

## **Evaluating Ecosystem Services in Finland**

From 21-25 April 2013, Tiina Nokela from the Finnish Environmental Institute SYKE and Dutch student Maarten Plug (VU University Amsterdam) visited the river Vääräjoki to conduct surveys on ecosystem services with local residents (figure 1). The aim of this research was to compare ecosystem services of the river Vääräjoki in restored and unrestored stretches. The research is part of workpackage 5 of REFORM, whereby ecosystem services are assessed in 12 case studies and rivers across Europe. The aim of the case studies is to enhance the framework for improving the success of hydromorphological restoration measures to reach the target of ecologic status or potential of rivers in a cost-effective manner. In the field visit to the river Vääräjoki, almost all respondents reacted very positively to the survey. Although some had never visited the Vääräjoki, most of them were concerned about the state of the river.



*Figure*

*1: The Vääräjoki (photo: Maarten Plug)*

In the beginning of the 1900's, the Vääräjoki was dredged and most of the boulders were removed to enable timber floating. Due to changes in the forest industry, timber floating ended by the end of the 1970's. Major rapids in the lower reach of the river were restored in the beginning of the 21st century. The restoration included replacement of stones and gravel beds to create spawning areas for salmon. The goal of the restoration was to increase fish catch, but also to improve other ecosystem services such as ecological quality and aesthetics which are not easily evaluated.

Order #	Option A	Option B	Current situation
			
Ecological status	Very good	Good	Moderate
Distances covered	100 kilometers	50 kilometers	5 kilometers
Accessibility	Good	Good	Reasonable
Increase in the annual municipality tax	70 Euro	30 Euro	0 Euro
Indicator	Option A <input type="radio"/>	Option B <input type="radio"/>	Current situation <input type="radio"/>

Figure

2: One of the Choice Cards used in the survey (photo: SYKE)

The methods used in the survey were Willingness to Pay (WTP) and Choice Experiment. By assessing how much people are willing to pay (WTP) for a restoration measure that enhances some ecosystem services, the value attached to these services can be derived. The Choice Experiment, a relatively new method to determine WTP, was also applied in the surveys. Local residents were presented a Choice Card with two alternative future states and an option to maintain the current situation (figure 2). WTP was included as an increase in municipal tax. To find sufficient respondents in the sparsely populated Vääräjoki basin (around 40 inhabitants per square kilometre), three different methods were used. The first method consisted of approaching visitors to nearby gasoline stations. This approach worked remarkably well: A relatively large number of respondents could be easily approached and respondents had the time to fill in the survey over a coffee (figure 3). However, this method could only be applied in the two population centres that were large enough to sustain a gasoline station. The second method used was 'door to door' interviews with inhabitants of small towns and farms, who were not all available for participation. The last method consisted of driving around and approaching pedestrians. This method was more time consuming than the gasoline station method, but it ensured a good spatial distribution and almost everyone agreed to being interviewed (figure 4). In total, 67 survey responses were collected in 5 days, which is relatively good "yield" from the total population of approximately 6000 people.



*Figure 3: Tiina Nokela (SYKE) conducting a survey (photo: Maarten Plug)*





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Figure 4: Conducting the survey at local cafeteria in Sievi (photo: Maarten Plug)

Many of the older respondents remembered those days when the water was clearer and fish and crabs were more plentiful. On some occasions, the surveys turned more or less into small interviews, for example with an older couple living next to the river for over seventy years or a retired professor of ecology who could name and locate all endangered species living near the river. During their week of field work, Maarten and Tiina quickly gained “local fame” due to articles published in a local newspaper just a few days before the survey. This publicity positively influenced people’s attitudes towards the research and enhanced their appreciation of the water courses near their home.

## For further information:

Maarten Plug

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