



The Neighbours of Eyjafjallajökull

The phenomenon of social capital

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THE NEIGHBOURS OF EYJAFJALLAJÖKULL: THE PHENOMENON OF SOCIAL CAPITAL

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ABSTRACT

The goal of this research is to examine how the phenomenon social capital can be used to explain and describe the impact of situations on the lives of people during the time of the eruption of the Eyjafjallajökull volcano. The issue is explored through construction and analysis of a number of narratives representative of a farming community that has experienced two separate crises, i.e. the man-made economic crisis of 2008, and non-human natural crisis of the eruption of the Eyjafjallajökull volcano in 2010. The narrative is therefore to explain how the people who were relying on farming and other small business activities managed to survive during the eruption. Furthermore,

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it explains the effect the eruption had on their lives and why they seem to be optimistic about the future and how they explain the opportunities due to the unforeseen growth in the tourist industry that materialized after the eruption. The investigation brings to the field of study knowledge as to the role of local authorities in the risk assessment processes, how social capital can be a resource to be drawn on when coping with critical situations, and whether local authorities should encourage building up social capital to support the inhabitants of the farming area in its economic development and its preparation for emergencies.

Keywords: Social capital, natural crisis

1. INTRODUCTION

Iceland hit the world news when its economy along with its currency, the Icelandic Króna, collapsed in September 2008. Iceland again made international headlines when the volcano Eyjafjallajökull erupted in 2010. The eruption caused massive disruption to aviation all over the world, but frustrated tourists may not have contemplated the impact the eruption had on the rural community right beneath the volcano. How does a small community, already dealing with the man-made crisis of the economic meltdown, simultaneously deal with a natural disaster? Here, we will put the closest neighbours of Eyjafjallajökull under the microscope, visit the rural community located beneath the volcano and take a look at it through theories of social capital.

The area investigated is a farming community, with a population of approximately 100 people, located on the south coast of Iceland where it lies between the glacial rivers of Markarfljót in the West and Svaðbælisá in the East. Glacial rivers and flatland – an old sea bed – define the area. Bordered off by the coastline to the south and the Eyjafjöll mountain range with Eyjafjallajökull as the highest point to the north, the area is usually referred to by locals as the area “at the foot of the mountains”(svæðið undir fjöllum).

The years leading up to the economic crisis in Iceland, the period 2000 - 2007, have been seen as a time of prosperity in the country. The rate of the Icelandic Króna was favourable towards other currencies, it was easy to get consumer loans at Icelandic banks and many spent more than they earned. When the economic crisis hit many people were faced with the stark reality that their loans had drastically increased while wages had dropped, and many faced unemployment. The situation was no different for people living

within the farming community investigated here and some are still struggling with high debt accumulation after the economic crisis of 2008. Studies show that the average wage of Icelandic homes went down 27% between 2008 and 2010 and private consumption dropped by 15%, at the same time that the debt load increased (Ólafsson & Kristjánsson, 2012).

In 2010 another disaster hit the area, with an eruption of the Eyjafjallajökull volcano, a 1666-meter high glacier in the vicinity. Beginning quite abruptly in April that year, this was the third time the volcano erupted since the settlement of Iceland in the 9th and 10th centuries. The eruption was unexpected to most people, although geologists had been expecting the glacier to erupt in the near future, as there was a gap of approximately 200 years between the first two eruptions, in 1612 and 1821-1823. The whole disaster started off as an effusive eruption in the Fimmvörðuháls ridge on 20 March that lasted for 20 days. Then, after a break of a single day, a phreatic eruption started at the top of the caldera in Eyjafjallajökull and lasted for 6 weeks. In the beginning, no one knew what kind of disaster was about to unfold, whether it would be a minor crisis or perhaps be of catastrophic proportions.

Today agriculture is the main occupation in the area, with a combination of dairy, sheep and horse farms, although tourism in the area is growing rapidly. In addition to the now notorious Eyjafjallajökull, many of Iceland's most famous natural treasures can be found in the district, for instance the popular outdoor wilderness of Þórsmörk, and the waterfalls Skógafoss and Seljalandsfoss. The closest village, Hvolsvöllur, with 900 inhabitants, provides the area with the main public services; such as public administration, a school, basic health care facilities, a bank and a grocery store (Rangárþing eystra, 2014).

The main threat of the Eyjafjallajökull eruptions was the shower of ash that for centuries has had an enormous effect on the rural area and the community whose livelihood depends on farming. During the 2010 eruption residents of the area investigated here had to be evacuated from their homes three times due to glacier outbursts and a fear of massive flooding from the two main glacier rivers; Markarfljót and Svaðbælisá. A second threat, which demanded an evacuation as well as creating problems for the rescue services (ISSAR) in the area, such as taking care of livestock, was the thick ash fall that led to total darkness during daytime and physical problems for humans and animals alike. Farms, houses and livestock were in danger and at that time it could not be foreseen how rescue and relief workers were going to deal with the situation. Farmers did not know what to do, causing some to consider permanently abandoning their farms and moving away. In the days and weeks that followed rescue teams and volunteers went to the various farms in order to help shovel ash from roofs and clean up the general mess.

The Icelandic Civil Protection Agency prepared an evacuation of all residents according to a response plan that had been prepared in association with the local municipality some years before. The Red Cross set up a care centre at Heimaland, the community centre in the area, to assist people after the initial shock. People gathered at Heimaland during the evacuation and after everyone had been given permission to return home the centre remained open throughout the duration of the eruption, offering food and comfort to the people in the area. The centre also became a base for the media.

After the collapse of the Icelandic economy and the fall of the Icelandic Króna tourism became the main source of income for this local community, which had attracted the world's attention. In recent times certain changes have become apparent in Iceland, especially among the farming community which has been seeking new opportunities related to the growing tourist industry. A number of farmers have started new businesses,

sometimes alongside traditional farming, such as offering farmhouse accommodation and other activities to tourists.

The rapid growth of the tourist industry was the main reason for the economic growth in Iceland in 2013. Revenues from foreign tourists totalled 15.4% of the gross domestic product (GDP) in 2013, up from just over 10% in 2009. The number of tourists visiting Iceland has been increasing annually by an average of 8.8 % from the year 2000 to 2013. From 2010 it has been increasing dramatically and between 2012 and 2013 it was up by 20% (Ferðamálastofa, 2014).

By interviewing residents and representatives of local authorities, the objective of this investigation is to discover indications of:

How the phenomenon social capital is manifested in the local community beneath the Eyjafjallajökull volcano.

This has been conducted through ten qualitative interviews with local residents and public service representatives who were asked about indications of social capital, before, during and after the two crises that struck almost simultaneously, i.e. the financial crisis and the eruption in Eyjafjallajökull.

In this study an attempt will be made to see whether social capital in the area helped this rural community to recover from its problems, e.g. the consequences of the financial crisis, wage loss, the negative impact of bad governmental decisions, and the general impact of the eruption. Furthermore, the question of what role, if any, local authorities have in building and supporting social capital in this rural community at the time of crisis will be answered.

Timeline of the period discussed in this paper:

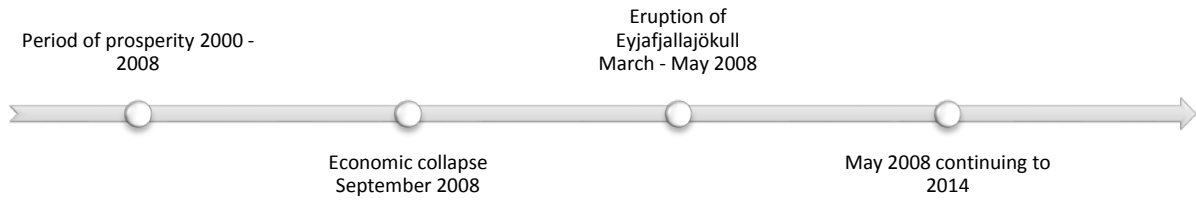


Figure 1: Timeline

Figure 2, the Globe, Iceland is framed within the red box. Figure 2 shows Iceland and the rural area researched in this paper is framed within the red box. Figure 3 shows a close-up of Eyjafjallajökull and the rural area where the farming community being researched is located.



Figure 2: The Globe (source: Google maps)



Figure 3: Iceland (source: Google Maps)



Figure 4: Eyjafjallajökull in the rural area (source: Google Maps)

2. LITERATURE REVIEW

The economic crisis that hit Iceland in September 2008 is well known, but the consequences of the eruption in Eyjafjallajökull in April 2010 are less obvious. What impact did the eruption have on the community researched in this paper in relation to the concept of social capital? Which role does the concept social capital have in a rural community and what is its impact when a natural disaster strikes?

When researching the phenomenon social capital in relation to rural communities, natural crisis and the role of local government in the recovery process, it is necessary to research the results of other academic studies regarding the concept of social capital.

2.1. What is social capital?

The concept of social capital can be regarded as vague, as it can be defined and interpreted in many ways. However, it is an important concept for it refers to the basic raw material of a civil society and it needs to be examined further in order to identify the correlates of social capital, such as, whether it is affected by organised community programmes (Onyx & Bullen, 2000).

Political scientist and Professor of Public Policy at Harvard University John F. Kennedy School of Government, Robert Putnam defines the concept social capital as the *“features of social life – networks, norms and trust – that enable participants to act together more effectively to pursue shared objectives.”* (Putnam, 1995, p. 664). James S. Coleman, an American sociologist, theorist and empirical researcher, is in agreement when he identifies three forms of social capital in his explanation of the concept: *“Obligations and expectations, which depend on trustworthiness of the social environment, information-flow capability of the social structure and norms accompanied*

by sanctions” (Coleman, 1988, p. 119). Furthermore Coleman (1998) argues that if informal norms and sanctions are strong then it is more likely social capital has been formed in the community (Coleman, 1998)

In their definition of the concept of social capital, Nakagwa & Shaw emphasise the indication of the role of trust, participation, networking and social norms that applies in a community (Nakagwa & Shaw, 2004). Onyx and Bullen say that social capital is a feature that in coordinated actions can improve efficiency in a given society (Onyx & Bullen, 2000).

Coleman argues that the concept of social capital is a variety of phenomena; it can be productive like other forms of capital and can be a resource to achieve certain goals (Coleman, 1988). Social capital builds up through changes in relations between people and facilitates action. It exists among people and is therefore less palpable than other forms of capital. However, it can encourage productiveness and can as easily facilitate productive activity as physical capital (Coleman, 1988).

2.2. Social capital in rural communities

Coleman argues that the level of social capital and social interactions is higher in rural communities. The reason, he claims, is that it is most likely to develop in communities with a strong sense of internal identity and boundaries (Coleman, 1988).

In a study of the attitudes and behaviour of the residents of Álftaver, a community located on the south coast of Iceland, approx. 100 km east of Eyjafjallajökull, before and after the eruption, and its impacts on social interaction and internal identity, Bird & Gísladóttir conclude that a rural community that has suffered together in a crisis caused by an eruption has an increased sense of internal identity. (Bird & Gísladóttir, 2012).

Putnam points out that despite the fact that social capital can be higher in rural communities, contradictory characteristics that hint at a conservative attitude and a lack of tolerance for differences can be more common in such communities, both of which are distinctive features of a low level of social capital (Putnam, 1995).

In the results to their research of social capital in five Australian communities, two of which were rural, Onyx and Bullen claimed that social capital was considerably higher in the rural areas than in the other communities regarding feelings of trust towards others, safety and a higher level of participation in the local community and neighbour connections (Onyx & Bullen, 2000). The results of a later research on social capital and community development in four rural towns in Australia showed a connection between a strong signal of social capital and a broad community participation, as well as formal and informal volunteering (Onyx & Leonard, 2010). Furthermore, Onyx and Leonard state that social capital can be seen as influential and able to facilitate development specific to the context in which it occurs, especially if the structure needs to be supported and not controlled by local government (Onyx & Leonard, 2010).

Regarding the role of the authorities, Dietrama & Dhavan conclude that resources should be directed to people who have been identified with a certain personal strength for it has been proven that the personal strength of self-confident leaders does matter when building social capital (Dietrama & Dhavan, 2000). Self-confident leaders are likely to engage in various forms of community activities and they are more trusting in others as they are satisfied with their lives and their own achievements. Also Dietrama and Dhavan found in their research that these leaders have to be identified so it is possible to direct resources towards them (Dietrama & Dhavan, 2000). Halpern, (2005) who have studied social capital across nations, has found out that local governments do indeed promote social capital even if they do not use that exact term (Halpern, 2005).

Furthermore, Onyx and Bullen (2000) say that even though government policy is important people do not expect it to be linked to their every day lives.

Onyx and Leonard maintain that in order to sustain a community-wide vision a community needs social entrepreneurship to bring together diverse groups in the community, for things do not happen, people make them happen, and therefore it is necessary to build a social capital networking (Onyx & Leonard, 2010). Baron and Markmann define a social entrepreneur as a person with the competence to interact effectively with others and claim that helping local entrepreneurs to grow their personal network should also contribute to social capital in the community (Baron & Markmann, 2000).

2.3. Social capital and natural crisis

In a study by Nakagwa and Shaw examining the role of social capital in post-earthquake rehabilitation and reconstruction programmes in Kobe in Japan and Gujarat in India showed that leadership in communities is a strong factor in the recovery together with governmental policy and intervention (Nakagwa & Shaw, 2004). Furthermore, they state the importance for governments to accept social capital as an asset in a community and for community leaders to support and increase social capital in order to use it effectively in the progress of post-crisis recovery. In the matter of disaster management and disaster recovery planning it is vital for the local government to recognize their role (Aldrich, 2012). Both Aldrich and Nakagwa and Shaw claim that the resources that local and national governments have at their disposal at a time of crisis are valuable but can easily be directed towards non-useful projects if these resources are not well coordinated in cooperation with local social networks and with social capital in mind. If so, these

valuable resources from the governments will be used effectively and in a more efficient way (Aldrich, 2012; Nakagwa & Shaw, 2004).

Also, Aldrich and Nakagwa and Shaw state that until recently it has not been standard in disaster management and post-disaster recovery to acknowledge the role of social capital or other social resources (Aldrich, 2012; Nakagwa & Shaw, 2004). Aldrich claims it is vital for residents to be able to be an integral part of the rebuilding process and know that their voices are heard by the relevant institutions, such as local governments, which is why the bonding, bridging and linking of social capital is important (Aldrich, 2012).

From his research Aldrich (2012) concludes that there is growing evidence for the importance of good social capital in the post-crisis recovery process, and his results indicate the importance of sustainable interactions between inhabitants in the area and the local government. In his opinion, the process of necessary reconstructions should from now on be planned carefully for an effective recovery because some of the standard recovery strategies can be harmful for the social infrastructure. Recovery plans and the emergency response formulated by the government should be prepared bottom-up not top-down for the inhabitants of an area since it is they who have the deepest knowledge about their needs in the preparation of such a plan. It is more sensible for authorities and governments to consider ways that depend on social-capital-focused programmes for improved recovery outcome than for them to invest in a physical infrastructure. The impact of recovery will be more prolonged and it is a cheaper solution in the long run than interventions that focus on a physical infrastructure (Aldrich, 2012).

2.4 Growing tourism in Iceland and social capital

According to Statistics Iceland, revenues from foreign tourists totalled 15.4% of GDP in 2013, up from just over 10% in 2009. As a part of Iceland's foreign currency income the share of tourism has grown from 19,6% up to 26,8% in the years 2009 – 2013 according to measurement on service and merchandise (Hagstofa Íslands, 2014).

According to the Icelandic Tourist Board the number of tourists visiting Iceland has tripled since the year 2000. Increasing from 303.000 in the year 2000 to 807.000 in the year 2013 (Ferðamálastofa, 2014). The Icelandic Tourist Board has conducted a survey among tourists visiting Iceland and according to the outcome almost 80% visit Iceland to enjoy its nature. Furthermore, 70% visit the southern part of Iceland, and 45% visit the waterfall Skógafoss (Ferðamálastofa, 2014).

Mr. Samúelsson, former General Manager of the South Iceland Marketing Office, stated at a forum held by his office in November 2013 on opportunities in tourism in South Iceland, that for tourism in South Iceland to be successful it is essential that members of the industry work together. Cooperation is a win-win situation for all parties and the whole industry would benefit from it. The common goal should be enlarging the whole "cake" not only the individual slices (Samúelsson, personal communications October 23. 2013).

3. METHOD

3.1. Project description and objectives

The purpose of this study is to find out whether there are any indications that the phenomenon social capital should be seen as a factor in the area investigated, i.e. the defined

rural community situated on the land strip between Eyjafjallajökull to the north, the sea to the south, and the glacial rivers of Svaðbælisá to the east and Markarfljót to the west. If it turns out that the phenomenon social capital was a factor before the financial crisis of 2008, is it still in existence? Also, what impact did the eruption have on the community? Was or did the phenomenon social capital become a factor then? Finally, to see whether local authorities have a role in building and supporting social capital in a rural community at a time of crisis. In conclusions it will be discussed whether the phenomenon social capital in the area did or did not help this rural community recover from both, or either, the financial crisis and the general impact of the eruption.

3.2. Research methodology

The methodology used in this study is qualitative, with interviews conducted with five inhabitants in the rural community investigated. Representatives of local authorities and public servants were also interviewed in order to gather information about the viewpoints of the official authorities. Furthermore, statistics on the Icelandic economy are provided, e.g. GDP and output growth from 2003 to 2013 and the growing tourist industry from Statistics Iceland and the Icelandic Tourist Board, in order to illustrate the situation before, during and after the economic collapse and the eruption of Eyjafjallajökull.

In the interviews participants were asked to describe their experience of the time before and after the financial crisis; whether, and then how, it had affected their lives and the community. The main emphasis in the interviews was on the experience from the 2010 eruption in Eyjafjallajökull connected to social capital. At the beginning of each interview the concept of social capital was explained, how it can reflect a sense of trust, participation and networking within a community. It was with care and awareness that

the concept of social capital was explained in a simple and understandable way to each participant and everyone was provided with the same explanation of the phenomenon.

The interviewees from the farming area were selected randomly, with these factors as guidelines:

- S/he should have been living in the area for longer than 10 years, in order to ensure a knowledge of the local community and conditions.
- S/he should be a farmer.
- S/he should live in an area that was evacuated due to ash fall and/or flood danger.
- S/he should be a farmer with some livestock, such as dairy or sheep, and the farm should offer some kind of tourist service, regardless of whether this service had started before or after the eruption of Eyjafjallajökull.

The local authorities and public servants interviewed were:

- Incumbent mayor, Mr Ísólfur Gylfi Pálmason.
- Former mayor, Mr Elvar Eyvindarson.
- Chief legislative officer, Mr Kjartan Þorkelsson.
- Former local Lutheran minister, Rev. Halldór Gunnarsson.

Everyone was asked the same questions or directed towards talking about the content of the questions. However, it was decided that it would be more important for the study that each participant would tell his/her own story about his/her experience of the time of prosperity, financial crisis and eruption of Eyjafjallajökull. In addition, there was an emphasis on gathering participant opinion of the words that are seen as important

for this research, e.g. trust, friendship and helpfulness, or lack of these. In this way, each interview became unique.

All interviews were carried out in Icelandic.

The questions asked where:

1. Looking back to the period of prosperity, from 2003 to 2007, how would you describe the rural community “at the foot of the mountains”?
2. What impact did the financial crisis have on you and your community?
3. How was your situation at the beginning of the year 2010?
4. What was your personal experience of the eruption?
5. How did you experience the response of the local authorities following the eruption?
6. Have you witnessed any particular changes in the community in the aftermath of the 2010 eruption in Eyjafjallajökull that could be connected to the phenomenon social capital (as explained at the beginning of the interview)?

Due to the small size of the community each participant was granted anonymity when it came to name and residence. Permission was granted to quote the incumbent and former mayors of Rangárþing eystra, the chief legislative official in Hvolsvöllur and the former local minister.

The reason for the method selected is that in April 2014 the Institute for Sustainability Studies, University of Iceland, started a study on the influences of the eruption in order to find out the effect it had on humans and livestock. That research is still under way. Therefore it was decided not to send out a questionnaire so as to not

overly inconvenience people in the area as it was deemed likely that the response would be poor. However, it is not clear from the description of the study in progress at the University of Iceland how they approach the topic of social capital so it has not been possible to make a comparison to this case study.

4. RESULTS

4.1 Statistics

Annual output growth in Iceland 2000 - 2013



Figure 5 (Hagstofa Íslands, 2014)

Gross Domestic Product and Gross National Product 2000 – 2013

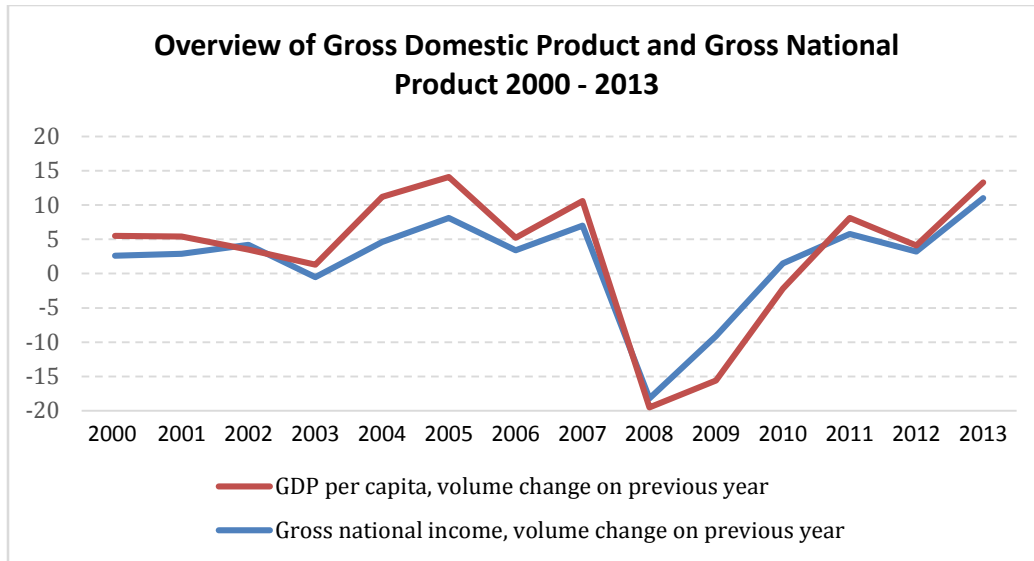


Figure 6 (Hagstofa Íslands, 2014)

Gross national income (GNI) equals GDP plus net primary income, in billions of Icelandic Króna (BISK), from rest of the world and changes in terms of international trade.

Figure 7 shows number of visitors in Iceland 2000 – 2013

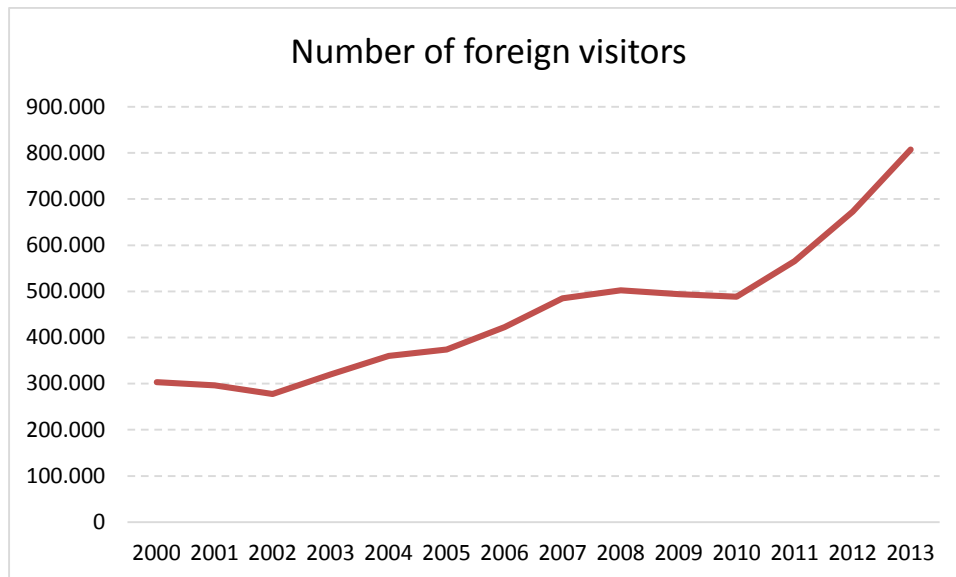


Figure 7 (Ferðamálastofa, 2014)

4.2. Interviews with local inhabitants

Question 1: Looking back to the period of prosperity, from 2003 to 2007, how would you describe the rural community “at the foot of the mountains”?

All participants said that the economic upswing during the period of prosperity had little impact in this area and the locals experienced few if any benefits during this time. To the best of their knowledge people in the area did not spend money they did not have either on goods or housing, even though access to financial capital through the banks was relatively easy. The material wealth associated with the boom never materialized here.

Most of the participants also said that people in this part of Iceland, especially from this locality, are modest in their living habits. A few did however mention that in these years they could have indulged themselves annually with vacations on a sunny beach abroad.

One farmer involved commercially in tourism said that the years of prosperity brought his business no financial benefit whatsoever.

For me it was not like a time of prosperity, I am in the tourism business and my customers pay in foreign currency. At this time the rate of the Icelandic Króna was about 80 to 1 EUR.

Some mentioned that during the years of prosperity it had happened on occasion that “guests” from Reykjavik offered to buy someone’s farm for the price of a fine detached home in the capital, but that had not been a common occurrence in this particular area.

Everyone talked about the time before the county was amalgamated with other small counties in 2002. How things were better before unification. Before, people were more willing to work together to uphold this rural community. People were conscious about maintaining public services in the community, such as keeping local schools open and building houses for teachers.

Most of the participants told a similar story about the “old times”.

If someone was building a house, a barn or just any construction big or small the neighbours would come to help, unasked. That was just how things were here.

When I moved here over 40 years ago the locals wanted to make me feel welcome. They gave me some sheep and fixed the stable so I could keep horses.

Some said that after the amalgamation in 2002 the helpfulness, close friendship and consideration for one's neighbour decreased. When public services for the rural community were moved to Hvolsvöllur the authorities were reticent about providing services and lacked the necessary understanding towards the needs of the rural community.

One participant told a story about when there was damage on one of the farms close to his due to a storm and the roofs of the outhouse had blown away. The farmer there did not get any help, for the local authority workers did not want to set a precedent for the service provided to the people in need.

Something like this never would have happened before the amalgamation, and I am sure if this would have happened in the village the local authority workers would have showed up instantly to assist.

One talked about that all schooling, including the teaching of music and sports activities, had been moved to the nearest village, Hvolsvöllur. This was for the better and improved the children's quality of life in the sense that they can now participate and

choose what they want to do during school hours. Previously children in each district were so few that the range of activities for them was limited. On the other hand there is a certain sense of regret regarding the loss of the old local schools, parents now have to send their children away to school to Reykjavík, Selfoss or Laugavatn after they reach 16.

Question 2: What impact did the financial crisis have on you and your community?

Question 3: How was your situation at the beginning of 2010?

Most participants agreed that the financial crisis did not hit the community too hard due to the fact that the preceding economic boom had hardly any impact in the area. However, some could relate stories of people in the community who had invested unwisely or had constructed too much and too fast. It was after all a time of easy access to loans in foreign currency and people did lose money, but no one could recall a neighbour that had gone bankrupt.

The dairy farmer said that he had felt the negative impact of the economic crisis just like other dairy farmers had. Their debts tripled.

For those of us who had debts, there were only more debts after the collapse of the economy. We had been managing quite well, and thought we would be able to help our children financially, but now it seems they will only inherit our debts.

The farmer who had commercial interests in the tourist industry said he had never earned more money or experienced a better quality of life than after the financial collapse; no doubt because most of his income was in foreign currency.

Before I sold 1 EURO for 80 ISK, but after crisis I sold the same EURO for ISK 280, so I had never experienced as much prosperity as in the period immediately after the collapse. Today the exchange rate is around 160 ISK to 1 EUR.

Most participants said that it seems to be common for sheep farmers in the area to be involved in tourism. The opinion was that few sheep farmers in the area can support their families solely on farming.

Question 4: What was your personal experience of the eruption?

Question 5: How did you experience the response of the local authorities following the eruption?

All participants agreed that there was a strong sense of solidarity during the eruption in Eyjafjallajökull in 2010. Everyone was looking out for their neighbours and concerned about how things were on the next farm and if someone needed help. It didn't matter what people needed help with, moving calves out of the cloud of ash, shovelling ash from rooftops, feeding horses or providing a shoulder to cry on or someone to talk to.

When the eruption started our world fell apart, I felt like I was stuck in a bad movie or a play when I look back. I knew this could happen, but I had not realized that it would happen.

The sun shone for the whole time but thinking back I only see the darkness, the ash and the damned river that could flood any time.

The solidarity among the people was amazing, I felt like we were one big family caring for each other.

It did not matter where in the area people lived, the east part got more volcanic ash than the west, while in the west everyone was conscious of the danger of flooding from the Markarfljót river.

I visited people as much as I could, I was quite lucky because where I live we did not get as much of the ash fall as others so I thought it was my duty to see how others were doing and if I could help out.

I took on most of the neighbour's horses, at one time I had almost 400 horses to care for.

One talked about the stroke of good fortune that at the time of the eruption construction was going on at Landeyjahöfn harbour so bulldozers and diggers were only a few minutes away to help breach the road and allow the water to flow through as well as piling up defensive banks to prevent massive flooding of the lowland area from the Markarfljót river. If that had happened it would have been disastrous; not only because of the land that would go under water but the houses also, and the possibility that the river could have flooded all the way east along the mountains to Holtsós.

These men who put their lives in danger to help prevent the river from flooding and ruining our land and possibly our homes can never be thanked enough.

Most participants said that the emergency care centre at Heimaland helped people considerably during the eruption, not only as a shelter where people had to evacuate due to the flood hazard or massive ash fall, but also as a place for people to meet and support each other. Volunteers from the Red Cross stayed there the whole time. Some participants said that their contribution to the community cannot be thanked enough. They prepared meals for everyone in need, no matter if it was night or day. Also it was important for the inhabitants to sense the sympathy and concern coming from all over the country. Companies sent us food and drinks, candy for the children and women's associations around Iceland baked cakes to be sent there.

Participants said that reporters and news crews were quite aggressive towards people at Heimaland and wanted to film everything, even the food that was being cooked. One described an incident at Heimaland when the camera was just pushed into the face of a farmer that came there covered in ash, emotionally drained and with tears in his eyes,

and the reporter asked how he was feeling. This only served to make people angry and be reticent about communicating with the media. That incident shocked the caretaker at Heimaland to the extent that he decided to limit the reporter's access to the premises.

We felt like we were the common property of the media, they just showed up like vultures on our doorsteps pointing cameras in our faces, filming without asking first. We were in the spotlight of the whole world.

All said that the local authorities did their best to manage their resources. They reacted quickly and helped out as best they could. Expenses incurred by them were in the end reimbursed by the Icelandic government but it did not seem to matter for them at the time. The emergency response plan that had been drawn up by the chief legislative official of the multiplicity had worked well and it was clear that a considerable amount of thought had been put in to it.

Most said that there was a downturn in tourism during the eruption, not only the whole area was closed for a limited time, but also areas further away like Þórsmörk were closed for the most part of the summer 2010. A farmer who has a business offering horse treks to Þórsmörk said he lost a considerable part of his income that year. Many had cancelled their booking and he had to refund the money to clients. He said that the Icelandic Relief Fund did not compensate a loss of business income; the farmers that received compensation were sheep and dairy farmers and those providing hay.

One morning when we woke up we looked at each other and said that this could not go on any longer, we realised that we had reached rock bottom and the only way from here on would be up and so we started thinking of what we could do to inform and educate others about the eruption in Eyjafjallajökull as well as perhaps making a living out of it.

Question 6: Have you witnessed any particular changes in the community in the aftermath of the 2010 eruption in Eyjafjallajökull that could be connected to social capital (as explained at the beginning of the interview)?

Participants seem to agree that the solidarity that people experienced during the eruption is on the wane, however it is still there to be drawn on if something were to happen here again, that is for sure.

I know now, that if something were to happen to me or my farm, I can turn to my neighbours for I know they are my friends and will stand by me no matter what.

Some mentioned that there is a certain degree of envy towards the ones that are doing well, especially if they are in the tourism business where most of the opportunities are. More and more are looking to tourism and they agree that it has been good for the area.

The people here are not bad people, it is no different from other places where there is envy towards those who are successful.

One thing is for sure, the land is still here, the waterfalls and the beauty of the area that people seek out when they visit us.

The farmers agreed in general that things are going better in the community for those who still live there. They said that only a few have moved away as a direct consequence of the eruption but they also said that it is not possible to hide the fact that the population in this rural community has dropped over the last two decades.

4.3. Interviews with the local authorities

All public representatives said they could verify the opinions aired by the inhabitants about the time before the amalgamation of the counties. That it was the norm then in the community to help out one's neighbours.

All the official and public representatives said the same as the inhabitants about the boom time prior to the financial crisis in 2008, i.e. that it had never reached this rural community and therefore it did not have the same influence in this area as in other places in Iceland.

A few wealthy individuals from Reykjavik bought several estates in the area at inflated prices. However that did not have the snowball effect that one would have expected.

One consequence of the financial crisis in Iceland has been the increasing number of foreign tourists visiting the area and that has opened up opportunities for locals to engage in tourism.

Chief legislation officer in Hvalsöllum, Mr. Þorkelsson, said that his office in association with the Civil Protection Authority in Iceland drew up a risk assessment plan for the area regarding an eruption in Eyjafjallajökull. This was then introduced to the local community and a contingency plan was drawn up in association with the people. Small community meetings within each of the old communities were held to get a reaction and opinions. People were well informed and responded swiftly for they knew what to do the moment we hit the evacuation button when the eruption started. The speed of the evacuation was quick and people thought about each other and called to check upon their neighbours to see if they were okay.

The inhabitants showed solidarity and followed our instructions to the letter when we had to evacuate the area; we never feared that it would not go well. We had been working with the local population in planning this and had held an evacuation drill.

Big events in a small community is a factor for group cohesion, it is as though it is instinctive for people to stand together.

Mr. Þorkelsson also said that following the end of the eruption the chief legislation office was providing follow-up meetings with the people in the community to find out what went well and what could have gone better with the aim of learning from the experience and so be even better prepared should there be another eruption. The emphasis is to get people involved at these meetings, listen to their point of view and see what can be learned.

We are processing the data gathered at these meetings in order to be better prepared for the next emergency.

Mr. Eyvindarson, who was the mayor of Hvolsvöllur community at the time of the eruption, offers opinions similar to those of the chief legislation officer. From his point of view at the time it was a matter of a rapid response from the local authorities to help people not to lose hope in this hugely difficult situation. He said that on day three, when the wind changed its direction resulting in the ash spreading over the inhabited area, he gathered a group of community employees and volunteers that had the mission to go between the farms and offer help to the people in need. Fortunately the eruption did not last for a long time, everything would have been much more difficult if the duration of the eruption had been over a longer period for he could sense a drop in tolerance in the urban area of Hvolsvöllur towards the fact that local authority employees spent all their time assisting “out there”.

Mr. Pálmason, the present mayor of Hvolsvöllur and Mr. Eyvindarson also agree with the locals that the community's sense of solidarity has waned since the eruption, but both are confident that people would stand united together if something serious were to happen again in the community.

Mr. Gunnarsson, who was the local Lutheran minister for 44 years and served at the time of the eruption, says from his point of view the sense of local cohesion started to decline right after the amalgamation in 2002, but of course people were united during the time of the eruption.

Mr. Gunnarsson and Mr. Eyvindarson said they concur with inhabitants that a certain degree of envy can be detected in the community towards those who are more successful than others. Mr. Eyvindarson emphasizes though that he is convinced that solidarity and harmony are more commonly found in rural communities than in urban ones even though there is always gossip.

Mr. Pálmason said that for the local community to maintain the concept of social capital and strengthen the sense of human cohesion after the eruption in 2010, a communication web page for the inhabitants was opened in early year 2014. He added that the civil defence committee holds educational meetings regularly with the local community.

5. DISCUSSION

The following discussion will be structured in connection with the research question: How is the phenomenon social capital manifested in the local community living in the vicinity

of the Eyjafjallajökull volcano? Were indications of social capital, before, during and after the two crises which struck almost simultaneously, the man-made financial crisis and the natural disaster of the Eyjafjallajökull eruption. And finally what role the local authorities have in building and supporting social capital at the time of crisis.

The results of this research indicate that the phenomenon social capital exists in the farming community interviewed. The phenomenon has been a factor there before the economic collapse; it was important during the 2010 eruption but most interviewers stated that the impact of social capital has diminished since then.

The solidarity in this rural community before the amalgamation in 2002 indicates social capital as defined by Putnam and Coleman that social capital indicates the participation, role of trust, networking and social norms in a community. It supports Onyx and Bullen's findings that rural communities have higher levels of trust, safety and neighbour connections. Factors that both locals and representatives of the community talked about, e.g. helping out and welcoming new people to the area, or just assisting neighbours in what they are doing also supports Onyx and Bullen's finding. The ambition to maintain the school system, build houses for teachers and have a community centre are all examples of active participation in the community to a certain outcome.

The outcome of the interviews is clear on the issues of solidarity and group cohesion during the time of the 2010 eruption and can be interpreted as a strong sign of the phenomenon social capital. The helpfulness and consideration they had for each other shows that the concept of social capital existed during that period; they looked out for each other and made sure everyone was safe. Furthermore, even though many say it has diminished since then one participant said that he knows they are his friends and he can turn to them if something were to happen. It can be assumed that during the 2010

eruption inhabitants in this rural area got to know each other well, so we can assume that people who perhaps did not communicate before do so after this joint experience and that supports the concept of social capital in the area; and even though it might not be strong social capital, it exists. The people's reactions during the Eyjafjallajökull eruption in 2010 indicates a high degree of neighbour interaction, trust and sense of security that are all considered to be elements of strong social capital.

The fact that some talked about a certain envy towards those who are more successful reduces awareness of the phenomenon social capital. It also supports both Putnam and Onyx and Bullen who pointed out that people in rural communities have a lack of tolerance towards other people's lifestyle and hold more conservative attitudes than in urban communities. It is also possible to assume that the ones that the envy is directed at are at the same time the strong leaders in the community that need to be identified, according to Dietrama & Dhavan, by the authorities so that appropriate resources can be directed towards them. These strong leaders should play a crucial role in building up strong social capital in the area. It supports also what Aldrich stated in his research that it is vital for residents to be able to be an integral part of the rebuilding process and know that their voices are heard by the relevant institutions, such as local authorities.

The tourist industry has been growing rapidly in the area since the eruption in 2010, even though it had shown signs of growth prior to that event. The tourism sector is where most of the opportunities for commercial development are to be found locally. We can assume that the phenomenon social capital should be a factor in strengthening the industry in this small rural area and should help locals build up strong successful enterprises. Expert evaluation of the industry emphasizes that cooperation is a key element for success within the sector.

As for the effects of the man-made economic crisis, the research shows that the economic boom had little impact in the area, consequently the resulting economic crisis did not affect the locality. Therefore no conclusions will be drawn about the effects of social capital on the impact of the economic crisis. To do so would require further research looking at the financial situation, before and after.

The risk assessment plan that was drawn up is an example of a project that was formulated in association with the local community; the working process was in a way prepared bottom up not bottom down with the participation of the inhabitants resulting in lessons being learned for future reference. This supports Aldrich's (2012) conclusion about the importance of sustainable interactions between inhabitants and local government and that crisis response should be prepared in cooperation with the inhabitants, since they know best what their needs are.

We did not find in our results other strong evidence about the local government implementing the phenomenon of social capital in this rural community either before, during or after the economic crisis or the eruption of 2010. The communication web page can however be considered an effort to do so.

6. CONCLUSIONS

The objective of this study is not to measure social capital, but to find out if there are indications about the phenomenon in this small farming community, the closest neighbours to Eyjafjallajökull. We have concluded that indications of the phenomenon social capital can be found in this rural community. This research gives a clear indication that repeating this type of research in another rural community caught in a similar

situation could give even stronger results about the effects of the phenomenon of social capital in a time of crisis. It is important though to remember that the phenomenon social capital is a subjective concept and difficult to define properly or measure.

Most of the papers on post disaster recovery found while working on this research are written about areas in developing countries where massive earthquakes have taken place with a high number of casualties and much greater damage to houses and other structures. Even so we can conclude and learn from the experience gained in other post disaster recovery and prepare for disaster management when the next eruption takes place Iceland. Indeed if one thing is certain it is there will be another eruption in Iceland sooner than later, bearing in mind that we experience on average an eruption every five years.

The growth in the tourist industry in the area “at the foot of the mountains” gives an opportunity in the coming years to research further effects, as well as the importance or unimportance, of the concept of social capital within a growing tourist sector in a farming community.

This research is not without limitations but it is hoped that it will give some indication about the concept social capital and its influence in a rural community recovering from disaster.

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