

**VUELCO: Volcanic Unrest in Europe and Latin America**  
**2<sup>nd</sup> WORKSHOP**  
**“Scientific advice, decision-making, risk communication”**  
**7<sup>th</sup> – 8<sup>th</sup> November 2013**

**SESSION 1- “SCIENTIFIC ADVICE: Scientists-decision makers interaction and advice giving”**

**Synthesis and best-practices retrieved**

The second VUELCO Workshop, titled “Scientific Advice, Decision-Making, Risk Communication” was organized in Rome by the Italian Department of Civil Protection on November 7 and 8, 2013.

First session focused mainly on interaction between scientists and decision makers on advice giving. The chairman was Prof. Luciano Maiani (President of the Italian High Risk Commission). The speakers were: Prof. Mauro Rosi (Director of the Seismic and Volcanic Risk Office, Italian Department of Civil Protection), Dr. Richard Bretton (Lawyer and Geologist, University of Bristol), Dr. Tomoyuki Kanno (Senior Analyst for Volcanic Activities, Japan Meteorological Agency).

Prof. Rosi introduced the organization of the Italian civil protection system in managing volcanic risk, explaining how scientific advice are produced and the cooperation between scientific and operational components. Dr. Bretton focused his talk mainly on the responsibilities of different actors involved in hazard assessment and decision-making, offering suggestions, particularly to scientists, on the way to continue to do their job and offer their advice with no fear of possible legal prosecution. Dr. Kanno offered an overview of the Japanese system, presenting two case-studies from recent crises occurred at Asamayama and Shinmoedake volcanoes.

Presentations were followed by a round table discussion, where participants had the opportunity to share their opinions and adding further interesting comments and points of view.

Here is offered a brief synthesis of best-practices which emerged from the session.

The most effective way to get adequate scientific assessment for civil protection operational activity is to have scientific advisory committees composed of experts with solid experience in volcanic processes, eruptive history and volcano monitoring, combined together. Calibrated



organized by



probabilistic forecasting models prepared in advance can help, during crises, expert panel activities, but cannot replace them.

Scientists should try to be as transparent as possible, clearly stating the assumptions at the basis of their evaluation, as well as the methods they followed to produce their advice. The assessment process needs therefore to be clear, consistent and accountable.

In addition, scientists must accustom themselves to communicate their advice and their knowledge, as well as the limitations and the uncertainties that always accompany such evaluations, particularly when aimed at eruption forecasting. Miscommunication of these uncertainties can wrongly induce people in believing that eruptions are always predictable. Scientists need therefore to get used expressing their assessment in terms of probabilities (compared to familiar events) and uncertainties.

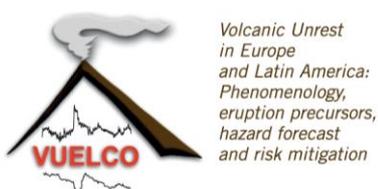
Although scientific advice must be clear, independent and not influenced by external factors, the following process of decision-making should be shared among different subjects. Scientists, sociologists, economists, civil protection and local authorities are called to work together on the same matter to get to the best possible result; like a football team where each player has a different well-defined role, but plays on the same field for the same goal.

Nevertheless an efficient system needs to have clearly defined roles and responsibilities of each part involved. For this reason scientific advisory committees should be charged on the basis of well-defined tasks and responsibilities.

After the L'Aquila legal trials, in order to help in identifying and delimiting the range of responsibilities, Italian Civil Protection started asking for the advice of High Risk Commission through precise queries. However it was noted that sometime this is not a valid method, because it hinders interaction between scientists and civil protection and the query may be inaccurate.

Is a strong, common belief that interaction between scientists and decision-makers is crucial. Not only during a volcanic crisis, but during non-crisis periods too.

Another issue concerns emergency plans and exercises. Even if very thorough, plans cannot be completely reliable if they have not been tested before a crisis. Testing plans bring decision makers, risk managers and scientists to be more legally defensible after a crisis occurs, in case of



organized by



legal trials. Performing periodic table-top exercises, without involving the population, requires less effort and expenses, but offers the chance to detect possible weaknesses, providing important suggestions.

A possible weak point that came up is that in many countries (e.g. Italy and Japan) the mayor is the most exposed, directly involved and liable authority, who often has to make immediate decision. Nevertheless rarely (in Italy) he has the necessary know-how and resources to face risky situations.

It has also been verified that often there is a wide lack of risk perception in the population living in volcanic areas, as well as among local authorities. As a matter of fact, this problem appears to be more diffuse in well developed countries rather than in developing ones. Moreover the frequent changes in the role of mayor, don't help in building the necessary long-lasting knowledge and preparedness. To bypass this problem, in some countries the information and education activities toward people are carried out by the volcanic observatories. In Italy the Department of Civil Protection has been organizing courses aimed at technicians working in the municipalities in the Neapolitan area.



*Volcanic Unrest  
in Europe  
and Latin America:  
Phenomenology,  
eruption precursors,  
hazard forecast  
and risk mitigation*



organized by

