

What can we learn from previous generations? Álftaver's experience of the 1918 Katla eruption

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Abstract — Residents in Álftaver are very familiar with the 1918 Katla eruption, which caused rapid and catastrophic glacial outburst flooding of the area. Descriptions of the 1918 events, passed down by older generations, have become an important part of the collective memory. Based on oral and written history, this paper provides a vivid account, including detailed maps, of what people experienced and felt during the 1918 Katla eruption. It also considers how these experiences influence current-day perceptions and the impact this may have on behaviour in relation to emergency response strategies. Until now, much of this history has only been accessible in Icelandic text and through oral stories. The aim of this paper is to unlock these stories for an international audience in an effort to advance understanding of volcanic eruptions and their impacts and, inform future emergency planning. Importantly, these descriptions tell us about the nature of the glacial outburst flood, with a 'pre-flood' devoid of ice and travelling at a much faster rate than the ice-laden main flood. As a future eruption of Katla may impact Álftaver, emergency response plans for glacial outburst floods were developed, and in March 2006 preliminary plans were tested in a full-scale evacuation exercise involving residents and emergency response groups. But Álftaver residents questioned the plans and were reluctant to follow evacuation orders during the exercise, as they felt their knowledge and the experience of their relatives during the 1918 Katla eruption, had not been taken into consideration. Residents were concerned that flood hazards, as well as tephra and lightning, were not appropriately accounted for by officials. In response to residents' concerns, officials developed an alternative evacuation plan (Plan B) that builds on some of the experience and knowledge of Álftaver residents. However, residents were not involved in the development of 'Plan B' and they are not aware of what it constitutes or when it is to be implemented. This paper argues that more needs to be done to promote inclusive dialogue and the co-production of knowledge to ensure emergency response strategies adequately reflect and accommodate local knowledge, perspectives and planned behaviour.

INTRODUCTION

Katla is one of Iceland's most active and dangerous volcanoes, erupting at least 21 times since Iceland was settled around 874 CE (Guðmundsson, *et al.*, 2007; Larsen and Guðmundsson, 2016). This large volcano, situated beneath the Mýrdalsjökull ice cap in the south of Iceland, has produced on average two major erup-

tions per century. These eruptions can melt their way through the ~400m thick ice, breaching the glacier surface Björnsson *et al.*, 2000. The last time this occurred was on 12 October 1918. The first-hand experience of this eruption among the farming community of Álftaver (Figure 1) is the primary focus of this paper.