PANEL DISCUSSION 3 *(Smr2142, May 12, 2010, 16:00 to 17:00 pm.)*
DSHA and PSHA

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Hazard and Risk:

- **General concepts and roles in policy making;**
- **Earth scientists - Engineers - Stakeholders interaction targeted on effective planning and decision making;**
- **What kind of decisions should be made by whom?**
- **What do the stakeholders need for effective planning and decision making?**
- **Affordable costs of risk assessments and implementation;**
- **Earthquake lesson: Haiti, Chile and other recent earthquakes...**

Panelists: Takashi Imamura (France), Rodolfo Saragoni (Chile), Alessandro Martelli (Italy), Efraim Laor (Israel -rapporteur)

The panel addressed the questions outlined above.

There's a wide range of accepting and agreement on: the need for extending the know-how in the field of Hazard Assessment as a whole; the need to further the ongoing fruitful dialogue between geo-scientist, engineers and disaster managers/leaders and the ordinary people. The question of DHSA vs. PHSA remained unresolved.

One of the gaps in know-how refers to operational information regarding the **next strong** earthquake and the follow **aftershocks**. This fundamental issue attracts the main attention of leaders and the public.

Stakeholders anticipate to get from geo-scientists a reliable, feasible input for effective planning and decision making at affordable costs. This expectation requires overcoming across several burdens:

1. To evaluate the simulation of earthquake motion in the high frequency range [t<1 Sec], which is important for earthquake engineering and it is not random as it is assumed today.

2. To identify the positions of asperities in the faults and their time scaling, both matters could affect seismic design.

3. To better define ground motion in the low frequency range for large magnitude earthquakes for seismic isolation applications.

4. To improve motion formulas, since there is a lack of information regarding hard rock sites and magnitude larger than 7.5. It should be confirmed whether attenuation formulas may reduce their scattering by considering the closest distance to the asperities rather than the closest distance to the fault.

5. To provide engineers with more reliable data/information on ground displacement, vertical component in the epicenter area, energy content at low frequancies, site-effects.

6. To revise the fact that several recent quakes were largely nderestimated.

7. And some more.....

The panel expressed its concern that even those areas which are covered by professional know-how have been bypassed by inappropriate field-practices. For example L'Aquila quake demonstrated bad construction quality and lack of construction control.

The panel-members consider that prevention is better than cure. Therefore the appropriate policy is devoting efforts duly to prevention measures rather than emergency response after earthquakes.

The panel mentioned the recent fatal earthquake to hit Haiti, on 12 Jan. 2010.

More than 220,000 people lost their lives and even more their well-being, among them 38,000 pupils and students and 1,300 teachers and educational personnel. More than 4,000 schools which represent close to 80% were destroyed. Haiti has lost a significant segment of its Educational systems, essential for rehabilitation and future recovery.

It should be on the part of the international community to assist in the recovery of Haiti. It is on the part of the professionals in geo-sciences and engineering to assist in building a safer home for Haitian people.