Insaforp
Instituto Salvadoreño de Formación Profesional

SENAI

Oficina Internacional del Trabajo
CINTERFOR

STUDY ON THE PROSPECTIVE FOR PROFFESIONAL TRAINING SECTOR: CONSTRUCTION INDUSTRY

41st Technical Committee Meeting ILO/Cinterfor

50 YEARS OF INDEPENDENCE TRINIDAD & TOBAGO

50 years
International Labour Office
CINTERFOR

Port of Spain, July 2013

CONTENT

1. Construction Industry in El Salvador
2. Methodology Used in The Study on The Prospective for The Construction Sector in El Salvador
3. Technological Prospective in The Construction Industry
4. Occupational Impacts
5. Contextualization and Recommendations
6. Implemented Actions
7. Future Actions and Prospective Studies

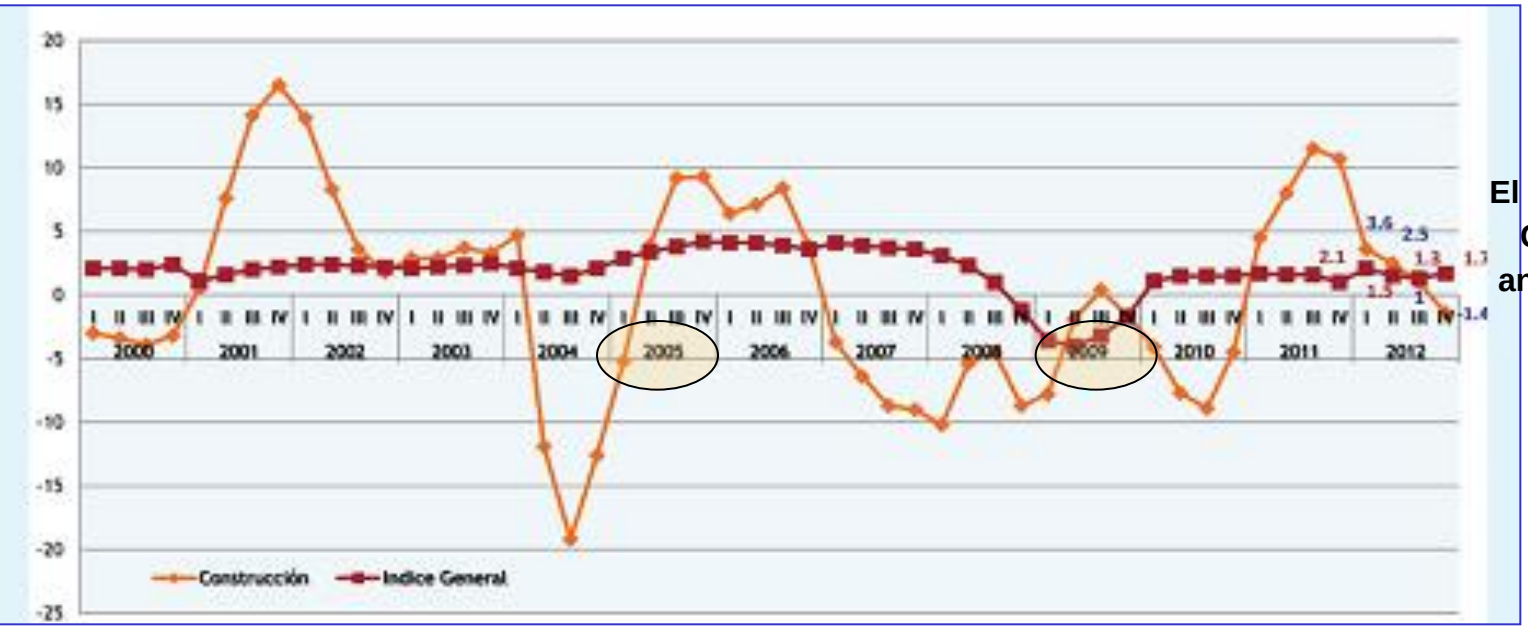
1. CONSTRUCTION INDUSTRY IN EL SALVADOR

- **Last ten years** the construction sector has had a **low participation in the national production**, very different than the Commerce and Industry sectors.

- The construction sector accounted **for 4% on the GDP in 2012**.

- In **2008, the number of contributors** from the construction sector to the Salvadorean Social Security Institute **was of 32,374 workers**. There has not been a recovery of such quantity for 2013.

1. CONSTRUCTION INDUSTRY IN EL SALVADOR (Cont…)



Graphic 1

El Salvador: Quarterly Total Gross National Product and from the Construction Sector.
Period 2000 – 2012

Graphic 3 was taken from "Revista Construcción" of March – April 2013, of the Salvadorean Chamber of the Construction Industry (CASALCO), (with data from the Central Reserve Bank of El Salvador, BCR).

- From 2008, the Salvadorean economy has had a slow growth rate, of a little less than 2 % per year.
- Construction's Sector GNP has been impacted by the behavior of the economy as a whole.
- When the economy grew at almost 4%, as in 2005, construction's sector GNP grew at 9%.
- When the country's economy had a negative growth of 3.1% in 2009, the construction's sector GNP grew to less than 8% per year.

1. CONSTRUCTION INDUSTRY IN EL SALVADOR (Cont.…)

CONCLUSIONS:

- The construction industry is important for the **development of the country's social infrastructure and for the economy.**
- Likewise, for the creation of **housing for the general population.**
- The construction industry sector **contributes little to the national production.**
- There are, relatively, very **few companies in this sector**.
- It absorbs a **large amount of labor force**.

2. METHODOLOGY USED IN THE STUDY ON THE PROSPECTIVE

- Setting up of the **Executive Group**, for which the main universities and trade associations of the construction industry were contacted. It was established with 9 external experts and 3 internal experts from INSAFORP.

- The basis to determine the technologies that, according to the Executive Group, may become the most popular in the country during the next 5 years was a list that **other countries like Costa Rica and the Dominican Republic considered**.

- A questionnaire about **emergent technologies** was developed, and it was validated by the **Executive Group**.

- **Specialists' Panels** were formed (as an immediate alternative to the Delphi Technique): these panels were able to determine: **"Technological Prospection", the "impact of new technologies in professions" and the "Analysis of occupational impacts".**

3. TECHNOLOGICAL PROSPECTIVE
Results from the Technological Prospective

Table 1
Technologies with a diffusion rate of 70% from 2013 to 2018

COMPUTERIZED SYSTEMS	
1	Revit MEP
OTHER COMPUTERIZED SYSTEMS	
2	GPS on modern topography
CONSTRUCTION MATERIALS AND CONSTRUCTION SYSTEMS	
3	Intelligent Concrete
4	Ductual's Ultra High Performance Concrete (UHPC). High Performance concretes.
5	Pervious concrete
6	Decorative concrete
7	Architechtural concrete
8	Translucent concrete
9	Controlled Low-Strength concrete (soil cement)
OTHER CONSTRUCTION MATERIALS AND CONSTRUCTION SYSTEMS	
10	New Structural material – Fibre-reinforced plastic
11	Cardboard tubes for formworks
12	Post-tensioned slabs
13	Domotics
RENEWABLE ENERGIES	
14	Clean renewable energies
15	Solar heaters
ENVIRONMENT PROTECTION	
16	Low consumption and low maintenance bathroom fittings
17	Green roofs

4. OCCUPATIONAL IMPACTS
Results Obtained

As a result from the analysis performed from the Occupational Impacts' Matrix, where every emerging technology was crossed with the identified occupations, the low, medium and high impacts were determined. And, from the analysis, **the following occupations were impacted:**

- **Architect**
- **Civilian Engineer**
- **Architectural Technician**
- **Civil Engineering Technician**
- **Master Builder**
- **Bricklayer**
- **Environmental designer**
- **Person in charge of Cost Control and Quality Control**
- **Electrical Engineer**
- **Technician in Electrical Engineering**

Afterwards, for each occupation, the following was analyzed: **Technologies that will have an impact on them, new activities that will be required (capacities), new knowledge that they will need and the required attitudes.**

5.CONTEXTUALIZATION AND RECOMMENDATIONS

- **TO INSAFORP**

1. Carry out the curricular design of on-going education courses on the identified technologies.
2. Update the curricular design for the initial training courses: Master of Works, Bricklayers and plumbers, among others.
3. Keep an open offer of on-going education courses to continuously update workers from companies on new technologies for the sector.

- **TO UNIVERISITIES AND TECHNICAL INSTITUTIONS**

1. Evaluate the feasibility to include in the curricula for those majors related to the construction sector, those subjects related to emerging technologies presented in the study.

6. IMPLEMENTED ACTIONS

- INSAFORP has designed a program for **specialized On-Going Educations courses,** which **started in May 2013**, offering 51 different courses.

- **The offer included 3 emerging technologies were identified** in the Technological Prospective Study, and for which the curricular design was already done:

    - ***Revit 2013 Architecture, with three levels***
    - ***GPS on Modern Topography***
    - ***Controlled Low-Strength concrete (soil cement)***

- **The Prospection Method was presented to other economic sectors of the country,** to identify those sectors where another prospection study can be carried out.

7. FUTURE ACTIONS AND PROSPECTIVE STUDIES

- **Technical Workshops will be carried out for the identified emerging technologies with specialists from the construction sector** to work on the curricular design to add them to the programs offered on Initial Training and On-Going Education.

- Works will be carried out on a Prospective Model on Green Jobs.

- There will be activities to identify other sector to carry out Prospective Studies.

THANKS FOR YOUR ATTENTION

Carlos Gómez

cgomez@insaforp.org.sv

INSAFORP