Deliverable 1.4

WP1 Lessons learned and guidelines

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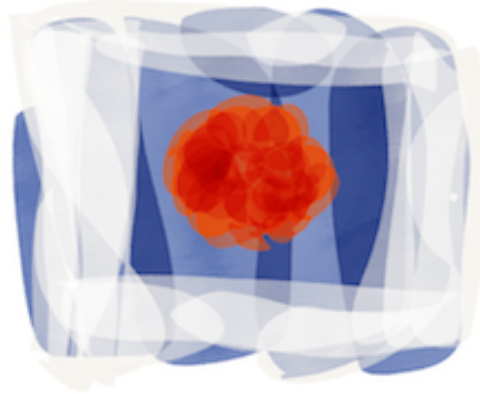
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Executive summary/summary

Lessons learned and guidelines

Climate services mostly provide numbers and statistics. In CoCliServ, we aimed to add local meanings and perceptions of climate and its changes. In order to make climate policy feasible, climate as a matter of fact has to be turned into a matter of concern, numbers and statistics have to be made meaningful. In WP1 "Narratives of change", the goal was to provide the basis for the co-production of place-based climate services for action, and in the following we present some of our insights, our lessons learned and guidelines.

In five different places in Europe, we looked for narratives about local weather worlds, about climate and its changes. We started with **mapping narratives of change** and singled out different qualitative types of narratives, such as

- geo-political and geo-social narratives;
- narratives about identity, belonging and heritage;
- science-based and climate change narratives;
- narratives about different weather types, local disasters and catastrophes.

From here it is a small step to the insight that our life stories and personal narratives, but also our world views and politics are deeply weathered. This list is open for more types of narratives; what it accomplished was the insight that climate and weather are not out there, but that they are an integral part of our existence. As Roni Horn (2007) once pointedly expressed, it is not only that we report the weather, but "Weather reports you").

In a second step, we considered **climate and weather in time**, from a chronological perspective. In order to do so, we borrowed a concept from literary theory, **chronotopes**, which is defined by Bakhtin who researched how literary events are situated in specific configurations of time and space. For example, when in a film someone is writing on a type writer you know that we are in the 20th
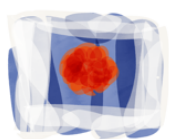
century, in the pre-digital age. As long as human and natural history are considered separately, events are situated mostly in the past five or six centuries, or, in the case of the bible, the last 2000 years. But once we consider our climatic or ecological footprint, we situate our existence in a timeline of millions of years and geographically on planet Earth. This is the true meaning and relevance of geo-social stories: to situate events in terms of geological and earthly categories. Our case studies provide many examples of those climatic chronotopes, be it flood markers, historic monuments, buildings, dikelines or foot paths. As an effect of using this concept, climate becomes a geo-cultural and place-specific history.
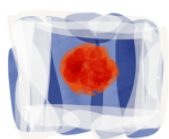
Based on these epistemological and methodological approaches, we finally wrote our own narratives of the specific narratives of change. All of us did so in the way anthropologists do: the narratives of change are the result of empirical field stays and close relationships with local actors, human and non-human. They are based on co-operation and on intimate knowledge of the social, economic and political environment and weather conditions in the respective field area. In short, we considered local narratives of change in a situated manner, as those of humans that are involved with the environment they actively inhabit, shape, administer and make weather- or climate proof.

All of the researchers were involved for a certain amount of time with the places and people of their field sites. In one way or another they committed a time of their own life and personality, in order to gain trust, to make people tell their stories and to make them participate in the scenario exercises, the workshops and citizen science activities. We all entered those life worlds in a specific moment in time, and from a specific perspective; no one can claim to capture it all. There were ongoing projects, civic or municipal; other projects or activities were started through the co-operation of researchers and local actors. Each project has its own story to tell. This is also a main lesson learned, that there is not a uniform approach
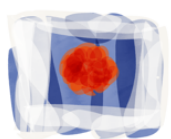
to local or regional weather worlds; it takes a project, an interest, a perspective – each project has to be situated and made fit for purpose.

The variety of our approaches and projects is reflected in the individual reports in the 3rd deliverable. For example, in Dordrecht, class relations are an important factor when it comes to the adaptation to climate change. In Bergen, current climate change seems to overwrite the already extensive and deep relationship of local inhabitants to their weather, turning Bergen into a climate city. In the Golf du Morbihan, the co-operation of local artists, climate science and CoCliServ actually shaped a new climate infrastructure, a local foot path which according to the authors will become a new chronotope – the coast will be anchored in a configuration of very long time and as a reaction to local effects of global climate. In Northern Germany, two work-shops with local actors finally resulted in a new public forum, a climate market, which will exist beyond the scope of CoCliServ and provide local climate information and stir local climate action. And finally, in Brest, we learned that climate weaves fine webs in and among the lifelines of those who were forced to migrate and seek refuge in the quarter of Kerourien – there is no life without climate, but some climates and weathers remind us of where we come from, and others where or what we long for. Again, arts and the procedural process of co-development are an outcome in itself. This knowledge is indispensable for making place-based climate services fit for action. It is a knowledge that empowers people to actively shape their environment in a meaningful way.

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Goal/Purpose of the document

The purpose of this document is

- To provide an overview over the results of Work Package 1, Narratives of change;
- To critically discuss the role of narratives in the production of place-based climate services for action;
- To document the lessons learned from the five case-studies;
- To inform the consortium and the respective site organizers from scenario building, climate services, metadata, citizen science and knowledge assessment,
- and to provide guidelines for the implementation in other sites.

Relationship to the Description of Work (DOW)

The goal is to provide lessons learned and guidelines for implementations in other sites.

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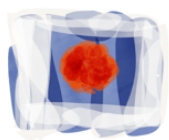
1. Dordrecht case study / The Netherlands

Arjan Wardekker

Disciplinary background

The core discipline of the Dutch research team is in environmental studies and environmental governance. My own background is interdisciplinary; both social science and natural science, and a developing interest in the humanities. The way I use *narratives* in environmental studies, was mainly in relation to the study of climate and environmental *risk perception & communication*, *framing*, and *discourses*. Actors relate to specific societal challenges and policy proposals in various ways, as expressed through their language, argumentation, perceptions, and interactions. These perspectives may contrast, conflict or match up, which can impact how society responds to environmental change and to policy change, which coalitions emerge, or how policy debates evolve. In the scenario development field, narratives are sometimes used in a different way; 'scenario narratives' detail the reasoning embedded in specific *environmental/exploratory scenarios*, e.g. how different drivers might combine, interact, and lead to future change. This helps make such reasoning more explicit and can also make the scenarios livelier and engaging to others. Furthermore, the term narrative has been used for *policy scenarios* (which is what CoCliServ uses) to reflect more detailed storytelling of what future visions and potential pathways might look like. Communication/perception narratives were our main disciplinary and methodological starting point, but the notion of scenario narratives did give us some inspiration to try to build on narratives to design visions and scenarios.

Approach to narrative research

In the CoCliServ project, we started with discussing the goings on in Dordrecht with the Municipality of Dordrecht, who was a core project partner for the Dutch case study. The municipality was developing adaptation plans for different

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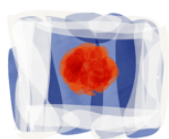
neighbourhoods and wanted to strengthen its collaboration with citizens in this effort. Traditionally, meetings are announced and held in which citizens can contribute, but this often attracts the 'usual suspects'; the more affluent, well-educated, majority residents that are familiar with municipal and policy issues. Socio-economically less well-off groups are often not there. We decided to focus on one specific neighbourhood (*Vogelbuurt*) that had socio-economic challenges, much social housing, a pending urban renewal effort, and also needed adaptation plans developed. We were particularly interested in how the narratives of policymakers compared to narratives of neighbourhood residents. Interviews with policymakers at the Municipality, Water Board (regional water authority), Rijkswaterstaat (national water management & infrastructure agency), and the Province were arranged through our municipal and our own contacts. This went very smoothly; policymakers know what to expect with such interviews and policy researchers know how to research policy. Initially, we tried to arrange interviews with citizens through municipal contacts as well, but this didn't go so smoothly. Only when we established good connections with the Vogelnest neighbourhood centre, which also runs a local café and is a meeting spot run by a local social entrepreneur, things progressed rapidly. MSc thesis student Benedikt Marschütz spent several days in the Vogelbuurt and surrounding neighbourhoods, visiting local museums, and staying at the centre and talking with people connected through the entrepreneur. This was a light, informal setting and we used a fairly flexible approach (though with semi-structured interview questions available). This proved well-suited to the local residents.

To a large extent, the narrative work was similar to earlier experiences around (argumentative and critical) discourse analysis and framing analysis. We examined *patterns* in the arguments and situations in which they were made, similar to discourse analysis. We also looked at *contrasts* in the way people experienced the changes in their neighbourhood and the preferences they held to deal with these,
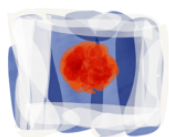
similar to framing analysis. Both methods often follow textual coding approaches (qualitative or quantitative) and we used that in our narrative analysis as well (see Marschütz et al., 2020). However, the concept of 'narratives' did force us to think more in terms of *sequences* of events, and the ways in which these were embedded in time and space/location. In a way, that actually led to a nice match with the scenario work in WP2 (scenario development): both deal with 'sequences of events leading up to...' (the past, present, or future). We particularly liked D2.2 on chronology and chronotopes (Krauß et al., 2018). This was a fairly conceptually oriented task, but it did improve our focus on the historical and material embedding of the narratives. The historical angle proved to be very important for Dordrecht (Marschütz et al., 2020). To link up with WP2, we did also have to diverge slightly from traditional approaches in narrative analysis, by explicitly asking and coding for future visions. These didn't always follow strict narrative structures, perhaps because they hadn't happened (yet) and respondents brought these into the interviews in another format. However, future visions were essential to the focus of the research, so we considered them in the analysis.

Outcomes

We assessed the narratives of policymakers and residents, using narrative and historical interviews, site visits, document analysis and photo documentation. Nine main narrative themes emerged: history, identity, vulnerability, practical experiences, adaptation, holistic action, socio-economic constraints, governance, and future perspectives. One particularly interesting narrative was related to history and identity. Historical floods such as the St. Elisabeth's Flood of 1421, which heavily shaped the region and formed the 'Isle of Dordrecht' (Dordrecht is inland, but surrounded by rivers), and the North Sea Flood of 1953 are deeply ingrained in the city's cultural memory and shaped an 'island identity' among policymakers and residents alike. This shared narrative shaped their perceptions of past, present, and future weather and climate issues (Marschuetz & Wardekker,
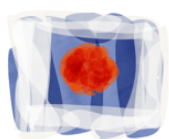
2018; Marschütz et al., 2020). This showed a surprising impact of historical events, embedded in local memory and identity, on how current and future climate change and climate action are interpreted and acted upon. These aspects are rarely explicitly taken into account in adaptation research and policy. A second key observation was that, while there was a common historical-identity narrative, the practical consequences diverged. Policymakers expressed a more managerial narrative, detailing the city's specific vulnerabilities to climate change and targeted climate adaptation approaches to deal with these. Residents revealed a more 'hands-on' narrative: they expressed a strong experiential awareness of water, weather and climate in their neighbourhood (e.g. extreme precipitation events, storms, large river discharge, flooding, etc.) and desired holistic approaches to take broad action on climate, sustainability, and other environmental issues.

The narratives of residents and policymakers showed both common threads and some clear differences in how they envisioned their environment. The common thread could paint a shared vision, which helps establish that there is a lot of reason for local actors to collaborate. We used the shared vision of Dordrecht as a resilient island (Wardekker & Marschütz, 2018). Within this vision, both policymaker (narrow, long-term, strategic) and resident (broad, practice-based, non-strategic) narratives have value. Following the narrative work in WP1, we organised a visioning and scenario workshop with residents, policymakers and researchers (Wardekker et al., 2020, p. 13-30). Three vision sketches were developed based on the narratives, each combining elements from the policymakers' and residents' narratives, but highlighting different aspects. The visions were Close-knit Island Community, Innovative Connections, and Water Safe & Water Wise. The first two were codesigned into full future visions in the workshop, and scenarios and knowledge need inventories were developed for both. The participants noted that much climate information is available in the Netherlands, but often developed from the national scale. They lacked local
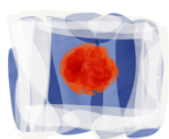
(neighbourhood scale) tangibility and salience. They emphasized the need for locally grounded information, linked with non-climate challenges, focused on options and neighbourhood improvement, related to local sensitivity to water issues and local acceptability of these, and perhaps timed with small disruptive events (which form a window of opportunity to discuss climate issues) (Wardekker et al., 2020, p. 29-30). The case study partners – Municipality of Dordrecht, Studio Lakmoes, CAS Climate Adaptation Services, KNMI Netherlands Meteorological Institute, and Utrecht University – are currently designing an experimental mock-up for such a new service. Recently, two rare extreme rainfall events in a row have caused considerable damage in the area. Some locations proved particularly vulnerable, because they were at low elevation points and the houses were even lower due to soil subsidence ("10cm water in the street, 20cm in the houses"), and insurance companies seemed to be reconsidering whether to pay for such costs in the future. The case partners are currently exploring the possibilities for a new service (app, website, or something linked to existing social media channels) that warns residents for approaching heavy rain showers and ties this to local resilience measures that residents might take to reduce the damage.

2. The Gulf of Morbihan / France

Charlotte da Cunha

Interdisciplinary approach and narratives

The French research team in Gulf of Morbihan is deeply interdisciplinary. It is rooted in the articulation of an academic consortium (researchers from environmental studies and climate sciences) with local teams. My own background is interdisciplinary, both social science and natural science. Due to using of multicriteria and scenario-based studies, I was already familiar with exploring 'scenario narratives' before CoCliServ. For instance, I explored how different
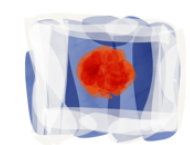
drivers interact and lead to futures of agricultural activities within a territory during my PhD.

I started the CoCliServ project with the idea to conduct a prospective exercise, scheduling the organisation of incremental scenarios workshop and interviews. WP1 was the first in the timeline, and narratives initiated a new reflection on my practice through the conceptual framework they called for. Narratives of change and chronotopes provided a new point of view to help restructuring our data. Narratives proposed a framework to analyse short and long-term changes in the Golf of Morbihan, with a historical look. Breaking away from the more descriptive 'scenario narratives', they made it possible to look at the territory from different viewpoints, reliant on the multiple histories of people and places.

Approach to narrative research

For the in-depth analysis of narratives of change, we followed the suggestion of Braudel (in Krauß et al., 2019) and others and developed a multi-level structure for the analysis of specific configurations of time and space. Braudel's chronology roughly differentiates processes of very long time, of long time, and of short time; for our purposes, we refined this typology and added seasonal time, geo-political time and lifetime.

We explored Golf of Morbihan's narratives of season, weather and climate change according to timescale and chronotopes that distinguishes them. By interrogating Golf of Morbihan's narratives, we so explored what insights do local narratives in Golf of Morbihan offer to explore resilient and desirable futures under the influence of climate change. These insights are important since they form the basis for reflection on the incremental scenario co-construction process (WP2), the determination of relevant climate services (WP3) and the art–science conjoint analysis (WP4 - Task 4.4).

Some results

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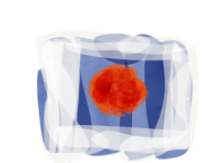
Key elements play a roles in three local narratives, making Golf of Morbihan a moving territory. The seasons organize the timeline of the territory through an immutable cycle, with winter and autumn and their slowed down life, versus summer and spring with tourism. On long term, climate change influences the coastline and impacts iconic marine activities. They are undeniably place-based, even if we can find them in most of the French Atlantic coast places.

1) The Golf of Morbihan everyday life is linked to season. It is mostly composed by secondary housing. The population is rising on summer and weekends, and the socio-economic characteristics of this population influence the economic and social activities of the territory as well as land-use planning.

2) The Golf of Morbihan everyday life is also linked to weather as the economic and leisure activities are strongly influenced by it.

3) The Golf of Morbihan is undergoing climate change and extreme events. It was an estuary, flooded 3000 years ago, and is now expanding. Many housing and economic activities will be impacted by the rise of sea level and temperature as well as by fresh water shortage and storms.

As we developed narratives, we came to identify two important chronotopes. They were very useful in the development of the conception of what "place-based" actually means. The coastal path is an interesting chronotope as it visually underlines erosion. In French law, the coastal pathway corresponds to a 3m-wide right of way on private property along the shoreline. Most owners tend to fence their property, and so they erect this close to the trail. Erosion can thus be clearly seen in the changing width of the trail. Erosion of the banks has led, in consequence, to the erosion of private land, forcing homeowners to move back their fences to respect the right of passage. The second chronotope is linked to a hypothesis: the two hemicycles of a cromlech were not constructed as a whole but like a reconstruction of megalithic enclosures on a higher point due to the 5-meter sea level rise 3000 years ago. Megaliths are chronotopes, representative of a
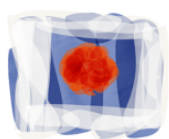
period of time and noticeable from far away, so marking a point in space and time. They are immemorial landmarks of a place and its history. The sea level rise at this time partly submerged certain megaliths, including the iconic one of Er Lannic. This cromlech clearly illustrates the rise in sea level during the Neolithic period, and acts as a symbol for the forthcoming increase.

Place-based narratives

Grounded on these place-based narratives, several issues have been explored and exposed during the scenario co-construction process (WP2). Thus, we studied the level of place attachment and its role in the individuals and decision-makers decisions as well as the risk perception of people and decision makers, who accept to build and live on risk areas. These issues must be seen through the light of another place-based specificity: how to realize the planning and the development capacity of this territory with a temporary and aging population.

The collaboration between social and climate scientists allowed researchers to communicate a coherent vision of the issues at hand composed of climatic and socioeconomic dimensions to the participants (WP3). This set the tone of the collective discussions during the workshop and, as a result, the needs for climatic information started to emerge from the joint narratives/incremental scenari approach, so that desirable visions and adaptive actions to get there could be co-developed.

This approach allowed us to adopt a new perspective, notably based on history and prehistory in an attempt to better understand the present. For instance, the geo-social narratives and the chronotope of Er Lannic have provided us with a new vision of the Gulf, a dynamic one whose contours have their current aspect only in the present moment. Indeed, Er Lannic has raised interest as a symbol of the need for climate change adaptation. This has inspired interest in carrying out artistic work around this chronotope. At 6,000 years BP, Er Lannic was on a hill and

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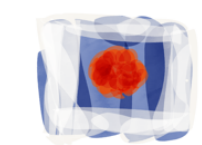Climate
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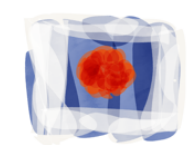
Neolithic people, seeing the sea level rise, were obliged to adapt. We can imagine that it was hard, at that time, to conceive of a flooded Gulf, as is the case nowadays. During the foresight workshop, we showed maps; this visualization of the geo-social narratives put the (pre)historic sea level rise into perspective, thus rendering it more eloquent. The historical and seasonal narratives allowed us to better understand the socio-economic issues the Gulf of Morbihan faces, while the climatic narrative depicted the effects a changing climate is having on the ways people occupy and transform a territory.

Another value of narrative and chronotope mapping in the context of planning for climate adaptation is that they give meaning to scientific data about climate and turn 'matters of fact' into 'matters of concern'. Thereafter, artists and designers are ideally placed to challenge existing narratives and to provoke the exploration of pioneering future narratives.

Art and science process, piloted during the CoCliServ project and resulting from interpretations of the collectively-built narratives of past, present and future change, have been be converted into an artistic work - a physical element which allows people to follow the ongoing changes in the territory (WP4). The main outputs were a collaboration with the designer to produce creative tools in order to support the animation of workshops, the project of a long term exhibition, the realization of a small itinerant exhibition with climate data vulgarization panels and a comprehensive storytelling exercise[1].

This "sneak-peek" into the future, as well as the ability to observe the speed of these changes through these new chronotopes, could inspire community-led transformative practices. Researchers and artists analyzed scientific information collectively to capture the spatial and temporal dimensions of current

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[1] **Ca baigne?** (2020). Exhibition dealing with adaptation to climate change. http://cocliserv.cearc.fr/ça-baigne. Information booklet "Ça baigne ?" is available in English and French

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transformations, which are then communicated through artwork acting as markers of expected sea level rise or estimated coastal erosion in the future. Hence, the coastal path could have a fundamental role as an apt location for the artistic exhibition.

These first results indicate the advantage of taking an integrated art and science approach to culturally relevant co-construction processes for climate change adaptation. The development of artistic works is found to be an effective way to convey messages of future narratives and may also become chronotopes themselves with the integration of temporal and spatial dimensions of the territory allowing ongoing changes to be monitored. This experience seeks to show that mobilizing art and science to establish future narratives of change and to interact with stakeholders in a territory undergoing transformation due to climate change can empower people and incentivize local action.

3. Bergen / Norway

Scott Bremer

Positionality

Narrative scholars write about us as 'storied animals', who make order of life's jumbled experiences and sensations by setting them to a storyline. I'm not sure if that's universal - my brother is an electrician and I'm quite sure he sees the world as an assemblage of moving parts – but it is certainly true for me. And so it is that when I reflect on the CoCliServ project work mapping narratives of climate in Bergen in 2017, then this features as a particular episode in my life, when I came to better understand Bergen as home.

Indeed, I could go so far as say that my own story of this study probably played some part in how I conducted this research. This is precisely why it is so important
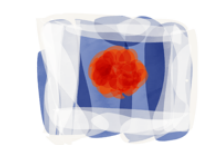
to reflexively pause and consider our *positionality* in narrative research, because we aren't impassively sorting narratives like a can-recycling machine. We are (or at least I am) recounting narratives of how we study narratives; over dinner, in presentations and papers, in our CVs, in the twilight hours. And as all these different stories we come across cohere in our own monologues, then they're shaped to fit (even in some minor and unconscious way). This honest and personal re-telling is part of what constitutes robust science for me, in whatever field or discipline.

This then is an opportunity to honestly tell my own story of this research; of how I collected and tried to re-tell stories of Bergen that talk about climate. What this meant for me, and what it meant for the research. There are some limits to my honesty; notably knowing that this account will be publicly kept for posterity in some flickering government databases.

Home to Bergen

Anne and I moved to Bergen in 2010, with 100kg of baggage and no expectations. I remember pulling bags on wheels up Hoyden – the hill that the University sits on – under Bergen rain, and the wheels lodging in wet cracks in the pavement. That was everything we owned, in five bags. And we had no idea where we would be heading with those bags when Anne submitted her thesis, planned for 2011.

As it was the bags were never packed again. We stayed in Bergen and we're still here. But we kept those bags ready for about 5 years, like fugitives who have to leave at a moment's notice. Bergen was less home than a nice place to stay for a while, even as we bought a small apartment and began to accumulate far more things than could fit in those five bags. Only after five years did I start to *come home to Bergen*. We got rid of the original bags – duffle bags like drug dealers use in movies to lug cash around – and started to make a life here, including under Bergen's climate. I remember flying into Bergen after a summer in France one
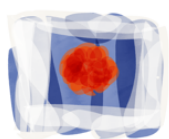
year, and the relief I felt of having left behind 30-degree sunshine for an overcast 14 degrees. Now we have two daughters, and leaving Bergen seems a lot more difficult than in 2010.

The CoCliServ project was for me a way of learning about my new home; conducting science in Bergen about Bergen. My research before then had been all over the world – Asia, the Pacific and continental Europe - but never really in Norway. For me, this research was an opportunity – a privilege – to find out what distinguishes Bergen; a kind of personal discovery seen through formalised social science lenses of 'narratives', and how they constitute a sense of 'place'. In this I was inspired by autobiographical accounts of people moving to new homes. One of my favourites is Laurie Lee's 'Cider with Rosie', where he describes moving from the city to a remote Welsh village as a toddler, and learning to live by the new daily routines he found there. I guess Lee's account is embellished – it reads more like fiction – but Ive always found this genre of writing engaging, whether it adopts a more formal style like Thoreau's 'Walden', or is even totally fictitious, like Iain Banks gothic 'Wasp Factory'. To me, these books create a place, and how it changes, through the telling of that place. And they all imply 'seeing again', in the sense that authors re-look on their home with a new regard for everything that is special and particular, but overlooked, in that place.

This seeing again was all the more poignant in that my first daughter Louve was born in 2017, and this sparked in me a new fascination for the simple, mundane things that she was (naturally) fascinated by. Things like colours, textured wall-paper, or accidental music; when rhythmic noises in the world align in a repetitive pattern, like a dripping tap and the dishwasher cycle and a bandsaw at the next-door works-site. Moving through Bergen with Louve, where she experienced that place – as the world – for the first time, also sharpened my attention.

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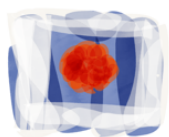
Of course, this is not without challenges, because it is never easy to 'study anew' a place you have come to know and love through daily interaction, in routines and my perception of my living environment. How could I detach myself from my accumulated experiences and see a Bergen only through the empirical methods employed in this instance? Or, more realistically, how could I reconcile previous experience and new empirical work in a coherent and honest way?

Decisions for how to study home through narratives

For me, studying Bergen as my home implied two deliberate (methodological) decisions. *The first decision* was to set up a quite structured method of narrative interviews, carefully planned according to the methodological literature and my experience in Bangladesh, according to a tree of research questions with corresponding interview questions. These interviews were pre-arranged, and at least half were with people I had never met before. While they followed a relaxed conversational style, these were most definitely interviews, with a signed consent form and recording device and usually held in an office. The point was that I wanted to organise a formalised and structured empirical dissection of Bergen and its stories, rather than a more informal ethnographic approach that might have favoured observations, chance encounters, joint activities, or unstructured conversations over coffee. The reason for this was that I had lived in Bergen for seven years before starting this research, and already experienced the city – and become socialised or naturalised to it – through precisely these informal observations, encounters and activities. To see the city again, I wanted to make some distinction from my previous perceptions.

At the same time, the research was enriched by my lived experience. On one hand, this allowed collecting together previous observations, and formally recording them; the shops called 'rain', the wreckage of umbrellas I walk past each day, or the daily weather conversations I've had. On the other hand, I came to see that I had built a network of friends, colleagues and vague acquaintances over my seven
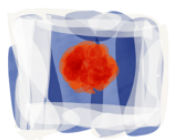
years here. When thinking of who to interview, some of these contacts presented themselves as perfect opportunities; the climate scientist I've come to know and work with, the poet from whom we bought our apartment, the film-maker that we worked with some years ago, or the curator of our local art gallery. In fact, in studying Bergen as home, I came to see to what extent it has become home. And of course, that by looking around Bergen as home, I could capture far more than I could have arriving freshly off the boat from New Zealand, and conducting ethnographic research, however embedded and in-depth. So, the formalised interview framework was complemented by more informal observations.

The other reason I adopted formalised interviews as a method was probably disciplinary. My background is mixed, but sits most comfortably in planning, resource management and governance. This field borrows from a lot of different traditions, but where I studied – Massey Universities planning department 2007-2010 – structured qualitative interviews was the favoured method. So informal ethnographic research is an uncomfortable shift. Likewise, social scientists of this tradition often voice a particular perspective on narratives; notably that they capture lived experience and make it explicit, extracting the tacit understandings that we carry around with us, in order to study these understandings. This perspective probably also describes the way in which I approached this research.

The *second decision* was to peer review what I found, to sound out the stories with other long-time residents of Bergen – Norwegians – and hear if they rung true for them. If the narratives I collected somehow reflected Bergen as a place, and whether others recognised these experiences and stories in their own daily lives in the city. I mainly ended up doing this near the end of the research, when writing up the findings. We wrote a paper about Bergen as a climate city, and included two Norwegian residents in the co-authorship (Bremer et al., 2020).

Bergen as a climate city
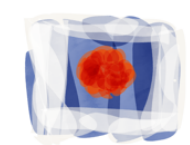
Bergen is talked about as 'a place with a lot of weather', where the word weather tries to soften the city's reputation as Europe's rainiest city. Living here, precipitation – in rain or snow or hail or sleet – occupies an important part in our daily conversations (like a lot of places I think). But what I was perhaps not ready for was the very personal anecdotes that these interviews drew out of people, and at times the affect of telling these stories. I saw how this topic is not purely polite conversation, but something material to living here, with the rain dripping through all of our life episodes. One interviewee melancholically talked about siting at the window in an ex-girlfriend's apartment, watching the rain streaming down on a Sunday afternoon and wondering where all the water went. Another talked about being woken up early morning when a neighbouring house was swept away by a landslide, taking two people with it. Another talked about how she always knew her birthday approached when she saw the autumn colours come over the trees, but that a changing climate has upset this rhythm. And then she started to cry. Asking people about episodes with the climate invoked break-ups, deadly accidents and terrible nostalgia, besides many other stories and emotions. It wasn't so much that climate stories invoke important life episodes that was surprising, as that relative strangers felt open to share these episodes. Perhaps it was easier to share such personal stories via the relatively innocuous cultural vehicle of climate.

This narrative research revealed certain 'clues' that concepts of climate are emerging as increasingly important in Bergen's various public spheres, and potentially subsuming notions of Bergen as a weather city. By clues I mean small signals, not always obviously linked, that came up in interviews and observations and text analysis in very different spheres, but which together provide a solid body of evidence for a meaningful shift in how Bergen residents consider what's happening in the atmosphere above the city. This didn't allow for a typically comprehensive causal analysis or model of what is happening, but rather some

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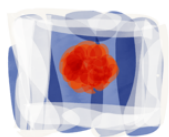Climate
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well-founded speculative arguments. In this way, the narrative approach, used this time in this context, invited a very different analysis than either I or my colleagues/co-authors had conducted before. We decided to carefully craft a paper, which was published in Climate Risk Management (Bremer et al., 2020), that systematically assembled these small signals and showed them alongside each other as a meaningful constellation of changes in place in Bergen. This broad, cross-cutting approach was an intriguing alternative to many narrative studies that dig deep down into one social sphere. By comparing stories across spheres, we could get at some notion of public/shared narratives in Bergen, the nuanced ways in which those public narratives are changing in different spheres, and together build a case for a change in place. Overall, I think this study invited us all to try something new, and while it was a challenge and at times uncomfortable, it enabled us to experiment with different types of narrative analysis.

Denouement

Studying narratives of change in Bergen was an important opportunity to learn about my adopted home. My personal attachment to this place was the motivation, but it was also a challenge for designing narrative research that cut with, yet complemented, my lived experience here. My own positionality had a bearing on how I designed this research and ensured it stood alone as a robust piece of work, not an indulgent voyage of discovery. The broad design, collecting narratives from across different public spheres, was both a humbling and exciting experience. Humbling, in that people confided in me the meaningful episodes of their lives against the backdrop of Bergen's climate. And exciting because it invited an alternative mode of analysis, like detectives collecting clues of changes to Bergen's public narratives and sense of place.

As a follow up piece of work, I am working on a book chapter with one of the co-authors, with whom I wrote the piece on Bergen as a 'portrait of a climate city'. In the face of calls by vocal proponents like Greta Thunberg for more and faster

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social transformation, we want to show that at least in some places, concepts of climate change are already having fundamental impacts on the city's institutions. Looking at local government, we show how climate change is transforming their regulative, normative and cultural-cognitive foundations in profound ways, and at high speed. It's not an exaggeration to say that climate change has transformed Bergen residents public understanding of the city as a place, and society's interaction with nature; and all this in just 20 years. This is, we think, incredibly rapid, considering the fundamental changes it means for how we understand our place in the world. Indeed, we argue that we should take care in how we transform our institutions, so that rapid but unconsidered transformation doesn't end up with highly maladaptive and unfair outcomes.

4. Kerourien / France

Juan Baztan

Our 4 years of CoCliServ's efforts in Kerourien 2017-2020 are rooted in previous efforts of our partners and our team. Across the related processes, we have moved from individual to collective narratives; they are the core of the social dynamics and research. Writing this last deliverable for WP1, we realize how central narratives are, and the challenge to define them, make choices and link them with the co-development of place-based climate services.

The process related with the special issue *How narratives of change influence local climate risk governance* (Bremer, Krauß and Wildschut, 2020) concentrates almost all of our site-based and collective results. The paper on Kerourien (Baztan et al., 2020) explains the Kerourien site case study. Here we summarize the main process and outcomes of the Kerourien case study as the final step of previous deliverables and WP1.
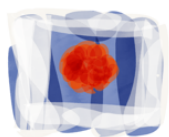
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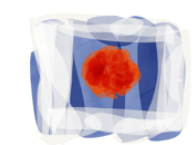
The processes through narratives

As detailed in Baztan et al. (2020), we developed the working hypothesis that iterative art and science approaches have the potential for instigating and sustaining community dialogue through efforts to co-produce climate services. We saw art as essential for making the concept of climate services more meaningful in a specific place, and focused on narratives as an entry point for co-construction. Artists are ideally placed to challenge existing narratives and to provoke the exploration of new narratives. The intermeshing of nature and culture, emotions and reason, around weatherscapes implies that approaching local climate through science could be put into perspective by a more intuitive approach seeking to represent the world as perceived by the senses. We envision the integration of art and science not in terms of using the arts to communicate scientific findings, but rather in terms of gaining access to elements that are generally excluded from scientific inquiry to convey a more complete picture of the challenges at hand. Developing a strong connection between art and science enables the re-articulation of the scientific description of the world.

The initial step of our co-production work focused on collecting narratives. As a starting point, we formed a working group of four partners who had participated in preparing the project, including: The Maquis, the Centre social Couleurs quartier, the Theatre du Grain, and the CEARC research center.

The five initial meetings focused on identifying the means to simultaneously mobilize the neighbourhood around locally salient issues while giving access to potential conversations about climate-related concerns. The upcoming 50th anniversary of the neighbourhood was chosen as an opportunity to achieve this goal. A list of stakeholders was established by the four core partners with the provision that snowballing was possible if a category had been overlooked. Accordingly, over the course of events we incorporated additional partners, but to

a limited extent and very progressively. The initial stakeholder list comprised eight groups and institutions and it expanded to 14 members. Stakeholders were invited to a foundational meeting to identify shared objectives within the context of organizing Kerourien's 50th anniversary celebration. The goal that generated the most widespread support was to dispel the myth that "in Kerouien only bad things happen". The anniversary celebration was thus named *les Belles histoires de Kerourien* (Kerourien's beautiful stories). The group of 14 stakeholders formally became the local coordination committee for the 50th anniversary.

Approaching the climate service co-production question

At that point, the aim of climate service co-production seemed remote. However, the intention, climate-services wise, was to gather narratives in order to explore the linkages between explicit concerns and climate issues, which seemed mostly invisible in Kerourien. Working on *les Belles histoires* with and for Kerourien residents seemed to be a quite challenging and promising opportunity. We held monthly meetings of the 14-member local coordinating committee. These occurred under the leadership of its rapidly established executive board, composed of four members of the initial core working group. In the course of these meetings, stories were progressively identified. Four important developments were observed:
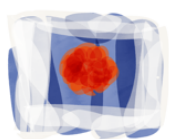
- Members of the group acknowledged the need to increase the involvement of community members;
- Systematic archive research became necessary because, according to those around the table, the stories being told needed anchoring in dated, identifiable events that those present had not necessarily witnessed but that were still part of the memories of the neighbourhood;
- An interview protocol was devised to simultaneously involve more members of the local community and gather stories in the words of those most affected;

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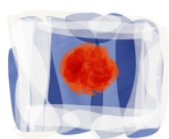
- Practical matters were delegated to implementation committees tasked with managing specific practical concerns for the 50th anniversary celebration, such as: welcoming/ticketing; hiking, cycling, scooters; canteen/kitchen organizing; reports, video editing, projections (17 in total). These were powerful recruitment tools, and many community members participated.

These developments were important on two levels. First, the local coordinating committee turned to the a priori climate-centred transdisciplinary team to mobilise their expertise in terms of public participation and research. Second, it allowed for a more systemised approach to recruitment and collecting local and non-local narratives. A transdisciplinary research design was then adopted to prepare the 50th anniversary celebration and its associated art form. This included systematising the identification of archive materials, their sorting, key-wording, storage, and subsequent use. These archives contained materials such as: personal photographs, drawings, memorabilia, media excerpts, and recorded songs collected through on-site participant observation. Gathering the archive had two effects. First, it allowed us to put Kerourien's stigma in perspective both as the product of historical and political processes, and as the product of the amplification of anecdotal events. Second, compiling the archive also lent a sense of materiality to the process.

A semi-structured interview protocol was designed and the associated interview framework was developed. Both were developed with input from the local coordination committee and members of the local community. First, narratives were being collected with a level of robustness that would make them usable in a science-centred process. Second, the team of climate social-scientists and artists were putting their skills to work to serve the local community in realms that may seem far removed from climate issues, but that allowed for a fascinating exercise in trust building and, as a result, quite extensive data collection: Papers, objects,

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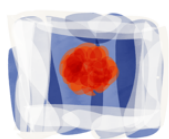Climate
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newspaper, bits and pieces of local narratives, were made physically available. This led to another important development: obtaining two rooms and toilets fully dedicated to those preparing the 50th anniversary celebration. This locally anchored what had otherwise been a "placeless" exercise. Stories, archives, drawings, timelines all could be pinned on the walls. Interviews were conducted in the *les Belles histoires* room. Involvement continued growing, with community members "just passing through" to "take a look," and thereafter staying around, becoming contributors to the anniversary celebration preparations and to the archive and narratives corpus we were compiling.

For the climate service co-production work, it meant a wealth of stories were made available. Ongoing dialogue with and participation from the artists meant that a central art form was progressively taking shape. This acted as a filter, prioritizing local issues as they appeared in the stories being told. A script and a scenography emerged, encapsulating the stories being told in Kerourien.

Narratives and the climate service co-production question

The narratives we collected show that Kerourien residents are, indeed, stressed by their daily economic constraints along with societal challenges related to gender, racism and well-being. They do not seem to show much interest in Kerourien's weather and climate. Furthermore, when envisioning a relationship to the nexus of place, weather, and climate, the narratives seem to indicate that for the so called "newcomers", weather and climate has mostly been experienced in places other than Kerourien. Newcomers may have experienced weather and climate, but in diverse ways, associated with their diverse origins. Moving from the Comores entails seafaring, flying, and having lived in intense relationship with the Indian Ocean, its power and associated weather patterns. This experience is not easy to relate to the experience of those migrating from Mali who have experienced rainfall deficits at the margin of the Sahara Desert. The relatively mild

and humid climate of Kerourien may be seen as a relief for some, and as nuisance to others. The limited time some have spent in Kerourien may simply not allow for much of a relationship with the local weather to exist.

Kerourien's current climate information sources bring light on how residents of the Kerourien neighbourhood have access to mass media and their coverage of weather (mostly through weather forecasts, or coverage of extreme events, mostly storms) and climate issues. This also clarifies how the information sources produced by authorities (such as information booklets about Brest 's climate action plan) or by social action NGOs (such as information booklets developed by an NGO centred on fighting for housing rights and covering the Paris Conference of Parties in 2015). They thus have access to the dominant techno-scientific discourse on climate change. Very little is available on their everyday concerns, on the places they hold dear, be it Kerourien or their hometown in Syria, Mali, Morocco or Haiti. One striking finding from our analysis of the collected narratives is the inability of dominant climate change discourse to significantly influence local narratives. Not that weather and climate are absent, they simply take another form.

Narratives' narratives, all are narratives

Trust-building in our case study was the key condition for co-producing climate services-related narratives. Another important observation relates to mutual learning, in the sense of learning to do things together and the way in which the transdisciplinary and scientific skills of the research team were put to work for non-scientific purposes, namely the preparation of a neighbourhood's anniversary celebration. Learning and trust-building were deeply intertwined for this. As our case shows, those on the science-side of co-producing climate services may render other services to the communities with whom they engage. Through this observation we see that co-producing climate services may actually be more about

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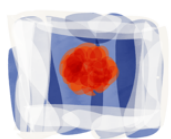Climate
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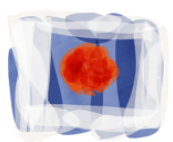
transdisciplinary science. The collectively identified set of narratives did put the Kerourien community back on track to becoming whole again. These narratives constitute what the residents all share, at least for the time being. Having this renewed common ground is making them stronger than before our co-production intervention. A stronger community will be able fare better in the face of climate change. For our purpose of co-producing climate services, a stronger community will be a stronger partner, more reliable, and more aware of its actual needs. Not only did we develop trust with the Kerourien community, we all became stronger in the process, stronger for engaging in substantive work, stronger for taking stock of the substantive effects of our intervention.

Climate services are often assessed against their usability. Our research demonstrates this is not sufficient; the procedural benefits of co-producing climate services should be assessed as well. Context dependency will make such evaluation particularly challenging. This should not prevent climate service funders from taking stock of the wider social benefits the actions they support may bring for co-producing partners.

As Borges suggests, "I cannot know if the described events are effects or causes"; what appears clearly from the Kerourien case study is that human societies are narrative-based, and having the chance to develop community-based climate services efforts led to partitipation in constructing more conscious and empowered communities.

This text is a very brief version of the extended published one "Facing climate injustices: Community trust-building for climate services through arts and sciences narrative co-production" by Baztan, Vanderlinden, Jaffrès, Jorgensen and Zhu, for the special issue *How narratives of change influence local climate risk governance,* edited by Bremer, Krauß and Wildschut (2020).

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5. Jade Bay (Jadebusen), Germany

Werner Krauß

My research differed in one aspect from my previous ethnographic studies: it was intended to trigger a process in the field, to set into motion the co-development of place-based climate services for action. I was nervous about this part, because I am used to basic research, and I did not know exactly how to proceed. Anyway, as an anthropologist, I followed my routine during more or less one year of fieldwork – actually, it was more, due to the fact that this field site, the Jade Bay, is only one hour from my university in Bremen and 2 ½ hours from where I live, in Hamburg, and it was easy to travel back and forth whenever new questions came up. I was and still am able to follow the process whenever I want to.

How to come from basic to applied research? Narratives are part of anthropological craftsmanship, we collect and interpret stories. But during this research, something was different: in order to achieve my goal and the project's goal, I had to tell a story myself. Normally, when I conduct fieldwork, I tell people I will write a book about their life and their landscape, or at least some articles. This is mostly enough. But this time, I wanted people to make do something, and this was the difficult part. In the following, I first write about the routine part, which if followed by the difficult one – how I learned to tell my own story, or the project's story.

Routines of narrative research

My interviews are narrative interviews, I listen to other people's stories. I take my time. I was served tea and coffee; sometimes, the spouses joined and told stories, too. Everyone has a story to tell which is worth listening. Of course, the interviews are structured, too – there are routine questions, and I do not hide that my main interest is in weather and climate. Which was an easy match, in an area where weather and climate are central issues. At least, this is the North Sea coast with

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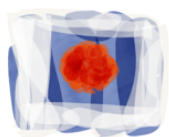
huge dikes protecting the land from the sea, with heavy storms in winter, with lots of rain and beautiful northern summers. And yes, climate change is an issue there. I did not have to push people talking about it, most of the time. There was an unusual warm, cloudy and rainy winter – the skies seemed to fall down on us. This was climate change, almost everyone was sure of it. Even more so in summer: there was a severe drought from March to end of October. And there are wind turbines, bio gas tanks, solar and so on: climate change has already changed the infrastructure, access to the land and land ownership. Climate change is already there, in the mindset and in the landscape.

To understand a landscape – and I was not familiar with this part of the North Sea coastline before -, I follow a certain routine. I found a place to live in the realm of extended family ties, on an organic farm with an organic food store. I learned the daily schedule of organic farming and of running a business; in daily talk during meals and so on, I got introduced into the who-is-who of the village, town and district. Observing the production and selling of organic food during the cycle of the year introduced me into the life of plants, of the soil, and, respectively, of the geo-history and how it melts with human history. In former times, it made a difference whether you live on the marshes, the *Geest* (alluvial sands from the Ice Age) or the moors. Coastal society was a class society, until manure and technology levelled the differences. Later on, there was the shift from an exclusively rural to an energy landscape. And on and on: this is what I learned in daily talk, sharing the life of rural dwellers with urban attitudes. There were narratives from the beginning, I learned to understand the coastal landscape and to get fluent in local relationships – and in local gossip, as well. From here, I planned my excursions and extended my circles, one after another.

When I look at my list of recorded interviews – almost thirty – I can see that I followed a routine, more or less, following a double strategy. On the one hand, I got myself introduced to those who are formally ranked high in the coastal region;

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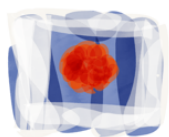Climate
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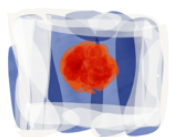
the presidents and mayors of districts, municipalities and parishes; the heads of the National Park and of coastal protection, most of all the dike and sluice associations, followed by the representatives of different nature conservation groups, the local newspaper and so on. On the other hand, I followed the advices and suggestions I got from my interlocutors: Dr. Krauß, you have to talk to this guy, he knows a lot – and I followed the gossip and the scandals which exist everywhere. This is how I got around, defined my field, chose the issues I wanted to follow. I had to make some decisions, which district, which field of actors, which network. I mapped the conflicts and chose the ones I wanted to follow.

The difficult part: CoCliServ as narrative

Talking to people is one thing; convincing them to participate in a project is another one. Imagine talking to a farmer, a mayor or a sluice guard and trying to explain what "co-development of place-based climate services for action" means, in German. Nobody understands. Nobody knows what a climate service is unless you explain. Okay, my colleagues from Helmholtz provide statistical information about the regional climate, everyone appreciates this. For a long time, I felt uncomfortable not knowing what to offer exactly. Discourse on climate change looked like a *Autobahn*: it is straight and fixed on numbers, and it is designed for administrative purposes. But what about climate as a matter of concern? A matter of concern is not what people want to know about climate change; a matter of concern makes you want to act, to do something about climate change. It is more than data and information, even though they are important. A matter of concern is to cross the line from administration to action, it turns matters of fact (the sea level will rise in x decades about x cm) into matters of concern (we have to stop the loss of biodiversity, we have to reduce emissions and to change our way of living).

On the one hand, there is the tightly knitted science-based climate discourse, on the other hand – the anthropologist's one – climate change creeps into every

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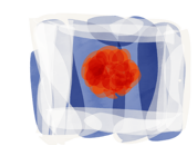Climate
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corner of people's lifeworlds. Everyone enjoyed the spectacular summer of 2018, and everyone seemed to be concerned, at the same time.

Two events in 2018 helped to bridge the gap, between science-based climate service on the one and anthropological research on the other. Firstly, Greta Thurnberg arrived on the world stage, there were Fridays for Future school strikes coming up. Finally, there was a new movement which framed climate change in a new way and turned it into a practice. Secondly, the Helmholtz climate service decided that it was time for inviting locals to a workshop, which we organized together. Helmholtz invited routinely those who are responsible for water management and other climate related issues, and I invited those I had interviewed along the way, which made a nice mix of approximately 35-40 people.

The workshop worked well. The climate service provided data and information about regional climate change, people added observations and asked questions. In the second part, people told stories why they are concerned about climate change and what should or could be done about it. They told stories and shared concerns. This, I realized, is the narrative CoCliServ has to tell: not only climate science, but people, too, have climate stories to tell. CoCliServ gave people a license to talk about climate change, alongside science. Not to be corrected, not only providing data hidden in lengthy complaints (even though this is an important aspect for the existing climate service), but as citizens who are concerned about climate change. Climate becomes an object of thick description, it is full of people, events, worlds. It is not only a skinny skeleton made out of statistics and numbers; narratives add flesh and life, blood and heart.

But how to get from here to something like action, as promised in the title "co-development of place-based climate services for action"?
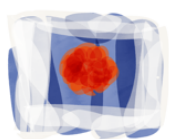
From narratives to action

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The transition from providing (and collecting) data and information to place-based climate services for action came from the outside. In the autumn of 2019, Fridays for Future school strikes were all over the place. With the photographer Werner Rudhart, I joined the Fridays for Future demonstration in Oldenburg, a university town close to my field area. There attended 15000 people or more, the weather was beautiful, and from Kindergarten to grandparents for Future, everyone seemed to be out on the street. At the closing event in front of the city hall, the representative of the environmental nature protection organisation BUND, Susanne Grube, spoke to the protesters. She had participated in the previous workshop, and we met again after her speech. She asked me to jointly organize another workshop in Ammerland, a neighbouring district to Friesland, where I had conducted fieldwork. I happily agreed, and soon after, we staged the first "*Ammerländer Klimamarkt*" (climate market) in an old farmhouse, with about 60-70 attendants. The head of the local BUND shortly summarized the climate information provided on the previous workshop by the Helmholtz climate service, before the attendants contributed their concerns about climate change.

There was one change to the first workshop: from the beginning, we organized seven different sections such as health, nutrition, energy, water, construction, mobility, and land use. From here, we organized working groups, which eventually met in the following weeks and months.

There was another major change which came from the outside: Covid-19. After the public climate market, communication went online, on zoom, but unavoidably, some working groups thinned out. Most of all, we could not organize a follow-up *Klimamarkt*, which we had planned to meet with representatives from politics and administrations. But we went into contact on a smaller scale, and currently the *Klimamarkt* is on its way as a new form of place-based climate service for action. Finally, data and information have turned into a matter of concern via the narrative approach. The *Klimamarkt* is now independent and works on its own

terms, still accompanied by "their" anthropologist. Finally, a new form of place-based climate service for action has come into being.

6. Conclusion

The focus on narratives of change provides a slightly different picture of what people know about climate change. Science-based climate discourse mainly seeks to convince people of the reality of climate change and provides facts about climate change. Many of my interlocutors are eager to get that information, and they are happy to get more place-based information. But there is another reality, too, which came to the foreground via narratives of change: many people are well-informed about climate change, they are ready to take action. But how to act? Climate change already is institutionalised, but it is in a very incomplete way. It is channelled from top down, along the pathways of administration. This is a good thing, of course, and there is much to be improved. But it is based on a very narrow understanding of climate change, understood as statistics and translated into the existing political and administrative structures. Local narratives linked climate change differently, to the memories of the past, to the uncertainties of the present and to visions of the future. Climate is a way to mediate between people and their material conditions of life, and this relationship is disturbed. This is the subtext of many of the personal stories, many of them saturated with people and things, with vibrant matters. Most of these actual climatic relationships are left out in climate discourse and its translation into politics, on all levels. Narratives of change helped to open up a political space, a space for action, in transforming data and information into narratives, and science-based climate services into public spaces like the *Ammerländer Klimamarkt*. It is only a small example, it is not yet made out where it will lead to, but it is a lesson in *climate democracy*, based on the polyphonic narratives and their translation into place-based climate action.

Co-development of place-based
Climate
Services for action

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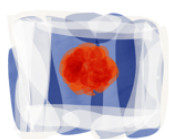
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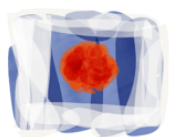
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