

INTERNATIONAL CENTER FOR SETTLEMENT OF INVESTMENT DISPUTES  
ICSID CASE NO. ARB/20/11

PETERIS PILDEGOVICS AND SIA NORTH STAR  
Claimants

v.

KINGDOM OF NORWAY  
Respondent

ADDENDUM TO EXPERT REPORT OF DR. BROOKS KAISER

28 FEBRUARY 2022

## Introduction

My name is Brooks Kaiser, I provided an expert report in this proceeding, dated 11 March 2021.

I provide this addendum to my expert report, answering specific questions posed to me by Savoie Laporte, counsel to the Claimants.

I understand that I am under a continuing duty to assist the Tribunal in this matter in an independent and impartial manner, and confirm that I will do so to the best of my professional judgment and ability.

## List of Acronyms

ICES	International Council for the Exploration of the Sea
IMR	Institute of Marine Research
NEAFC	North East Atlantic Fisheries Commission
NEZ	Norwegian Economic Zone
PINRO	Polar branch of the Russian Federal Research Institute of Fisheries and Oceanography
REZ	Russian Economic Zone
RKC	Red King Crab
SFPZ	Svalbard Fisheries Protection Zone

## Questions Answered in this Report:

1. In your view, has Norway appropriately taken into consideration the fact the snow crab is a non-native invasive species in its management of the snow crab fisheries in the Barents Sea and other relevant principles that should guide the management of a resource like the snow crab in the Barents Sea?
2. From your perspective, and as a member of the scientific community who has taken an interest in the management of the snow crab fisheries in the Barents Sea for a number of years, did Norway change its position on how it regulates the snow crab and whether it considers it a sedentary or non-sedentary species and if so when? Please describe the scientific community's reaction to any such change.

Please find my answers below:

## 1. QUESTION 1:

*In your view, has Norway appropriately taken into consideration the fact the snow crab is a non-native invasive species in its management of the snow crab fisheries in the Barents Sea and other relevant principles that should guide the management of a resource like the snow crab in the Barents Sea?*

1. In my view, Norway has not appropriately taken into consideration the fact that the snow crab is a non-native invasive species in its management of the snow crab fisheries in the Barents Sea. The “precautionary approach” referred to<sup>1</sup> in the management of the species is not an ecological precautionary approach but an economic one, aimed at protecting the long run viability of a profitable fishery. This is confirmed by their own “Strategy for further development of snow crab management” (**C-0209**) which calls for sustainable fishery development. An ecologically precautionary approach would implement rules and policies aimed at preserving the existing benthic habitat and promoting harvest as a control, while the economically precautionary approach would implement rules and policies aimed at growing the stock of Snow Crab by limiting harvest.

2. The actions taken by Norway that cause me to be of the opinion that the approach is contrary to clear mandates to manage for both ecological and economic concerns, include:

- a. Allowing the Snow Crab to grow unchecked from its original identification in the Barents Sea in 1996, while tracking its progress in annual surveys;
- b. Deciding that the unlikelihood of being able to eradicate the species meant that the next best alternative was a sustainable fishery, as argued in *the* 2 July 2014 memo to Minister Elisabeth Aspaker on “Management of snow crab” (**R-108-ENG**);
- c. Prohibiting catch of the Snow Crab without a Norwegian license, available only to Norwegian vessels;
- d. Stopping the development of international regulation of the fishery initiated in the International Loophole under NEAFC in order to reduce fishing pressure;
- e. Stopping this fishing expressly against the recommendations of the Ministry of Climate and Environment to allow all snow crab equipment fishing Snow Crab to receive dispensations to fish, and to allow high quotas (**C-0248**).

---

<sup>1</sup> At paragraphs 587-588 of its Counter-Memorial of 29 October 2021, Norway refers to the “precautionary approach” in the following manner: “In its approach to regulating snow crab harvesting on its continental shelf, Norway has been guided by this internationally recognized approach to precaution where new harvesting opportunities emerge.”

- f. Limiting access to the Svalbard Fisheries Protection Zone (SFPZ) and preventing fishing where the crabs were most expected to expand, and intensifying these limitations as it became more clear that the SFPZ would be the main source of Norwegian crab once Russia limited Norwegian access to the Russian continental shelf (this is visible in the expected spread of the Snow Crab shown in **Figure 1**);
- g. Waging long term fights against the EU for the right to continue to limit access to the SFPZ;
- h. Choosing conservative quotas (~85% of the recommendation from the Institute for Marine Research (IMR)) from the first year of quotas forward until 2021; this is opposite to the behavior taken with respect to the Red King Crab. The choice of quota for the Red King Crab has been at or above 100% of the IMR advice level for all but 3 of the 13 years between 2009 and 2021, averaging 121% over the advice level (**Annex 5 to my Expert Report**);
- i. Failing to adopt an open-access harvest strategy for the invasion front; this is opposite to the behavior taken with respect to the Red King Crab. To stop the spread of the Red King Crab, an open access fishery was designated for anywhere outside of the area marked by the 26° E and 70°30' N lines in 2007;
- j. Consistent messaging regarding the economic potential of the Snow Crab Fishery from 2013 forwards, exemplified in news articles by IMR scientists Hvingel and Sundet in 2014 discussing the snow crab as a “valuable new fishery resource in the Barents Sea” (**BK-11**); and
- k. The following conclusion found in the Ministry of Fisheries’ “Strategy for further development of snow crab management” dated 19 September 2016 (**C-0209**) to the effect that Norway’s management objective of the Snow Crab is the following: “Snow crabs are managed with the aim of achieving the highest possible long-term, sustainable financial return. A revision of the management goal may be relevant if significant negative ecological consequences of the stock are identified.”

**3.** In short, the failures to take actions that would stem the spread of the invasive crab, and to cease or limit harvesting actions that were potentially stemming its spread already, were taken in spite of the joint mandate to manage for anticipated ecological effects as defined by the Fisheries Directorate (as indicated at the start of each year’s snow crab management plan), scientific advice that these effects would have ‘a severe impact of the snow crab on the arctic benthic ecosystem in [the Barents Sea] region” (Sundet and

Bakanev, 2014, **BK-0056**), and evidence and experience from the Red King Crab fishery that an open access fishery zone could reduce the spread of negative benthic impacts in the Barents Sea all demonstrate that hopes for profits, not ecological precaution, has guided snow crab management decisions.

## 2. Question 2:

*From your perspective, and as a member of the scientific community who has taken an interest in the management of the snow crab fisheries in the Barents Sea for a number of years, did Norway change its position on how it regulates the snow crab and whether it considers it a sedentary or non-sedentary species and if so when? Please describe the scientific community's reaction to any such change.*

4. From my perspective as a member of the scientific community interested in the management of the snow crab fisheries in the Barents Sea since 2013, Norway indeed changed their position.<sup>2</sup>

5. When crab fishing first began in the loophole in 2012, questions regarding how the Norwegians might manage the species started to come up in the scientific community, particularly those of us already studying the invasive Red King Crab's management and spread. Slides like the below were presented at international workshops, showing that how management might evolve was uncertain and that both the international waters of the Loophole and the SFPZ were part of the management challenge.

6. In a successful grant application to the Belmont Foundation on "Bioeconomic Analysis for Marine Resource Governance and Policy" put together in July, 2014 (Project Description, **BK-0057**), Jan Sundet participated as a co-principal investigator. His role in the work was focused on the crab invasions and management in the Barents Sea as case studies. In putting together the grant, Mr. Sundet expressed the following points he believed were the keys to coming Snow Crab management:

- The Snow Crab is a more "arctic" species than the Red King Crab, and it will probably also spread to a much wider area than the RKC, covering most of the east- and northern Barents Sea including Svalbard and Franz Josef Land. In sum, this entails a serious concern for the arctic benthic fauna and the ecosystem deliveries in these areas.

---

<sup>2</sup> The following statement is made by Norway in its Counter-Memorial at paragraph 753: "Norway has since the 1950s always considered snow crab to be sedentary. The Claimants' argument on the so-called 'Malta Declaration', i.e. the Agreed Minutes, is predicated upon the premise that Norway changed its position. That is wrong."

- In a few years the Snow Crab most likely will inhabit four different management zones in the arctic part of the Barents Sea; Russian Economic Zone (REZ), International waters (“The Loop hole”), Norwegian Economical Zone (NEZ) and the Fishery protection zone off Svalbard (FPZ).
- All management issues regarding questions of fisheries and marine biology management/research between Norway and Russia in the Barents Sea are regulated by the Joint Russian-Norwegian Fishery Commission, which will discuss the Snow Crab during the annual meeting in October 2014.
- The Snow Crab expansion is still a new situation and will be treated officially for the first time at the Commission meeting in October 2014.

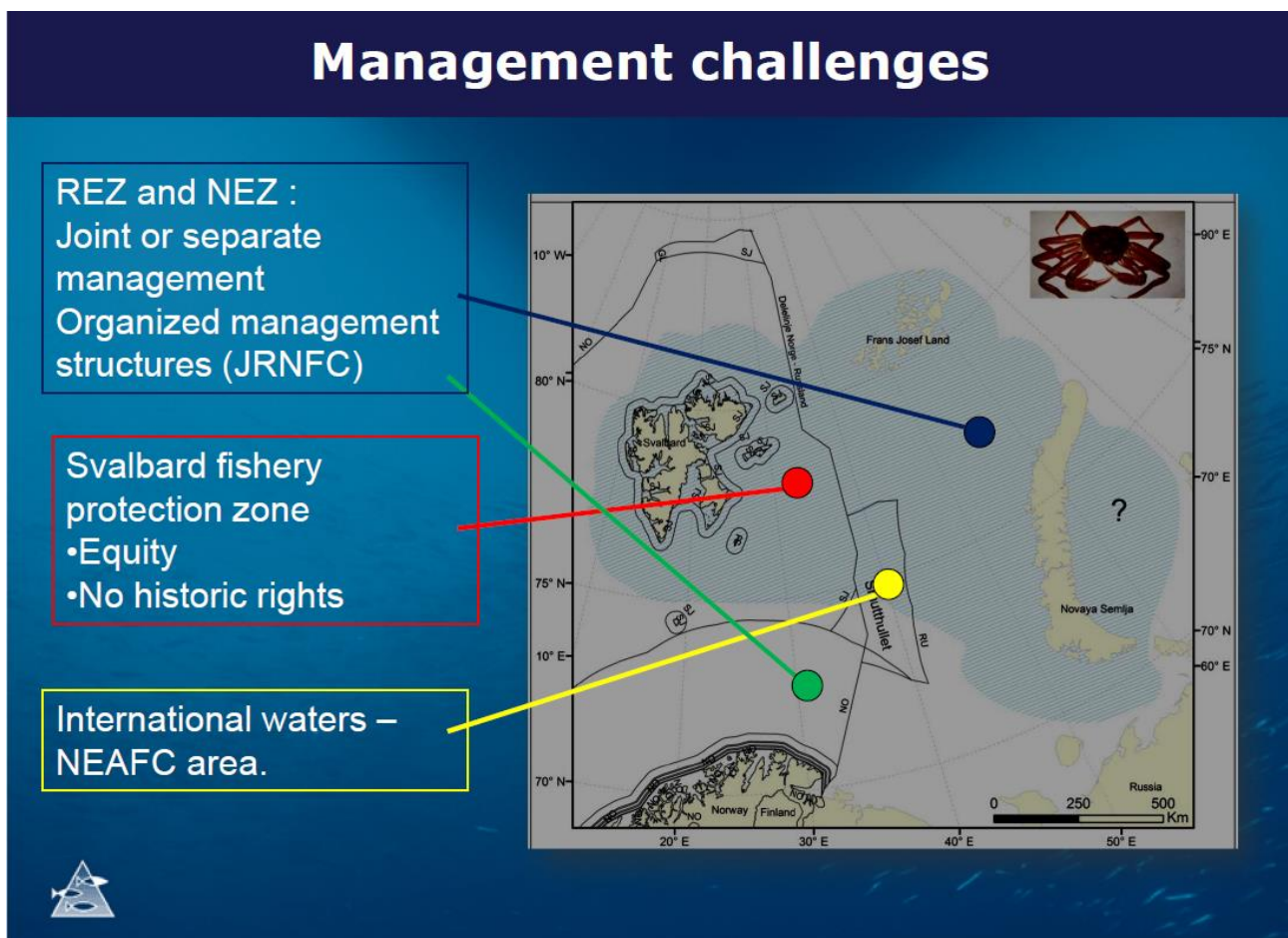


Figure 1: Slide from Presentation “Future challenges in research and management of the invasive snow crab (*Chionoecetes opilio*) in the Arctic Barents Sea” by Jan Sundet, Institute for Marine Research at the international workshop, “Spatial Issues in Arctic Resource Management”, Stockholm, SE, Sept 4-6, 2014 (**BK-0058**).

7. No mention of the Snow Crab as a sedentary species, or of the possibility that the species' management might be tied to the continental shelf, was made in preparing this July 2014 grant proposal, or at the September 2014 workshop, nor any previous conversation, workshop, peer-reviewed or editorial comment by the Institute for Marine Research of which I am aware. I had repeated interactions with Jan Sundet and IMR from 2012 forward, including at several workshops where he spoke directly on snow crab as an invasive species in need of management and as editor of a chapter he wrote for the book, "Marine Invasive Species in the Arctic" (**BK-0059**). In May 2015, I prepared an abstract for the 2015 ICES Annual Science Conference titled "Facing the challenge of Arctic fisheries management within a context of spatially differentiated ecological-economic externalities," with Mr. Sundet as a co-author (**BK-0060**). Mr. Sundet's comments to the abstract draft focus on the question of how the Snow Crab had arrived in the Barents, with no mention of a sedentary species designation or how that might affect management.

8. In conference proceedings at ICES from October 16, 2014, Jan Sundet and Sergey Bakanev (PINRO marine biologist expert on crab species in the Barents) contributed a joint write-up of the Snow Crab as a "new invasive crab species becoming an important player in the Barents Sea ecosystem" for the International Council for Exploration of the Sea (ICES) that also does not mention sedentary species or the continental shelf (**BK-0056**). Rather it discusses the invasion as progressing in "The Russian Economic Zone and the international waters of the Barents Sea, [as well as] in the Norwegian Economic Zone and in the Svalbard area." In 2016, Mr. Sundet and his colleague Alf Håkon Hoel contributed a chapter to a special issue of Marine Policy (**BK-0061**) reflecting a presentation they made at an October 2015 Arctic Marine Resource Governance conference in Reykjavik. The paper was entitled "The Norwegian management of an introduced species: the Arctic red king crab fishery" and also discussed Snow Crab. I do not recall him mentioning the sedentary designation explicitly at this time, though a portion of the presentation and the chapter included an update on the snow crab. The update stated that "the snow crab is a highly valuable species and was recorded for the first time in the Barents Sea in 1996. It represents a threat to the benthic ecosystems, but is a valuable fish resource in other regions. The expansion of the snow crab is similar to the expansion of the red king crab in the southern Barents sea, bringing the same management challenges" (**BK-0061**).

9. In checking my notes, I can see that the Belmont Foundation grant team had a skype conversation August 17, 2016, and that this is the first time Mr. Sundet mentioned that the sedentary species designation from July 2015 would change management plans. My colleague Linda Fernandez asked for follow-up on data regarding the fishing, so I have an email record of this (**BK-0062**). It was a surprising revelation and instigated the research for our paper published in the Journal of Environmental Management in 2018, "A case for the



commons: the Snow Crab in the Barents Sea” (which I co-authored with Linda Fernandez and Melina Kourantidou) (**BK-0063**).

**10.** The first time Mr. Sundet provided written input about the impact of the sedentary species designation came from a December 2017 ICES workshop on the crabs. He identified the Valletta Declaration as causing a shift in the management of the Snow Crab in the published report on the workshop (ICES, 2018) (**BK-0064**). In the report, he also stated: “Vessels that are neither Russian nor Norwegian are increasingly targeted for exclusion from the Loophole and from the Svalbard Fisheries Protection Zone (SFPZ). The sedentary species designation renders the SFPZ management uncertain as Norway claims sovereignty over the continental shelf but the Svalbard Treaty (1920) may require equal access...” (ICES, 2018).



---

Dr. Brooks A. Kaiser

Kolding, Denmark, 28 February 2022

## Annex I:

### Documents Reviewed for the purposes of this Addendum to my Expert Report

Norway's Counter-Memorial of 29 October 2021

Lemo to Minister Elisabeth Aspaker on "Management of snow crab" of 2 July 2014 (**R-108-ENG**)

Letter from the Ministry of Climate and Environment to the Ministry of Fisheries on "Management of snow crab" of 10 December 2014 (**C-0248**)

Memorandum from the Ministry of Fisheries to Minister Aspaker on the mandate for the 45<sup>th</sup> session of the Joint Norwegian-Russian Fisheries Commission of 29 September 2015 (**C-0201**)

Note from the Ministry of Fisheries entitled "Decision note – amendments to regulations on the prohibition of catching snow crab" of 11 October 2016 (**C-0202**)

Ministry of Fisheries' "Strategy for further development of snow crab management" of 19 September 2016 (**C-0209**)

Norway's internal analysis of as well as exchanges with Russia on whether snow crab is sedentary (**C-0184 to C-0200, C-0204, C-0205, C-0208, C-0211 to C0213, C-0254**)

## Index to References Cited (BK-0056 to BK-0064).

**BK-0056:** Sundet, JH and S Bakanev, *Snow Crab (Chionoecetes opilio) – a new invasive crab species becoming an important player in the Barents Sea ecosystem*, 2014, ICES CM 2014/F:04 report. Last accessed Feb 23, 2022 at <https://www.ices.dk/sites/pub/CM%20Documents/CM-2014/Theme%20Session%20F%20contributions/F0414.pdf>

**BK-0057:** Project Description of Belmont Foundation successful grand application for “*Bioeconomic Analysis for Marine Resource Governance and Policy*” by J. Sundet, B. Kaiser and L. Fernandez, July 2014

**BK-0058:** Slide from Presentation “*Future challenges in research and management of the invasive snow crab (Chionoecetes opilio) in the Arctic Barents Sea*” by Jan Sundet, Institute for Marine Research at the international workshop, “*Spatial Issues in Arctic Resource Management*”, Stockholm, SE, Sept 4-6, 2014

**BK-0059:** Sundet, J.H., “*The Red King Crab (Paralithodes camtschaticus) in the Barents Sea*,” in eds. Fernandez, L., B. A. Kaiser, and N. Vestergaard. “*Marine invasive species in the Arctic.*”, *TemaNord* 2014:547.

**BK-0060:** Brooks Kaiser, Linda M. Fernandez, Jan H. Sundet, Melina Kourantidou, “*Facing the challenge of Arctic fisheries management within a context of spatially differentiated ecological economic externalities*”, commented version, May 2015, abstract for 2015 ICES Annual Science Conference

**BK-0061:** Sundet, J. H., & Hoel, A. H., “*The Norwegian management of an introduced species: the Arctic red king crab fishery*”. *Marine Policy*, 2016, 72, 278-284.

**BK-0062:** Email from Linda Fernandez to Jan Sundet and reply, 17-18 August 2016.

**BK-0063:** B. Kaiser, L. Fernandez and M. Kourantidou, “*A case for the commons: the Snow Crab in the Barents Sea*” *Journal of Environmental Management*, 3 January 2018.

**BK-0064:** ICES, *Report of the Workshop on Global Ecological and Economic Connections in Arctic and Sub-Arctic Crab Fisheries (WKCRABCON)*, 11–13 December 2017, ICES Headquarters, Copenhagen, Denmark. ICES CM 2017/SSGEPD:24. 28 pp.