UCL DRR Conference 4-6 November 2009: Session S5

# Risky beliefs in a volcanic crisis:

## The importance of context-specific information

**Sian Crosweller**

**Jenni Barclay, Peter Simmons, Irene Lorenzoni, Richie Robertson**

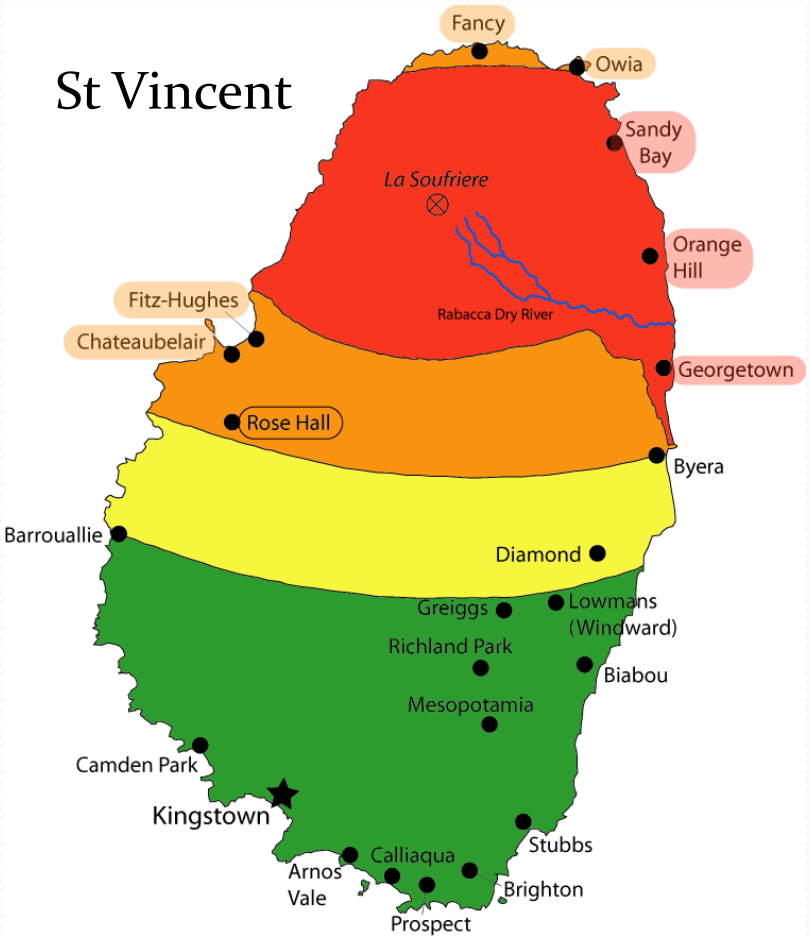
# Overview

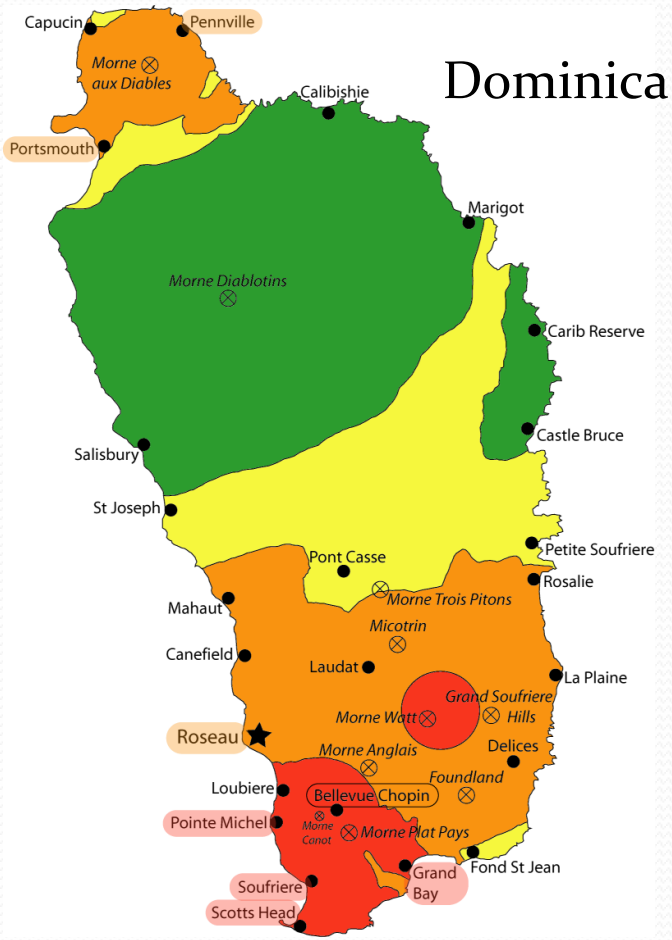
- Background to study
- Case studies
- Mixed methods
- Survey questions
- Ordinal regression results
- Significant predictors
- Summary
- Suggestions for future work

# Background

- Investigate the effect of previous experience on people's views of volcanic hazards and risks
- Comparative cases using two culturally similar islands
- Two phases of data collection
  - Qualitative interviews
  - Quantitative surveys
- Output intended to provide communicators with a clearer understanding of views within the population
- Raise issues to be tackled in future outreach campaigns

# Case Studies



# Mixed Methods

- A pragmatic framework supporting the use of mixed-methods

  "*Pragmatic research is driven by anticipated consequences. Choices about what to research and how to go about it are conditioned by where we want to go in the broadest of senses*." Cherryholmes, 1992: 13
- Qualitative first phase of semi-structured interviews with scientists, disaster officials, and the public
- Quantitative second phase of public surveys
- Mixed methods research provides better (stronger) inferences (Teddlie & Tashakkori, 2003)

# Survey Questions

- Derived from issues raised in QUAL phase, focussing on 'risky beliefs'
- Based around 4 topics:
  1. Information needs
  2. Nature of volcanic systems
  3. Anticipated action during a volcanic event
  4. Preparedness
- Level of agreement to statements measured using a 5-point Likert scale

Strongly Agree – Agree – Unsure/Neutral – Disagree – Strongly Disagree

# Ordinal Regression Results

***I know enough about what to do in a volcanic emergency***

**Table 6.1** Ordinal regression results in response to statement 'I know enough about what to do in a volcanic emergency'. S.E. is standard error, Sig. is significance value, valid $n$ = 259.

| Variable | Estimate | S.E. | Sig. | Interpretation |
|---|---|---|---|---|
| Island | –1.36 | 0.25 | $p < .05$ | St Vincent > Dominica |
| Prep_Self | 0.54 | 0.12 | $p < .001$ | Less prepared < More prepared |
| Eth_White | –1.74 | 0.86 | $p < .05$ | Not White > White |
| Gender | –0.48 | 0.24 | $p < .05$ | Male > Female |

Mean: $\bar{x}_{SVG} = 3.00$ (St Vincent), $\bar{x}_{DA} = 2.46$ (Dominica)

# Significant Predictors

- ISLAND for 7/12 statements
  - St Vincent riskier on 5 statements
- EDUCATION for 9/16 statements
  - Less educated riskier on 8 statements
- GENDER for 4 statements
  - Males riskier on 3 statements
- AGE GROUP for 4 statements
  - Older age groups riskier on all statements

# Summary

- Mixed methods used enabled identification of ‘risky beliefs’ and assessment of their general prevalence
- Allow context specific information to be gained
- Past experience has a dramatic effect on a person’s views of volcanic hazards and risks, also extending to their perceived need for information
- The less-educated sections of communities hold the most misconceptions, but are difficult to tackle since they do not attend outreach events

# Future Work

- The specific risky beliefs identified in this work should be tackled in future outreach campaigns
- Repetition in other areas to ascertain whether the broad issues found here are more widely applicable
- Evaluation of such events and development of a two-way communication process is required
- Imaginative communication tools are needed to reach the less-engaged sections of society who are often those that need the information the most