Manual for Area of Support: **Reducing the negative impact of human activity on water quality**

Norway grants

STATE ENVIRONMENTAL FUND OF THE CZECH REPUBLIC

Are micropollutants a new threat?

With increasing knowledge of laboratory methods, the presence and increasing concentration of new pollutants in the aquatic environment, sometimes referred to as micropollutants (English equivalent „emerging pollutants"), has been proven to occur in the last decade. This is one of the main current challenges for the management of water resources. However, the first mention of micropollutants dates back to the second half of the 1980s. Micropollutants are substances of anthropogenic origin which occur in low concentrations (≤100 µg/l) in water. Their composition includes a wide range of different chemicals of various properties, such as steroid hormones, pharmaceuticals, drugs, PCPs (personal care products - eg cosmetics), pesticides, industrial substances and many others. These substances may be potentially harmful to aquatic organisms, ecosystems and also to humans. The main problem of these substances is their persistence, ie the ability to remain in the environment for a long time. In other words, they do not readily biodegrade and, in the long term, may accumulate in water, soil, plants and also in tissues of living organisms. Moreover, the degradation products of micropollutants are their metabolites, which often have the same or even worse toxic effects.

The main topic in the field of micropollutants during the preparation of our Programme became pharmaceuticals in surface waters of the Czech Republic. Household sewage is an important source of remnants of pharmaceuticals in surface waters, but we pay particular attention to so-called hot spots in our Programme. These are places where wastewater with a high concentration of pharmaceutical residues is discharged from specific facilities (nursing homes, hospitals).

Given the potential risks and negative effects of pharmaceutical remnants on the metabolism and behaviour of organisms (as demonstrated, for example, by research conducted at the Faculty of Fisheries and Water Protection of the University of South Bohemia in České Budějovice) this modern phenomenon needs to be intensively monitored. The Norway Grants Programme is one of the first instruments to contribute to the search for solutions and to support concrete steps to reduce this type of pollution in the aquatic environment.

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Micropollutants in the Norway Grants Programme

The issue of micropollutants and remnants of pharmaceuticals in surface waters became one of the most discussed areas during the program preparation and also a topic that attracted a lot of attention from Czech and Norwegian organizations, including our Norwegian program partner – the Norwegian Environmental Agency. The Programme allocates **EUR 6,726,669 to this area of support**.

Within the framework of its European and global obligations, the Czech Republic is obliged to carry out monitoring of water quality in its territory – with regard to its membership in the European Union, in particular pursuant to the Water Framework Directive – Directive 2000/60/EC. However, the issue of residual concentrations of pharmaceuticals (and micropollutants in general) in surface waters is only marginally addressed in this Framework Directive. Only by Directive 2008/105/EC and subsequently by Directive 2013/39/EU systematic monitoring of selected pollutants (such as pharmaceuticals and hormones) started. The current list of controlled substances is defined by the Commission Implementing Decision (EU) 2018/840. The determination of concentrations of new pollutants requires in many cases the use of new, more sensitive and accurate analytical methods, the use of which depends on the acquisition of appropriate laboratory equipment. One of the objectives of our Programme is therefore to improve the conditions for **comprehensive monitoring of micropollutants** taking into account the **list of priority substances**, the current list of **monitored substances** and the **list of specific pollutants**.

At the same time, the Programme will support the implementation of **pilot projects aimed at reducing pharmaceutical pollution** (pharmaceuticals and their metabolites) in surface waters of the Czech Republic originating from municipal pollution sources. A particular emphasis is on the most problematic point sources of pollution, such as health and social facilities. In these places, wastewater contains high concentrations of pharmaceutical residues, and the implementation of such projects is therefore much more efficient than in places where this pollution reaches dilute concentrations (eg wastewater treatment plants). In particular, comprehensive pilot projects combining not only technical but also organizational and system measures in the facilities concerned are welcome.

An integral part of this area of support will also be a small grant scheme aimed at **raising public awareness**, awareness-raising campaigns and training of capacities related to the issue of new pollutants and their impact on water quality.

Basic information about the area of support

The third area of support within the Programme focuses on **the protection of water quality** in the Czech Republic and the **reduction of pollution of surface water by micropollutants**. Projects will be supported through **two open calls**. The first one focuses on **improving the conditions for monitoring** of these substances under the Water Framework Directive and related regulations. The second one focuses on projects aimed at implementing specific measures to **reduce pharmaceutical pollution in surface waters**. A small grant scheme will support **education and training projects** focused on the issue of water protection especially in relation to micropollutants.

What is the project grant rate?

- The support is provided up to a maximum of 90%*/100% of the total eligible expenditure of the project with regard to the type of applicant and the focus of the call. The total amount of support for each call can be found on the following pages of this manual.
- Total allocation for this area of support: **6 726 669 EUR**

Who can apply for a grant?

- In general, all entities, private or public, commercial or non-commercial, and non-governmental non-profit organizations established in the Czech Republic as a legal entity are considered eligible applicants.
- In the Call - 3A aimed at improving the monitoring conditions, the applicant must also be a subject providing surface water monitoring according to the Water Framework Directive (2000/60/EC), respectively according to §21 of Act no. 254/2001 Coll. (on Waters and Amendments to Some Acts (The Water Act).

* support of 90% of total eligible expenditure concerns SGS 3c and cases where the final beneficiary is a non-governmental non-profit organization and a social partner

Are you interested in applying for support?
Detailed information for applicants can be found at the text of each call on the website ww.sfzp.cz

What do we expect from your projects?

The area of support focuses on two main types of projects. The first is to support monitoring institutions according to relevant laws and decrees. This support consists in **strengthening the monitoring infrastructure** (acquisition of laboratory equipment including instruments) for analysing samples, and **introducing and optimizing analytical methods** for determining concentrations of polar micropollutants and their metabolites in surface water. Our goal is to monitor these specific pollutants discharged into surface water. Surface water monitoring programs in the Czech Republic meet its obligations under relevant European directives and regulations. These regulations set requirements for monitoring and evaluation of water quality and status. **Your projects should therefore contribute to the ability to meet these European water protection commitments to the required quality.**

The second type of projects in the two-round open call focuses on the **elimination of micropollutants in the form of residual concentration of pharmaceuticals in surface waters**. Our support is intended for pilot projects contributing to limiting the increase in the concentration of pharmaceuticals in the aquatic environment, including their removal at wastewater treatment plants. Our main goal is to check how effective the technical and other measures are, especially in the case of so-called hot spot sources, which produce wastewater with a high concentration of residues of pharmaceuticals in the long term. Given the nature and expected innovativeness of these projects, it is always necessary to first **submit a project intention** in the first round of the call. On the basis of this project intention, an expert commission will assess whether the project is suitable for funding from the Norway grants. Your projects should contribute to a real reduction in the amount of residual concentrations of pharmaceuticals entering water. We expect to use innovative practices, best practice methods and transfer of experience from abroad.

Increasing public awareness is an important part of all areas of the Programme. In this case, these are educational and information projects or campaigns focused on the issue of water protection and water pollution by micropollutants - especially pharmaceuticals. Examples include educational projects for the public and schools aimed at the right household management of the remnants of unused medicines, etc.

Within the Programme preference is given to such measures that **bring new innovative solutions** to environmental problems and have the potential to serve as examples of good practice in the Czech Republic, Norway or other countries.

The Norway Grants will support **the renewal of Czech laboratory equipment and the development of appropriate procedures** to meet our national and international obligations in the protection of aquatic ecosystems.

Call 3a: Provision of infrastructure and appropriate analytical methods for the identification of new pollutants in the aquatic environment

Open Call

Total allocation:	**3 000 000 EUR**
Expected date of call announcement:	**3rd quarter of 2020**
Minimum and maximum project grant rate:	**200 000 – 750 000 EUR**

What key will we use to evaluate the submitted applications?

In particular, the following groups of criteria will be considered when evaluating and selecting projects:

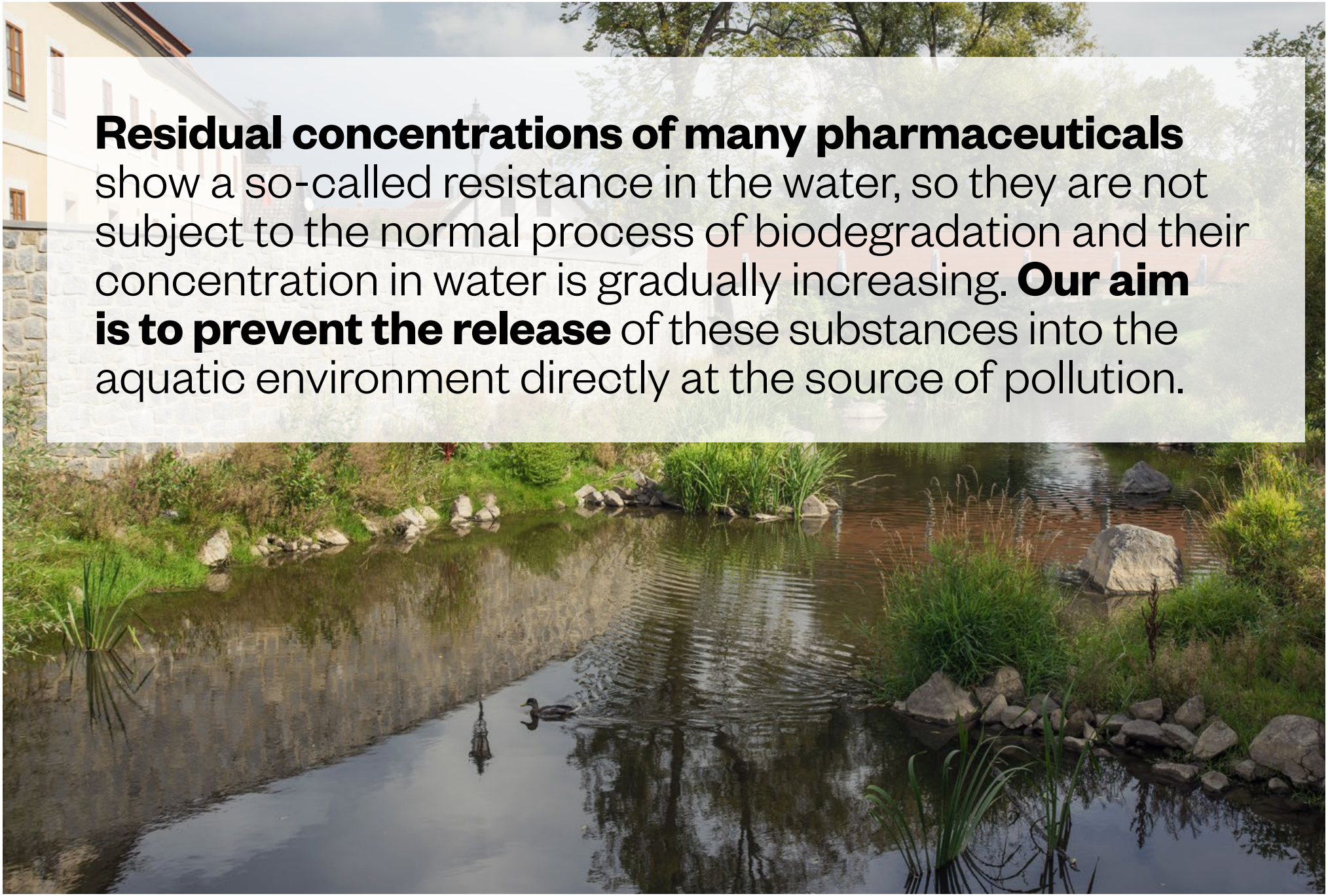
- Link to monitoring according to relevant laws and regulations in the area of water protection
- Organizational support, experience with a similar project
- Financial cost and efficiency of the project
- Bilateral or other international cooperation
- Long-term sustainability of the proposed measures

What mandatory indicators do you have to follow in your project?

- Number of institutions with improved conditions for water quality monitoring
- Number of newly acquired analytical equipment
- Number of analytical methods developed
- Number of analyses within the developed analytical method (optional)

Supported measures:

- The acquisition of micropollutant analysis instruments including the necessary associated laboratory equipment (to be specified in the call)
- Introduction and optimization of analytical methods for determination of concentrations of micropollutants and their metabolites



Residual concentrations of many pharmaceuticals show a so-called resistance in the water, so they are not subject to the normal process of biodegradation and their concentration in water is gradually increasing. **Our aim is to prevent the release** of these substances into the aquatic environment directly at the source of pollution.

Call 3b: Implementation of pilot projects to reduce pharmaceutical pollution of watercourses

Open Call

Total allocation:	**3 426 669 EUR**
Expected date of call announcement:	
→ Project intentions:	**3rd quarter of 2020**
→ Applications for approved project intentions:	**1st quarter 2021**
Minimum and maximum project grant rate:	**200 000 – 1 000 000 EUR**

What is the „project intention“?

The project intention provides a brief description of the purpose and expected benefits of a pilot project aimed at reducing pharmaceutical pollution. In includes a description of the current situation, including a description of the problem addressed, a summary of the underlying assumptions, a proposal for a technical, organizational or other measure, funding requirements, the expected effect of the measures implemented and their overall sustainability. The project assumptions must be supported by a feasibility study including a risk analysis. Where the project is expected to be implemented in a partnership, the nature of the partnership, its justification and the expected involvement of the partner(s), including a description of their contribution to the successful implementation of the project, should also be described.

What key will we use to evaluate the submitted applications?

In particular, the following groups of criteria will be considered when evaluating and selecting projects:

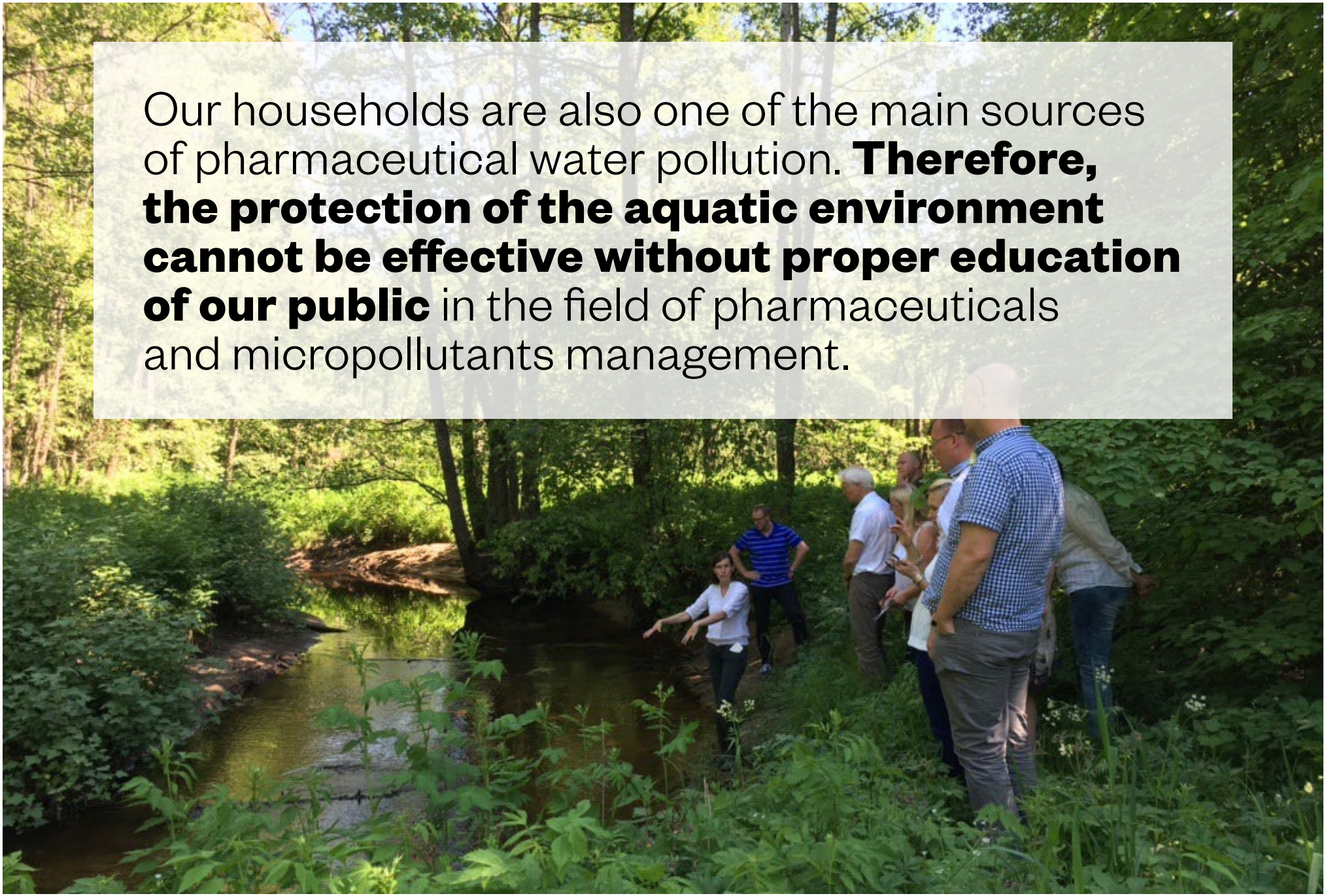
- The applicant‘s prerequisites to successfully implement the project, including professional and organizational support
- The expected contribution of the project and its importance with regard to the objectives of the Programme
- Feasibility, cost and efficiency of the project
- Innovative approach and transfer of good practice examples
- Bilateral or other international cooperation
- Long-term sustainability of the proposed measures

What mandatory indicators do you have to follow in your project?

- Number of persons benefiting from the implementation of water quality improvement measures
- Number of pilot projects (contracted sites for pilot applications) aimed at reducing pharmaceutical water pollution
- Percentage reduction of pollutants discharged after the introduction of measures

Supported measures:

- **technical measures** to install advanced wastewater treatment technologies to reduce the content of pharmaceutical residues both at source and in municipal wastewater treatment plants
- **organizational and other measures** for major wastewater producers with a high content of pharmaceutical residues consisting of separation of so-called “yellow water” (eg collection of urine bags and other ways of separation) before entering the local wastewater treatment plant or sewerage system. These measures cannot be implemented separately, but only as a complement to technical measures in the framework of complex projects
- **natural and nature-friendly measures** consisting of the implementation of artificial wetlands (root treatment plants) or other innovative technologies with the aim of reducing the content of pharmaceutical residues in wastewater



Our households are also one of the main sources of pharmaceutical water pollution. **Therefore, the protection of the aquatic environment cannot be effective without proper education of our public** in the field of pharmaceuticals and micropollutants management.

SGS 3c: Public awareness raising and capacity building on reducing the amount of pollutants in the aquatic environment

Small grant scheme

Total allocation:	**300 000 EUR**
Expected date of announcement:	**autumn 2020**
Minimum and maximum project grant rate:	**5 000 – 50 000 EUR**

What key will we use to evaluate the submitted applications?

In particular, the following groups of criteria will be considered when evaluating and selecting projects:

- Number of directly and indirectly addressed participants
- Range and quality of media outputs
- Professional contribution
- Innovative approach and transfer of good practice examples
- Cost and efficiency
- Short/long term benefits of promotional activities

What mandatory indicators do you have to follow in your project?

- Number of people in the target areas who have increased their knowledge of water quality and measures to improve it
- Number of awareness-raising campaigns and propagation activities
- Number of people who have received training
- Number of people reached by awareness campaigns and propagation activities

Supported measures:

- Carrying out information and education campaigns for the general public on water protection issues related to the occurrence of micropollutants (pesticides, pharmaceuticals, personal care products, etc.)
- Organizing seminars and workshops on water protection and micropollutants
- Preparation and publication of professional and information media outputs on the issue of water protection and micropollutants
- School projects on water protection and micropollutants

Bilateral aspect within the area of support

In the preparation of the Programme, the issue of pharmaceuticals in water and micropollutants has received the greatest interest from the Norwegian partner of our Programme, the Norwegian Environmental Agency, as well as from potential projects partners from Norway – such as universities or other research institutions. This is not surprising because for Norway, which has the second longest coast in the world, the issue of water pollution is one of the current priorities for environmental protection. The Norwegian environment, due to its location, is strongly struggling, for example, with marine pollution by microplastics.

Big potentials for cooperation are offered when **developing new analytical methods** for testing water quality, as well as collaborating and sharing examples of good practice in implementing specific measures to reduce water pollution by residual concentrations of pharmaceuticals at key sources of pollution.

There is also a potential for cooperation in case of a small grant scheme to raise awareness on water protection. Examples include joint projects for Czech and Norwegian educational institutions.

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If you have any questions or concerns regarding this area of support, please send your question to norwaygrants@sfzp.cz.

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