



CLIM'ABILITY DESIGN: NEWSLETTER NO. 7

JANUARY 2022

All the latest news from
the Clim'Ability Design project!

Three times each year, we'll be publishing this trilingual newsletter on the Clim'Ability Design project. We'll be telling you the latest news from the project, sharing technical information on the impact of climate change on the Upper Rhine region, and presenting operational solutions to help you adapt and future-proof your business.

BE 4.0 Industries of the Future Fair – Clim'Ability Design was invited to give a feedback on Covid-19

Florence Rudolf, Scientific coordinator of the project



What are the links between the Covid-19 pandemic and climate change? Such links are manyfold by hypothesis and are being studied, but one thing is certain: **Covid-19, just as climate change**, reveals what all experts in social sciences – whatever their geographic origin – qualify as **global risks**. They represent the other side of sustainable development (Brundtland Report, 1987) and are thus described as « **boomerang feedback** » by Ulrich Beck, the author of the *Risk Society* (*Risikogesellschaft*, 1986).

Just like all civil society and economic actors, Clim'Ability Design was also caught off guard by the interdiction on conducting normal activities. **The CAD project has embraced this unusual situation to conduct remote interviews.** The result of these interviews has been a corpus of information that reflects on the **first adaptation measures**, i.e. emergency adjustments made by economic actors. The companies contacted were from various sectors (agri-food industry, brewery, bookstore, culture and art). Their feedback shows **contrasted situations** depending on whether or not their activities were essential. Some companies have seen a record boom in their order books, for others they collapsed. **This situation has mobilized different functionalities**, as evidenced by their description of the adaptation of equipment, access to raw materials, production lines, warehouses, human resources, logistics, etc. which were not always up to the new constraints. If the **use of digital technologies** has been unanimously adopted (albeit with differences according to generations), the services they offer were not always appropriate to support the activities. Last, timeframes have undergone major modifications, with multiple consequences, **sometimes creative and bringing innovations!** In the face of this totally new context, all companies insist on the **importance of communication** as well as of forms of **social solidarity** (between peers, from the civil society or the government). Lest we forget the fact that **company culture** and the **relationship to the territory** are an important factor of success.

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How does climate change affect hop quality and how are brewers adapting?

This may not be the most often mentioned consequence of **climate change**, but did you know that it could **change the taste of beer**? It has a major impact on an ingredient that is used in small quantities perhaps, but is essential for the taste and aromas of the beer: **hops**.

Rising temperatures and droughts represent a real threat to hops in quantitative terms but most of all in qualitative terms. Indeed, higher temperatures, in particular in spring, lead to a **reduction in the content alpha acids**, the molecules responsible for the bitterness of hops. Without these, hops lose a large part of their benefits for beer flavouring, or even become useless. In terms of quantity, water stress **exhausts the plant** and the yields decrease from year to year. This could **jeopardise the supply chain of brewers**, at a time when the demand already exceeds the offer, in particular in organic beers.

Hop growers are trying to adjust to these evolutions by **developing new varieties** and **experimenting with irrigation or misting** to cool the plant. But there are significant difficulties: selection of varieties and experimenting take time, and misting favours fungal diseases.



Yarrow – the new hop?

How can brewers adapt at their level? Two strategies are mentioned.

The first consists in **preserving the properties of the beers** by increasing the amount of hops in the recipes to maintain the same alpha acids contents – which of course has an impact on costs – or by using stronger foreign hops.

A second type of adjustment consists in **evolving the beers according to locally available ingredients**, for example by making beers with less hop content or replacing hops with other plants such as Yarrow or Ground Ivy.

These strategies also respond to **different sales logics** addressing different clienteles whose expectations vary, in particular since adapting the beers to local ingredients is rather counter-current to the current trend of *craft beers*, and in particular to India Pale Ale (IPA) beers.

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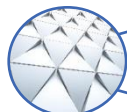
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From words to actions – The Real Laboratories

Presentation of adaptation and mitigation measures to various stakeholders of the Quartier Klybeq in Basel and the Birsfelden Harbour. But which of these measures will really be effective in the end? Our partners have made a first selection – and we now move to take action with the actual laboratories.



The **Klybeq Real Energy Laboratory** aims at developing and testing new alternatives for sustainable energy production (see first box opposite). Two other topics « The 15-minute city » and « Food and Innovation » will be addressed in a yet to be defined format. As for the adaptation, the Clim'Ability Design (CAD) team act as an « idea broker » by proposing non-conventional measures. And we welcome all new ideas for designing the squares of the neighbourhood (creation of Cools Spots), the use of water and CO2 absorption. The project planning team in charge of the implementation takes all ideas into account and passes them on to the coordination group, which allows for a large and multidisciplinary approach.



Sustainable energy: Klybeq will be a climate positive quartier. The CAD team collects innovative proposals for sustainable energy production. The implementation is then carried on by partners.



The 15-minutes city: The residents of the Quartier Klybeq should be able to live without a car for their daily requirements. The CAD team evaluates what services and infrastructures are needed within a given radius.



Food & Innovation: The Quartier Klybeq will play a pioneering role in the field of innovation for sustainable food. The CAD team selects competent partners from the region and beyond. A first meeting is planned for the year to come to favour the exchange of ideas.

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The **Industry and Climate Real Laboratory** in the Birsfelden Harbour is testing measures for adapting to climate change – using existing infrastructures. They focus mainly on the optimization of infrastructure and the creation of open spaces. A workshop on this topic will be organized in January 2022 with local private companies.

Optimization of infrastructures: The existing infrastructure must be as optimally adapted as possible to cope with the expected climate changes. For the most part, this includes green roofs and façades, freeing up sealed surfaces and using more permeable ground coverings.



Creation of open spaces: The Quartier should have more open spaces that can be shared by the persons working in the Birsfelden Harbour, either during breaks or for leisure. These spaces should serve as Cool Spots.



Collaborative search for solutions to low water levels in the Rhine, based on the association of social sciences and engineering sciences

Ein Einblick in die SWOT-Analyse der Interviews

In the 4th newsletter (January 2021), Amadou Coulibaly (INSA Strasbourg/Icube Laboratory, CSIP Team) presented the inventive design method (MCI-Triz) and the main phases of its implementation. Since that date, our joint exploration of the **crisis of low water levels in the Rhine in 2018** has made significant progress. On the side of social sciences, **some fifteen individual qualitative interviews** have been conducted with a network of companies involved in river logistics (institutions, shippers, operators, etc.). The aim was to **take stock on the Trig impacts and challenges** of the low water crisis on their activities, the adaptation strategies implemented and the possible actions considered. These interviews have then been analysed according to the **SWOT method** which identifies the **strengths** and **weaknesses** of the companies interviewed, as well as **opportunities** and **threats** (risks) posed by severe low water levels mentioned during the interviews. The analysis has highlighted positive and negative elements to face a period of low water, depending on the company or its environment. The results are presented in summary tables that provide **an overview of the inland waterway transport sector during low water periods**, but are also useful for a particular company to **develop strategies to improve its performance during low waters periods**: How to overcome weaknesses by taking advantage of opportunities? How can threats be reduced by using strengths? What actions can be implemented to mitigate a risk or seize an opportunity?

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Positive (to overcome low waters)

Negative (to overcome low waters)

STRENGTHS

- Low water surcharge
- Development of rail and road services
- Diversification of activities
- Cooperation/mutualization between container transport operators

WEAKNESSES

- Very large vessels
- Limited cooperation/mutualization between operators
- Low commitment of customers to the company
- No sustainable alternative transport solution during low waters periods

OPPORTUNITIES

- Development of communication/advertising around the waterways
- Sustainable development of the Rhine
- Reduction of the draft of the ships
- Improvement of the reliability of water level forecasts
- Development of digitalization

THREATS

- Lack of action of the French public authorities in the face of low waters
- Loss of attractiveness of inland waterways
- Uncertainty about the profitability of investments in sustainable river development
- Opposition of environmental groups
- Costly short-term work financing in France and risk of weakening the French companies compared to the less economically stressed Swiss/Dutch companies

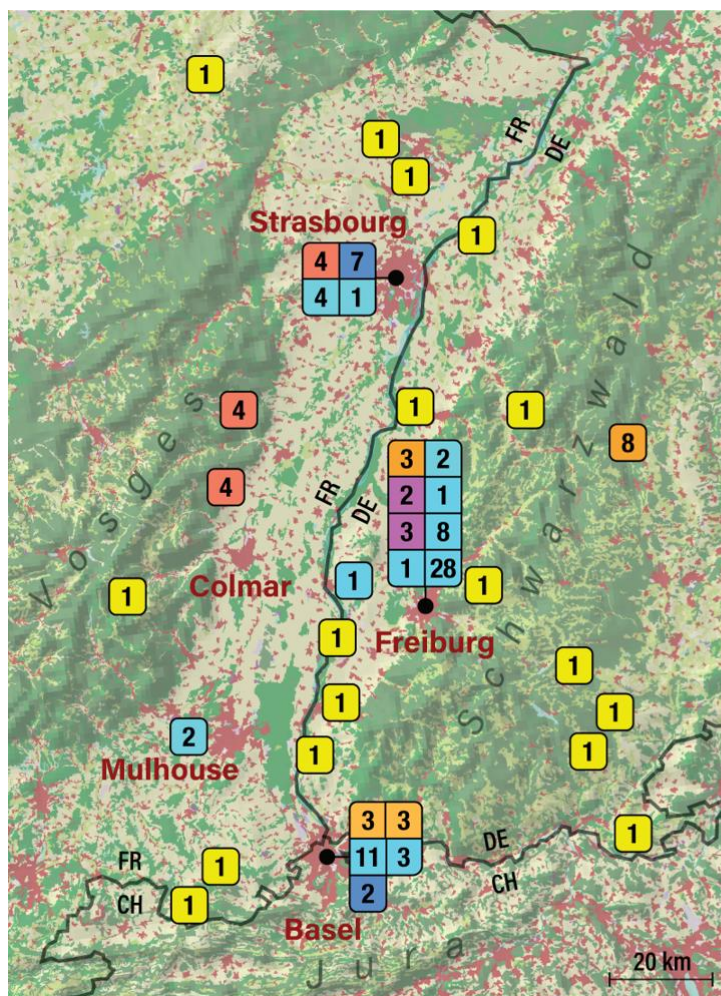
SWOT analysis: Ship owner, Group Conteneurs

Internal origins

External origins

To go further

MoBiMet measurements in the Upper Rhine region



Enterprises equipped with MoBiMet

- Agriculture, forestry, food industry
- Raw material, wood, textile industry
- Electronics, mechanical engineering
- Chemical industry
- Logistics
- Service, education

1 — Number of MoBiMets in the company

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In Spring and early Summer 2021 120 MoBiMets (Mobile Biometeorological System) were installed at different workplaces in Switzerland, France and Germany. The MoBiMets continuously determine the thermal comfort at the different workplaces every 5 minutes until autumn 2022.

The collected data is sent to the server of the University of Freiburg in real-time and visualized on the website mobimet.uni-freiburg.de. The next step is to use the previous measurements from the MoBiMets and the weather forecasts from the weather services to generate workplace-specific forecasts of the thermal comfort.

They talk about Clim'Ability Design

News on the website & on social networks

CAD GENERAL ASSEMBLY

"On the 8th and 9th October 2021, Clim'Ability Design organized its first General Assembly..."

The complete articles are accessible at clim-ability.eu/actualites

Clim'Ability Design present during the Open Access Week 2021 at the INSA Strasbourg

During the Open Access Week 2021 at the INSA Engineering School in Strasbourg, Florence Rudolf, coordinator of the project, gave a presentation on **participative science**. She explained how **experts and economic actors produce data and scientific knowledge in partnership**, in particular through the **Landing Game**. Companies, researchers, local authorities, architects, landscapers, urban planners and associations based in the Upper Rhine are invited to **use this dialogue tool** to try to clarify, elaborate and consolidate together ways of adapting to climate change, in connection with the territory: it is a question of **betting on local collective intelligence**.

[To find out more](#)

Clim'Ability Design at the Water Observatory

Meteo France, partner of the Clim'Ability Design project, was present on November 18th, 2021 for the Water Observatory in Troyes, organized by the SDDEA (Syndicat Départemental des Eaux de l'Aube). This first edition dealt with « **Water and climate change: what models, what actions for our territories?** » David Pelot presented before 300 persons from various horizons (representatives, local powers, companies, etc.) the state of knowledge on current and future climate change **from the planetary scale to that of the Aube department**.

[To replay the exchange](#)

Managing floods in the Upper Rhine and the Greater Region: a workshop to reflect on adaptation strategies

Within the framework of the Clim'Ability Design project and the « Water » working group of the Greater Green network, a workshop was organized on December 9th, 2021 on the theme of flooding. Following several **testimonies of scientific and economic actors** concerning the floods of July 2021 in Germany and in Belgium, a time of exchange allowed to reflect on the **issues and needs for innovation, both technological and « social » or « organizational »**, in order to better manage floods in the context of climate change.

[To replay the exchange](#)

Coming up at Clim'Ability Design

25 March 2022: Industry Night Basel



The **"Industry Night"** proposes to the general public in the Basel region a unique opportunity to discover, from the inside, the various companies of the region.

Numerous economic actors from various sectors of activity will show you their creations and their corporate culture – such as Klybek and its partners, or **the Clim'Ability Design Project**.

The latter will be **represented by an exhibition of the highlights of the last two years of research as well as future projects**, presented in an educational and entertaining way. We are looking forward to welcoming many visitors!

[To find out more](#)

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Dépasser les frontières, projet après projet / Grenzen überschreiten, Projekt für Projekt

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