

UNESCO-IPRED International Memorial Symposium on “Protecting Lives from Earthquake and Tsunami Disasters” and the 5th session of IPRED in Tokyo, Japan, 26-29 June 2012

PROBLEMS IN THE EXECUTION OF FIELD SURVEY AND ADVANCE ON SATREPS PROJECT

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BEFORE THE DISASTER

The Peruvian TEAM

- ☐ GEOTECHNICAL GROUP
 - Dr. Zenon Aguilar
 - Msc. Fernando Lazares
 - Eng. David Luna
 - Eng. Luis Chang
 - Dr. Diana Calderon
 - Eng. Silvia Alarcon
 - Eng. Selene Quispe
 - Eng. Rocio Uriarte
 - Eng. Ramiro Piedra

Advisor: Dr. Jorge Alva



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The Peruvian TEAM

- ☐ BUILDING GROUP
 - Dr. Carlos Zavala
 - Dr. Miguel Estrada
 - Msc. Ricardo Proaño
 - Msc. Jenny Taira
 - Msc. Lourdes Cardenas
 - Eng. Luis Lavado
 - Eng. Cesar Fajardo
 - BCE. Luis Moya
 - BCE. Lucio Estacio
 - BCE. Erika Flores
 - BCE. Jorge Morales



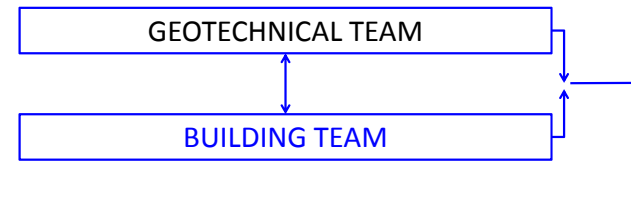
FICHA DE EVALUACION PRELIMINAR POR EVENTO SISMICO PARA EDIFICACIONES DE ALABALERIA			
1. IDENTIFICACION			
1.1 DEPARTAMENTO	1.2 PROVINCIA	1.3 MUNICIPIO	
2. DESCRIPCION			
2.1 AREA CONSTRUCCION (APROXIMADA)	2.2 NUMERO DE PISOS	2.3 TIPO DE PACHADA	
3. DATOS GENERALES			
3.1 TIPO DE ESTRUCTURA	3.2 MATERIAL DE MURERIA	3.3 TIPO DE MURERIA	3.4 TIPO DE MURERIA
4. DATOS DE LA EDIFICACION			
4.1 ELEMENTO DE CONFINAMIENTO	4.2 TIPO DE CONFINAMIENTO	4.3 TIPO DE CONFINAMIENTO	4.4 TIPO DE CONFINAMIENTO
5. DATOS DE LA ALABALERIA			
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6. DATOS DE LA EVALUACION			
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AFTER THE DISASTER:

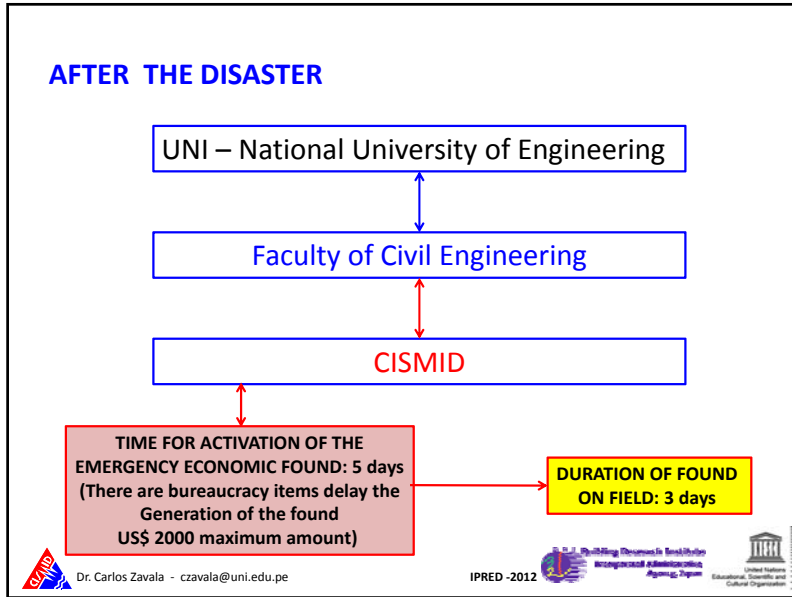
Establishment communication between teams



Team meeting to study the possibility to dispatch immediately with Researchers own funds. If there is not possibility we must wait for Emergency fund of UNI

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- ### PROBLEMS FOR THE GENERATION OF THE EMERGENCY FOUND
- Ministry of Economy had a protocol even in emergency cases
 - Priorization of the found must be submitted
 - Approval of the Priorization must be submitted for certification
 - Certification of the found by Ministry of Economy will allow the use of the found
 - After Certification is approve the found money will be allowable
 - Found could not be more than US\$ 2000 from and are taken from CISMID founds
 - Teams can survive only 2 days with this money.
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- ### WHAT ARE THE IMPEDIMENTS TO EARTHQUAKE DISASTER MANAGEMENT IN PERU?
- Government Officers of Ministry of Economy, Majors of City Office and also City Planners are not sensible with disaster risk.
 - There are cities where Hazard, Microzonification and Risk Analysis has been developed. Authorities of City office don't use it on the planning of the city. Studies are on a shelf or in a drawer very hide.
 - CENEPRED (brand new government agency) should be more aggressive and active consider alliance and teach the local authorities about the disaster management policies.
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National System on Disaster Management - SINAGERD

Components of the disaster management	National and International Policies for the development	Process for the implementation of disaster management
Prospective Management	-Education -Health	-Estimation of the risk
Corrective Management	-Science & Technology -Planning for development -Citizens security	-Prevention and reduction of the risk
Reactive Management	-Environmental -Public investment -Control & monitoring	-Preparation Response and rehabilitation -Reconstruction

Source: CENEPRED

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Technical Tolls for planning and management the risk (Source: CENEPRED)



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MAIN CHALLENGES FOR FUTURE IMPLEMENTATION OF MANAGEMENT AND CORRECTIVE IN PERU? (SOURCE: CENEPRE)

- Achieving a culture of disaster risk management in the population located in urban and rural areas nationwide.
 - Articulate a consistent manner between the public and private institutions involved in the processes of prevention and relief, to ensure consensus and commitments necessary to enable the formulation, implementation, monitoring and evaluation of policies, plans, programs and investment projects .
- Achieve a system of automated information about potential risks at local, regional and national levels, enabling the formulation of plans and investment projects reducing the vulnerability of the population and heritage.
- Strengthen the SINAGERD integrally from a decentralized perspective to empower regional and local governments under the leadership CENEPRED

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WHAT WOULD BE THE INTEGRATED APPROACH TO DISASTER MANAGEMENT?

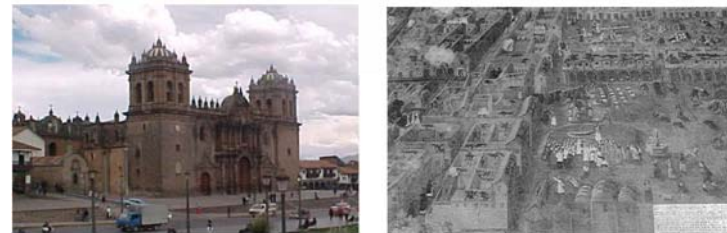
- Integrated approach to disaster management should include the participation of the population, because if technical tools are development, people should know about the risk they are expose.
- Risk Reduction plan should be developed for each governmental agency or ministry to produce a national plan. Disaster reduction plan of each sector with the knowledge of the population, will judge the authorities, and monitoring can be effective.
- Sustainable Development demands the improve of the capacities of the authorities and also officers with power of decision

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WHAT DO YOU SUGGEST JAPAN AND UNESCO TO DO FOR THE FURTHER INTERNATIONAL COOPERATION ON EARTHQUAKE DISASTER MANAGEMENT?



HISTORICAL BUILDINGS UNDER RISK – NON BUDGET TO KEEP OUR HERITAGE




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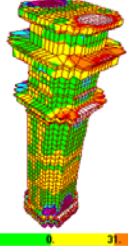
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HISTORICAL BUILDINGS – CUZCO CATEDRAL




Vertical Cracking on stone

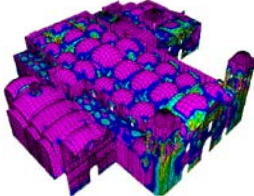


Horizontal Stresses Due to quake

Peeling and Cracking



Loss of horizontal mortar Between stone blocks





Replacement of stone units

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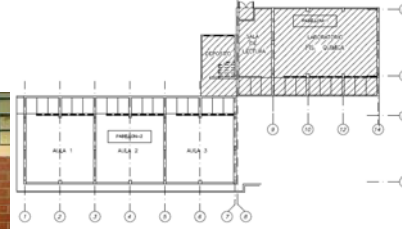
SCHOOLS UNDER RISK

Source: CISMID-UNI

Source: CISMID-UNI

Designed with 1977 Peruvian Standards
Drift control inefficient




Source: Eng. A. Blanco


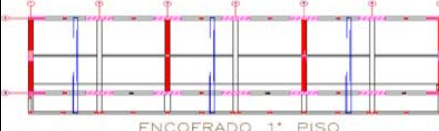
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1997 PERUVIAN STANDARD CHANGE DRIFT EXIGENCE SCHOOLS BECAME SAFE BUT MANY SCHOOLS STILL REMAIN ON RISK



Source: Eng. A. Blanco


ENCOFRADO 1° PISO
Source: Eng. A. Blanco




Source: Eng. A. Blanco

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Science and Technology Research Partnership
for Sustainable Development : **SATREPS**



Advance on the Earthquake Engineering Research in Peru and SATREPS Project

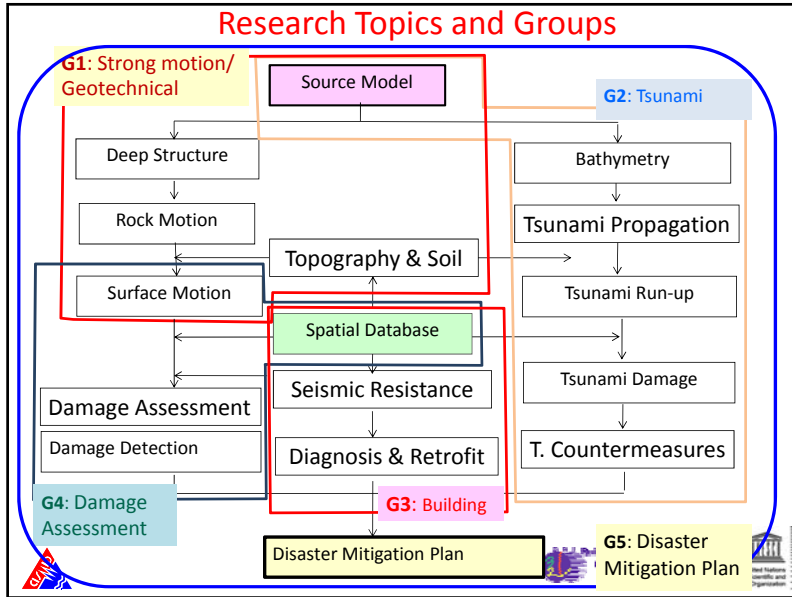



Project between
Chiba University and
National University of Engineering

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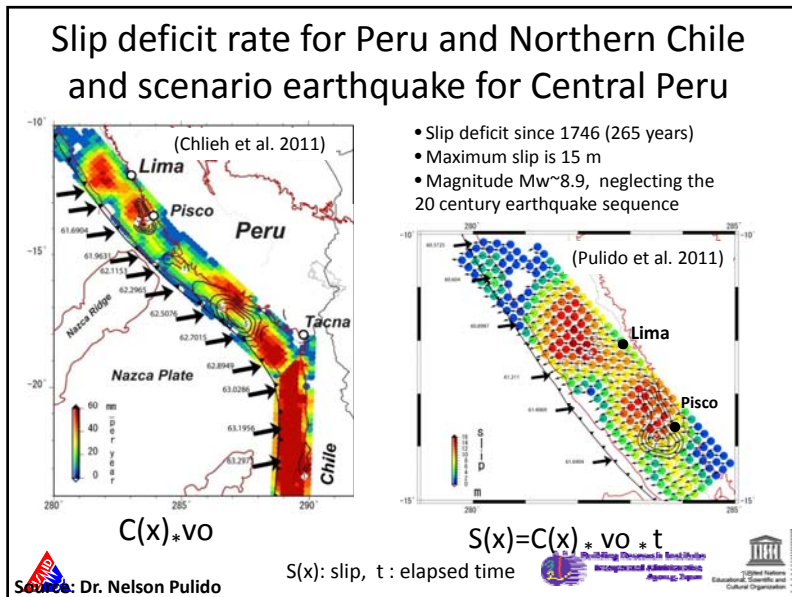
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SATREPS OUTPUTS RELATED WITH APPLICATION OF NEW EQUIPMENT

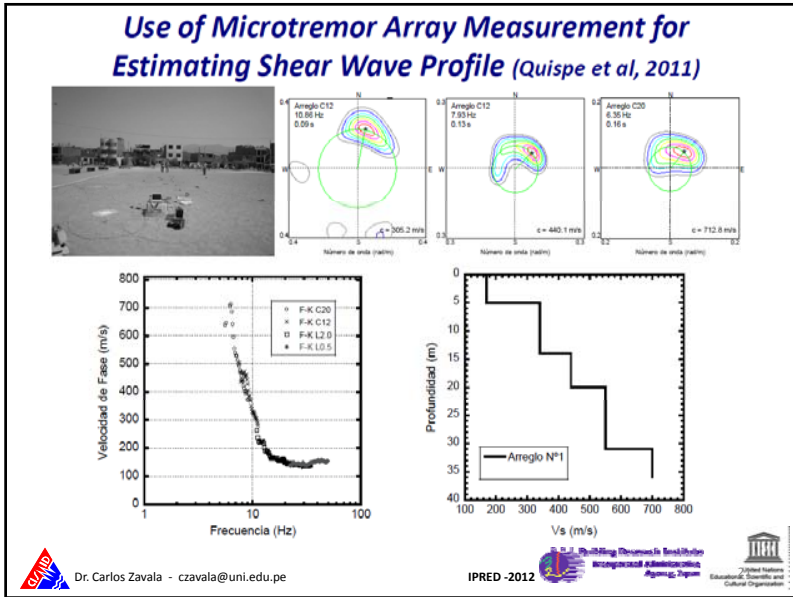
G-1
G-2
G-3
G-4
G-5

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Seismometer implementation on SATREPS Project

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All the data from the recorded events will be available in the Project and REDACIS (CISMID Seismic Network) websites

<http://ares.tu.chiba-u.jp/peru/>
<http://www.cismid-uni.org/redacis>

Two screenshots of web portals are shown. The top one is the ARES portal, and the bottom one is the REDACIS portal, which includes a map of Peru.

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G-3 Some Group 3 Outputs

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Low ductility wall: main differences

1 thickness
100mm thick
(RC walls: min150mm)

2 reinforcement

Electrowelded wire mesh

Deformed steel bars at edges

Dowells tied to basement

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LOW DUCTILITY WALL TEST

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LOW DUCTILITY WALL TEST

AGRIETAMIENTO MURO 2
Cara Sur
Drift: 1/154

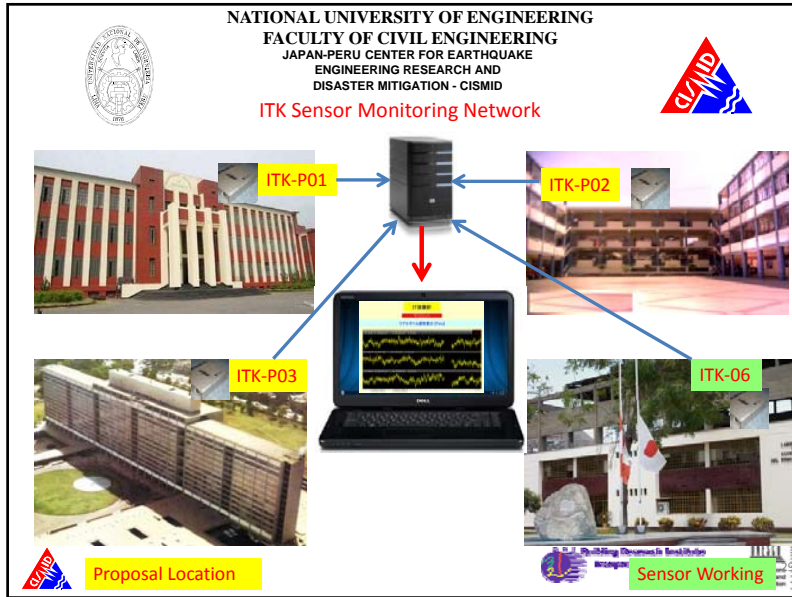
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Cyclic Load Test Wall-02

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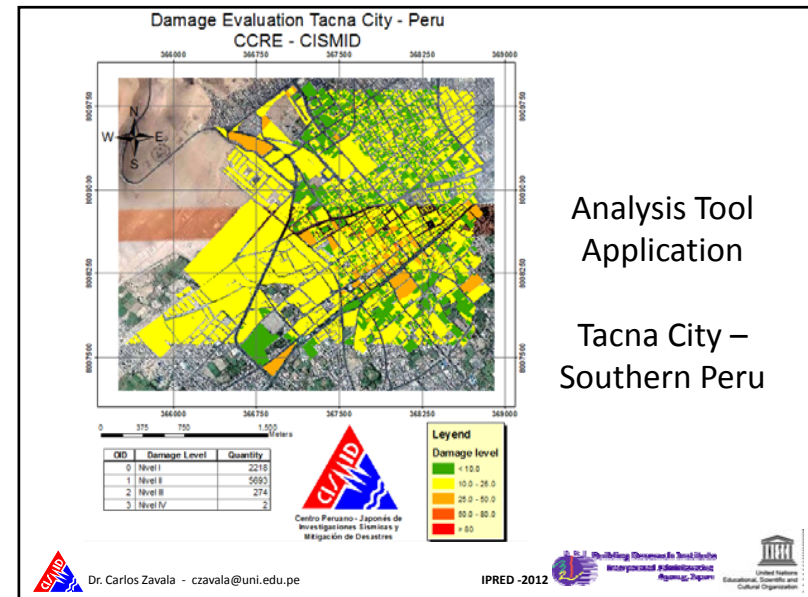
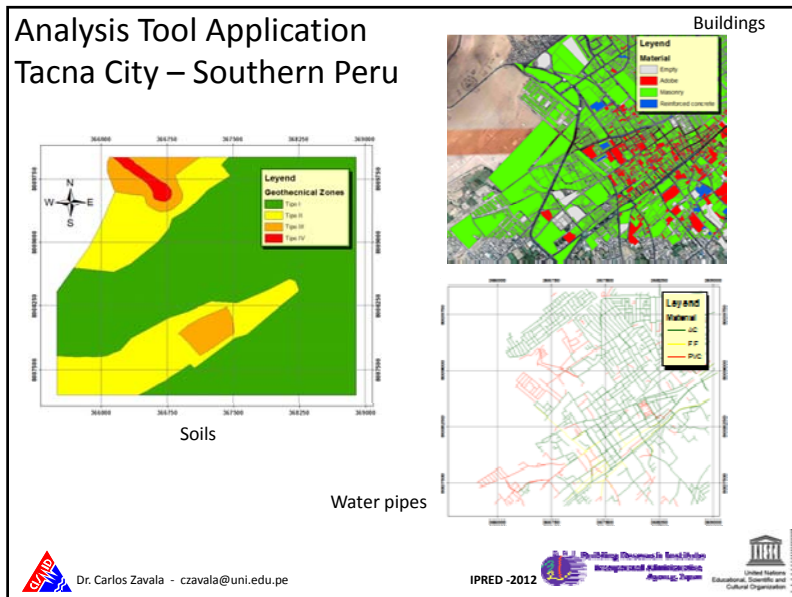
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G-4 Some Group 4
 Outputs

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Analysis Tool
 Application
 Tacna City –
 Southern Peru

CONCLUSIONS

- The introduction for the implementation of a Filed survey in Peru has been treated
- Peruvian disaster management scope was presented.
- Indifference of decision makers and authorities is one of the main problems. Improval of the capacities of the authorities is needed.

