

CRISISTÓBAL LIRA

Director

Committee for Earthquake and Tsunami Emergency (March-August 2010)

Reconstruction Committee (since August, 2010)

Chilean Ministry of Interior

Before the Ad Hoc Subcommittee on State, Local, and Private Sector Preparedness and
Integration

September 30, 2010

(Power Point Presentation will be given and submitted into the record)

Good morning, first of all I would like to thank the invitation to come here, it's an honor to share the experiences of a catastrophe as big and complex as the one our country lived. In this opportunity I would also like to thank the United States Government and all the people in this country that helped Chile during this difficult times.

In this presentation I will talk about 3 main topics:

- 1) Earthquake and Tsunami Impact
- 2) Government reaction and organization
- 3) Initiatives in place and learning captured

First of all I will try to show how big this emergency was, and all the consequences it had for our people and our economy.

As you can see, this was the fifth strongest earthquake registered until now. The total loss was 14.9% of the Gross Domestic Product, a huge loss for our economy.

Images can say a lot about what happened in our country. This image shows the island of Juan Fernandez before and after the tsunami.

This image shows Talcahuano port in the south, one of the most important ports in our country.

Here we can see our main highway in the city of Santiago, and all the damages caused by the earthquake.

A bridge 200 kilometers south of Santiago before and after the earthquake.

This is the town of Dichato before and after the earthquake and tsunami. This picture shows the "Alto Río" building in Concepción after the earthquake.

During the emergency period we worked in each one of these areas, delivering temporary solutions to the people affected.

Here we can see an open view of the damages caused by the earthquake in the different sectors of the economy.

As we saw before, these losses represent 14,9% of the country's GDP.

Now I'm going to talk about the government reaction to this emergency and how it organized to respond and deliver the necessary solutions.

The most important thing is that we started simultaneously to attend the emergency and also starting the reconstruction efforts.

As you can see here, two committees were created, the first one to respond to the emergency, and the second to start working in the reconstruction.

The emergency Committee recruited around 10 people from the private sector to work temporarily in this committee. These people continued to receive their wages from the companies where they used to work. This help from the private sector and an emergency law that made it easier to buy and deliver help, were fundamental to the success of the emergency Committee in a very short period. We worked in coordination with the armed forces and Onemi (National emergency office).

The Armed Forces were very important in two stages of this emergency. First, working to restore the public order that was missing after the earthquake. And second, changing their guns for tools to help to build emergency houses and remove debris from the streets.

A fundamental aspect to have a permanent knowledge of the situation and deliver fast and adequate solutions, was that the government worked permanently in the field, distinguishing their people with colorful red jackets.

Since the beginning of the government, we have worked together with McKinsey trying to have a good diagnosis of what worked well, and what didn't work during this emergency. I would like to share with you these learnings, and how we are working to be better prepared when the next emergency comes.

Finally, I would like to give you some material that gives more information on the topics I have talked about before:

- A copy of the "Sustainable Reconstruction Plan" of Constitución, so you can see how we have been developing the reconstruction plans since the beginning of the government.
- Information about Onemi, the Chilean National Emergency Office, and how they are working in the prevention, response and recovery for future emergencies.
- I will also give you a presentation from the Minister of Finance, where you can find more information about the costs that this emergency implied for our economy and how the government is preparing to finance these costs.
- The final daily report from the Emergency Committee, where you can find details about all the aid delivered in the area affected by the earthquake and tsunami.

Emergency Committee

Contents

- **Earthquake and tsunami impact**
- Government reaction and organization
- Initiatives in place and learnings captured

Chile Had One of the Strongest Earthquakes On Record

Location	Date	Magnitude
Chile	22/05/1960	9.5
Alaska	28/03/1964	9.2
Northern Sumatra	26/12/2004	9.1
Kamchatka	11/04/1952	9.0
Chile	27/02/2010	8.8
Ecuador	31/01/1906	8.8
Alaska	02/04/1965	8.7
Indonesia	28/03/2005	8.6
Assam - Tibet	15/08/1950	8.6
Alaska	03/09/1957	8.6

The total loss was 14.9% of GDP



Emergency Committee

■ Consequences: Juan Fernández before



Emergency Committee

■ Consequences: Juan Fernández after



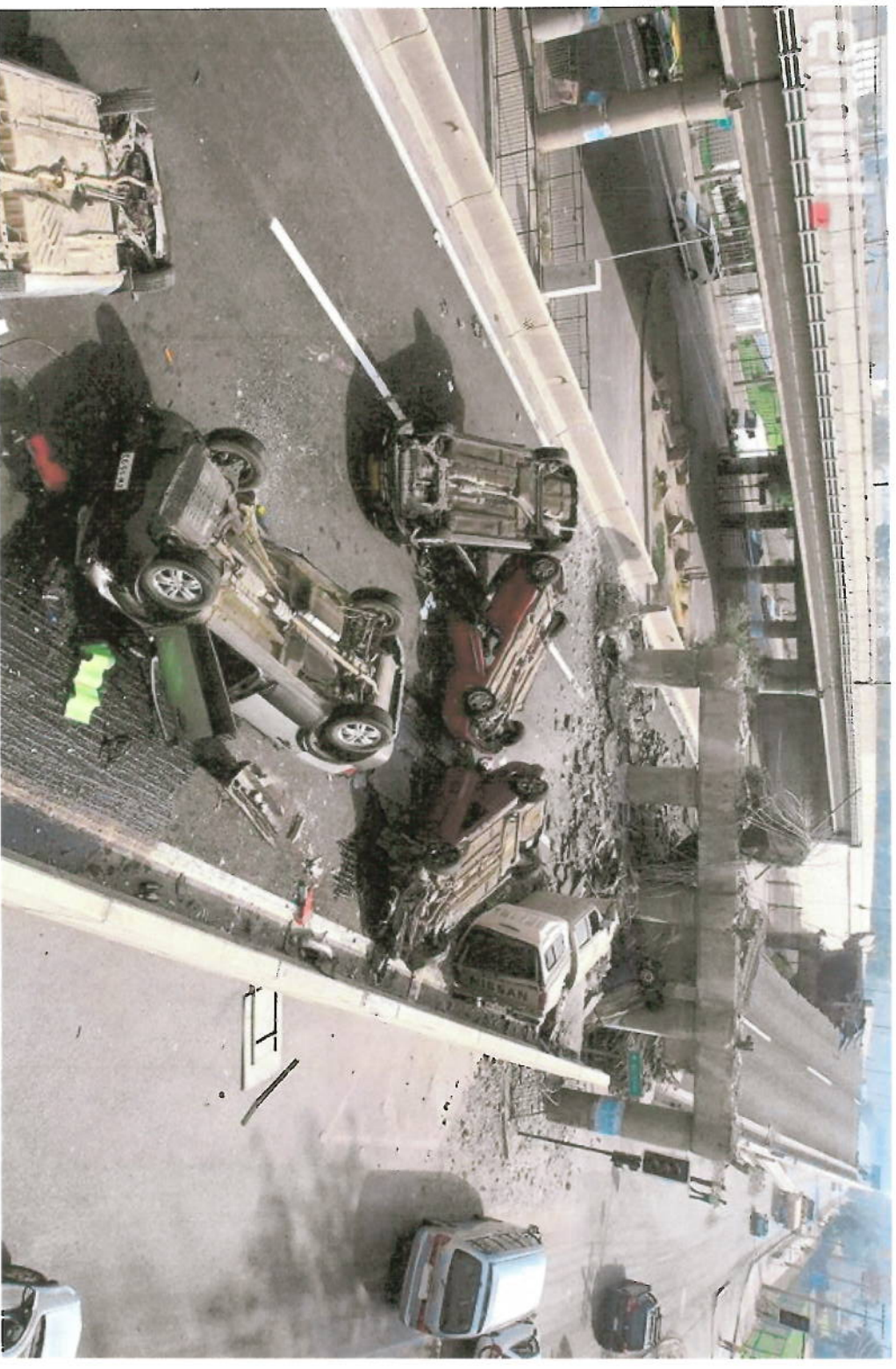
Emergency Committee

■ Consequences: Talcahuano after



Emergency Committee

■ Consequences: Santiago, Vespucio Sur highway



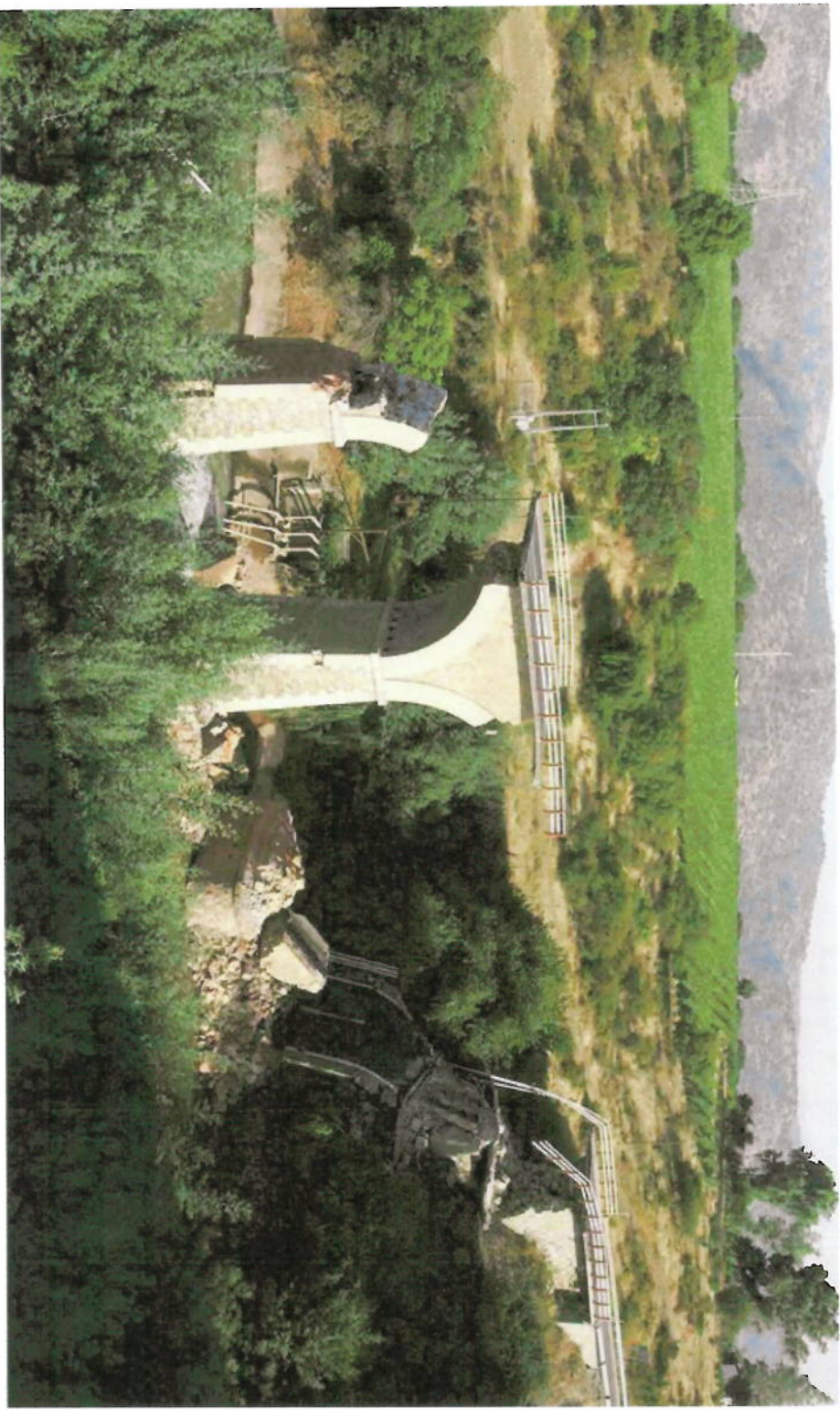
Emergency Committee

- Consequences: highway to the south before



Emergency Committee

- Consequences: highway to the south after



Emergency Committee

■ Consequences: Dichato before



Emergency Committee

■ Consequences: Dichato after



Emergency Committee

■ Consequences: Concepción



Emergency Committee

Enormous impact of Earthquake and tsunami

- **521** fatal losses and **56** disappeared
- **370.000** destroyed and damaged houses (11% of total)
- **73** destroyed hospitals
- **3.049** destroyed and damaged schools; **1.250.000** children out of school
- **221** destroyed and damaged bridges
- **900** towns and communities affected

Emergency Committee

The cost of the damages was USD 30.000 million

Sector	Amount (million USD)
Industry, Fishing and Tourism	5.340
Housing	3.943
Education	3.015
Health	2.720
Energy	1.601
Public works	1.458
National Assets and others	1.376
Agriculture	601
Transport and Telecommunications	523
Other infrastructure	267
Local governments	96
Infrastructure loss	20.940
GDP loss	7.607
Other expenditures	1.117
Total	29.662

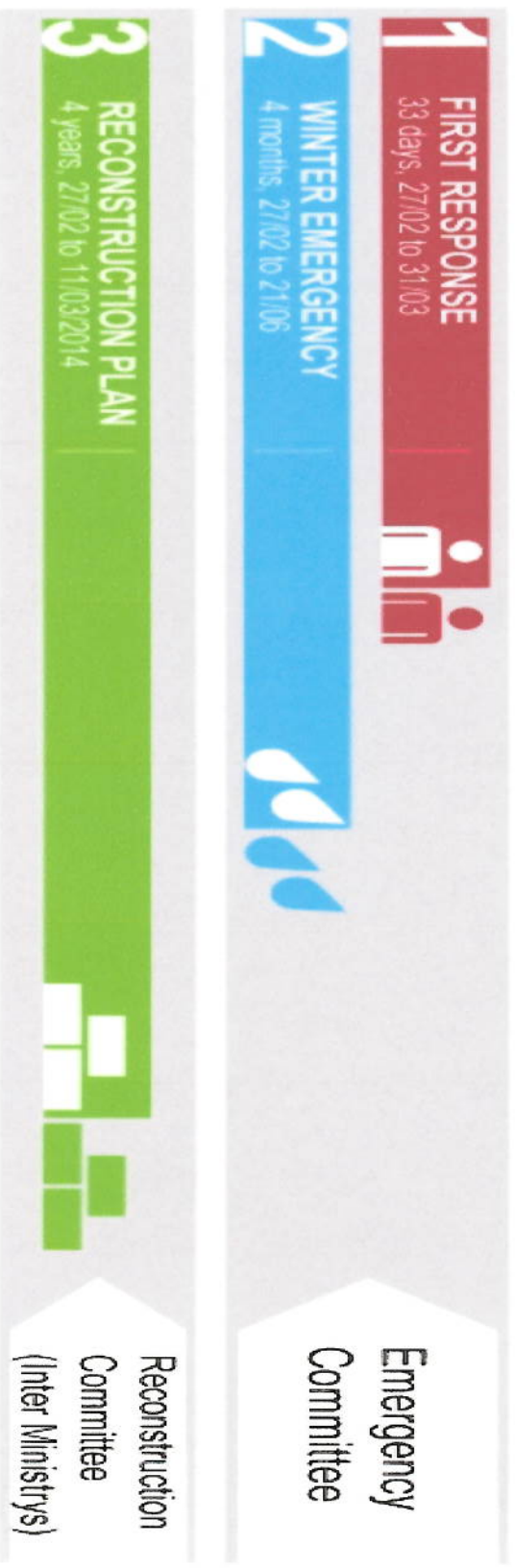
Emergency Committee

Contents

- Earthquake and tsunami impact
- **Government reaction and organization**
- Initiatives in place and learnings captured

Emergency Committee

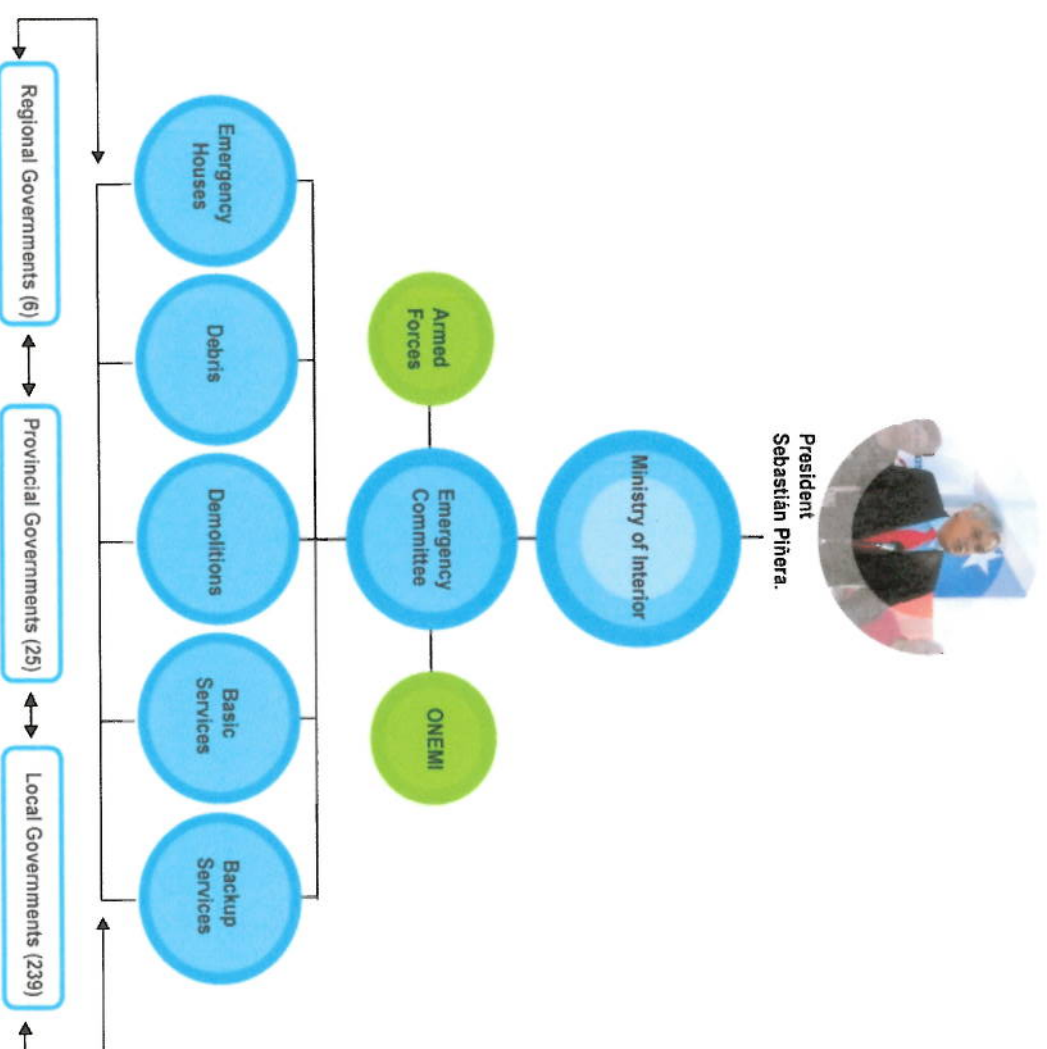
Government responded with a structure to overcome the emergency



Triple response plan by the government

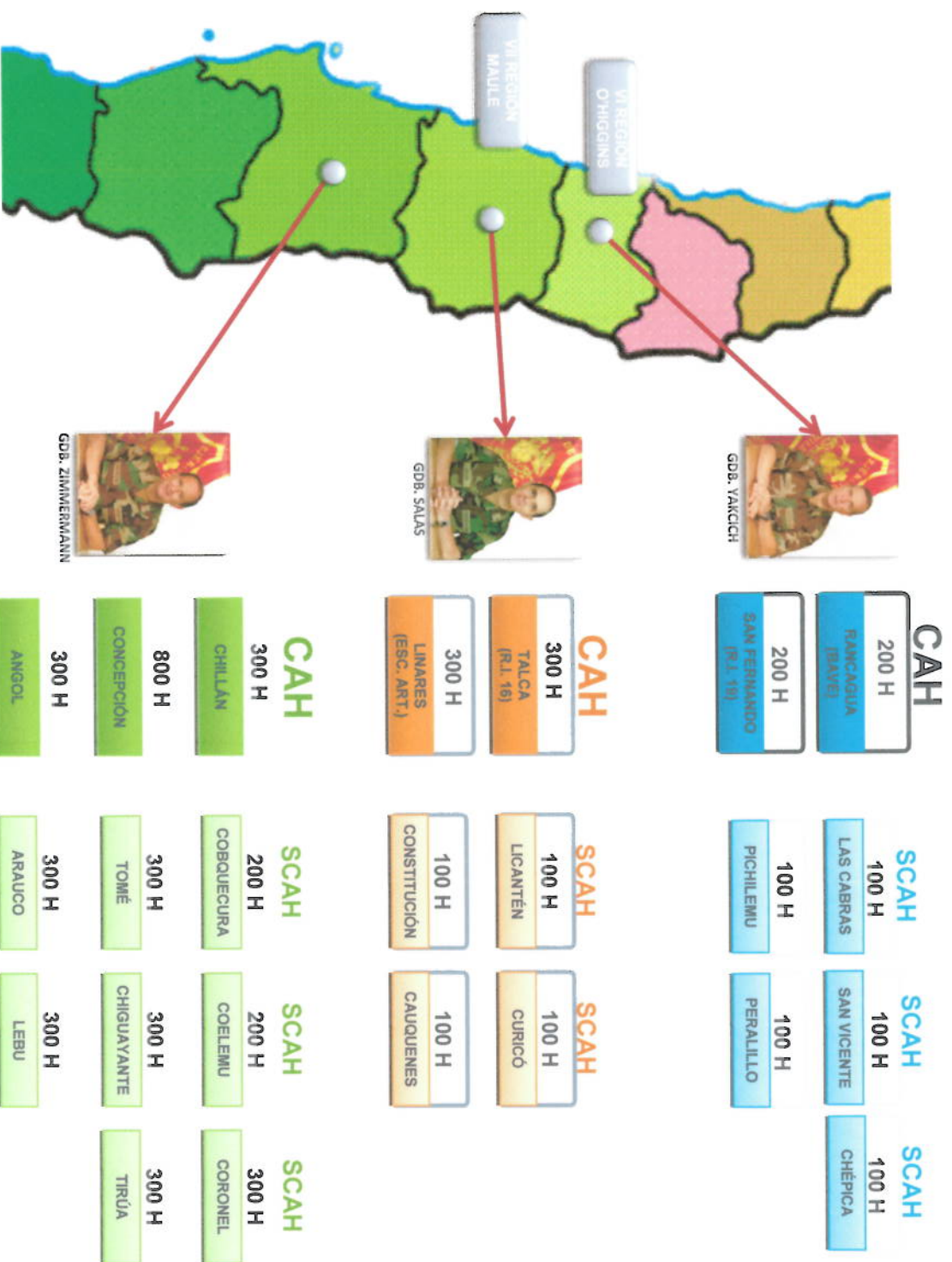
Emergency Committee

■ Government response: Organization after emergency



Emergency Committee

Army – Division by territory



Emergency Committee

Restoration of public order



Emergency Committee

Humanitarian aid by the armed forces



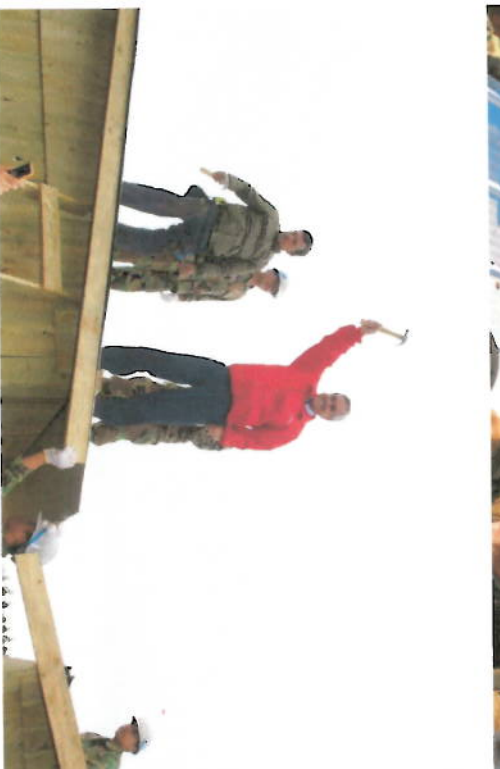
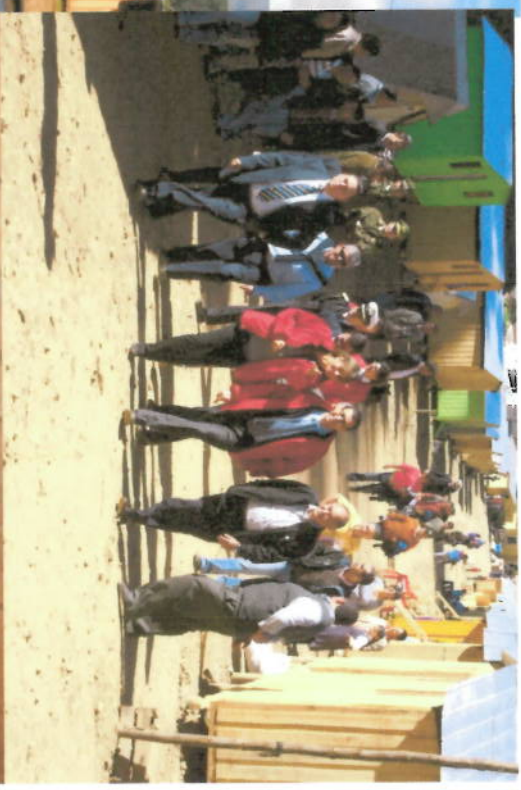
Emergency Committee

Humanitarian aid by the armed forces



Emergency Committee

■ Government: work in the field



Emergency Committee

Contents

- Earthquake and tsunami impact
- Government reaction and organization
- Initiatives in place and learnings captured

We learned hard lessons from different things we were missing.. (1/2)



1 Seismological and telecommunications infrastructure

- Communications were down for more than 12 hours
- Sensors took more than 2 hours to provide the information

Problems observed

- ### What we are working on
- Investments in real time monitoring process and robust telecommunication systems with multiple backups

2 Issuing alarms process

- Process to issue an alarm involved:
 - Unclear communication protocols
 - Multiple unnecessary decision points
 - No use of mass communication channels

- Streamlined process with:
 - Clear communication protocols
 - Single responsibility for decision
 - Use of mass communication channels

3 Emergency task force

- No special force dedicated to help in initial evaluation of damages nor specialized in emergency procedures

- Development of an army emergency task force specialized in emergency procedures

We learned hard lessons from different things we were missing... (2/2)

Problems observed

What we are working on

4

Chain of command

- No clear chain of command in place:
 - Too many direct reports
 - Organized by institutions instead of functions
 - Leadership duplicity
- Clear chain of command:
 - No more than 8 direct reports
 - Organized by functions
 - Single leadership

5

“War room” dynamics

- Unrestricted access
- Everybody sitting around the same table randomly
- Press with direct access to everything
- Restricted access
- Decision makers in one table separated from support staff in separate tables grouped by functions

6

Looting

- Heavy looting begun 18 hours after the earthquake
- Procedures to deploy armed forces to ensure safety in the first hours of the emergency



...but we also learned from the good things we had in place

