

1st Forensic Workshop

STREVA's first forensic workshop took place in Montserrat on the 27th and 28th September. The theme of the workshop was 'Is Montserrat a resilient society' and aimed to explore the *extent* to which Montserrat represents a resilient society, and the components that have largely contributed to this resilience - as well as those that have undermined it. Delegates also were encouraged to consider and discuss similarities and differences in resilience, its origins and dynamics, between Montserrat and communities near STREVA's other forensic and trial volcanoes, as well as other volcanic settings.

The workshop was structured predominantly as focus groups, although the delegates were treated to a variety of captivating presentations by Rev. Joan Delsol Meade, Neil Adger, Rose Willock, Herman 'Cupid' Francis, Paul Payne, Kafu Cabey and Paul Cole. The presentations and a short 'vox-pop' film shown at the workshop will be available on the STREVA website. A panel session at the end of the second day included Richie Robertson, Richard Aspin, Sir Howard Fergus and Kafu Cabey. The Governor of Montserrat from the earliest days of the crisis, Frank Savage, provided some insightful closing comments.



Rev. Joan Delsol Meade and Neil Adger presenting © Sonja Melander



During the workshop, the group were separated into eight focus groups, initially divided into 'fields' (monitoring; hazard and hazard communication; risk management; civil society) but becoming more mixed throughout the course of the two-day event. Focus group discussion was directed around the following sub-themes:

- 1) What does resilience mean in a volcanic setting and how does it relate to analysing risk?
- 2) What examples and evidence are there of resilience during the course of the SHV eruption?
- 3) Have there been specific moments or 'tipping points' when resilience increased or was severely undermined?
- 4) Which social, economic, political and scientific components contribute the most to building or losing resilience?

- 5) To what extent are these findings unique to the Montserrat case and which components may be generic or have resonance with resilience in other areas?
- 6) How can the most important individual components be evaluated, measured and monitored?
- 7) How can we refine and tailor the process of risk analysis to incorporate all of these components?



Peter Simmons and Roger Few checking out the latest dome activity from Plymouth © Anna Hicks

The workshop also acted as a 'launch' event for STREVA, and as such was particularly well-attended. Over 40 STREVA researchers and project partners travelled to Montserrat and a further 30 invited guests from the Montserrat community were present. Almost all of our project partners were represented, with attendees from: Montserrat Volcano Observatory (MVO); Instituto Geofisico Escuela Politecnica Nacional de Ecuador (IG-EPN); Seismic Research Centre, University of the West Indies; Disaster Risk Reduction Centre, University of the West Indies; Vhub; Corporación OSSO; University of Exeter; the CASAVA project; Global Volcano Model; and Volcanic Unrest in Europe and Latin American Countries (VUELCO).

We were also delighted to welcome guests from the National Emergency Management Office, St Vincent (NEMO), Caribbean Disaster Emergency Management Agency (CDEMA), University of Iceland; Icelandic Department for Civil Protection; the Icelandic Meteorological Office; Franklin MacDonald (Visiting Scholar, York University, Canada); HE Adrian Davis (Governor of Montserrat), Frank Savage (UK Foreign and Commonwealth Office) and Cynthia Gardner (USGS), one of STREVA's advisory board members.



Delegates at the first STREVA forensic workshop, Montserrat, September 2012 © Sonja Melander

What next?

Information from the monitoring time series, focus groups, key informant interviews and secondary literature is now being collated and coded according to five 'layers': volcanic events & monitoring capacity, hazard analysis & risk advice, vulnerability, governance, and communication. Within those layers, we will be analysing how this has changed over time (e.g. fig. 1.), particularly during the last 17 years of the Soufriere Hills eruption. On 22nd January, some of the STREVA team will be meeting to present our five separate timelines and discuss how to integrate them (e.g. fig. 2) to establish both the interactions between differing factors of risk and the critical combination of factors (tipping points; both positive and negative) that act to change risk. This information provides a crucial step in the design of our risk assessment framework.

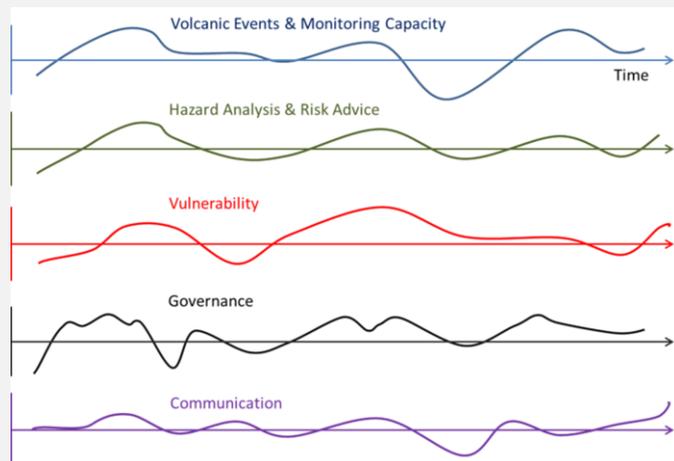


Fig 1. Simulated and simplified time series for each of the six 'layers' of the Montserrat forensic analysis.

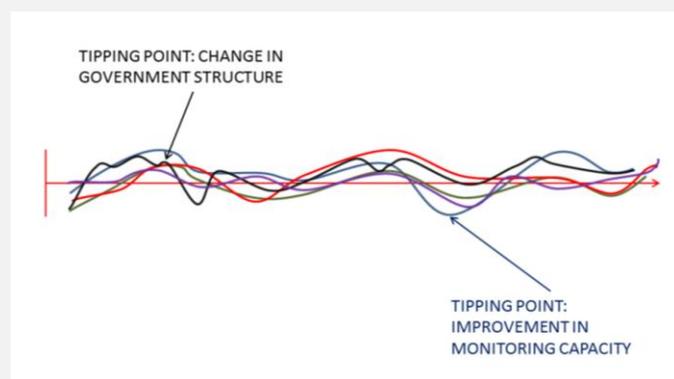


Fig. 2. Simulated integration of time series to help establish interaction between risk factors and possible 'tipping points'.

In addition to this analysis across the groups, each work package has now started research within their own domain, including re-analysis of monitoring data and the development of new models or methods for assessing e.g. governance and vulnerability.

Forensic Workshop 2: Ecuador

The next forensic workshop will take place in Baños, Ecuador. Likely to be held on the second week of June 2013, the theme of this workshop will be 'How has life changed in the last 13 years?' Similarly to our Montserrat workshop, this event will include a range of guests from among the local community, risk managers and decision-makers as well as STREVA researchers (although fewer numbers than at our 1st workshop). Field trips to Tungurahua and Cuicocha will top and tail the 2-day workshop.



Cuicocha volcano © IG-EPN

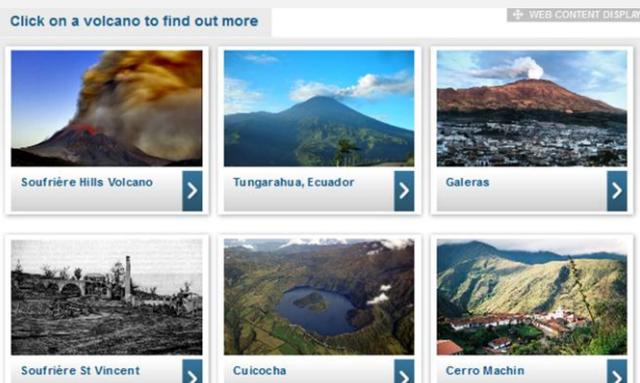
Plans for the third and final event will start to take shape with Servicio Geologico Colombiano after some of their own meetings have taken place early in 2013.

Official STREVA launch event

An official STREVA launch event will likely take place in London in late April 2012. Further information is to be published shortly. This will also bring together all UK STREVA researchers and provide an opportunity to share new results and research strategies with both the wider volcanological and risk reduction community. It is hoped that our Project Partners will also attend.

STREVA website

The STREVA website, www.streva.ac.uk, will go live in January 2013. Thank you to Jon Stone for helping us to create it! We encourage all STREVANS who have yet to submit biographies and photographs for the website to do so as soon as possible.



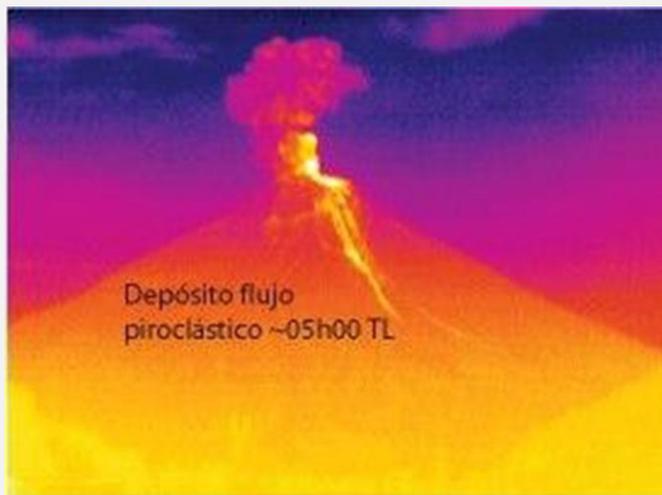
Heightened activity at Tungurahua

On Sunday 16th December, Tungurahua restarted a second phase of eruption (following an initial explosion on the 14th). Several explosions occurred throughout the morning, generating a 7 km ash column and pyroclastic flows that descended mid-way down the flanks.

There have been reports of gravel-sized fallout in the sectors of Cusua, Cotaló, Pondoá, Runtún and Pillate, and thick ash has fallen in Vascún, Agoyán and Ulba. Finer ashfall has been reported in the sectors of Palitahua, Choglontús, Manzano, Capil, Guadalupe Cevallos, Tisaleo, Ambato, Patate, Pillaro, Pelileo, Salcedo, and Pujilí/Latacunga. An orange alert has been declared by Secretaria Nacional de Riesgos of Ecuador.

Due to continuous inflation of the volcano since 9th December, this latest eruption is considered to be associated with a new intrusion.

See www.igepn.edu.ec for the latest eruption news from Tungurahua and other Ecuadorian volcanoes! You can also like their Facebook page Instituto Geofísico – Escuela Politécnica Nacional and follow them on Twitter (@IGecuador).



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IRNH Announcement of Opportunity

The Natural Environment Research Council (NERC) and Economic & Social Research Council (ESRC) wish to appoint two IRNH Knowledge Exchange Fellows for the Increasing Resilience to Natural Hazards in Earthquake-prone & Volcanic Regions (IRNH) research programme in 2013 for a period of three years, with the possibility of a further one-year extension. Applications are welcomed on a part-time basis. Ideally the Fellowships will commence in April/May 2013. The closing date for application is 16:00 on Tuesday 12 February 2013.

STREVA attendance at conferences

In November, several of the STREVA team attended the 7th Cities on Volcanoes conference, held in Colima, Mexico. Jenni Barclay presented the latest from the STREVA project in the session, 'Design of Strategies for Risk Reduction'. This presentation will be available on the STREVA website shortly.

Emily Wilkinson (ODI, WP4) attended the 1st IUGG GRC Conference at Chapman University in Orange, California earlier this month. A whole session was assigned to Forensic Investigations of Disasters (FORIN) which aimed to bring together senior scientists to draw upon data and knowledge to test and provide a critique of the FORIN approach. STREVA have been asked to contribute an article about the Montserrat analysis to an IRDR (Integrated Research for Disaster Reduction) publication aimed for the UNISDR Global Platform meeting in May.

New researchers joining STREVA

Four researchers will begin working within the STREVA project in 2013:

Robbie Jones (University of Leeds)

Robbie started his PhD in November at the University of Leeds, supervised by two STREVA researchers. The main aim of his research is to explore initiation processes for lahars in the STREVA study areas.

Susi Ebmeier (University of Bristol)

Susi will officially start on the STREVA project on 1st January, but has already been working on compiling seismic monitoring outputs and seismic network capability timelines for the Montserrat forensic study.

Thea Hincks (University of Bristol)

Thea will contribute to STREVA WP2 (development of multi-volcanic hazards models for footprint) and WP5 (development of BBN tools and regional stochastic risk models). She begins work on the project in April 2013.

Chris Johnson (University of Bristol)

Chris starts on the 1st February on lahar modelling. He has recently visited the USGS lahar group and will bring valuable expertise in this field.