

## Learning for Lakes:

Tourism Case Study



**Title:** HELIO – a floating platform on Lake Constance

**Location:** Western part of Lake Constance (Germany & Switzerland)

**Period:** 1996 – now

**Organisations:** Bodensee-Stiftung (Lake Constance Foundation), Allianz-Umweltstiftung, BUND-Möggingen and various local companies and bank institutes. Today, HELIO is owned by Bodensee-Solarschiffahrt GmbH

**Budget:** costs for solar boats vary depending on the size and the material. HELIO was a prototype and therefore more expensive than solar boats are nowadays.

### Location and Background

Lake Constance is the third largest freshwater lake in Central Europe. The lake and its catchment is an attractive habitat for plants and animals as well as for human beings. Around 3.8 million people live, work, and relax in the Lake Constance region. Every day, over 5 million people rely on drinking water pumped out of the lake. As a popular holiday destination, the lake region registers over 8 million overnight stays per year and up to 50,000 boats are based there.

HELIO is the major solar boat within a fleet of 6 solar boats crossing Lake Constance. The solar catamaran has a capacity of up to 48 passengers and is used for thematic excursions, environmental education and private events in the Western part of Lake Constance.

### Problems/Issues and Causes of Issue

Even though the water quality has continuously improved in the last decades, Lake Constance still faces a lot of other challenges. The shore regions with over 500 inhabitants per km<sup>2</sup> are among the most densely settled areas. The increasing traffic produces pollution and intensive agriculture threatens flora and fauna. Industrial settlements (textile factories, metalworking industry and car factories) were established early on and the abandonment of non-economic sites (particularly grasslands and orchards) leads to the dramatic loss of typical and valuable landscape structures as well as animal and plant species. Furthermore, harbors, marinas and jetties damage the shoreline and protected areas are under pressure due to increasing urbanization of land.



## Organisations Involved

HELIO was inaugurated as part of a “Zero-Emission Initiative” of Lake Constance Foundation. Today, the owner of the boat is the Bodensee-Solarschiffahrt GmbH. Partners of the project include Allianz-Umweltstiftung (the environmental foundation of Allianz), BUND Möggingen (Friends of the Earth Germany in Möggingen) and various local companies and bank institutes. The city council of Radolfzell advertises HELIO in the framework of its tourism and marketing strategy.

## Actions Taken

The solar boat HELIO was inaugurated in 1996. In those times, curved solar panels were a real innovation and the design very futuristic. The boat is equipped with 4.2 kWp solar panels producing maximum 4,500 kWh equivalent to approx. 2.5 tons of CO<sup>2</sup>. The energy is stored in batteries which allow HELIO up to 8 hours of autonomy if the sun is not shining. Two motors with a capacity of 8 kW each move the solar catamaran with a maximum speed of 10 km/h. HELIO operates from April until the end of September. The price for a tour starts from 4 € up to special prices for special events. The boat can be rented together with the crew for about 270€ per hour. In 2011, about 8.000 passengers experienced a trip on the HELIO. More information available on: <http://www.solarfaehre.de/>

## Maintenance and Monitoring

HELIO is a prototype constructed with stainless steel which made the boat very expensive. The advantage is its long term duration and low maintenance costs of approx. 1.000 – 2.000€ per year.

## Results and Benefits

The HELIO boat trip transforms passengers’ objections towards renewable energies into positive memories: tourists are impressed by the autonomy of the boat and the total lack of any engine noises or smells. Due to the silent shifting of the solar boat, people can observe water birds at close range or enjoy concerts in the middle of the lake.

HELIO is an excellent device for environmental education. Within the programme “Schwimmendes Klassenzimmer” (Floating class room), a co-operation with Allianz Umweltstiftung, 30 school classes with about 1.000 pupils per year experience the Lake Constance ecosystem and learn about the functions of the lake, water quality, fauna and flora as well as renewable energies. Also adults can enjoy educational trips with an experienced referee on the peninsula Mettnau. An excursion to the most ancient reservation of Baden-Württemberg is conducted in co-operation with the Nature Information Center Mettnau.

## Lessons Learnt

HELIO is a prototype constructed of stainless steel, which made the boat very expensive. Nowadays, solar boats can be produced in a much cheaper way, as the technological know-how on the use of solar panels has improved significantly in recent years. However, being the first solar boat of its kind, HELIO played an important role in promoting renewable energies in the tourism sector.

Originally, the boat was used as a ferry boat to connect the German and Swiss shoreline. But in order to offer attractive prices for public transport continuous subventions are needed – not a good basis for a sustainable business model. In order to make the boat economically



more viable, the disabled accessible HELIO also serves as a platform for private events such as weddings, festivities, birthday celebrations or business meetings since 2001. On chartered excursions, the boat turns into a floating restaurant with culinary delicacies. In addition, HELIO takes off for cultural events like concerts and lectures and offers scheduled round-trips, starting at Radolfzell port.

**References:**

Canalicchio et al. (2011) *SLOWTOUR Manual on Excellence of Lake Tourism in Europe* Castiglione del Lago: BRUGI communication, pp. 76-77.

<http://www.solarfaehre.de/>

<https://www.facebook.com/Helio.Solarschiff.Bodensee>

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