



CLIM'ABILITY DESIGN: NEWSLETTER NO. 3

NOVEMBER 2020

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

Three times each year, we'll be publishing this trilingual newsletter on the European 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.

Urban heat islands as trigger for action?

Cédric Duchêne-Lacroix, University of Basel, Tina Haisch and Florian Jakob, University of Northwestern Switzerland

In the Upper Rhine, it is possible that we will work and live in denser cities in the future. The trend is towards the **production of dense neighbourhoods**, mixing housing, business and leisure to avoid urban sprawl, optimize the use of infrastructure and reduce greenhouse gas emissions from transport and buildings.

However, modern dense cities are subject to greater heat than the rest of the country. **Localized temperature increases** (heat islands), without a decrease in night-time temperatures, are increasingly common in urban areas. Records show that when the weather forecast predicts 37°C in Basel, it is already 42°C on average in the artificial, post-industrial district of Klybeck. This does not "just" affect well-being. It affects the declining **work performance**, **product quality** and **health** of an ever-increasing number of workers and residents of these districts.

The recurrence of periods of high heat makes its management and the reduction of **heat islands** inevitable. It is a visible indicator and a challenging shared experience that can be a **starting point for conscious action** to address climate change. In places where the master plan is evolving, it is a matter of persuading all stakeholders - entrepreneurs, developers, politicians, residents - of the value of a **systematic and coherent sustainable approach**.

For **the mitigation of heat islands benefits everyone**. Whether through the renaturalization of neighbourhoods, lowering the vulnerability of businesses, increasing productivity, reducing greenhouse gas emissions, etc., support for the fight against climate change is essential because of its **positive economic, social and environmental benefits**.

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Too hot and too dry once again – the situation after the summer 2020

Spring 2020 was already very hot and dry in the Upper Rhine region. Unfortunately, this negative trend was confirmed this summer. **Rainfall deficit** summed up to 70 to 75% in April and July.

	June 2020	July 2020	August 2020	Average summer 2020
Temperature difference	+0,4°C	+1,4°C	+2,3°C	+1,4°C
Rainfall difference	0 %	-74 %	+12 %	-21 %

Difference is calculated compared to the reference period of 1981-2010 from 7 weather stations in the region.

During summer, we usually see very **high temperatures**, including a long heat wave in mid-August, and great **drought**. But this summer has been especially dry: July 2020 has been the driest month in Alsace since 1959 with only 12 mm of rainfall in Strasbourg. At the end of August there was more precipitation, but only due to several severe local thunderstorms. It was not until the end of September that the rainfall became more regular.

It has been the **third remarkably hot and dry summer in a row**. In 2019, temperature records were broken in July, whereas 2018 was the second hottest summer since 2003 with a record number of hot days. The fact that summers have regularly become hot and dry is a **clear sign for climate change**. As a result, the **vegetation** and especially the forests are **under higher stress** every year.

In the Feldberg region, we can currently see **broad areas where spruces have been uprooted**. They had already been weakened by two exceptionally dry summers in 2018 and 2019. The high temperatures are highly favourable for the bark beetle, which weakens the trees even more. Furthermore, a storm with medium intensity uprooted large parts of the spruce forest in February 2020. Numerous trees had to be felled to prevent further **propagation of the bark beetle**. As a result, wood prices dropped in the last years.At the beginning of June 2020, in the southern Black Forest, the **beeches had already turned autumn colours**. Since the previous winter was mild, beech trees in higher altitudes **budded very early**. Unfortunately, during the "ice saints" period, new and already well-developed leaves were severely damaged by **frost**. Since the beeches had to produce new buds, their condition worsened and they were more vulnerable to stress factors like strong winds or drought. The beech is the second most endangered native tree species after the spruce.


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The development areas as key actors in the strengthening of the Upper Rhine's adaptation to climate change: focus on France

Following up on our second Clim'Ability Design newsletter, we focus once again on partnership programmes in the Upper Rhine region to support areas characterised by their economic activity. In our third newsletter, we will focus on France. The authorities at the wholesale market **"Marché-gare" in Strasbourg** accepted to carry out a vulnerability diagnosis on heat waves, **in cooperation with Adeus** (Agency for development and urban planning in the Strasbourg agglomeration).


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Heat islands are a consequence of global warming. Mostly found in urban areas, they are a consequence of a combination of various factors: land sealing, the use of certain building materials, the type of urban planning, the use of fossil energy, etc. Heat islands have a very high thermal inertia, which is a key factor during heat waves. Heat islands keep **high temperature levels** for longer periods and have a **negative effect on the quality of life and work accident statistics**.

In order to cope with these effects, many tools can be used: **mitigation**, adjustment to the consequences of global warming, reduction of the use of fossil energy in buildings and transport (in order to reduce greenhouse gas emissions). Planners can also choose to increase biodiversity and water circulation in urban areas, thus creating a kind of thermal comfort (planting areas, increasing the use of water-permeable pavement, renaturation of watercourses, etc.). An assessment was carried out, during which the daily business and the buildings were monitored. With the help of our Clim'Ability toolbox, we were able to visualise the areas in which heat waves are most likely to occur. With our **first diagnosis**, we are going to develop **two planning scenarios** for the Marché-gare, in cooperation with Adeus: the first one is to be implemented step-by-step, the second one requires a pro-active programme. Our research will continue: **sensors** are to be installed in order **to measure thermal comfort** in the course of Clim'Ability Design project. The results of this second phase will be cross-checked with the systemic approach on the one hand and with the sensor data on the other hand.

Please feel free to contact us if you would like to build a partnership with Clim'Ability Design to re-design your area of economic activity.

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Conducting interviews to gather knowledge and learn about climate change

How does climate change affect entrepreneurs in the Upper Rhine region? To what extent do they deal with climate adaptation in their day-to-day business?



The skiing area Muggenbrunn in the Black Forest in January 2020. The ongoing interview campaign deals with climate adaptation for winter tourism.

In order to answer these key questions of our research project, we conduct interviews with business representatives. During this **new interview campaign**, we will add 25 new interviews to the 100 previous ones.

The interview campaign is coordinated by Prof. Rüdiger Glaser and Nicolas Scholze from the **University of Freiburg** im Breisgau. The interviews are conducted and analysed as part of a project study by students of the Master's programme "Geography of global change" as well as their partners from **UHA Mulhouse** and **INSA Strasbourg**.

The study is centred on the following industries: **logistics, forest and wood industry, winter tourism, water supply and brewing**. Due to the coronavirus, the interviews are conducted via phone or video conference.

All of these case studies follow a **transnational approach**. By interviewing French, Swiss and German companies from the Upper Rhine region, the interviewers want to emphasize **differences in climate change management**. Alsatian breweries might implement different adaptation measures than their German or Swiss colleagues, since French **legislation** is different or the French and the German interior **markets** are different.

We want to **identify these differences and make them known internationally**. In order to achieve this, we are creating a **freely available, trilingual database**. Since we want to target new audiences, we are also experimenting with **innovative means of communication** like online documentaries, dialogue forums or graphic novels. Cultural diversity is an opportunity to learn from each other and to improve the joint preparation for climate change.

Please contact us if you would like to take part in the Clim'Ability Design interview campaign.

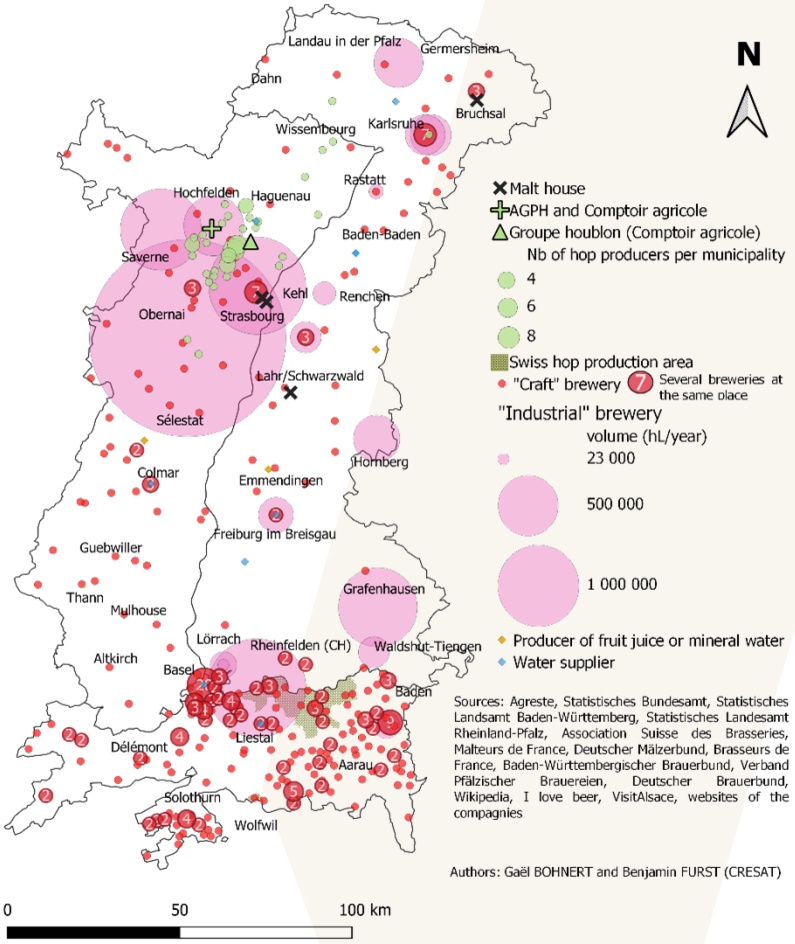
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To go further

What about Upper Rhine breweries' adaptation to climate change? Investigative work with the brewing industry actors conducted jointly by the University of Haute-Alsace and the University of Freiburg im Breisgau



The beer sector and other enterprises of the water sector in the Upper Rhine region

The **brewing industry** is particularly **sensitive to climate change** due to its reliance on water and on barley and hop production. **Hop** is predominantly cultivated in the Lower Rhine region and its harvest and quality are strongly affected by heat and droughts. **Barley and malting** are also dependent on temperature and precipitation. Beyond raw material issues, in the event of droughts and heat waves, industrial breweries as well as the many craft breweries in the Upper Rhine region may have **difficulties cooling their fermenters**, while at the same time handling **water restrictions**.

They talk about Clim'Ability Design

News on the website & on social networks

SALON BE 4.0 : CLIMATE RESILIENCE AT THE HEART OF THE DEBATES (REPORT)

How to adapt its industrial activity to climate change and decarbonize its investments? ...

INTERVIEWS AND PHOTO ESSAYS AVAILABLE SOON

On the occasion of the last team meeting on July 15 at the University of Offenburg, video interviews of the project partners were filmed ...

The complete articles are accessible at clim-ability.eu/en/category/news/



Scientific publications & articles

- Averbeck, P.; Rudolf, F.; Gobert, J.: **"Natürlich natürlich ?! Wie natürlich sollten die Wälder der Biosphäre Reservat Pfälzerwald-Vosges du Nord in Zeiten des Klimawandels sein"**, *in* Choné, A.; Hamman, P. (dir., hg.), Environmental Humanities in Frankreich und Deutschland: Wälder, Gärten, Pflanzen: Wissenstransfer und Wissenserneuerung, Bern, Berlin, Frankfurt am Main, Oxford, New York, 2021

Clim'Ability Design at the Festival International de Géographie

The **Festival International de Géographie** (International Geography Festival) "Climat(s)" took place from **2 to 4 October** in Saint-Dié-des-Vosges (Lorraine). Florence Rudolf (INSA Strasbourg), Sophie Roy (Météo France) and Brice Martin (UHA) **presented the Clim'Ability Design project** in order to sensitize the public to the consequences of climate change for the Upper Rhine region.

"Visibility of nature in urban planning": Clim'Ability Design's testimony

On 28 September 2020, Clim'Ability Design was invited to **La Cité Descartes** in Champs-sur-Marne by Groupe Transversal Natures Urbaines (Labex Futurs Urbains). They talked about the **challenges for the forest and wood industry**.

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Coming up at Clim'Ability Design

The Clim'Ability Design website is now online!

In October 2020, the **new layout of the Clim'Ability Design website** was launched. Built in a **storytelling format**, the new look of the website is now cleaner and talks directly to the target audience - the companies.

The **tools developed by the project** as well as its **history** and **objectives** have a prominent place in the structure, designed to invite the user to explore it and discover everything about Clim'Ability Design.

The new Clim'Ability Design website is now online and ready to be used on all devices:

Click here to consult the website

Let's keep in touch!

Visit our website : **clim-ability.eu** and our social networks:

Email us at **climability.eu@gmail.com**

To suscribe to the newsletter : **Click here** or send us an email at **climability.eu@gmail.com**

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

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