



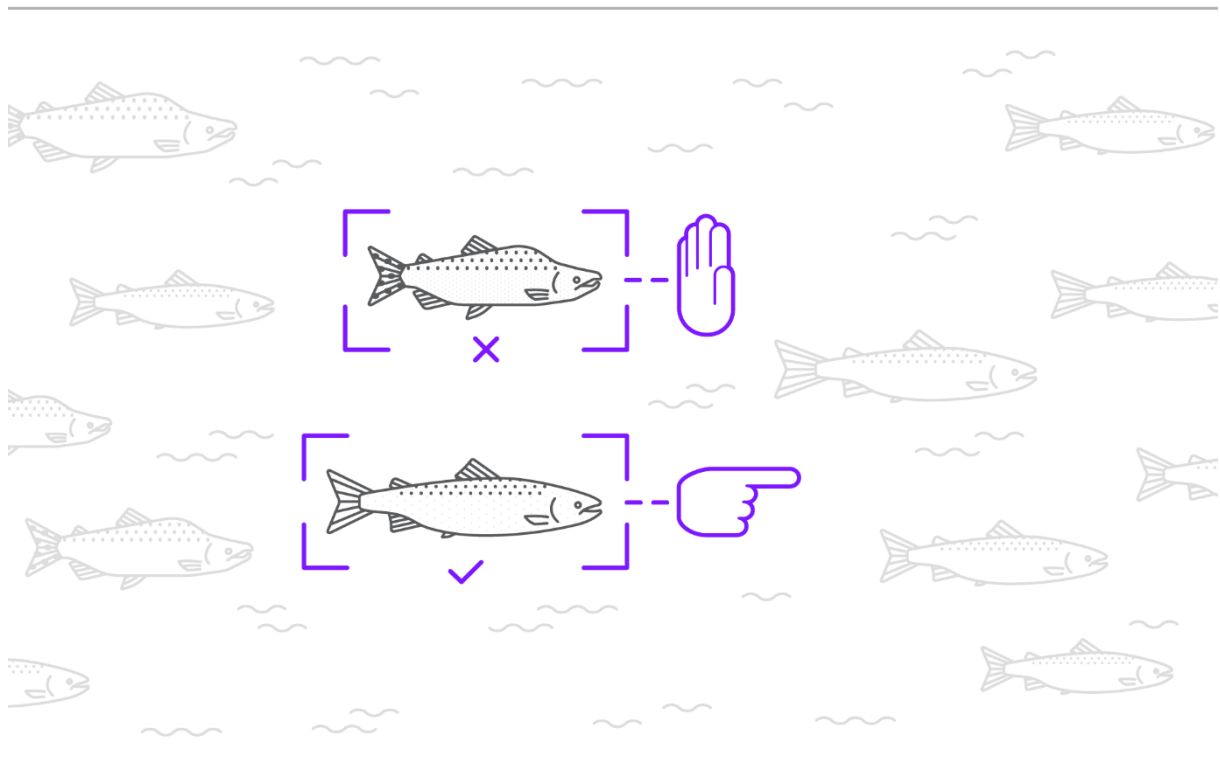
Statsforvalteren i Troms og Finnmark

Romssa ja Finnmárkku stáhtahálddašeaddji  
Tromssan ja Finmarkun staatinhallittija

## Dialogue conference

Dialogue conference prior to advertisement of pre-commercial procurement of pink salmon trapping device with automatic sorting

14 June 2023



## About the activity

The County Governor of Troms and Finnmark (SFTF) is the state's representative in the county and is responsible for following up decisions, objectives and guidelines issued by the Storting and the Government. SFTF has been commissioned by the Norwegian Environment Agency to procure equipment for combating pink salmon in the watercourses. The work follows the recommendations set out in the proposal for a [National action plan against pink salmon](#). The Norwegian Environment Agency has also established a national competence group for measures against pink salmon, in which SFTF is represented.

## What is a dialogue conference?

The County Governor of Troms and Finnmark is conducting a dialogue conference with potential suppliers and experts in preparation for pre-commercial procurement. The purpose of the conference is to establish a dialogue to gain knowledge about whether there are future solutions which will meet the County Governor of Troms and Finnmark's market needs, or whether it is possible to develop such solutions.

We will use insights obtained from the dialogue conference to put together tender documentation most appropriate for subsequent participation in the pre-commercial procurement.

## About the dialogue conference

### Target group

Suppliers or consortia that can deliver all or part of a solution for a pink salmon trapping device with an automatic sorting system. Research groups involved in relevant disciplines such as biology, biotechnology, systematics, ecology, mechanical engineering, robotics, digitalization, computing and cybernetics. Potential actors in business, administration and research.

## What do we want to discuss during the dialogue conference?

The aim of the County Governor of Troms and Finnmark is to bring about the development of a trapping device for pink salmon with an automatic sorting system. Such a system will require different components to cover each step involved in the solution. We need information about solutions such as:

- Technical solutions currently available on the market
- The potential and limitations of current solutions
- The main challenges in developing an automatic sorting system
- The costs involved in developing a complete solution
- Estimates of what it will cost to operate a complete solution
- How long it will take to develop such a solution
- The areas of application most appropriate for development

By inviting experts and suppliers/entrepreneurs to engage in dialogue with us, we hope to find out whether an automated sorting solution for pink salmon is technically feasible and viable. We also want to enter into dialogue with other users who are in need of a similar solution.

## Practical information about the dialogue conference

**Place:** Digital – Teams Meeting  
**Date and time:** 14 June 2023, 09:00 to 11:00.  
**Streaming:** The meeting will be streamed and will be held in Norwegian and English.  
[Click here to join the meeting](#)

Meeting-ID: 314 647 620 370  
Passord: WY3Gnt

Recive a meeting invitation by contacting Erik Drivdal

### One-on-one meetings

After the dialogue conference, one-to-one meetings will be possible.

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## Main purpose of a potential acquisition

The main objective of the project is to develop a solution that can distinguish pink salmon from Atlantic salmon without involving physical human contact and which can prevent pink salmon from spawning in the river.

## Background

Pink salmon is an alien fish species that has spread to Norway after releases in north-western Russia. Pink salmon has a 2-year life cycle, and so far, only odd-numbered stocks have increased in number. In recent odd-numbered years, this has become a major problem, risking serious impact on populations of naturally occurring species of salmonids, other biodiversity, water quality and the health of both wild and farmed fish. Since 2015, the number of pink salmon in Norwegian rivers has grown exponentially. Previously, this mainly affected rivers in Varanger, but the phenomenon is now spreading steadily westwards. Through dialogue with researchers in Russia, the County Governor of Troms and Finnmark has received information indicating that we must assume that the situation could become much worse if pink salmon are allowed to spawn in an uncontrolled manner in the coming years. The Russian rivers on the Kola Peninsula and the White Sea are a few years ahead of what we are seeing in Norwegian rivers, and they give us a picture of how things may be expected to develop if we do not implement effective countermeasures.

Norway tries to control the numbers of pink salmon by blocking off the estuaries and sorting out the unwanted species, while allowing the indigenous species through. The sorting is done manually, which involves considerable cost and effort. In addition, trapping and sorting the fish has adverse effects, such as delayed migration and the fact that fish can be harmed when handled prior to being released again. Stress and mechanical injury to the skin can result in a breeding ground for diseases, especially fungal infections.



*Male pink salmon*

## **Description of requirements and function**

The aim of the County Governor of Troms and Finnmark is to develop a solution that can identify and distinguish pink salmon from Atlantic salmon without involving physical human contact and which can prevent pink salmon from spawning in the river. With such a solution, we envisage that only pink salmon will be trapped, while salmon, sea trout and char will be allowed past the traps with minimal delay.

## **Potential impacts and outcomes**

As previously mentioned, pink salmon is an undesirable species and causes damage in Norwegian rivers. In addition to the cultural value that salmon have in river valleys across the country, billions are at stake in economic terms if the problem is not solved. This represents the value of the economy created around salmon fishing by thousands of small businesses in rural Norway.

A trap with an automatic sorting system will result in less time spent operating the trap, which means savings for the state budget that is used to fund the work involved. In 2022, NOK 15.3 million was set aside for pink salmon control equipment alone. In 2023, this has so far increased to 25 million, and a large proportion of the allocation goes to salaries for looking after the traps.

Furthermore, the information an automatic sorting system provides about the natural stocks in the river will be of quite different quality and without the animal welfare challenges that manual sorting entails. The development of species identification, counting and size grouping of migrating fish via machine vision will be a very useful management tool in itself. The well-known solutions for video surveillance of fish migration currently on the market still require human quality control of each individual that passes.

The main goal of the device is to reduce the number of pink salmon as much as possible, or, to put it another way, "to stop an ecological catastrophe" in the rivers. Norway is obliged by the Convention on Biological Diversity to prevent further spread from stocks in Norway to other countries.

As all pink salmon die after spawning and the species is becoming very numerous compared to Atlantic salmon, hundreds of thousands and potentially millions of fish can die in a single river over a short period of time in autumn. This presents a direct threat to water quality in Norwegian watercourses, where many villages obtain raw water for drinking from rivers and other surface water sources. During an international seminar on pink salmon in the autumn of 2021, Russian participants revealed that pink salmon are already having an adverse effect on water quality in rivers in north-western Russia. In Sør-Varanger municipality, the Norwegian Institute of Bioeconomy Research (NIBIO) has already documented similar tendencies.

The situation in the Pacific Ocean shows us that pink salmon can become so abundant as to have a cascade effect on marine ecosystems, through competition in the food chain. For many species, from other salmon species to seabirds and top predators such as killer whales, there is a negative correlation with large cohorts of pink salmon in the ocean. In the Pacific Ocean this is a natural phenomenon, but in the Barents Sea and the Norwegian Sea it will be an undesirable and serious outcome if other species experience competition that results in lower production in some stocks.

## Pre-commercial procurement

A pre-commercial procurement is a purchase of research and development that is used to develop innovations that the public sector needs.

Once the development work is completed, any purchase of the developed solution will take place in a separate procurement.

This pre-commercial procurement is financed by the Research Council of Norway and the Norwegian Environment Agency and implemented with support from County Governor Shared Services, the LUP supplier development programme and the Norwegian Agency for Public and Financial Management (DFØ).



Norwegian  
Environment  
Agency



The Norwegian Agency  
for Public and Financial Management



The Research  
Council of Norway



Statsforvalterens  
fellestjenester

County Governor Shared Services



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i Troms og Finnmark

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Troms and Finnmark