Hydropower Build-up and the Timber Floating in Northern Finland after the Second World War

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1 Introduction

During the Second World War, Finland lost a substantial amount of built and yet un-built hydropower capacity to Soviet Union due to loss of Karelia. The most significant energy user at the time was the forest industry, especially paper and pulp mills, which had to replace this loss and to secure uninterrupted supply of energy in the future; otherwise the industry could not realise their expansion plans. One solution was to harness the still untouched northern waters for the service of the industry and society in large. (Myllyntaus 1991, 101–103, 112–115) However, these rivers served already the forest industry in another way, as transport routes in floating of timber.

2 Objectives of the research

Vast waterways had made the emergence of forest industry in Finland possible. Transportation of timber from distant forests, located more than hundreds of kilometres away from the mills, was possible using rivers and lakes. Especially in Northern Finland the industry had to rely on floating as the railway network was less extensive than in some other parts of the country.

The objective of this paper is to study closer, how the emergence of vast hydropower dams in these northern rivers from late 1940's to 1970's changed the transportation of timber. Road transportation in particular could not compete with floating because of their higher costs and the lack of suitable trucks and roads, but this changed after the war. Despite the fact that expanding industries consumed more and more timber, the role of floating decreased. But how did these ratios change during this period? Did the build-up of hydropower plants contribute to this shift of timber transportations from waterways to the land? Salmon and logs did not fit on the same river, the fishermen had to yield in the end. Did the hydropower plants do the same to the floaters?

3 Results

3.1 The transportations shift from waterways to land

Immediately after the Second World War money and resources were directed in the floatway construction. Smaller brooks and creeks of the main rivers were cleared in order to bring new forest tracts within reach of the forest industry. The introduction of tractors meant that loggings could be carried out deeper in the forest, further away from the floatways.

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Gradually, the emerging land transportations began to challenge floating. Smaller creeks and brooks were passed, as timber was transported using the forest roads, which had emerged in the woods. Timber was driven for longer distances into the bigger float ways, or even straight to the mills. Brook floating ceased in many rivers, but in some small rivers truck transportation replaced floating. (Pakkanen 2004, 58–67)

The high labour costs in floating, expansion of the road network, availability of suitable trucks were among those reasons, which ended floating in small rivers. The floating costs in smaller rivers were higher, because the amounts to be floated were not as great as those on the bigger rivers. The differences between the transportation costs decreased, which made it possible to replace floating by land transportations. (Itkonen 66–67, 78) Additional benefit was speed. Trucks brought the timber to the mills faster than floating, which also meant that less capital was tied down on timber purchases than earlier.

The benefits of land transportation became more apparent and the floaters had to give way for truck drivers. In many small rivers this happened quite soon after the Second World War, for instance in Kuiva river the last floating took place already in 1948. Others followed. In 1958 floating ended in Kiiminki river, in 1964 at Simo river (Itkonen 1998, 78) and floating came to an end also on one of the major floating rivers, in the Tornio river, in 1967. (Itkonen 2001, 148) This left only Ii, Kemi and Oulu river, which had been harnessed for power production, to serve forest industry as float ways.

3.2 Floating continues on harnessed waters

Most of the remaining big rapids in southern Finland had been harnessed for power production during 1920's and 1930's. Therefore, the post war boom of hydropower building concentrated in northern Finland. Between the late 1940's and 1976 over 30 hydropower plants were built in Kemi, Ii and Oulu rivers. First of these were built on the river mouths, Merikoski on the Oulu river and Isohaara by Kemi river (both in late 1940's). (Myllyntaus 1991, 112–115)

Power plants emerged in contested waters, where timber companies and local salmon fishers had competed for the right to use the river. Salmon fishing had been carried out for centuries, but as floating increased in the late 1800's, so did the conflicts between these two sides. It seemed that the log and the salmon did not fit in the same river. Floating damaged fish stocks, whereas salmon dams formed an obstacle for downstream floating timber. Building of salmon dams was regulated, as well as the floating periods, but still the antagonism continued. In the end the economic benefits of timber floating exceeded those of fishing and the dams had to go. For instance in the Kemi river the last great salmon dam was built in 1932. (Satokangas 2004, 127–139, 167–177, 330)

The hydropower dams were a final blow for salmon fishers; they prevented the salmon from swimming the river upstream. Similarly, the timber could not "swim" freely downstream anymore. The dams chained the running water, formed reservoirs and evened out altitude dif-

ferences and seasonal highs and lows. The dams were physical obstacles for floating, but also transformed the waterways. The reservoirs rose the altitude of water, which eliminated the shallow spots along the float way. The natural rhythm of water was lost and the spring flood lost its importance, which had been crucial for floaters earlier. But as the man from the power company had mastered the nature, the floaters had to rely on his benevolence. Power companies could adjust the level of water as the energy production required, but their and floaters requirements were not necessarily similar. (Jakobson 2000, 94–97)

The builders of the power plants had to ensure, that the timber could pass the dams. Arrangements were done to facilitate the transportation of floated timber. In Isohaara it was a funnel, which led the timber pass the turbines and the lock hatches. (Itkonen 2001, 127–130). Wood flumes were constructed in other hydropower plants of Kemi River, where loose floating was practiced. Some of them were even several kilometres long. (Archives of Metsäteollisuus Ry) In Oulu river floating in bundles had been introduced and therefore the dams were equipped with bundle cranes or similar transfer systems, which could lift the timber over the dam. (Virtanen 2004, 204–206, 348)

The dams themselves were not an impassable obstacle; it was the drainage that caused controversy between floaters and power companies. Complaints were heard from Oulu river that timber bundles had to be towed there, where the stream had earlier done the job. Also, the power companies were blamed for keeping the reservoirs full for the winter, which meant that drainage was low during summer time. Standing waters instead of roaring spring floods was not a sight for the floaters sore eyes. (Virtanen 2004, 204–205, 348–349)

Maybe it was these warning examples from the other rivers, which made floaters of Ii river to be more careful. In Ii river, which was harnessed for energy production only in the 1960's and early 1970's, the floaters and the power company struck a deal. If the floating costs increased substantially because of the drainage, the power company would do their part to contribute to lower floating costs. The power company also agreed to keep the drainage on such a level, which would not hinder floating substantially. It seems that the disputes about the drainage were not as big on this river as they had been on Oulu river. In fact, it seems that the floating benefited from the construction of power plants, at least it was claimed that the reservoirs removed some difficult parts from the float way, which had proven really troublesome earlier. (Itkonen 1998, 83–84)

Floating ended in the main course of Oulu river in 1982, but still continued in rivers leading to Oulujärvi until 1992. On Ii river the final logs were floated in 1988 and in Kemi river in 1991. Coexistence of floaters and power companies did lasted for about 40 years in Oulu and Kemi rivers, little less in Ii river. The dams, which had closed the rivers and led to the regulation of the drainage, were not the reason for the ending of floating. In fact, these were the last rivers, where floating gave way for land transportations.

4 Relevance of the research

The harnessing of the northern waters for electricity production raises even today opinions for and against. Timber floating ended in the north in 1991, when logs were floated in Kemi river for the last time. The hydropower dams did not end the floating, for instance in the Kemi river it continued for over 40 years after the building of first dam. The floaters could cope with the changes that the hydropower plants brought. Other reasons led to the end of timber floating.

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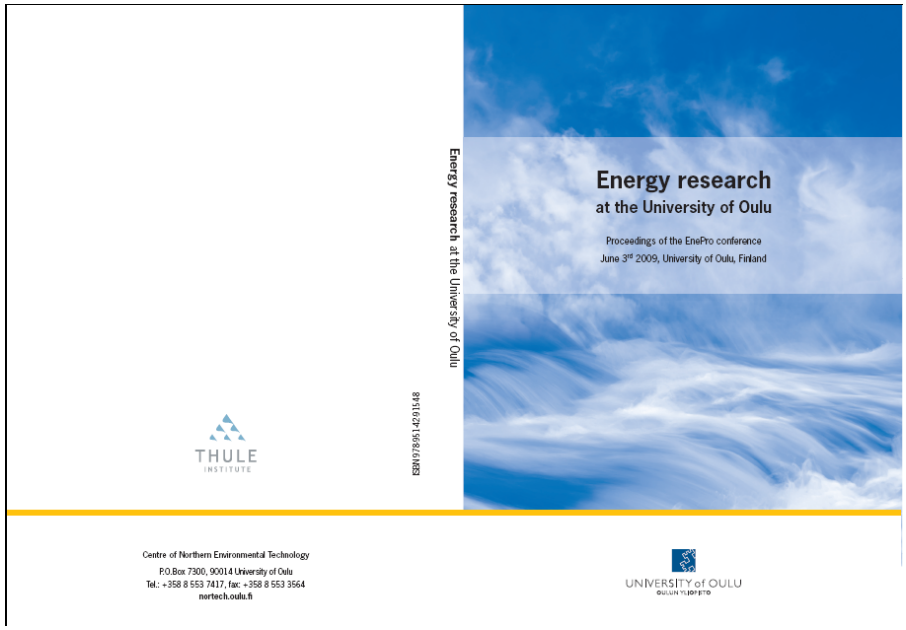

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