

# „FOOTPRINT CALCULATOR FOR SCHOOLS – AN INTERDISCIPLINARY TOOL TO SUPPORT SUSTAINABILITY ACTIONS AND LOCAL CLIMATE PROTECTION“



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## Welcome to the Footprint Calculator for Schools!

### What is the ecological footprint?

The ecological footprint is the measure of the extent to which we change and burden nature through our human activities. The footprint is expressed in area (m<sup>2</sup>).

The more raw materials we consume and the more pollutants we produce, the greater our ecological footprint will be and the less sustainable life will be.

Sustainability is only possible on the basis of renewable resources. All renewable resources depend on solar radiation as a natural “source of income“. For the conversion of solar radiation into products and services a certain area is always necessary. However, as the earth’s surface is limited, the possible use of land is also limited. For this reason, “area“ is the calculation unit for the Ecological Footprint.

The Ecological Footprint and its calculation according to the Sustainable Process Index (SPI®) – Method.

### Why do we need a Footprint Calculator for Schools?

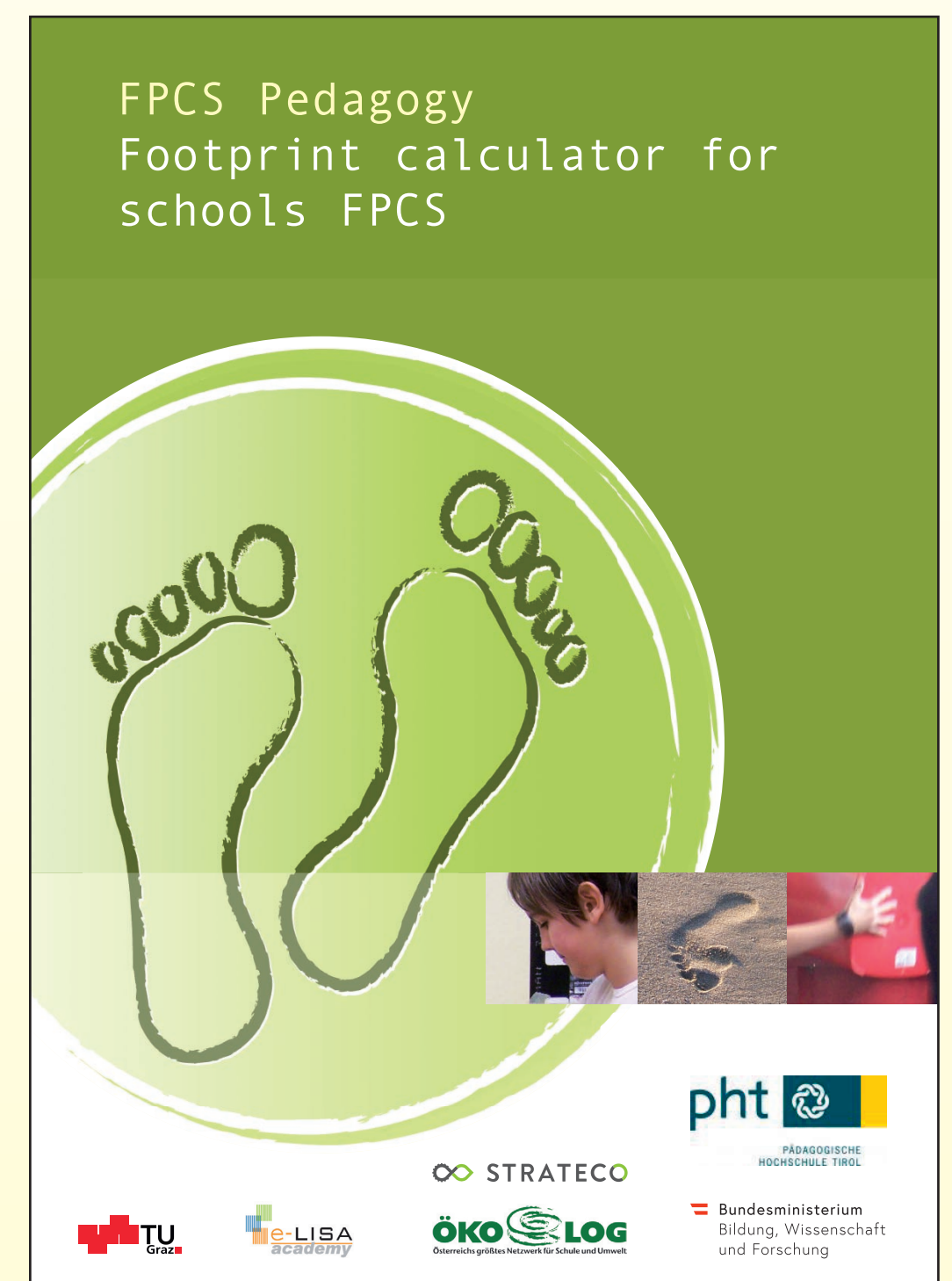
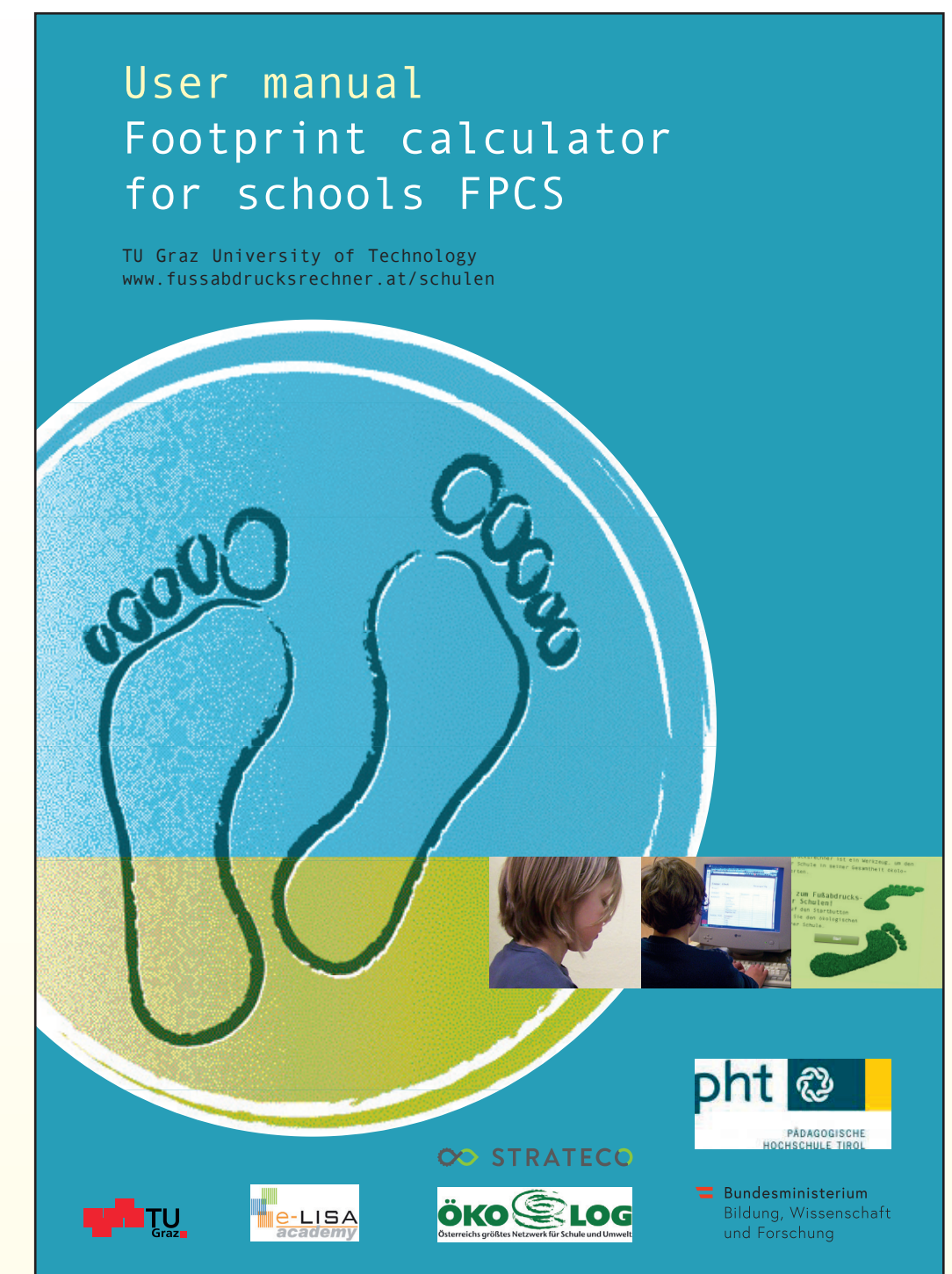
Schools are living and working space for pupils/students, teachers and non-teaching personnel. Everyday life in schools also causes a footprint.

The footprint calculator for schools is a tool to evaluate schools ecologically in their entirety. To this end, the calculator examines the areas of electrical energy, thermal energy, water, waste, food, mobility and procurement are highlighted. Through the calculator you can find out the size of your school’s footprint.

### What is the pedagogical use of the Footprint Calculator for Schools?

It allows and encourages school communities to

- raise awareness, quantify, compare and evaluate the material flow of a school,
- address school as a living space, as an organisation and to make its material flow tangible,
- make the current status and changes visible, document them and make them communicable,
- become active and contribute to positive changes in school. This stimulates the development of key competences of the students involved,
- address change potentials of measures and simulate their effectiveness by repeatedly playing through the Footprint Calculator for Schools with different inputs,
- develop time series of data by a regular use in a school, e.g. annually, which always involves a new generation of pupils,
- inform and communicate in the classroom, in the whole school, in the out of school community, especially parents, residents of the community and the community as the school owner.
- promote school-community cooperation. Resource conservation to the optimal material flow of the school through various measures and communication about this can also serve as an example for other institutions in the community.
- work interdisciplinary, especially natural sciences and IT, but also humanities, especially when it comes to internal and external communication.
- embed the use of the Calculator in the local curriculum.

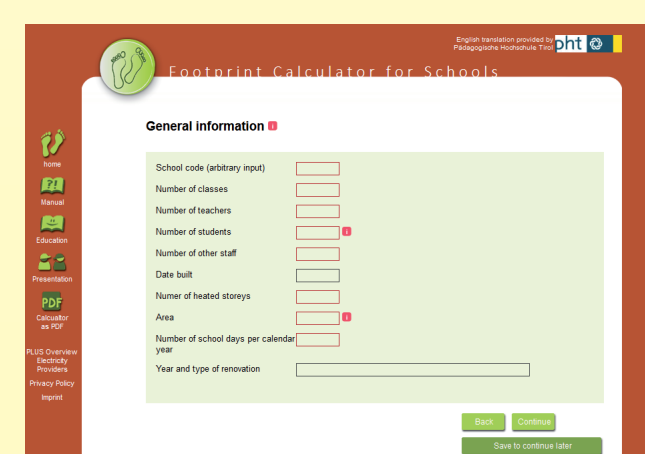
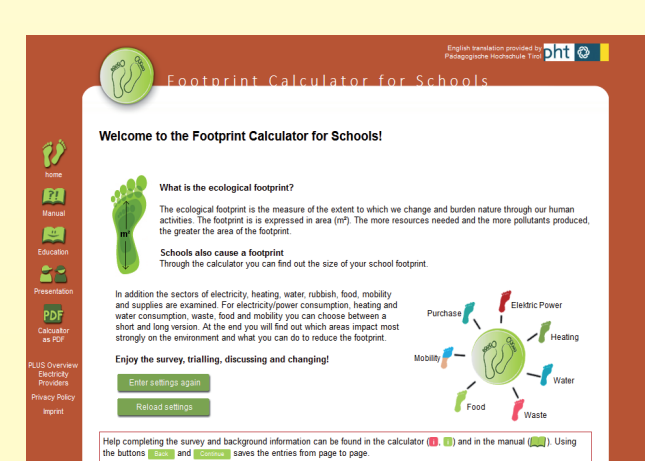


### What is the connection between the use of the calculator & action research?

The goal is the reflection on experiences, learning, insights, competences, e.g. on the basis of personal research diaries of pupils and teachers.

Research diary – divided into logbook and reflection page

- Logbook: factual, chronological report:
  - What have I done?
  - How did we work?
  - What are the results?
- Reflection:
  - How have I fared? (pleasant, interesting, good team ...)
  - What was exciting, surprising, instructive?
  - What did I learn or recognize?
  - What considerations and consequences do I draw from this?



### Context of the international version of the Footprint Calculator for Schools

The Footprint Calculator (FARS) was commissioned by the Austrian Federal Ministry of Education, Science and Research and developed in cooperation with Graz University of Technology. The tool was supported for several years through online teacher training seminars held by the Austrian University College of Virtual Teacher Education. The international version of the FARS has recently been developed in close collaboration with the Pedagogical University in Tyrol.

In view of the current climate debate, this international version is a meaningful contribution to pedagogical work to support sustainability actions and local climate protection in schools and also to the foster the implementation of the Sustainable Development Goals (Agenda 2030). This concerns the following objectives

- # 4 => High quality education;
- # 7 => Affordable and clean energy;
- # 11 => Sustainable cities and municipalities (municipalities are school holders!);
- # 12 => Responsible consumption and production patterns
- # 13 => Measures for climate protection. (<https://bildung.bmbwf.gv.at/euint/sdgs/index.html>)

**Keywords:** Energy, ecological foot print, climate change, resources, action research

**Link:** [http://www.fussabdrucksrechner.at/schulen/index\\_en.html](http://www.fussabdrucksrechner.at/schulen/index_en.html)

