**Stewards of Boreal Rivers and Atlantic Salmon: Finland Final Report for the Nordic Resource Management Project, October 2016**

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**1. Introduction**

*Nordic Resource Management* is a new project across the Fennoscandian and Greenlandic areas to investigate, develop and strengthen the role of local knowledge and ‘citizen knowledge’ in decision-making about the use of nature and natural resources.

The efforts in Finland were coordinated by the non-profit independent Snowchange Cooperative in two ecosystems – the south boreal catchment area of Jukajoki in North Karelia and in the indigenous Skolt Sámi home area of the Näätämö basin in Lapland from late 2014 to 2016.

**2. Applying the Model in Finland**

In Jukajoki and in Näätämö rivers and basins the project forms were given out to hand-picked, trusted fishermen, who utilized them. They numbered between five and eight between 2015-2016. Forms have been collected and analysis provided both from the first season (2015) and second season (2016).

The first case, Jukajoki basin, is a south boreal watershed located in the villages of Selkie and Alavi. It is heavily damaged, and at the same time home to one of the largest aquatic habitat restoration activities in Finland, with a total budget of 2,7 million € between 2010-2018, combining local knowledge of Finnish-Karelian peoples, latest science and internationally recognized ways of collaborative management.

UNEP recognized Jukajoki as a best practice in July 2014. In early 2016 the project received the ‘*Energy Global Award’* in Tehran, Iran. In September 2016 Jukajoki was eighth in the competition ‘*Best River Project in the World’*[[1]](#footnote-1). In March 2016 a major US documentary film ‘*Jukajoki*’[[2]](#footnote-2) documenting these efforts was released.

Jukajoki has therefore, partly due to the new approach provided by *Nordic Resource Management* Project, risen to international acclaim as a new method of governance of natural resources and ecosystems. From official side, natural resource management bodies in Finland who participate in the local interaction in this case are Center for the Environment, Transport and Economy, Municipalities of Joensuu and Kontiolahti, and the Regional Administrative Agency – AVI.

The second case is the Skolt Sámi homeregion of Näätämö watershed in NE Lapland. *Nordic Resource Management* partnered with the Näätämö co-management project which began in 2011 as it provided existing baselines, platform and a positive testing ground for the international efforts.

Project forms were given out to two Skolt Sámi fisherman teams active on the river:

1. First team led by a male Elder in mid-60s, consisting of two – three different Skolt Sámi fishermen.
2. Second team led by a reindeer herder-fisherman in mid-40s consisting of additional Skolt Sámi fishermen through the season.

Main fish for harvesting and observations included northern pike[[3]](#footnote-3), grayling[[4]](#footnote-4), Atlantic salmon[[5]](#footnote-5), white fish[[6]](#footnote-6), sea trout[[7]](#footnote-7) and burbot[[8]](#footnote-8). Both teams used the template forms to document observations, catches and weather as well as anything unusual from June to July in 2015 and 2016. Snowchange coordinators visited the teams in April, June-July and early October. The forms are collected and oral histories recorded during these visits.

A region where the first collaborative management plan for Finland was published in 2013, the Näätämö watershed is a cross-border area between Finland and Norway, with majority of the territory located in Finland.

Being one the of the most relevant Atlantic Salmon spawning rivers in Europe, the watershed is home to the rich cultures of the Indigenous Skolt Sámi, a key stakeholder group in the collaborative management actions, as well as the Finnish-speaking national minority in Norway, the Kvens as well as local Norwegians and Finns.

Main natural resource management bodies in Finland who participate in the local interaction include Metsähallitus, Natural Resources Institute – Finland, regional authorities and the Ministries for salmon management as well as the municipality of Inari.

**3. Elements of Success in Finland**

Näätämö basin and Jukajoki catchment area represent, here, the pilot locations for the uses of template forms in documentation of local and Indigenous use and governance of renewable natural resources, in both cases fish.

These locations were chosen for the first test round, due to their infrastructure and personel capacity in place, i.e. project resources benefitted from existing teams of fishermen, experts, locations and possibility to expand the work for 2015 into the uses of forms.

**Jukajoki**

In summary, fishermen found the forms useful in both case regions. In Jukajoki we can divide the results into observations and governance.

In terms of producing relevant observations the fisherman teams recorded extreme weather events, such as very strong winds, up to 25 m/s (from south, south-east) and cold weather had not been seen in 50-60 years. This unusual weather was later confirmed to be the coldest in 50 years from official records. Water levels were unusually high in 2015.

In 2015 a very interesting observation was made: 19th June rainbow trout[[9]](#footnote-9) filled with roe was caught in the larger fish trap – this introduced species is very much affected by acidity of water. The fishermen felt that this is a very good indicator of improving water quality, due to the fact that this trout cannot stand acidic waters. Also, the fact that it developed roe was seen as a good sign. Another rainbow trout was harvested from smaller standing nets on the 7th July, 2015.

Perch, a good quality indicator fish was plentiful in the small traps from early June onwards, in some cases over 26 individuals. In July to early August, temperatures remained colder than usual, but closer to the seasonal normal, with 18-20 C recorded by the fisherman teams. Harvest focused in the late summer mainly to common bream with the use of small fish traps.

Results from 2016 indicate a new round of extreme weather, with temperatures very early in May up to 28 C. This triggered the common bream spawning weeks ahead of ‘normal’. Catches in June were therefore at relative low as the sites of harvest and spawning were affected by this weather.

For example, the team fishing with large fish traps in the summer 2016 reported in skabelon forms:

*11th – 15th June 2016: Hailstorms, very cold period after extremely warm May*

*21st June 2016: Small bream, waters very cold after being warm in May*

*6th July 2016: Extreme thunderstorms, rain 50 mm in 24 hours[[10]](#footnote-10)*

Second crucial observation of 2016 was made in the sub-catchment area of Kissapuro, where a local landowner, as a part of the project activities, observed ammocoetes-stage brook lamprey[[11]](#footnote-11). An indicator species of a good ecological quality, this re-directed the restoration efforts to Kissapuro basin.

The project forms worked relatively well for the fishermen and the ‘blank space’ provided for unusual observations worked alright. The fishermen felt their catch diaries and observations using the forms, conveyed locations and amounts as well as indicator species and weather events well.

However, Finnish fishermen felt that their deeper knowledge of the river and relationship to it would need to be conveyed using interviews and mapping. Jukajoki has quite well guaranteed process of including local traditional knowledge in management, so the forms provided an added tool to document the fishery on the river.

In Jukajoki the Nordic cooperation enhanced the documentation of both professional and subsistence harvest of fish stocks and seems to allow deeper assessment of weather changes and limnological water quality. The management of the ecological restoration of the river has the hallmarks of a co-management regime, so the Nordic initiative complements this direction.

**Näätämö**

In Näätämö there is an existing, formal co-management project initiated by the Skolt Sámi and research NGOs. The overall aim is to reform and renew the watershed governance towards better reflecting Sámi land and water uses and cultural rights.

It has been in operation now for its sixth year. The Sámi involved welcomed the Nordic participation and cooperation to further document their observations and catches.Formal recognition to the co-management steps from Sámi side took place in May 2015 at the annual meeting of the Sevettijärvi Skolt Sámi village Council. The Council decided to “*start cooperation with the Näätämö Co-management project and thus advance the Skolt Sámi participation in issues of status of river Näätämö, culture, revitalisation of traditional fisheries and to reform the dialogue with the state authorities*.”

Problems of management in Näätämö are reflective of the overall situation of ‘local and Indigenous’ governance in Finland. It does not exist. Therefore state authorities, such as Metsähallitus and ELY will deny, and refuse most initiatives towards this direction. In Spring 2016 reforms to the legislation affecting Metsähallitus were enacted to full opposition to the Sámi, providing a worsening framework of new approaches to resource governance in the region. However, the Näätämö project continued as planned in the basin.

Main results from the Näätämö basin include extreme weather events, such as early summers being extremely rainy and cold. In Mid-July 2015 when the forms were in use, unusual grayling behaviour was reported, as they had not disappeared from the usual salmon spawning pools, such as *Pyöreäsuvanto.* They were still persistent in these areas of Näätämö, which means the male salmon had not driven them out like usual.

In 2015 fishermen reported ‘dead salmon roe’ in the bottom of spawning areas, assessing that as the water levels were very low in Autumn 2014, the ice has wrecked parts of the hatching roe over winter.

Forms worked relatively well as a first review of catches and special observations. A closer look indicates results from the forms in 2016:

1. **First team:** The first Skolt Sámi team conducted mainly net fishery along the main Näätämö river from early July to end of July. Their usual catches were Atlantic Salmon from 1,3 kg range to 2,1 kilos, usually 2-3 fish at a time. Winds, locations, air and water temperatures were recorded as well as any unusual activities, such as high water marks. Salmon nets are usually 3-4 meter tall, with large mesh sizes. In late July the harvest shifted to include whitefish in the nets. Air was quite cold, with temperatures in the 10 C range. At the end of the July grayling featured in the catches. In July 2016 large salmon in the range of 16 kgs swam upstream and were caught in the village fishery.
2. **Second team:** The second team led by the younger Skolt Sámi in his mid-40s used the template forms from June to end of July. They harvested with salmon nets, with large mesh sizes. Their catches included mostly Atlantic salmon, with large individuals in the range of 6-7 kilos as well, but averaging in the 1,5 – 3 kg range.

The forms were collected and analyzed by Snowchange specialists. Additional contact with both teams was kept through the summer using phones. Metsähallitus provided the team with official research licences between July-September 2016 for the Silisjoki sub-catchment area, a first such licensing.

Late in the season fishermen emphasized the need to restore the lost habitats and trout and salmon spawning areas to increase the productivity of damaged sub-catchment areas such as Vainosjoki. The project financed a sturdy photo camera Canon to document the erosion and lost spawning sites as well as other top priority areas. The material was collected in October and will form the next step of local knowledge and natural resources management steps, while continuing to apply the forms and self-documentation of harvests in Näätämö basin.

The season and project activities concluded in a major workshop in Sevettijärvi on restoration and Nordic Resource Management results, that was covered well in media.

**4. Conclusions**

In both cases, Jukajoki and Näätämö the forms are seen as a complementary tools to document observations, harvest and uses of a basin. However, in the research visits both the Sámi and the Jukajoki fishermen stressed that forms cannot convey their relationships and interaction with the river on their own, therefore primary vehicles for the local governance of resources has to include, in addition to forms, uses of workshops, oral histories, interviews and mapping.

The *Nordic Resource Management* method was discussed also with the Torneå river basin. This cross-border river is the largest unregulated water system in the Northern Europe and a major home stream of Atlantic Salmon stocks. Presentation of the project and the U.S. film ‘Jukajoki’ has taken place 2015-2016 between the river authorities and the project.

1. Organised by the International River Foundation, Australia [↑](#footnote-ref-1)
2. https://vimeo.com/122000332 [↑](#footnote-ref-2)
3. *Esox lucius* [↑](#footnote-ref-3)
4. *Thymallus thymallus* [↑](#footnote-ref-4)
5. *Salmo salar* [↑](#footnote-ref-5)
6. *Coregonus lavaretus* [↑](#footnote-ref-6)
7. *Salmo trutta trutta* [↑](#footnote-ref-7)
8. *Lota lota* [↑](#footnote-ref-8)
9. *Oncorhynchus mykiss* [↑](#footnote-ref-9)
10. Usual rainfall in a year 650 mm [↑](#footnote-ref-10)
11. *Lampetra planeri* [↑](#footnote-ref-11)