

Climate adaptation: How can leaders maintain and improve their trust while managing a creeping climate change crisis?

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The creeping climate crisis has become one of the most challenging to affect humanity as the associated impacts increase over time. This requires that people have to learn to adapt to climate change. It may be an asset for people to adapt if the leaders in charge are perceived as trustworthy. This qualitative study draws on five semi-structured interviews conducted in Longyearbyen-Svalbard to explore the research question: *How can local leaders maintain and improve their trust while managing the creeping climate crisis?* The study shows that people perceive local leaders in Longyearbyen (Sysselimesteren and lokalstyre) as trustworthy in managing the creeping climate crisis. The local leaders are using ways such as frequently sharing climate information, taking effective and efficient action, and involving diverse stakeholders to maintain and improve their trust among the population. However, the study shows that leaders may need to pay attention to some socio-political policies, such as Voting rights, as such policies may influence their trust negatively in the long run. Therefore, the study has suggested a perspective on how leaders may maintain and improve their trust while managing the creeping climate crisis.

Keywords: Climate adaptation, Climate change, Creeping crisis, Trust, Proactive trust, Adaptive trust, Reactive trust.

1. Introduction

Svalbard is a high-Arctic archipelago located midway between mainland Norway and the North Pole. The largest settlement in Svalbard is Longyearbyen -the administrative center. In recent years, Longyearbyen has become renowned as the town "on the front line of climate change" due to the rapid climate changes in the archipelago (Fraser, 2019; Meyer, 2022). In the last four to five decades, the air temperature in Svalbard has risen by 3 to 5 °C with regular rainfall patterns. Many avalanches have occurred in and around Longyearbyen due to the permafrost's significant warming (Hanssen-Bauer et al., 2019).

To understand how global warming would affect the future climate and physical nature in and around Svalbard, the Norwegian Environment Agency tasked the Norwegian Centre for Climate Services (NCCS) to provide basic information for use in climate change adaptation in Svalbard. Accordingly, the NCCS presented their latest report titled: *Climate in Svalbard 2100 – a knowledge base for climate adaptation*. The report presented changes towards the end of the century (2071–2100) compared to 1971–2000.

The main finding was that under a medium to a high scenario for future climate gas emissions, Svalbard's annual air temperature is projected to increase further by 7- 10°C, as the annual

precipitation will also increase. Among many other things, the snow season is projected to be shorter, and frequent rains could occur. Near-surface permafrost is projected to thaw in coastal and low-altitude areas for the high-emission scenario. There could be an increase in avalanches and landslide events. Moreover, there could be a loss in glacier mass and area which may change the landscape in Svalbard and contribute to sea-level rise (Hanssen-Bauer et al., 2019).

These changes would have a variety of impacts on both the population and ecosystems. This would require the population to learn to adapt to the rapid changes. For climate adaptation to be successful, there is a need for multi-level cooperation where national leaders recognize the important role of indigenous people, local leaders, and civil society in addressing and responding to climate-induced events (UNFCCC, 2021). Cooperation is necessary since local communities and indigenous people have a vital role and responsibility concerning the stewardship and protection of their livelihood and living in harmony with nature.

In Svalbard, the Governor (Sysselimesteren) and Local government (lokalstyre) are crucial local leaders in climate adaptation. These local leaders play vital roles in preparing, preventing, and responding to climate-induced events. To succeed

in these activities, the local leaders have to involve other local actors. However, climate leaders involving local actors alone may not be sufficient to create meaning and gain the required attention to climate-induced events. Leaders must also be seen as trustworthy communicators who engage, collaborate, and coordinate with local actors (Boin et al., 2005). Accordingly, this study explores ways local leaders in Longyearbyen could maintain and improve their trust among crisis actors. The study aims to answer the research question: *How can local leaders maintain and improve their trust while managing the creeping climate crisis?*

Next, the theoretical framework will be presented before the method section and the results. After this, the discussions and conclusion section will follow accordingly.

2. Theory

2.1 Creeping crisis

Boin, Ekengren, and Rhinard (2020) opined that a creeping crisis has a slow onset and usually fades away rather than being resolved. Such crises have a gradual emergence and development of a threat to society's core values. Therefore, it requires shared attention to initiate and sustain corrective actions against the threats. At the same time, creeping crises are characterized by a high level of uncertainty about the actual status of the threat, as well as variations in the level of concern expressed by different stakeholders. This makes it hard enough for crisis leaders to manage creeping crises (Boin, Ekengren, & Rhinard, 2020). Sometimes, it is often unclear to leaders that there is a crisis (Sætren et al., 2023). So, leaders may need to actually define that there is one.

Given the fluidity of creeping crises, it is crucial to think about how crisis actors can garner the attention these crises require. Stakeholder collaboration and coordination before, during, and after a crisis is one way to do this. Such coordination may require the adjustment of actions and decisions among interdependent actors to accomplish a particular goal (Koop & Lodge, 2014). Among many factors, trust among actors involved in a coordination process is vital.

2.2 Trust concept

Van Lange (2015) has argued that trust is not an easy concept to understand. Trust is frequently

referred to as a "social glue" in relationships, groups, and societies because it binds people together and encourages ideas, motivations, and actions that advance common goals. Trust can take many different forms. For instance, Uslaner (1999) asserted that trust could be divided into three categories: particularized, generalized, and institutionalized trust.

A particularized trust is built on a shared identity or familiarity developed through close friendships or family ties, as these connections provide solid incentives for cooperative behavior (Györfy, 2018). A particularized trust is based on the notion that group members cooperate according to the same rules. Over time, people who only trust members of their own group may develop category-based trust, which is frequently built on stereotypes ("us" and "them"). This mindset has the potential to turn into immoral familism, particularly when the greater good of society is neglected in favor of the small group (Larson, 2004). Uslaner (2002) argues that a particularized trust could transform into a strategic trust, in which individuals will only cooperate with those they know in order to further their own interests.

On the other hand, generalized trust is when someone has faith in someone outside of their social circle. Because it is frequently based on the notion that trust has a moral component and that one must treat others as if they are trustworthy, generalized trust is frequently interpreted as a moralistic trust (Uslaner, 2002). Usually, everyone believes that all share the same fundamental values and expect others to act honorably. So, trust becomes something that everyone demands. Uslaner (2002) contends that generalized trust differs from particularized trust in that it is fundamentally supported by a sense of optimism and control. Usually, optimistic people do not worry about being taken advantage of by strangers (Seligman, 2000). They have a cheerful outlook, motivating them to keep believing in others. Because the next interaction is likely to be much more amicable, disappointing experiences are regarded as temporary.

Institutionalized trust is centered on people's trust in formal institutions such as parliaments, governments, and courts that are in charge of creating, implementing, and upholding laws (Györfy, 2018). Institutions may directly impact

generalized trust, but they may also have a significant indirect impact. For instance, when an organization like the police or the court encourages inequalities among citizens, generalized trust will decrease. Excessive inequality may cause society to become more divided, which may reduce the attention given to shared values (Uslaner, 2002). And yet having effective policies for reducing inequality also requires having trust in institutions.

2.3 Trust during crisis management

For coordination to be successful during a crisis, trust is essential (Györfly, 2018; Boin et al., 2005). Building trust, however, requires time and relies on various factors, such as keeping promises, being open and transparent, and demonstrating a genuine desire to ensure the citizens have a high quality of life (Slovic, 1993; Seligman, 2000).

Györfly (2018) has argued that leaders' incapacity to deal with crises could result in punitive conditionality, opposition from crisis stakeholders, and a lack of trust from crisis actors. At the same time, the capacity of leaders to handle a crisis may increase in a society where there is a general increase in trust and where people have more faith in leaders' ability to handle crises (Christensen et al., 2016). So, a crisis could be a test of a leader's trust. People may have fewer worries when they have confidence in the institutions or leaders that are tasked with keeping them safe. However, trust is brittle; it develops gradually and is easily destroyed by a small error. Once trust has been lost, it might take some time to attain it back. Sometimes, a lost trust may never be regained (Slovic, 1993).

The various crisis management phases (pre-crisis, acute, and post-crisis) might also call for various levels of trust. According to Györfly (2018), during the pre-crisis stage, personalized trust is essential among key actors. And in the acute crisis phase, institutionalized and generalized trust becomes crucial. And in the long-term prospects, institutionalized and generalized trust plays a significant role in building back better. Generalized trust is a strong asset as it may influence personalized and institutionalized trust. Usually, generalized trust between the government and the populace at the pre-crisis stage puts much faith and confidence in a message sent during the acute crisis phase.

Thus, when people have faith in the government agencies tasked with keeping them informed and safeguarding them, their skepticism decreases (Ropeik, 2002). Therefore, the fewer people trust those informing them, those protecting them, or the method used to determine how exposed they are to a crisis, the more skeptical they become. As a result, a crisis might receive less attention and less subsequent action if there is a lack of trust.

3. Method

This study draws on a qualitative approach to collect data with semi-structured interviews (Kvale, 1997) conducted with residents exposed to climate change and adapting to such changes in Longyearbyen-Svalbard. This is part of a Ph.D. project concerning climate adaptation in local Arctic communities. This study is the first initiative to explore ways local Arctic leaders can maintain and improve their trust while managing the creeping climate crisis. The method was chosen to explore a theme with a gap in the research field.

3.1 Participants

Five semi-structured qualitative interviews were conducted with residents in Longyearbyen (LYR). The main criteria for selecting the informants were that they have lived in Longyearbyen continuously for at least one year (see Table 1) and are familiar with local climate adaptation measures implemented by local leaders (*Sysselmesteren* and *lokalstyre*). Additionally, none of the chosen informants were leaders in their own right and had no affiliation with the local leaders (*Sysselmesteren* and *lokalstyre*).

Table 1. Details about Informants

Code	Years in LYR	Nationality
INF 1	20	Norwegian
INF 2	5	Non-Norwegian
INF 3	5	Norwegian
INF 4	2	Non-Norwegian
INF 5	3	Norwegian

A snowballing approach (Noy, 2008) was used to select the informants. Even though the number of participants is quite a few, the number of residents staying in Longyearbyen for more than a year is small as not so many people would move and stay in Longyearbyen for a long period (Meyer, 2022)

to appreciate the climate adaptation measures implemented in the Norwegian archipelago. Therefore, the number of informants would represent the group of residents who have lived continuously in Longyearbyen for a year and experienced climate adaptation measures all year round.

3.2 Interviews

The interviews were conducted in Longyearbyen, recorded, and transcribed. On average, each interview lasted for approximately forty-five minutes. An interview guide was developed based on the study of literature. The interview guide was divided into three main themes: 1) The first theme was about the perceived trust of local leaders to manage the climate crisis. An example question here was, "Could you describe how you perceive leaders to manage the climate crisis?" 2) The second theme was identifying trust-building factors. Example questions here were about how local leaders involve other stakeholders, communicate, and so forth. 3) And the last theme was about the challenges and ways to improve trust. Here, questions regarding local leaders' actions and policies that could result in distrust were discussed.

3.3 Analysis

A thematic analysis (TA) was used to analyze the data. A TA is a flexible method of data analysis used in finding, analyzing, and reporting patterns in data (Braun & Clarke, 2022). The transcribed interview content was organized and systematized using the NVivo software (Release 1.7.1). During the coding process, general codes were labeled to reflect the general themes in the interview guide. Later, more specific codes were generated from the initial general codes due to new understandings gained while reading through the labeled texts in the transcribed data. The continuous review during the data analysis ensured the validity of the findings and interpretations (Silverman, 2017).

4. Results

The main findings from the qualitative semi-structured interviews were grouped into perceived trust among actors, perceived trust-building factors, and perceived challenges that could influence the local leaders' (*Sysselmasteren* and *lokalstyre*) trust (see Table 2).

Table 2. Findings on perceived trust, trust-building factors, and challenges in managing the creeping climate crisis in Longyearbyen.

Perceived trust	1.	High trust among each other
Perceived trust-building factors	1.	Communication of regular and timely climate information influence trust positively
	2.	Effective and efficient actions influence trust positively
	3.	Multi-stakeholder involvement and engagement influence trust positively
Perceived trust-building challenges	1.	Uncertainty and unclear communication of climate adaptation measures could challenge the perceived trust building
	2.	Perceived "hostile" policies could challenge trust building

4.1 Perceived trust in Longyearbyen

4.1.1. High trust among each other. It was emphasized by all the informants that there is a high trust for each other in Longyearbyen. Every person is trusted to do the right things that will have less negative climate footprint on the environment. It was explained that residents in Longyearbyen are aware of the impacts associated with climate change and the need to act appropriately. An informant expressed that "*trust is very important here, and trust does not only mean trusting your local management authorities. It means to trust in your neighbors as well*" (INF1). However, the informants expressed that it is not easy to trust always, especially when you do not know your neighbors very well. Often, people go to Longyearbyen to see the beautiful nature (in the case of tourists), work for a short time, and go back to the mainland. Only a few stay in Longyearbyen for a long time. This makes it hard to trust new neighbors.

4.2 Perceived trust-building factors

4.2.1. Communication of regular and timely climate information influence trust positively.

The informants indicated that they are aware of the rapid changes in weather patterns, which increases the chances of climate-induced events such as avalanches. They explained that they feel

much more responsible for taking action. Taking the necessary measures to save themselves means that they must trust the information that local leaders share with them. And informant echoed, *"I'm the kind of resident that very trust them. I trust the people that are kind of telling me because I don't have another solution"* (INF 3). The informants indicated that local leaders shared climate-related information through town hall meetings, Facebook, the Svalbard governor (Sysseimesteren) and local government (lokalstyre) website pages, and the local newspaper (Svalbard Posten).

4.2.2. Effective and efficient actions influence trust positively. The informants indicated that they have high trust in local leaders to provide them with the required support timely when needed. One informant elaborated on how efficient the search and rescue team is in Svalbard: *"We have an effective and efficient search and rescue team here. We can rely on them. They have a very good response time"* (INF2). The informants perceive the actions of local leaders as being reliable and dependable. This has resulted in high trust in them.

4.2.3. Multi-stakeholder involvement and engagement influence trust positively. It was emphasized that local leaders involve other stakeholders in planning and implementing climate actions. Diverse stakeholders, such as experts and actors from the industry, are usually engaged on a subject matter to find the appropriate solutions. A resource group is usually put together to deliberate further to address conflicting interests. For instance, to provide safety for tour guides and tourists in Longyearbyen, a resource group is put together, which includes experts from UNIS (University Center in Svalbard) and other stakeholders from different tourist companies. The aim is to have a roadmap for a form of regulation and certification for tour guiding. An informant indicated that *"this is actually good because the leaders are very much taking the side of the guide. That's more that the guide is going to act in a safe way, that they are not going to be in situations that they can't handle or in the worst case loss a life"* (INF5). The informants also emphasized how important local leaders engage and coordinate with other

local groups such as the Red Cross, the church, and other voluntary people to rescue and support people during accidents.

4.3 Perceived trust-building challenges

4.3.1. Uncertainty and unclear communication of climate adaptation measures could challenge the perceived trust building. The informants indicated that most of the means of communication are in Norwegian, making it challenging for non-Norwegian speakers to understand. Some informants also expressed a sense of uncertainty about the clarity of what is being communicated to them by local leaders. An informant expressed that in some cases, communication of the climate adaptation measures reckons *"this battle between what is a political decision and what is the actual hazard being communicated. This clearly impacts communication in a way that's very unnatural. And people see it. People see that this is just a political play"* (INF5). Such uncertainty and lack of clarity could make it challenging to maintain trust.

4.3.2. Perceived "hostile" policies could challenge trust building. The informants expressed that the high trust in local leaders is put to the test now with the implementation of some policies, such as the Voting rights policy, that could potentially divide the population. An informant elaborated that such a policy is a *"hostile policy and makes no sense because they are creating opposition and creating turmoil. The way you want to do it in a democratic society is appeasement, always appeasement. Don't let people feel like they are not wanted here"* (INF5). The informants (INF1-5) indicated that such policies (like the Voting rights policy) could deny some residents their voice to participate actively in climate-related discussions in the future. Such a division could create distrust in leaders as some residents may feel their opinions are not welcomed.

5. Discussions

This paper aimed to explore ways local leaders in Longyearbyen (Sysseimesteren and lokalstyre) could maintain and improve their trust among crisis actors. The research question was: *How can*

local leaders maintain and improve their trust while managing the creeping climate crisis?

The results from the empirical data collection showed local leaders are perceived to be very trustworthy. The perceived trust-building/maintaining factors were their ability to 1) regularly and timely communicate climate information, 2) effectively and efficiently take actions, and 3) involve and engage multiple stakeholders to plan and implement adaptation measures. However, the study finds that 1) uncertainty and unclear communication of climate measures and 2) the implementation of perceived "hostile" policies could challenge how local leaders maintain their trust.

5.1 Trust: a tool to bewitch crisis actors

The 2015 and 2017 avalanches in Longyearbyen may have increased the need for rapid climate adaptation actions. The impacts of these avalanches on people were obvious and may have created a general climate crisis awareness among the population. This may have contributed to their willingness to give much attention and adapt to the changing climate, as the population can sense a high degree of disruption in their daily activities (Rosenthal et al., 1989). Although the informants are willing to adapt, it is crucial for them to have relevant adaptation knowledge (Sætren et al., 2023). The findings indicate that it is an asset when people perceive climate leaders as trustworthy communicators. The findings (see 4.1) show a high generalized trust among the population in Longyearbyen. Such generalized trust is helpful as it could positively influence how people welcome climate communication and accept local leaders' proposed climate adaptation measures. As people trust each other to do what is right, it is less likely that what is communicated could be doubted (Slovic, 1993; Christensen et al., 2016). Such a generalized trust could result in high institutional trust, especially as the people in charge of the institutions are highly trusted (Györfy, 2018; Uslaner, 2002). The findings also illustrate that local leaders being perceived as trustworthy communicators is an asset in gaining people's attention to manage the creeping climate crisis. Moreover, the findings indicate that there is a significant turnover among residents and, also in leaders (see 4.1). This suggests that there could be

some impact on how trust is retained over generations of leaders coming to Svalbard.

5.2 Improving a fragile trust whiles managing a creeping crisis

Although local leaders are perceived as trustworthy (see 4.1 and 4.2), the findings (see 4.3) also show that there is a need for improvement. As the informants indicated, the implementation of "hostile policies" could create a window for division and distrust. This shows that trust is fragile and created over time (Slovic, 1993; Ropeik, 2002). This presupposes local leaders may have to consider improving their trust at every level of the crisis development phases (pre-crisis, acute, and post-crisis). Thus, leaders' attitudes toward a community before, during, and after a crisis can increase or decrease the level of trust people would have in them (Ullman-Margalit, 2004; Györfy, 2018). Accordingly, diverse proactive, adaptive, and reactive crisis management activities could help local leaders build and improve their trust in multiple ways. We could have:

- (i) Proactive trust: A kind of trust gained through proactive measures taken in the pre-crisis phase
- (ii) Adaptive trust: A kind of trust gained as a result of swift adaptive measures implemented during the acute crisis phase
- (iii) Reactive trust: A kind of trust gained as a result of successfully returning daily operations to normal or new normal state

I express that these three kinds of trust can be associated with the three crisis management phases (see Figure 1).

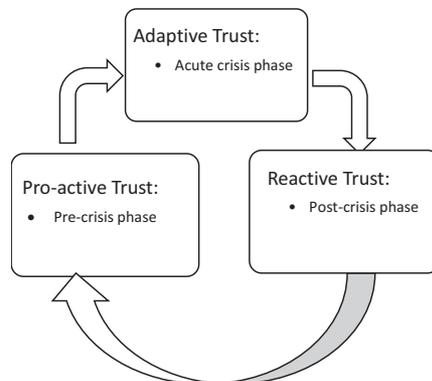


Fig. 1. Trust building in crisis management phases

Proactive trust is the type of trust gained through the proactive attitude of crisis managers. Some proactive attitudes (such as outlining the potential crisis plans, sharing information with actors, involving actors, and respecting socio-cultural norms and values) may help build trust. Thus, local leaders forming a diverse resource group to regulate tour guides (see 4.2.3) is a way to build and improve their proactive trust. Thus, proactive trust is built at the pre-crisis stage, where leaders focus on preventive measures and preparedness plans.

Adaptive trust is the type of trust gained during the acute crisis stage. The attitudes of leaders during the acute crisis (such as being open and transparent in their activities, providing unambiguous, timely, consistent, and accurate information, involving many stakeholders as possible, resolving and managing trade-offs of interests among stakeholders, allocating resources, and making decisions) could help improve their trust. Thus, leaders searching for and rescuing people on time (see 4.2.2) is a good way to build and improve their adaptive trust.

Reactive trust is gained during the post-crisis phase. The attitudes of crisis managers during the recovery and learning activities could increase or decrease the trust that the crisis actors impose on them. Diverse stakeholders need to be involved in recovery activities. Also, being open and transparent with learning activities may increase reactive trust among the crisis actors.

Time is crucial in crisis management (Boin, Ekengren, & Rhinard, 2020). The time factor, attitude, and way crisis leaders communicate could influence the trust gained. Thus, trust is not static (Slovic, 1993). A proactive trust built at the pre-crisis stage could easily fade away if the leaders do not continuously communicate and engage other stakeholders. A proactive trust at this stage could be created through appeasement (see 4.3.2). A proactive trust may be very helpful in the initial stages of an acute crisis. However, a proactive trust may fade away as the crisis unfolds. Crisis leaders need to be perceived as being effective and efficient to gain adaptive trust (see 4.2.2). Leaders could build an adaptive trust to consolidate their proactive distrust. However, some residual proactive distrust may linger on even during high levels of adaptive trust. A minor misalignment may set off such proactive mistrust during the acute

crisis phase (Slovic, 1993). A reactive trust may stay longer as it influences proactive trust for the next crisis. A high level of reactive trust makes it easy to gain crisis actors' attention to a new risk. The impact of such reactive trust could be transferred and reformed as proactive trust (trust gained at first sight). Sometimes, even if the next possible crisis has nothing in common with the old crisis, stakeholders may still feel comfortable imposing their reactive trust in the crisis leader. And in a case where there is reactive distrust, stakeholders may question every word and action of the crisis leader. As the findings (see 4.3.2) indicated, a "hostile voting policy" which may have no connection with climate adaptation could create an "us" and "them" society (Larson, 2004) and result in distrust for leaders- even when local leaders have little influence on such a national policy. In the long run, this distrust could also impact people's attention to climate adaptation measures.

5.3 Implications

It seems local leaders are much more trusted to manage the creeping climate crisis in Longyearbyen. However, implications from this study could be for leaders to maintain and improve their trust; they may have to consider trust-building/improving factors as a strategy immersed in their daily activities of the crisis management processes.

5.4. Further research

From this preliminary study which is part of a larger research project on climate adaptation, I recommend more empirical studies on how leaders can integrate trust-building/improving factors at various crisis management phases to obtain continuous stakeholder attention for climate adaptation measures. Also, I recommend further study on how trust is retained over generations of leaders in a society with significant leadership turnover.

6. Conclusion

The informants perceived local leaders in Longyearbyen as trustworthy, which is a great asset in managing the creeping climate crisis. Some elements such as frequent sharing of climate information, taking effective and efficient action, and involving diverse stakeholders are

some positive ways local leaders in Longyearbyen are using to maintain and improve their trust among the population. Moreover, the study finds that the leaders may have to pay attention to socio-political measures taken, which could influence their trust negatively. Therefore, the study has suggested a perspective on how leaders could maintain and improve their trust while managing the creeping climate crisis.

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