

CITIES ON VOLCANOES 5 – SHIMABARA – JAPAN – 19-23 November 2007

This Cities on Volcanoes conference was the 5th meeting, which are organized by the Cities and Volcanoes Commission of IAVCEI (International Association of Volcanology and Chemistry of the Earth's Interior).

This meeting, the first in Asia, received about 550 paper contributions and about 600 registered participants from about 38 countries around the world. The Symposium of the meeting consisted of three main parts; "Knowing volcanoes", "Volcanoes and Cities", and "Living with volcanoes". The meeting had been characterized by participation of residents on volcanoes and by involvement of volcanic hazard effect on long-term facilities.

IAVCEI is a group of scientists who carry out researches related to volcanoes as well as being active in reducing risks from volcanic eruptions and related phenomena. Many active volcanoes in the world are distributed within developing countries, where many people are exposed daily to the threat from volcanic eruptions. It is crucial to monitor volcanic activities, to train young scientists in charge of the former, to hold good linkage between volcanologists, officials and communities during the volcanic crisis, and to educate local people on volcanic phenomena.

IAVCEI supports scientists from developing countries to attend volcanological conferences and workshops, distributes guidebooks and DVDs for education, and promotes young scientists by nominate for an Award. Although IAVCEI membership brings some merits to each member, one of the most important effects to become the member is to indirectly contribute to reduction of volcanic disasters on the globe through the above activities. Please consider becoming a member in this chance.

Details about main parts of the Symposium

KNOWING VOLCANOES

- Recent developments in volcano research, volcanoes observation research and eruption forecast programs; health hazards of coexisting with active volcanoes.

The session on recent developments in volcano research featured a broad spectrum of interconnected topics ranging from subterranean processes to tephra ejection and distribution. The session started with a plenary talk on Monday morning by Dr. Bruce Houghton on diversity in volcanism. Oral presentations on Monday afternoon focus on observational, numerical and experimental studies of volcano seismicity, subvolcanic plumbing, magmatic processes and volcano degassing. Poster sessions on Monday and Tuesday focus on Unzen volcano, mass flow processes, gas-hydrothermal activity, tephra, geophysical studies, and eruption histories.

VOLCANOES AND CITIES

- Responding to natural disasters: case histories with lessons for volcano crises; assessing long term volcanic hazards and risks; impacts of volcanic activity on infrastructure and effective risk reduction strategies; long-term land-use planning that mitigate volcanic risk.

a) Responding to natural disasters: case histories with lessons for volcano crises

The session brings real-world volcanic crises experiences from the perspective of scientists, emergency and aviation responders, and journalists. The keynote discussed a broad set of disaster experiences and the lessons we need learn from them, before a first series of case histories: using simulated exercises to prepare for eruption response (Italy); dealing with multiple natural hazards simultaneously (Indonesia); and lessons

learned from 25 years of volcanic ash and aviation encounters (Australia). Next, we focused on crisis management in Japan with particular emphasis on evacuations, including two case histories and details of a new evacuation system. Tuesday end's with journalist's insights into public perceptions of risk (Japan and Mexico).

b) Impacts of volcanic activity on infrastructure and effective risk reduction strategies.

The aim of this session was to discuss vulnerability/risk assessment measures/strategies to mitigate hazard from volcanic activities through worldwide examples by one plenary talker and fourteen oral presenters and also 22 posters. At first, Dr. Ikeya presented a plenary talk. His topics were actual disasters and responses during volcanic eruption of Unzen Volcano in order to introduce issues lessons from the disaster. Co-conveners of the session programmed three thematic-topics of the session. The sub-session on sediment-related hazard and mitigation measures by 6 speakers from Mexico, Philippine, Indonesia, New Zealand, USA and Japan. The nature and mechanism of lahar, actual disasters, measures and strategy mitigating hazard, assessment and potentiality were the topics of this sub-session. In the afternoon, two sub-sessions started. One was on evaluation of volcanic risk and hazard mapping. Vulnerability of infrastructures, mapping and risk analysis were presented by 4 speakers from USA, New Zealand, England and Japan. The last sub-session presented analyses of mitigation measures where 4 speakers from Italy, New Zealand and Japan discussed scenarios, vulnerability analysis of various aspects of infrastructure, and evaluation.

c) Long-term land-use planning that mitigate volcanic risk.

Land use planning within the areas of potential hazards is a major aide in lessening the risk to growing communities, although it is rarely implemented. Unfortunately we missed an interesting talk about a long history of land use and the problems in the Kilauea lava field. Instead, a lava field formed by 20 years-ago eruption at Heimaey gives us another story. Replaced plenary talk by Peter Frenzen gives very suggestive lessons after the big eruption at Mount St. Helens in May 1980, where hazard map was used effectively for placing roads and facilities. Importance of hazard mapping for land use planning was verified also in New Zealand and at Usu for relocations of hospitals and schools. Vulnerability of Metropolitan City Tokyo against ash fall is being posed by future eruptions at Fuji and Hakone. Troublesome deposits of debris flows were used ingeniously by piling up on site for a safe elevation at Unzen, through which communities once destroyed by eruption were rebuilt.

LIVING WITH VOLCANOES

a) Linkage for reducing volcanic risks: Cooperation and mutual support amongst researchers, administrators, mass media, inhabitants, local organization and volunteers.

Volcanic crises require efficient teamwork among scientists, public officials, news media and citizens at risk to mitigate disasters. The session started with a plenary talk, by Hiromu Okada, which examined the risk mitigation strategy applied over more than a decade at Mt. Usu, which has been successful based on cooperative linkage among all of these agencies. The first presentations discussed risk communication and the evident need for cooperation, followed by the role of communication - especially the media and internet. The second half of the session included case studies focusing first on cooperation at national level and then on local initiatives. The session goal was to share lessons and success strategies for effective cooperation and support, and to discuss further improved approaches. Cases were presented from Japan (Mts. Unzen, Usu, Iwate, Miyakejima), Italy, Colombia, Alaska, New Zealand, multi-national work in the Andes, Ecuador and Washington State. Poster presentations cover material from yet other countries and link into wider related aspects of volcano risk management. A poster about the International Strategy for Disasters Reduction (ISDR) was presented by Henry Gaudru (SVE) during this poster session. In addition, Costanza Bonadonna of the University of Geneva shortly briefed the participants on ISDR concept during her presentation.

b) Community and volcanism — archaeological, tradition and recovery

This session widely covered ancient to recent traditions about volcanic activities and disasters, archaeological and volcanological research results, and economic and psychological problems during volcanic crisis. Plenary talk by Kazuaki Itoh explained the importance of community's coexistence with volcanoes, learning from historical volcanic disasters in Japan. Geological and historical interpretations of volcanic disasters in Vanuatu, Japan, Iceland, Nicaragua and Philippines were introduced. A series of research results of archaeological and volcanological project including disasters in Vesuvius (Italy) were displayed in posters. Researches on recovery processes from volcanic disasters in Japan, Iceland, New Zealand and Italy were one of important issues from this session. Communities on volcanoes and scientists have tried to form systems of their coexistence with volcanoes and to pass on the tradition to the next in Japan, Ecuador, Costa Rica and Philippines.

c) Education and outreach – strategies that improve community awareness about volcanoes

View more than 30 posters in this session "Education and outreach" This posters session focused on effectiveness of communication, cultural responses, citizen disaster mitigation, school education and the role that parks and museums play in raising awareness about volcanic hazards. Find novel approaches, such as an online volcano community education network, ash fall and volcano hazards atlases, a volcano board game, and a broad assemblage of teaching ideas and programs for school students and teachers. There were several informative and pioneering evaluations of community awareness programs.

In addition, an "Outreach Exchange" was organized. The Cities and Volcanoes Commission sponsored "Exchange" as an informal gathering of COV5 participants who wished to share volcano education products and ideas. Bring recently developed posters, pamphlets, teaching activities, educational videos, webpage models, and school international pen-pal opportunities to the "Outreach Exchange." Also an opportunity for informal discussion and some participants were received approximately three minutes with microphone to speak more formally about their product.

GENERAL VIEW: During past years, these conferences "Cities on Volcanoes" have successfully brought together researchers and practitioners and the Shimabara meeting was set to continue this tradition. The management of volcanic risk can only be effectively achieved through partnership with communities and agencies that have responsibilities for public safety. This conference has been further strengthening links between these groups and fosters a mutual understanding of the issues faced by cities on volcanoes.

As mentioned by a Mexican participant: "Scientists work with the community not for the community"

Summary from COV5 information by Henry Gaudru, volcanologist, SVE-UNISDR scientific adviser for volcanic risk mitigation, e-mail: hgaudru@sveurop.org

For further information on the conference visit the Cities On Volcanoes 5 website at:
<http://www.citiesonvolcanoes5.com/>

Cities On Volcanoes 5 meeting has been held in Shimabara (Japan) from 19 - 23 of November 2007. During five days about 550 scientists, administrators, disasters managers, national organizations, media, etc. from numerous countries in the world met together to share experience and to discuss about volcanic risk mitigation. UNISDR was represented by Henry Gaudru (SVE). A preliminary statement (below) has been written after the meeting.

Heisei-shinzan Appeal

COV5 at Shimabara, Nov. 23, 2007

Volcanoes, the product of hot magma gushing out from underground, have erupted numerous times since the birth of the earth. In recent years, as populations have grown and spread, humans have come to live in close contact with volcanoes and enjoy the blessings bestowed by them. As such, human beings and their communities' coexistence with volcanoes have become important themes for us.

Japan, the host country for the 5 Cities on Volcanoes Conference, has one hundred and eight active volcanoes, some of which are erupting every year. The disasters of Mt.Unzen, Mt.Usu, and Miyake-jima, still fresh in our memory, as well as Mt. Fuji, which has not erupted for three hundred years and the caldera-forming eruptions in Kyushu and Hokkaido, all give us grave concern for safety. Researchers, administrative organizations, and local people have all been working in cooperation to create maps of hazardous areas, debris protection and so on.

It is from within this environment, that this five-day COV5 Conference has been held based on the theme of "Communities' coexistence with volcanoes", co-hosted by academics and administrators. Scientists, administrators, disaster managers, the media and citizens from Japan and abroad have all gathered in Shimabara; revived and reborn as a safe and peaceful city. Through enthusiastic exchange of knowledge, experiences and discussion we have produced the following results;

1. In our meeting, we discussed the latest results from a wide spectrum of volcanological research, and realized the necessity of sound interpretation of volcanic phenomena based on real-time, multi-sensor observations. A probabilistic approach to volcanic disaster assessment is indispensable. Therefore, we must create databases of eruptions and related phenomena, including WOVOdat.
2. It is important that information from scientists and disaster agencies is integrated and reflected in risk management, and that long-term land use planning considers future risks. It was suggested that recovery processes are considered not only for infrastructure but also for communities.
3. Disaster preparedness, well in advance of an emergency situation, was cited as a key point. This is an important addition to creating thrusting relationships among scientists, officials, residents and mass media. The development and implementation of outreach and education activities provide a means to improve community awareness about volcanoes.
4. COV5 has attempted a new style of international conference, with participants not only from research, administrative and disaster management backgrounds, but also ordinary citizens themselves.

After the fruitful discussions of the past five days, we here and now declare to make greater efforts to reduce the challenges faced by volcanic eruptions around the world and to form communities living with volcanoes', creating stronger links of communication with those involved.

We hope from the bottom of our hearts that this COV5 Conference helps enhance people's awareness of volcanic disasters, promote partnership within the community, and bring people together in facing the volcanoes and disasters head-on, blessed with safety.