow up on the debts

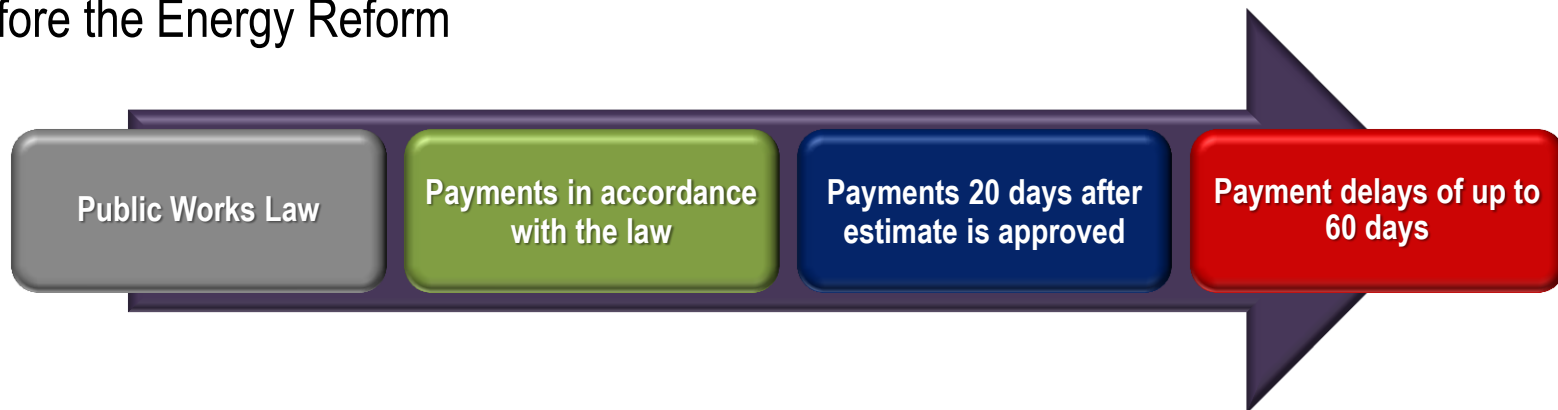


### 3.3.2 Legislation for prompt payment

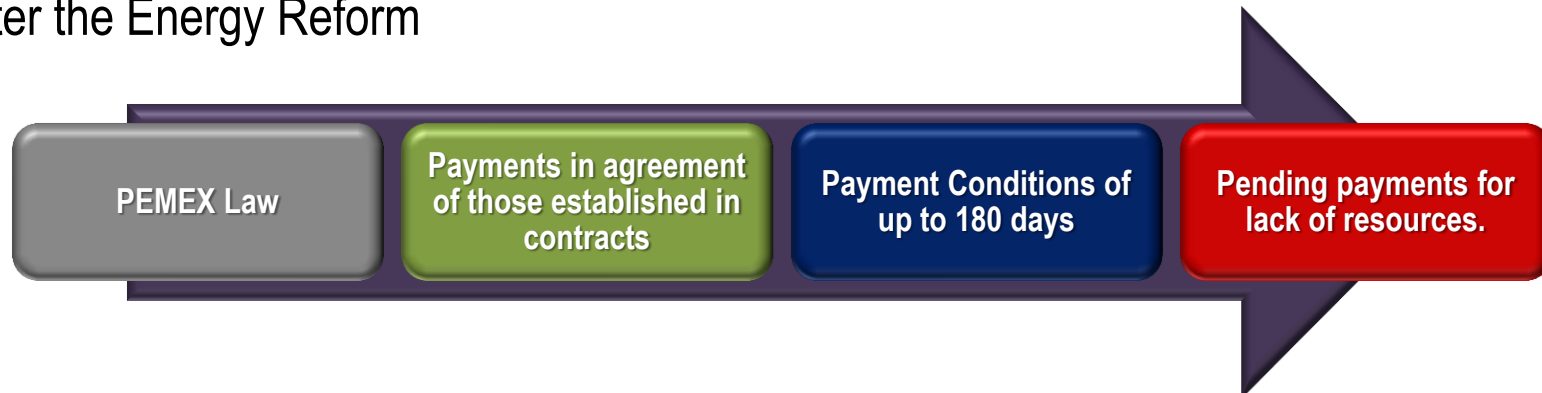
*Has some progress been made on this question.?*

## Petróleos Mexicanos (PEMEX)

Before the Energy Reform



After the Energy Reform

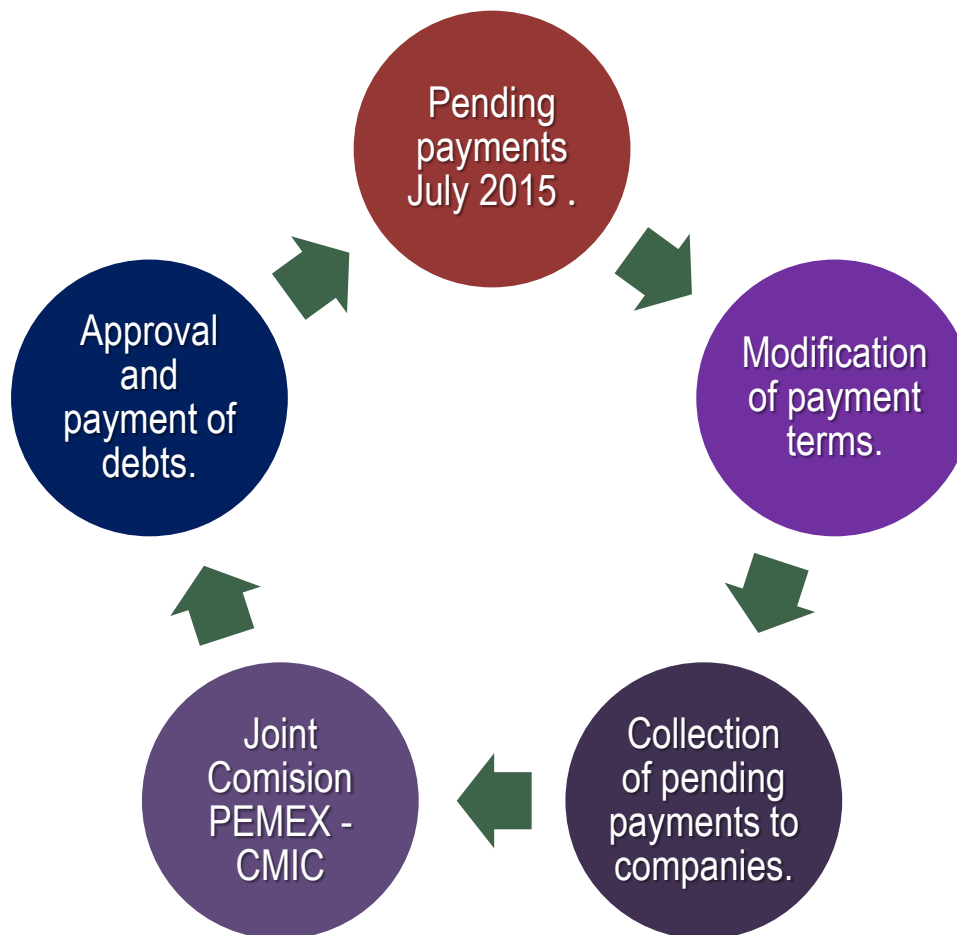




### 3.3.2 Legislation for Prompt Payment

*Has there been any progress on this question?*

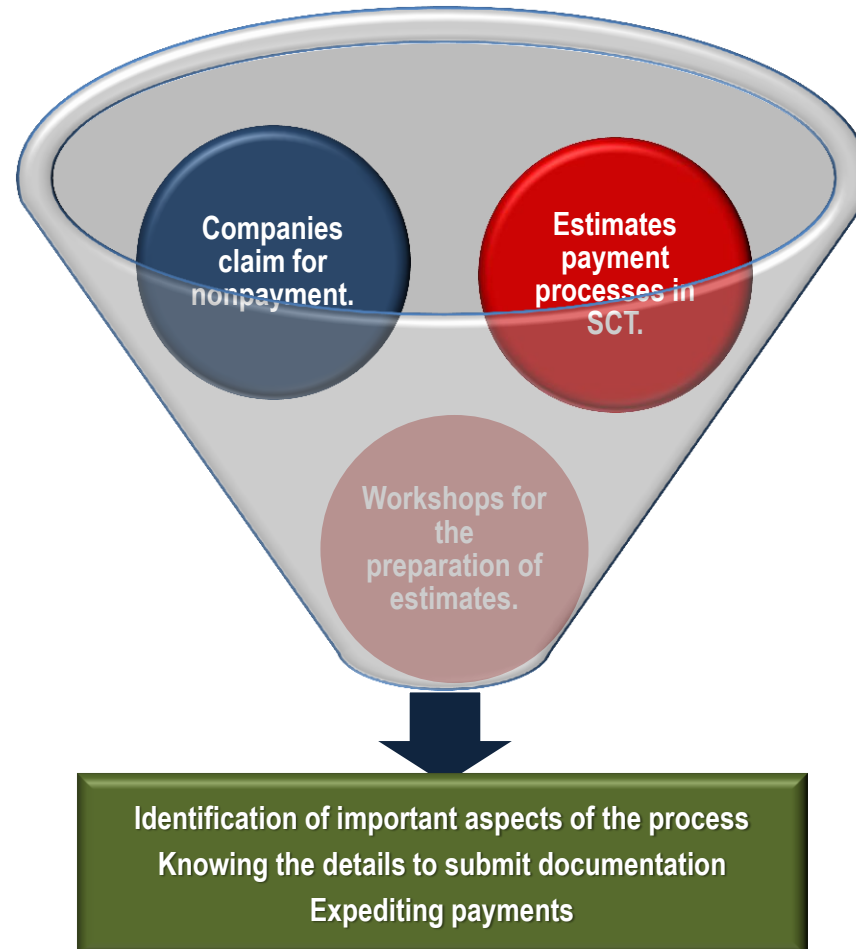
#### Debt management payment in PEMEX.



### 3.3.2 Legislation for Prompt Payment

*Has there been any progress on this question?*

#### Payment of estimates for work in Secretariat of Communications And Transportation (SCT).



### 3.3.3 Poor/Deficient quality in Executive Projects

Regularly, executive projects do not meet the necessity for what they were intended for, and are submitted incomplete.

The main reasons for this are:

- There isn't a databank of executive and current projects.
- There is no clear definition of responsibilities in order for the public servant to authorize the executive project.
- There are significant problems to obtain the right of way for the projects.
- There is no fixed and regulated budget aimed at developing the executive project.
- On several occasions and for political purposes, government offices request construction works to be completed in a short term.
- The periodic review of the progress of the development of the executive project is not always done by trained personnel in the field.

### 3.3.3 Poor/Deficient quality in Executive Projects.



CMIC actions in response to the problem:

- Proposal to the authority (SFP, SHCP) to contemplate permanently within the budget an allocation of 5% for the preparation of the executive project.
- The creation of a databank of projects by agencies or at the Secretariat of Finance and Public Credit (SHCP).
- Promote a bigger budget for the development of executive projects
- Proposal for a reform and additions to the LOPSRM
  - a. Include comparative life-cycle assessment.
  - b. Include a defined Project Management.

### 3.3.4 Social license and anti-development movement

- Nonconformity of social groups in Mexico has represented the cancellation of strategic projects.
- In highway development, delays and difficulties often occur because many projects do not have the right of way.
- In the urban environment neighborhood organizations also offer resistance;





### 3.3.4 Social License and Anti-Development Movement

To prevent social problems affecting the realization of infrastructure projects, it is advisable to consider the following points:

- Identify social groups that would be affected by the project
- To avoid or mitigate adverse impacts
- Maximize positive community impacts
- Minimize overruns for changes to the project caused by social reactions
- Reduce errors and omissions risks
- Find the consensus approval of the project

Currently Mexican law  
(Public Works and Related  
Services Law) does not  
include a clause in Public  
Works contracts that  
obligates contractors to  
undertake projects  
specifically for the benefit  
of the community.



It is possible to reach agreements with the community. One example is the Pemex "Program for the Support of Communities and the Environment (PACMA), which currently works with the New Airport Group to generate programs and projects that benefit society.

PACMA  
PROGRAMA DE APOYO  
A LA COMUNIDAD  
Y MEDIO AMBIENTE



NUEVO AEROPUERTO  
INTERNACIONAL  
DE LA CIUDAD DE MÉXICO



## Signing of the Agreement between Petroleos Mexicanos and CMIC to boost the Program of Support to Communities and the Environment (PACMA) of PEMEX



Bases for social development are promoted.



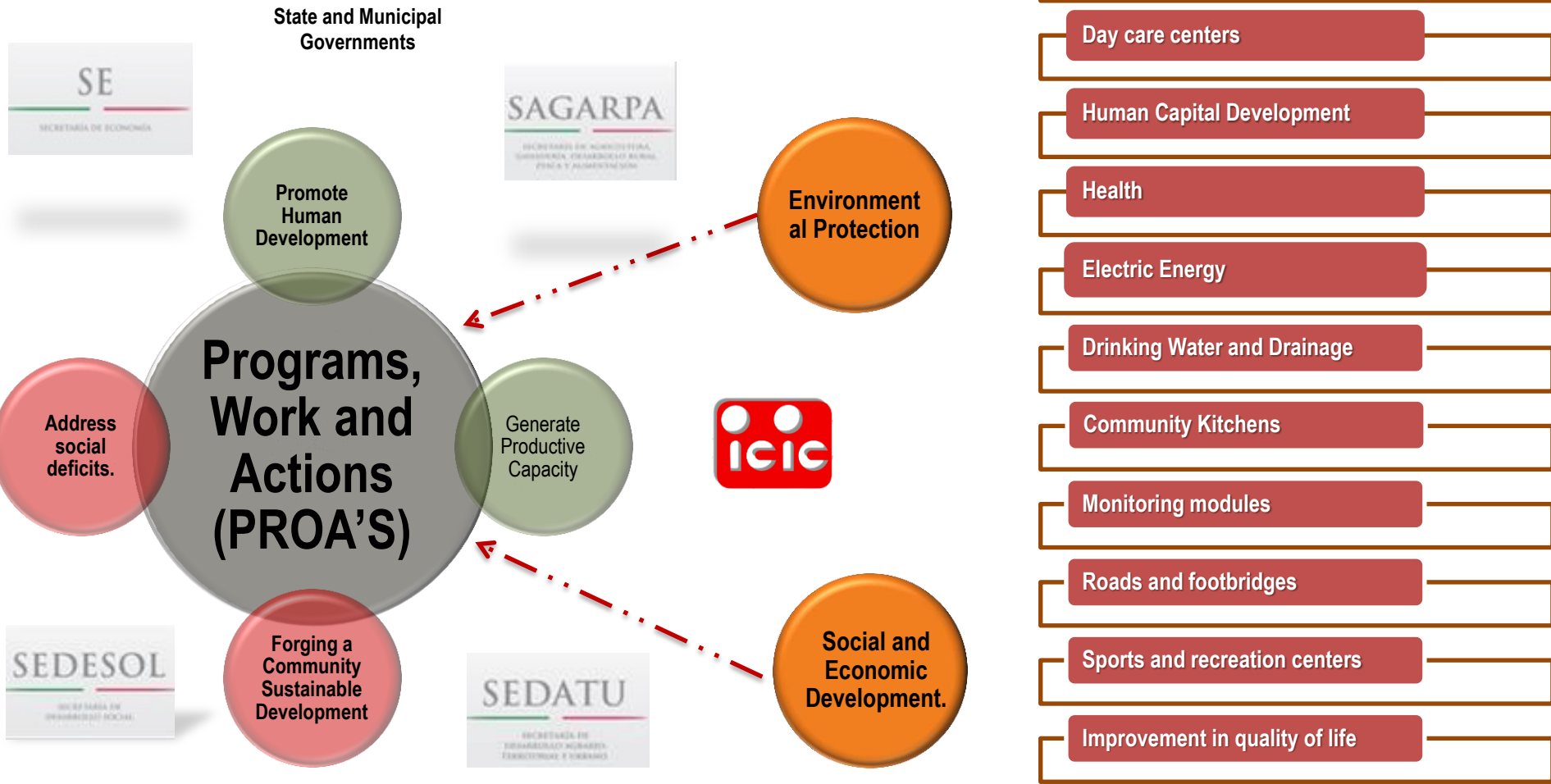
Small and medium-sized constructions are promoted.



Construction and rehabilitation of schools, streets, sidewalks, bridges, landfills, among others.



## Airport Group of Mexico City Comprehensive socialization



The use of drones in applications for public works or buildings in Mexico is becoming increasingly important:

- **The main reasons are:**

- Plan, promote or commercialize new works or projects
- Better monitoring on the progress of the works
- Inspecting work units,
- Logistics jobs
- Health and safety measures at work



- **However:**

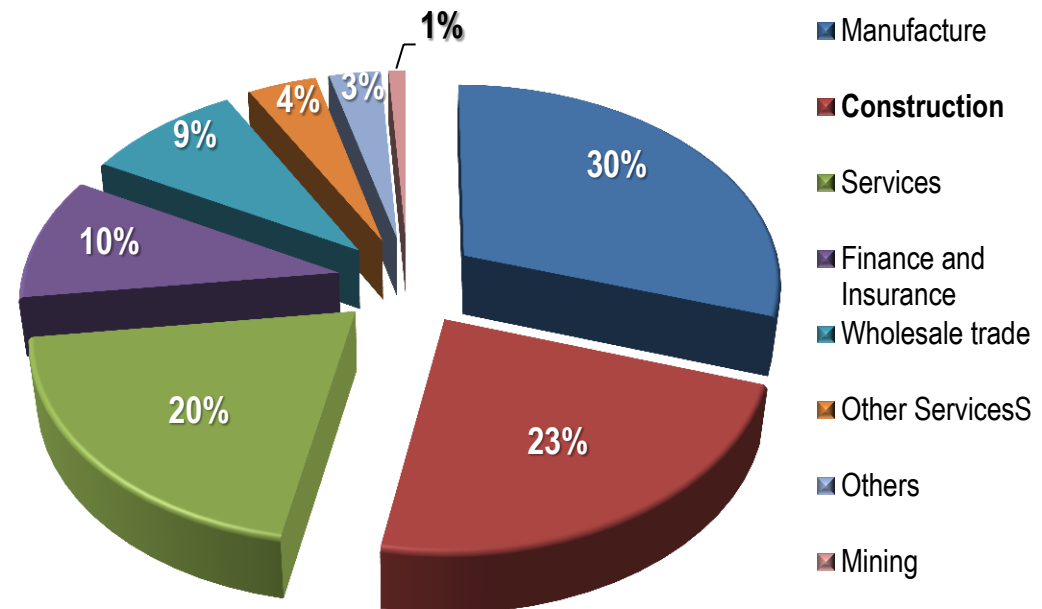
- Currently, there is still little use of drones for constructions in Mexico.
- They have been used in the construction of automotive plants where customers are foreigners, for topography and control of work progress.
- They will be used in the construction of the new airport in Mexico city.



### Main types of Cyber-Attacks in Mexico

- ☐ **Malware:** Malicious program to steal confidential information.
- ☐ **Spear phishing:** E-mail designed whose sole purpose is to gain unauthorized access to sensitive data.
- ☐ **Ransomware** (Informatic kidnapping): Pretending to be agents of the security forces require payment of a false penalty, as a condition to unlock a computer.

Distribution of crimes Spear-phishing attacks by economic sector



### Most Reported Cyber-Crimes in Mexico

- According to information from the Mexican federal police, incidents of fraud and extortion reported included e-commerce fraud, Nigerian scams, online banking fraud and extortion.
- Individual complaints included defamation, threats, theft of passwords, identity theft and harassment.



### Preventive Cyber-Delinquency Police

#### Lines of action:

- Monitoring social networks and websites in general.
- Informative talks at schools and institutions, in order to warn about the crimes committed and dangers through the internet and how to prevent them, creating a culture of self-care and digital citizenship.
- Emit preventive Cyber-alerts which are performed through the analysis of reports received in the accounts of the Preventive Cyber delinquency Police.





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