

Climate Adaption In The Arctic: Experiences From Longyearbyen

Stina M. H. Andreassen^a, Bjørn Ivar Kruke^b

^a*NTNU Social Research, Trondheim, Norway*

^b*University of Stavanger, Stavanger, Norway*

Keywords: climate change, arctic, adaption, emergency preparedness, societal safety

Climate change is changing the narrative, and a wetter, warmer and wilder climate is to be expected in the future. While a drastic reduction in greenhouse gas emissions could reduce the change, the climate will inevitably change, and this will lead to the need of climate adaption to uphold societal safety and the ability for sufficient emergency preparedness (Bilt et al., 2019; NOU 2010: 10; Vindegg et al., 2022). Longyearbyen is the administrative centre of the Svalbard archipelago. Longyearbyen is experiencing a temperature increase more rapidly than other regions in the world (Rantanen et.al, 2022). This is a challenge the local authorities in Longyearbyen deal with daily, and thus are experienced in practical climate change adaption, meaning preparing the society to be able to withstand the emerging risks due to climate change.

This paper undertakes to discuss climate change adaptation at municipality level in the Arctic, with particular focus on experiences gained in Longyearbyen on adaptation to climate risk. Empirical data is collected through interviews with representatives of local authorities and other local actors in Longyearbyen and document studies on climate change in the region and on directives on climate change adaptation.

Findings indicate that there is a dissonance between short-term preparedness for natural hazards and the long-term timeline for climate change and the resulting change in climate risk. This incompatibility could be attributed to uncertainty and a lack of guidelines on how to handle this uncertainty in emergency preparedness and climate adaptation work within local authorities. Further, the existing structures for municipal emergency preparedness and planning processes do not adequately consider climate change and the associated risks, and findings suggests that time, significant capacity and a coordinated and targeted effort involving multiple government sector, is needed to be able to remove the uncertainty that stifles effective climate adaption.

Acknowledgements

The paper presents results of work for the project “Risk governance of climate-related systemic risk in the Arctic” - ARCT-RISK.

References

- Bilt, W.V.D., Bakke, J.B., Smedsrud, L.H., Sund, M., Schuler, T.V., Westermann, S., Wong, W.K., Sandven, S., Simpson, M.J.R., Skogen, M.D., Pavlova, O., Ravndal, O., Risebrobakken, B., Saloranta, T.M., Mezghani, A., Nilsen, F., Nilsen, J.E.O., Nilsen, I.B., Kierulf, H., Kohler, J., Li, H., Lutz, J., Melvold, K., Gjeltten, H.M., Gundersen, J., Isaksen, K., Jaedicke, C., Dobler, A., Engeset, R., Frauenfelder, K.R., Gerland, S., Christiansen, H.H., Børsheim, K.Y., Breivik, Ø., Breili, K., Borstad, C.P., Bogen, J., Benestad, R., Beldring, S., Andresen, J., Adakudlu, M., Førland, E., Hisdal, H., Mayer, S., Hanssen-Bauer, I., Sandø, A.B., Sorteberg, A. 2019. Climate in Svalbard 2100. Norsk Klimaservicesenter, 105 p. Norwegian Centre for Climate Services Reports (1/2019).

NOU 2010: 10 (2010), Adapting to a changing climate - Norway's vulnerability and the need to adapt to the impacts of climate change.

Rantanen, M., Karpechko, A. Y., Lipponen, A., Nordling, K., Hyvarinen, O., Ruosteenoja, K., Vihma, T. og Laaksonen, A. 2022, The Arctic has warmed nearly four times faster than the globe since 1979, *Communications Earth & Environ* 3(1), 1–10.

Vindegg, M., Christensen, I., Aall, C., Arnslett, A., Tønnesen, A., Klementsens, M. og Selseng, T. 2022, Barrierer for klimatilpasning på lokalt og regionalt nivå, Technical report, CICERO, Oslo.