

## Promises and perils of sand exploitation in Greenland

Ice flow dynamics of the Greenland ice sheet control the production of sediment. Future acceleration in glacial flow and ice sheet melt will amplify Greenland's supply of sediment to the coastal zone. Globally, sand and gravel reserves are rapidly depleting while the demand is increasing, largely due to urban expansion, infrastructural improvements and the enhancement of coastal protection in response to climate change. Here, we show that an abundance of sand and gravel provides an opportunity for Greenland to become a global exporter of aggregates and relieve the increasing global demand. The changing Arctic conditions help pave a sustainable way for the country towards economic independence. This way, Greenland could benefit from the challenges brought by climate change. Such exploitation of sand requires careful assessment of the environmental impact and must be implemented in collaboration with the Greenlandic society.

**Forfatter:** Mette Bendixen ; Irina Overeem ; Minik Rosing ; Anders Anker Bjørk ; Kurt H. Kjær ; Aart Kroon ; Gavin Zeitz ; Lars Lønsmann Iversen    **Type:** Article | Artikel    **Årstal:** 2019    **Emner:** Sand exploitation; Greenland    **Titel på tidsskrift:** Nature    **Volume på tidsskrift:** 2    **Udgiver:** Nature

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