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Emergency Management: Learning from the Leaders

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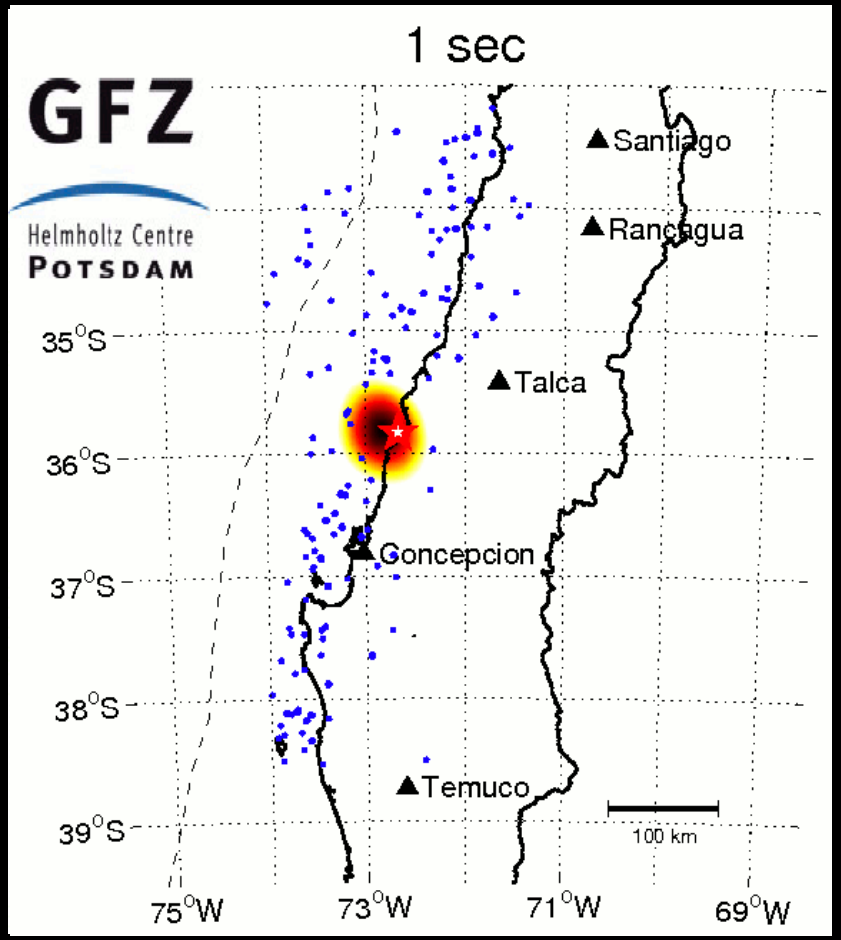
Emergency Management: Learning from the Leaders

F27 2010: Largest urban earthquake in extension and spread of damage

- 6th biggest earthquake ever recorded (8.8 Richter)
- Six regions of our country were affected
- 600 kilometers of the territory devastated

Urban damage:

- 3 main Metropolitan Areas
- 5 Cities with more than 100 thousand pop.
- 45 Cities over 5 thousand pop.
- More than 900 small towns and villages
- Distributed in more than 230 Municipalities



Juan Fernández

Juan Fernández

Ruta 5 Highway

Ruta 5 Highway

Talcahuano

Santiago

Concepción

521 fatal losses and **31** people still missing

370,000 destroyed and damaged houses (11% of total)

79 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

Total cost estimated at US$30 billion (~15% of GDP)

27F 2010: Diversity of Damage

- 27 Inland and coastal urban centers in process of economic restructuring
- 20,000 Social Housing units
- 180 Historic towns and villages severely affected
- Harbors, bays and coastal communities devastated by tsunami

Government Response Organized in 3 Stages

Demand Estimation

Damage Cadastre, Registration and Refinement of Victims Demand

25-Mar-10	370.000 HOUSES DAMAGED OR DESTROYED BY ONEMI
27-Ago-10	285.500 FAMILIES REGISTERED IN THE REGISTRY OF VICTIMS
27-Sep-10	**220.000** FAMILIES ELIGIBLE FOR GOVERNMENT ASSISTANCE

- At March 25, 2010 was possible to have a damage estimate
- A **Voluntary Registry of victims** was created to certify the type of damage
- With the information the Ministry determined the number of **families eligible for subsidies** for reconstruction / repair
- Process of disaggregation by type of housing and damage, geographical location (coastal, interior) or materiality, in order to **estimate the total amount of subsidies to be distributed**

MINVU Reconstruction Plan Phases

March 27: U.S. 2.5 Billion Housing Plan Approved

April 12: First call for subsidy applications

April 27: 100% children back to school


La Segunda

GRIETA DE 4 KILOMETROS DETECTADA EN ISLA DE MAIPO MOVILIZA A LOS GEOLOGOS

Gobierno dio a conocer Plan de Reconstrucción para 200 mil familias más damnificadas

US$ 2.500 millones a viviendas definitivas

Emergency Response

Feb 27 — March 27 — April 27 — June 11

May 15: 40,000 applications for subsidy received

June 11: 60,000 Emergency housing units built

July 30: 258.000 registered famiies for housing subsidy
23.000 reconstruction subsidies allocated

Subsidy Program Implementation 2010 – 2011

April 12

Housing Construction (2010 – 2014)

July 27 First reconstructed home is finished

Emergency Camps

By July 2010 almost **80.000 emergency houses** were constructed in the 6 affected regions . More than **70.000** of these homes were built in the **same places where the victims lived.**



4.350 families had no land to build the EH, so that **107 emergency camps** - Aldeas - were located (Region V: 3, Region VI: 4, Region VII: 16, Region VIII: 84)

Families living in Aldeas represent less than **5.3%** of the total of families living in emergency houses after the earthquake.

Emergency Camps

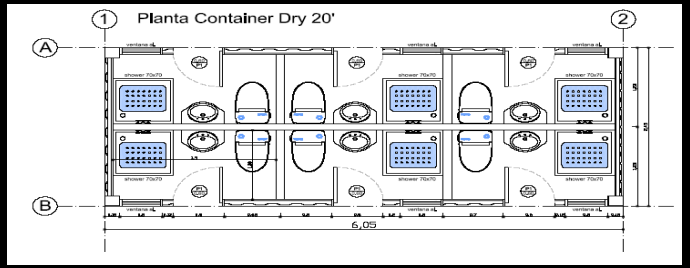
Houses Equipment / Community Equipment / Permanent Social Assistance

Houses Equipment

Electric Kit system security
Thermal insulation
Waterproofing
Enablement Kit: Cookware, mattresses, blankets, kitchenette

Community Equipment

Family Baths: To share between 2 and 3 families
Stabilized: From streets identified in the Camp core
Perimeter fence
Street lighting
Community Center: For Camps of more than 16 families

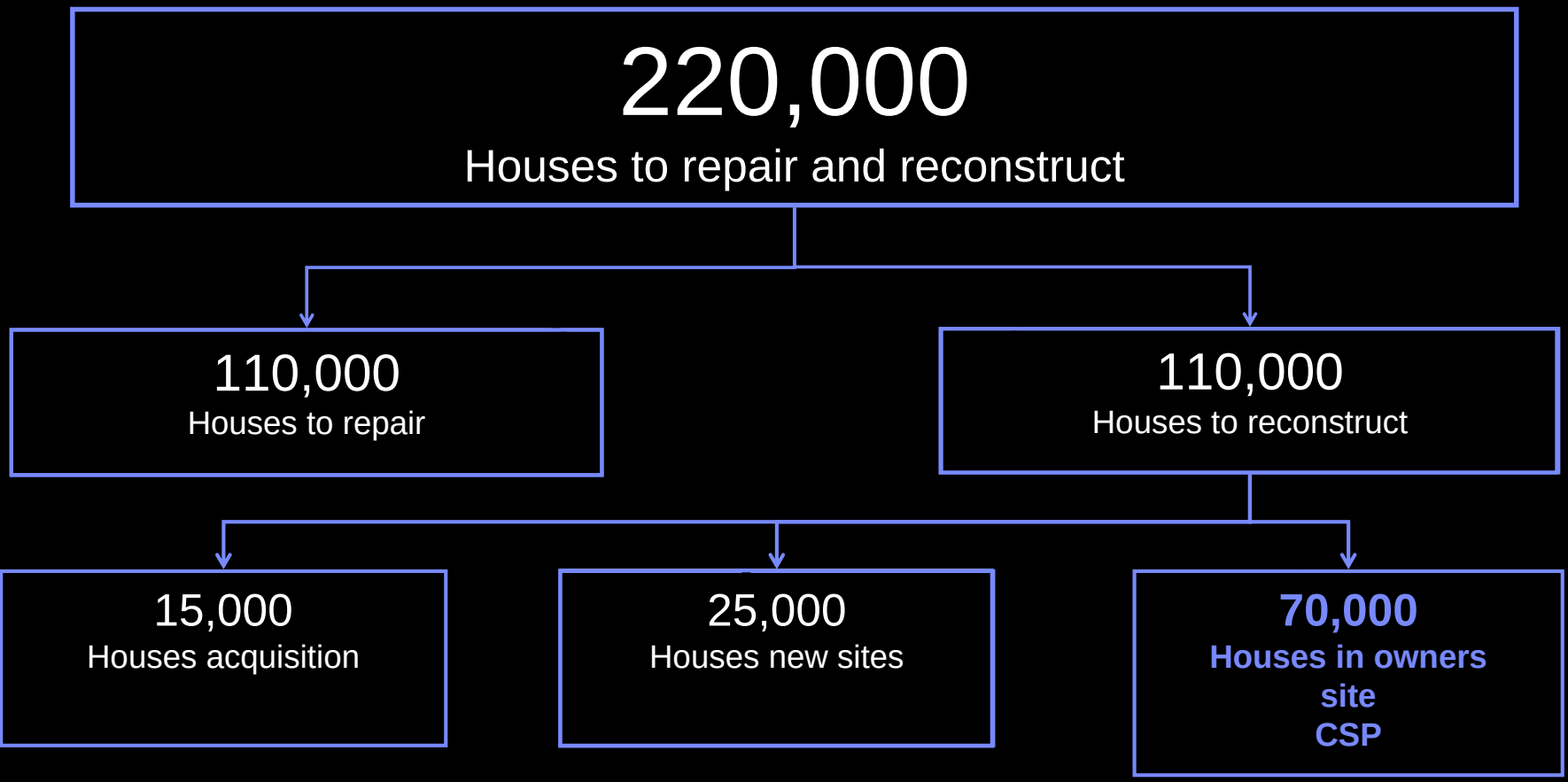


Permanent Social Assistance

Minvu Project Executive: Each village has a Minvu executive who coordinates the relocation of families
Social Team Articulators MINVU and Social NGOs: Supporting the nomination for subsidies and coordinates community activities

After Emergency Camps

Result: new houses in new sites for the families living in emergency camps


220,000
Houses to repair and reconstruct
110,000
Houses to repair
110,000
Houses to reconstruct
15,000
Houses acquisition
25,000
Houses new sites
70,000
Houses in owners site
CSP

70,000 homes will be constructed in the same site (owned site)

The great challenge of reconstruction is to re-build housing in the same place where families have lived forever

This confronts us with a new problem:
Reconstruct tens of thousands of homes in places that are geographically dispersed

Dispersal of sites for housing reconstruction in Talca

Demand organization to achieve critical mass for industrialized homes in remote areas

- Critical mass according to territorial distribution
- Call for proposals to contractors to bid for each group of beneficiaries
- Community vote for the best option, simple majority


Fondo Solidario de Vivienda I
• 380 UF monto de subsidio.
• Damnificados tienen costo cero
CHILE
Ministerio de Vivienda y Urban


Chile Unido Reconstruye Mejor
GOBIERNO DE
CHILE
OPCIÓN 3
vipalco


CNN
CHILE

Risk Mitigation and Resilience

Actions for the reconstruction of coastal cities

- **Risk Studies** were conducted form Regions VI to IX + Tsunami risk simulations
- **25 Master Plans** of Coastline were completed in 6 months
- Protocols were signed for **Coordination and Prioritization of works** with 12 municipalities and ministries
- In October 2010 we gave the information to municipalities to **upgrade PRC** (District Regulation Plans)

Risk Mitigation and Resilience

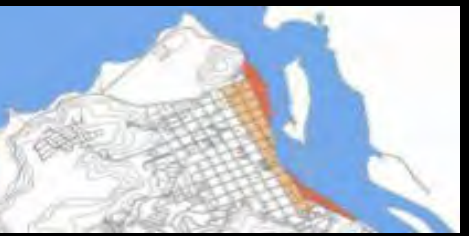
Each town has 3 products leading to the reconstruction of their coastline and the update of their Regulatory Zoning Plans

1. RISK STUDIES

- RISK STUDIES ELABORATED BY SERNAGEOMIN, UNIVERSIDAD CATOLICA AND UNIVERSIDAD DEL BIOBIO

2. MASTER PLANS AND MITIGATION PROJECTS

- MASTER PLANS FOR EACH LOCATION INCLUDE A PLAN OF URBAN INFREATESRUCTRE AND MITIGATION PROJECTS



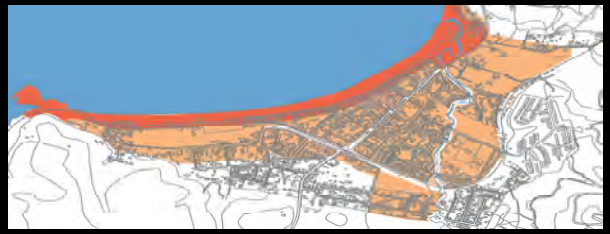
3. ZONING AND POLYGONS FOR SPECIAL SUBSIDIES

- DEFINITION OF ZONES OF EXCLUSION AND POLIGONS WHERE IT WILL BE POSSIBLE TO CONSTRUCT TSUNAMI RESILIENT HOUSES WITH SPECIAL SUBSIDIES

Special Subsidies for Tsunami Resilient Homes

- For those locations affected by tsunami, that count with **tsunami risk studies and master plans** which determinates the mitigation projects and evacuation plans. **Special polygons** are defined as areas for the assignment of reconstruction subsidies and also for special tsunami subsidies for the houses that incorporate **tsunami resilient designs** (First floor in solid material, raised in columns, etc.)

No resistant tsunami houses in Dichato



Risk zoning and special polygon in Dichato

- A **new building code for tsunami resilient constructions** was developed. The objective of the code is to allow and define the construction design of the houses so they can survive future disasters allowing evacuated communities to return to their towns as soon as the emergency is over

House in Pelluhue with solid first floor resisted the tsunami

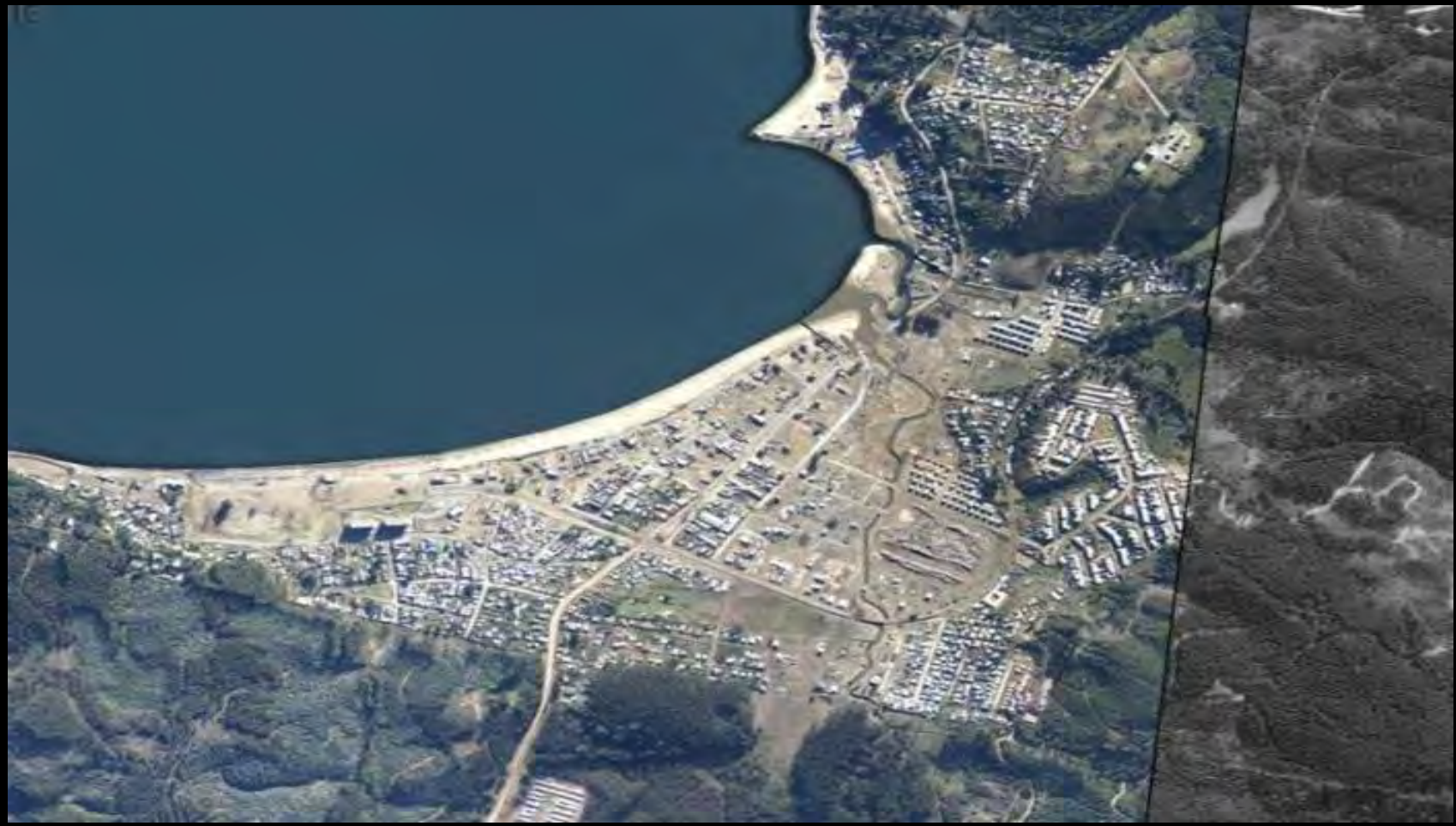
Houses with a tsunami resilient design constructed in Indonesia

- Special tsunami resilient subsidies are available to cover the mayor costs associated with the tsunami resilient designs (debris cleaning, contention walls and mitigation projects)

Master Plan Dichato

Master Plan Dichato

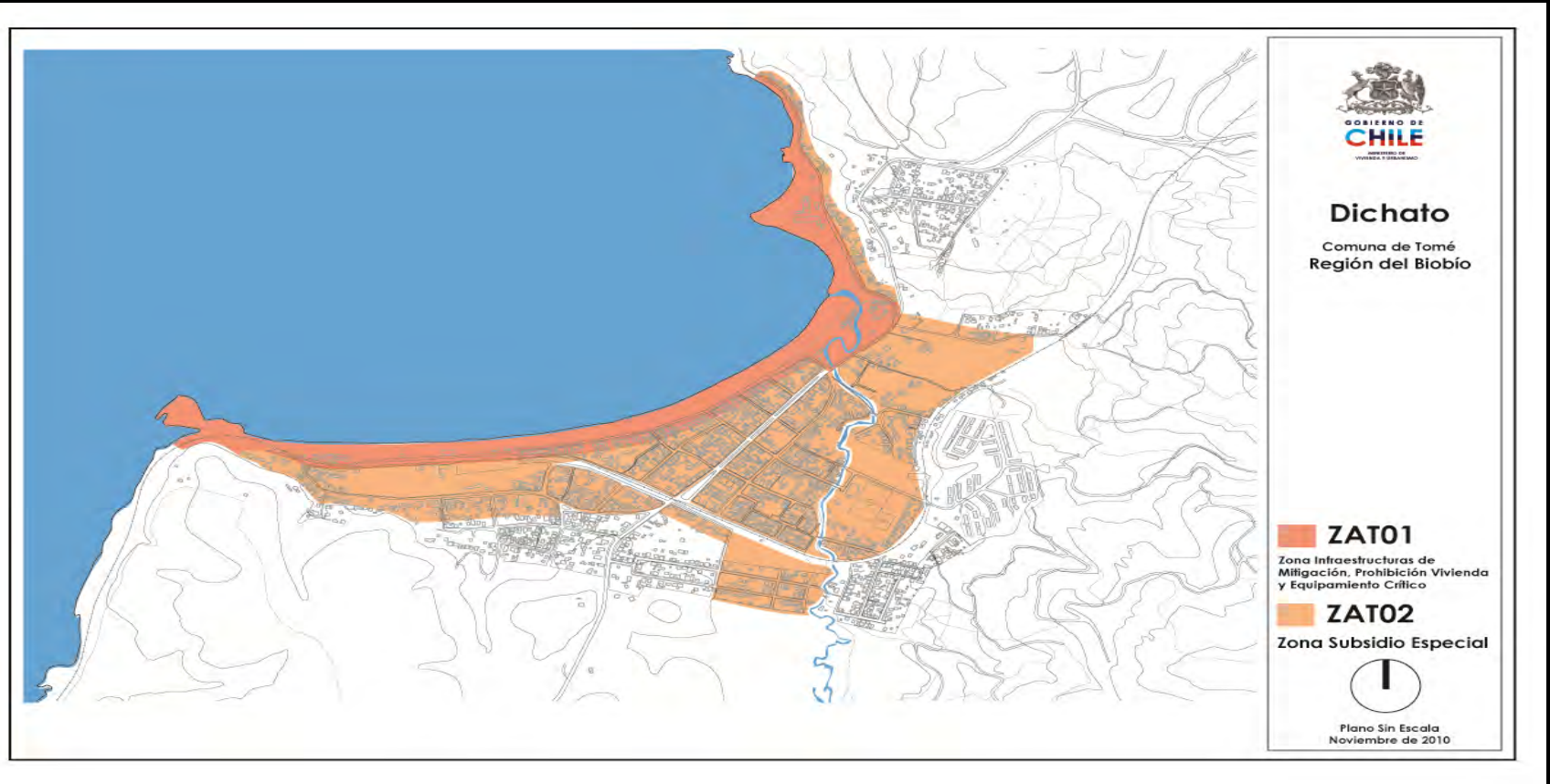
Master Plan Dichato



Master Plan Dichato

Master Plan Dichato

Restriction and conditioned zones for construction (tsunami resilient subsidy)



Master Plan Dichato

Urban Planning Reconstruction

✓25 Master Plans developed for main coastal cities
✓110 Regeneration Plans developed for mid-size cities, towns, and villages
✓ Heritage Recovery Plans developed for 180 zones of historic preservation

Housing Reconstruction

By September 2011:

174.317

Reconstruction subsidies allocated

120.907

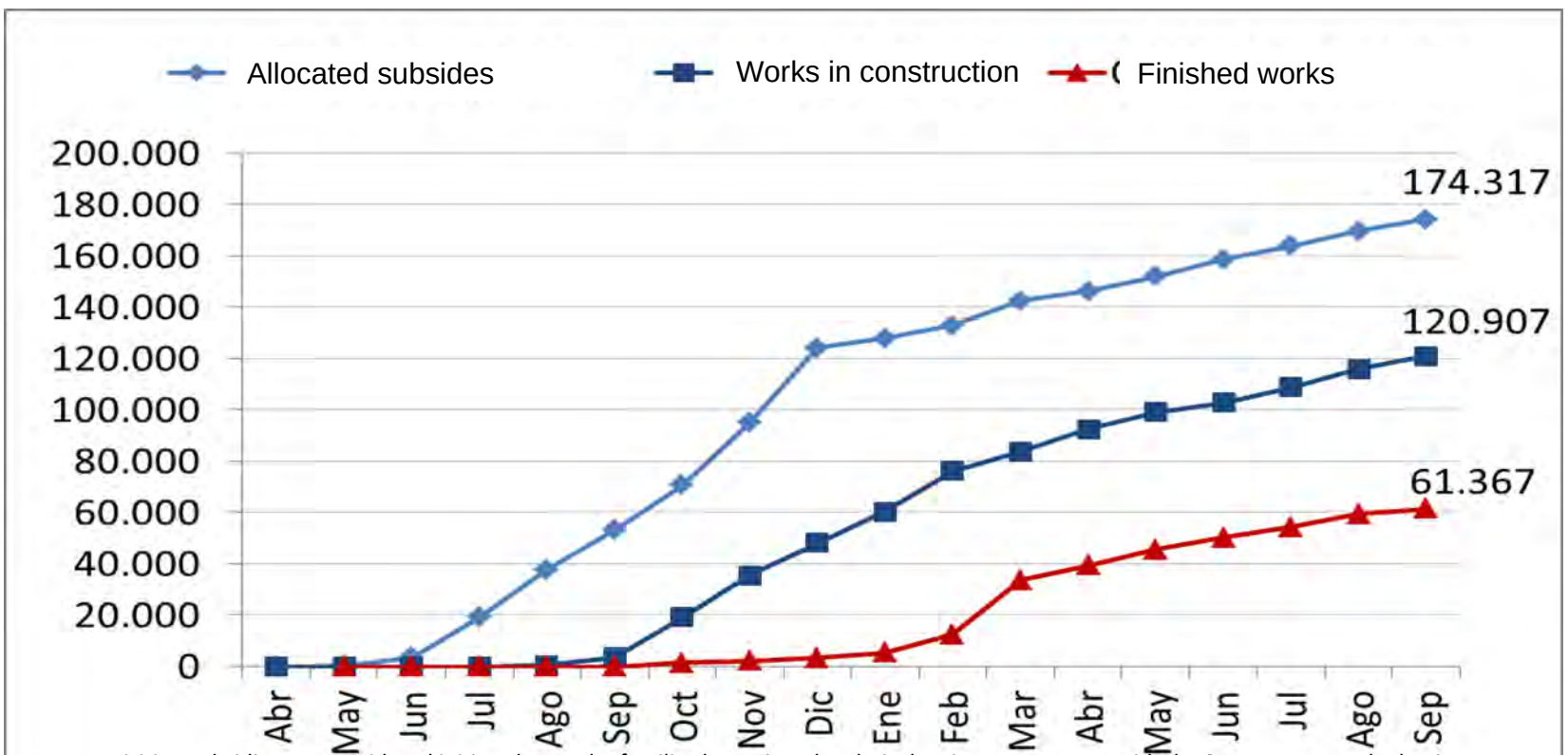
Works in construction

61.367

Finished works

Housing Reconstruction

Subsidies, in Construction, Finished Works (monthly accumulated numbers)



Note: Acquisition subsidies are considered initiated once the families have signed technical assistance contract with the SERVIU to start the buying process.

4 Year Goals of the Reconstruction Plan:

100% Subsidies allocated – Dec. 2011

100% Aldeas Erradicated – Jun. 2012

90% Houses constructed – Feb. 2013

100% Houses constructed – Feb. 2014

137 Master Plans Finished – Jun. 2011

National System of Emergency and Civil Protection

Main Challenge

Create and establish a national system of emergency and civil protection, including a risk reduction strategy, with civil society and local actors playing a central role

Some Guiding Principles

- **Multisectorial approach**
- **Descentralized--central government get involves only subsidiarily**
- **Minimize discretionary decision making**
- **Relience on existing capabilities**
- **Focus on prevention rather than response**

Lessons Learned:

Be Prepared for the Worst Case Scenario:

Intensity, Spread and Diversity of damage can jeopardize your response capacity

Manage Expectations:

The problem with a disaster is that, even if you are doing a great job, it is still a disaster

Communicate Complexity and Timeframe:

Socialize and communicate the scope of the process is the key to committed participation and engagement

Reinforce local capacities and leadership:

Disasters are decentralized, responsibilities and criticism tend to be centralized

Plan for collaborative P&P partnership:

Be ready to coordinate and drive help, some disasters require more than government response

Before

SmarterCities

Rio de Janeiro