

Science communication in a scientific tourism product

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Introduction

Science communication to a lay audience is one of the most challenging aspects of a scientific tourism product. Tour operators and guides are often not specifically educated to communicate scientific information in an understandable, salient and amusing way to an audience with diverse interests and levels of knowledge with regard to science related topics. On behalf of the Hornafjörður Research Centre, two consultants - Birta Bjargardóttir and Gunnhildur Fríða Hallgrímsdóttir - analyzed the science communication methods of different nature-based tour companies operating in the glacial environments of southeast Iceland. They did so mainly by participant observations during tours but also through discussions with the CEOs and guides of the participating tour companies. The tour companies were all part of the Hornafjörður scientific tourism network. This document summarizes the main findings and advice from both science communication consultants.

The findings of the two consultants as a whole were shared with all associated business and institutional partners within the Scientific Tourism network in Iceland. In addition, finding and advice specific to participating SMEs were communicated to them individually. Such findings, which can be traced to individual participants, are not included in this report, as they obviously constitute privileged information.

Birta Bjargardóttir is an expert in science communication, and she focused on science communication in general in the tours provided by the partner SMEs. A large part of her work concerned feedback on individual tour products, specific to certain companies, and it thus not included in this report. The focus of Gunnhildur Fríða Hallgrímsdóttir, a young and leading climate change activist, was mainly directed to science communication concerning climate change issues, as these are topics which inevitably come up in all glacier tourism products. She placed special emphasis on communication to young people, keeping in mind that this is an age group where eco-anxiety tends to be especially pronounced. Gunnhildur Fríða thus also undertook informal interviews with a group of young people (high-school students) taking part in a glacier tour, organized by one of the Icelandic partner SMEs, to investigate this further.

Overall, the findings of the two experts suggest that the associate partners participating in the studies were on the right track in their respective science communications efforts. Their scientific knowledge and their methods of communication could, however, still significantly be enhanced.

The SMEs in turn responded positively, both to taking part in the studies with the experts, and in the findings that were later communicated to them, both individually and as a whole. A secondary result of these studies was thus to demonstrate their clear value to the stakeholders involved. We therefore recommend that studies of this nature should be included as standard praxis in the development phase of new scientific tourism products and also that follow-up studies be conducted, both concerning the communication efforts of tour operators and the reception of such communication efforts by their customers.

How to communicate science

By Birta Bjargardóttir

Generally speaking there are a few main points to keep in mind when it comes to science communication, and communication in general.

If you are aiming to get information across in any communications, there are three important questions to ask yourself:

1. Who is the Communicator?
2. Who is your Audience?
3. Which Channel of communication are you using?

Furthermore, as a rule of thumb when communicating scientific material - and something that is often difficult to stick to when scientists or specialists in the subject seek to communicate it - it is good to keep the following in mind:

- Keep it short, simple and straightforward
- Start with the most important information
- Use social media to your advantage to help get the message across
- A picture and/or video tells a thousand words
- Stick to three main points
- Avoid jargon
- Be relatable, tell a story, be anecdotal, “humanise” scientific research and technical topics.

As previously stated, Annex A [not included in the report] provides more information on each company/tour but generally speaking, each company visited (and other companies and tour operators providing climate change and other such tours) could keep the following in mind, in addition to the general science communication pointers above:

- When it comes to sizes and measurements, try to use both metric and imperial.
- Provide information about why the glaciers are melting.
- Have open discussions about what we can do as individuals when it comes to combating climate change.
- Make space/time for some sort of “nature bathing” or appreciation of nature.
- Talk more about the company’s environmental policy, both during the actual tour, as well as online and on social media.

Communicating science in tourism

Taking the above points into account when communicating science in a tourism or hands-on experience setting it is important to think about which guide(s) (“communicator”) is leading the tour or expedition. Are they quite extroverted and anecdotal, do they find it easy to communicate to all sorts of people/audiences, can they think on the spot and change up the information depending on the interest of the audience etc. Etc.?

The guide/communicator might have varying “audiences” depending on the tour, some might be keener and/or more knowledgeable than others, e.g. when it comes to scientific material and discussions about climate change.

Also, it is important to take into account that the audience members might be from different backgrounds and cultures. Something as simple as keeping measurements universal and making sure to use both metric and imperial in the same setting can go a long way in getting your audience to connect to the information you are sharing. Examples of this are “the glacier has decreased by 10 metres or 30 feet in the last year”.

Sometimes your audience isn’t too bothered about actual numbers, it depends on the subject, so something like “the decrease is 10 metres or 30 feet - that is the equivalent of a 3-storey building”, can suffice if the material doesn’t have to be too accurate. As stated, people tend to connect more to anecdotal information and material.

Usually, the general public wants to know how things will impact their lives and their societies, not just the nearest environment. So if talking about climate change and melting of glaciers, it can be good to talk about the impact on a global scale, rather than merely on a local environment/Iceland scale.

Communication is also about balance, especially if the audience is a mix of people and cultures. Some people do not want to hear anything about climate or climate change. Some of the tour operators visited even said that they have had visitors (e.g. from the US) that think science is too political and/or that do not “believe in science”. These guests often only want the “adventure” and to have fun. They are on holiday.

However, if the tour operators are providing specific climate change tours, it is likely that the audience will generally be open to receiving more information, and more specific information about the life of a glacier, why glaciers are melting, discussions about climate change, what we as individuals can do etc.

So, it is good to keep in mind that the audience members are possibly very diverse with different interests and skill sets. However, when communicating information to them, it is possible to have a similar presentation but adapt to each group individually. Generally speaking, it is best to reduce any value-laden vocabulary as much as possible and e.g. talk about melting glaciers and changes in nature without using words or phrases like “climate change” or “global warming” too much, rather by allowing guests to digest the information, asking them questions, having discussions, and giving them room to form their own opinions.

Nature itself, and experiencing nature, along with a good and straightforward presentation of scientific knowledge, can raise awareness and result in real changes in attitude.

How can guides improve the dissemination of scientific information?

By Gunnhildur Fríða Hallgrímsdóttir

Guides can play a big role when it comes to making people think about climate change. It is not uncommon for tourists to experience glaciers and unspoiled nature for the first time and therefore the memories left behind are important. Glaciers play a similar role as polar bears when it comes to people's image of climate change, something that comes to mind when it comes to climate change. Seeing it with your own eyes is therefore on the lists of progressive and world-less tourists.

Guides can respond to this call and often get people thinking or encouraging action. After all, it is in the interest of guides to encourage action against climate change if they want to stick to the glacier guide star. This report is written after visits to tourism companies in the summer of 2021 with the aim of examining how tour companies around Vatnajökull tackle climate change as a topic of discussion.

Items for guides:

Glacier accumulation

Climate change has such an impact on glaciers today that it could be considered unscientific to talk about glaciers without talking about climate change, and should not at all seem like a "duty" or just something to check in boxing. Guides are faced with a choice, if they want to continue working on guidance, it is necessary for everyone to do their part and encourage action. Glacier accumulation is obvious and marked to mention when standing on a good vantage point.

To tell a story

When guides can relate climate change to their own life story or event, the impact of the story multiplies. Linking a big and overwhelming problem to a person's life explains the problem to people. It is not possible to expect all guides to be able to tell a story, as not everyone who grows up close to glaciers can, but those who can tell a story could make good use of it.

Dissemination of climate change information for kids

When it comes to catastrophic warming, care must be taken, as the response can be daunting. It is common for young people today to suffer from climate anxiety, climate anxiety and our future.

Although some people are nervous about such events, it is still important to talk about them in an open environment where professionals are present. These are three things to keep in mind when talking about climate change for young people:

- 1. Solutions are discussed in parallel with the problem.** If the consequences of climate change are discussed as without solutions, a feeling of hopelessness can arise that encourages a person to give up. By discussing solutions in parallel, it is emphasized that we can deal with the problem
- 2. Positive to teach new skills.** When young people are taught e.g. ice climbing on the glacier or how to read glacier patterns make them grow and feel more comfortable on the glacier. Then the glacier is more homely, not as scary as a friend, someone to protect.
- 3. A relationship cultivated with nature.** To experience unspoiled nature is something that not everyone is allowed to do and can often be a particularly sacred experience. Giving time for silence, or reflection exercise, is positive, and allows people to dive deeper.

4. Time is placed in the context of human life. When giving examples of changes over a long period of time, it is difficult to imagine what they mean. By linking it to e.g. grandparents' lives can change the nature of nature better

Product development ScienceTourism

The following are some points that I think ScienceTourism products and tours may have in common.

- 1. Man is a part of nature.** Emphasis is placed on building a personal spiritual connection with nature by giving time for play, sound, reflection and reflection.
- 2. Good follow-up.** It would be possible to send to all participants by e-mail additional material about glaciers, the accumulation of glaciers, e.g. a discount on a documentary about the accumulation of glaciers or something like that. In this way, interested participants could connect more with the topic and quench their thirst for knowledge.
- 3. Given time to teach new things.** When people experience that they have learned new skills on the glacier, they become more empowered and feel more confident. Self-confidence creates action.
- 4. For the dissemination of scientific information** to be accurate and correct guides receive scientific training on the basics of ecosystems; glacier accumulation, climate change, etc. This could be done by holding a meeting one day a year where all guides are invited to learn about climate change and science.

Ideas regarding communicating climate change

Statement

One thing that came up again and again was what tour companies could do extra in the fight against climate change. What guides guides is that they know the area and the glaciers better than anyone and saw the scale and speed of change better than anyone else. The idea arose that glacier guides would jointly sign a declaration urging the government and the private sector to take drastic action. The statement could argue that it is not enough to protect Icelandic nature, because climate change does not respect the boundaries of national parks, but has an impact everywhere. If Iceland wants to continue to base its economy on tourism, it is necessary to take drastic measures, as the jobs of tourism operators could be at stake.

Agreement on 5 minutes

Another idea that came up is that all glacier tour companies decide to spend 5 minutes of each trip discussing climate change. Some guides mention that tourists express dissatisfaction when climate change is mentioned, because they are here to enjoy, not listen to a lecture. This could be tackled by agreement to discuss this issue, because then the guides can tell the tourist that this is part of the policy of the tour companies around Vatnajökull. Also, time must not only be used to explain climate change, but also ecosystems, earthquakes, the ice age and more.

The navigation sector as a whole

Looking at the sector, it is clear that the vast majority show a keen interest in nature conservation and in the fight against climate change, for which we can be grateful. Glacier guides care about nature, although minor details might be better. The tourism sector is relatively new in Iceland, and there is an opportunity to shape culture and traditions.

That is why I consider ScienceTourism to be an important part of building tourism as a long-term industry around Vatnajökull. Sometimes, however, one gets the feeling that the opportunist in Icelanders and business owners is sometimes allowed to dominate, and that profit is most important. That culture, however, is not final, because the sector is so young and an opportunity to change. All investors and world leaders agree that companies that do not take a clear stand against climate change will lose out, and it is important to emphasize this.

Suggestions for ScienceTourism

- 1. Promote education** in the guide community through conferences and workshops where guides are given the opportunity to learn about the science behind nature.
- 2. Publish a booklet** on climate change for guides and other material that guides can e.g. new in their jobs, sent out to customers after a trip.
- 3. Joint statement issued** giving guides the opportunity to sign an encouragement to the government to act on the impact we are seeing on our natural gems.