Spatial Information Supporting a Collaborative Landscape-based Place Branding

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SUMMARY

The paper outlines a mixed methods approach to landscape characterisation and presents key findings from its application in northern Germany. It also illustrates the benefits for collaborative branding that result from the use of spatial data and information. Our study shows that working with maps helps to bring together stakeholders with different experiences and to involve them in brand building. This supported the transdisciplinary design of the project.

A need for further research on branding based on landscapes is identified. This applies both to the handling of dynamic and divergent landscape changes within a region as well as to the reliable cartographic representation of results and the appropriate use of maps in transdisciplinary collaboration.

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1. INTRODUCTION

In Germany, a research paradigm called transdisciplinarity (*Transdiziplinarität*) has recently gained momentum. Starting points for transdisciplinary research are questions with both scientific and social relevance. The concept follows an interdisciplinary and integrated research agenda in which scientific and non-scientific partners jointly generate knowledge. Transdisciplinary research “aims to provide a socially robust orientation for sustainable solutions” (Zeischler 2020: 127). From 2014 to 2019 Germany´s Federal Ministry of Education and Research (BMBF) funded nine scientific-practice-teams within the funding programme “Innovation Groups for Sustainable Land Management”. One team was formed for the project "Regiobranding" and aimed at identifying landscape characteristics in order to use them as unique selling propositions for regional brands. In addition to an outwardly visible brand, place branding targets the strengthening of local identity (cf. Botschen et al. 2019). Participation of the local population is therefore of particular importance (Zenker and Erfgen 2014) and was implemented in Regiobranding by a collaborative, bottom-up research process (cf. Zeischler and Rogga 2020).

In this article we describe a mixed methods approach for characterising landscapes and present main findings. Additionally, benefits for transdisciplinary branding resulting from both qualitative and quantitative landscape assessment based on spatial data and information are outlined. One component that particularly contributed to Regiobranding´s bottom-up process were mapping workshops and the explicit consideration of user-generated content.

To put the article, which is based on a previously submitted paper (Schaffert and Steensen 2020), into context, it should be noted that our contribution only served as one pillar in a larger project: In Regiobranding, eight institutions from three federal states collaborated. For five years, representatives of these institutions met regularly to guide the brands' development. This committee was informed by scientists from archaeology, architecture, geodesy, geography, and environmental planning. However, the scientific results, such as the landscape characterisation, did not directly lead to a brand. Rather, they served as a decision support that was evaluated by the responsible authorities.

2. STUDY AREAS

Our research took place in three areas in northern Germany, namely "Griese Gegend-Elbe-Wendland" (GGEW), "Lübeck-Nordwestmecklenburg" (LNWM), and "Steinburger Elbmarschen" (SEM). All study areas are located in the Hamburg metropolitan region (Figure

2), which comprises the city state of Hamburg and parts of the federal states of Lower Saxony, Mecklenburg-Western Pomerania and Schleswig-Holstein.

Griese Gegend-Elbe-Wendland is formed by the district of Lüchow-Dannenberg (in Lower Saxony) and the western part of the district of Ludwigslust-Parchim to the east (in Mecklenburg-Western Pomerania). Both districts are separated by the valley of the river Elbe in between. The largest cities in this rural area are Lüchow (~ 9500 inhabitants) and Ludwigslust (~12.500 inhabitants).

Lübeck-Nordwestmecklenburg incorporates the city of Lübeck (~ 210.000 inhabitants) and the villages of Kalkhorst, Dassow, Lüdersdorf and Selmsdorf. While the city of Lübeck is located in Schleswig-Holstein the other municipalities are part of Mecklenburg-Western Pomerania. The area is characterised by the contrast between the city of Lübeck and its neighbouring villages with about 1.800 to 5.000 inhabitants. Differences within GGEW and LNWM are reinforced by the fact that both areas are traversed by the former inner-German border (Figure 1). Today, this line marks the boundary between Mecklenburg-Western Pomerania in the east and Schleswig-Holstein or Lower Saxony in the west.

The Steinburger Elbmarschen form the southern part of the district of Steinburg in Schleswig-Holstein. Flat marshlands, notably the Wilster- and Krempermasch, characterise the SEM. They are located between the Geest area to the north and the river Elbe to the southwest. Geest is a landform of glacial origin that lies somewhat higher than the marshes. Itzehoe (~ 32.000 inhabitants) and Glückstadt (~ 11.000 inhabitants) are the major cities in this overall rural area.

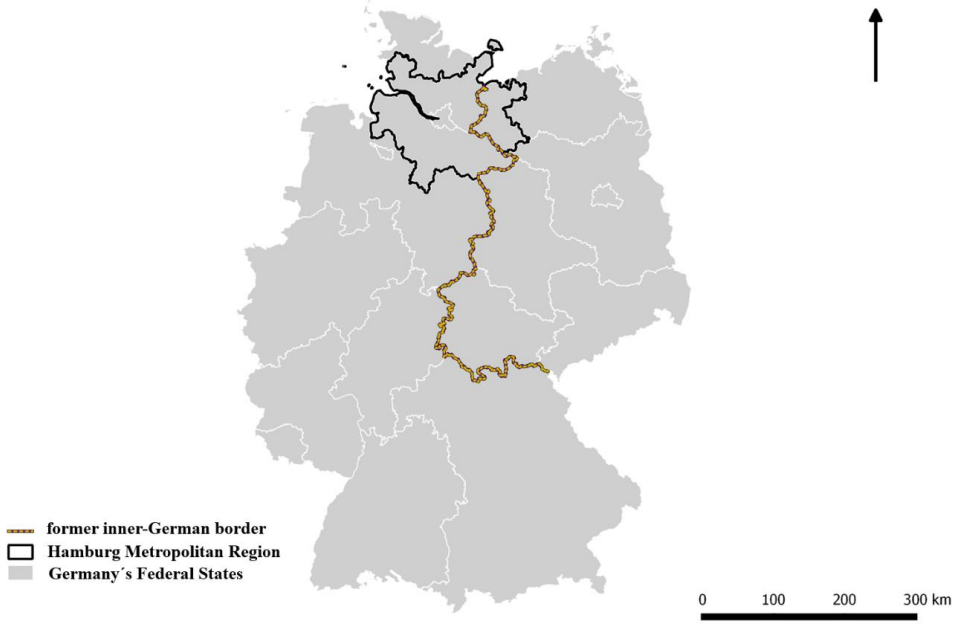

Figure 1 – The Hamburg metropolitan region, depicted together with the inner-German border that existed from 1949 to 1990 (Schaffert et al. 2016, modified).

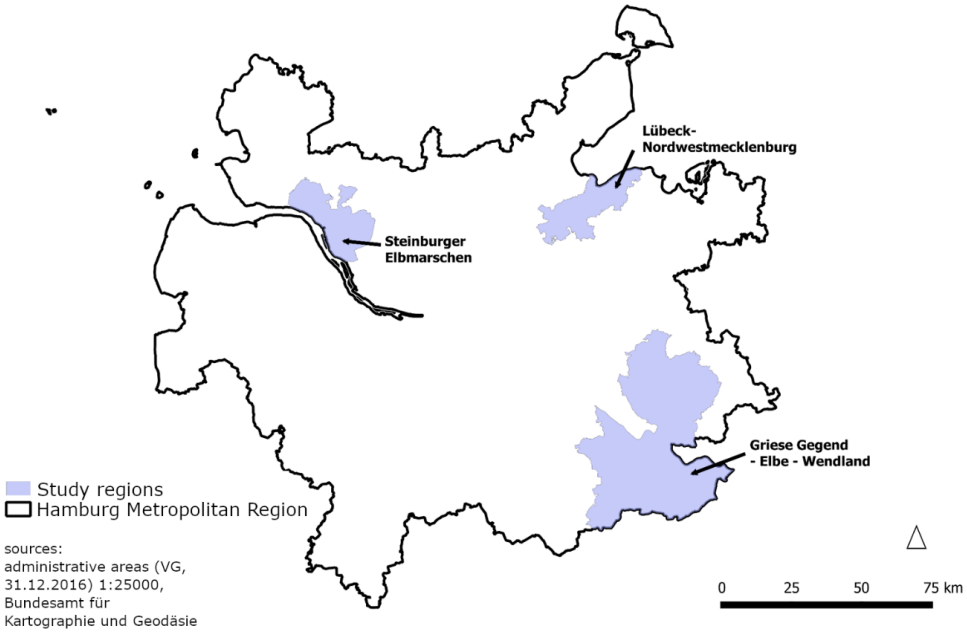

Figure 2 – The study areas in the Hamburg metropolitan region (Schaffert and Steensen 2020).

3. Methodology

Our methodology for characterising landscapes includes quantitative and qualitative elements, which were carried out in three sequential steps.

In step 1, landscape metrics such as area sizes, element densities or the landscape diversity were calculated for the study areas and the results were compared between them. Which landscape metrics were used – for example the Shannon Index (cf. Spellerberg & Fedor 2003) to measure diversity –, and how they were applied in Regiobranding is described in Wenger (2016). Furthermore, landscape classes were identified that are rare in Germany but relatively common in the study regions. Those landscape classes that make up less than 3 % of the total area of Germany were classified as "rare". This approach emerged from the idea that classes that are generally rare but appear comparatively often in a study area, give an indication of a local characteristic (cf. Wenger 2016). The datasets used for these analyses were primarily the digital landscape model (ATKIS-Basis-DLM), and the land cover model for Germany (LBM-DE). The advantage of these datasets from official mapping agencies are uniform mapping rules throughout Germany, which allow transregional comparisons. Since landscape is subject to constant change, recent land cover shifts were additionally identified using CORINE Land Cover (CLC) data. To track long-term changes, topographic maps from the 1870s onwards were examined (links to these datasets can be found in the resources directory). These datasets partly ignore features below a minimum mapping unit (see Retat and Schaffert,

2018). Additionally, only properties specified in the respective data schema are recorded. It is therefore unlikely that these data, which are sourced from authorities outside the region, cover all properties that might be important from the perspective of a local group or individual.

Step 2: To fill in this gap, we presented our findings in workshops and invited local people from politics and the public to add and label landscape features they personally perceive as special on a base map (Figure 3).

Figure 3 – Mapping at a workshop in SEM (Photo: C. Blaumann, © mensch und region).

Landscape elements that appear to be special as a result of combined qualitative and quantities analyses are not necessarily popular with landscape users. Therefore, “favourite places” or "places where people feel happy" were additionally mapped.

Step 3: User-generated content from the workshops was subsequently digitised with QGIS Desktop 2.16 and examined jointly with geodata from official bodies and results from step 1.

4. RESULTS

Comparative and participatory landscape branding

The comparative assessment of the landscape based on data from mapping authorities helped to raise awareness in the regions about aspects of the local landscape that may otherwise have been perceived as commonplace. A high landscape diversity based on the Shannon Index, for instance, was attributed to LNWN compared to the other study regions (Wenger 2016). The local partners already perceived their region as somehow diverse. However, through quantification and spatial comparison this “gut feeling” could be ranked and the high degree of diversity was recognised as a possible characteristic of the region.

Additionally, a number of landscape characteristics were identified that our study areas have in common and make them stand out compared to other regions. One of these characteristics are water bodies, which comprise a significantly higher percentage in areas investigated than the average in Germany. Such similarities proved to support transregional cooperation of the local partners who focused on their respective region at the beginning. In the two coastal regions, landscape elements related to water were particularly often identified as characteristic features in the workshops: a total of 55 objects were mapped in SEM and 44 in LNWM, of which 62 % and 55 % respectively were water-related (Schaffert et al. 2020). Locations in proximity to water bodies were also oftentimes referred to as “favourite places” or "places where people feel happy" in these regions (Becker et al. 2019). Both the quantitative and qualitative methods thus underline the relevance of local waterscapes and give them more weight in the negotiation on topics to be eligible for a brand. Such striking results, which are both generated with different methods and easy to communicate, are important since the decision making for a brand ultimately is a political process and follows its own logic.

Local assets promote a brand’s sustainability and have recently been proposed for a region in Catalonia (Eugenio et al. 2019). The waterscape was also identified in the Catalan study as a key element and it was suggested to link it with the local topography and cultural traditions. In our project, the relation between water landscapes and topography has been especially striking in LNWM: the user-generated content showed this relationship e.g. through comments suggesting vantage points from higher terrain over rivers and the Baltic Sea. In SEM on the other hand, features of the historical marshlands were frequently mapped and might form a second pillar of the local brand. The marshlands were formed since the Middle Ages by man-made land reclamation, leading to a terrain elevated partly below sea level (Figure 4). They can be seen as a cultural tradition that is directly reflected in the local topography, land use and land cover. The marshlands have always been linked to the SEM´s waterscape, as they feature a sophisticated drainage system with a dense network of canals, locks or water pumps. The brand could use and connect these assets, e.g. through walking trails linking the waterscape and the historic marshlands with restaurants offering local products. Cheese and fish dishes represent a local tradition in SEM that has been emphasized in supplementary studies dealing with cultural markers (Knaps and Hermann 2018).

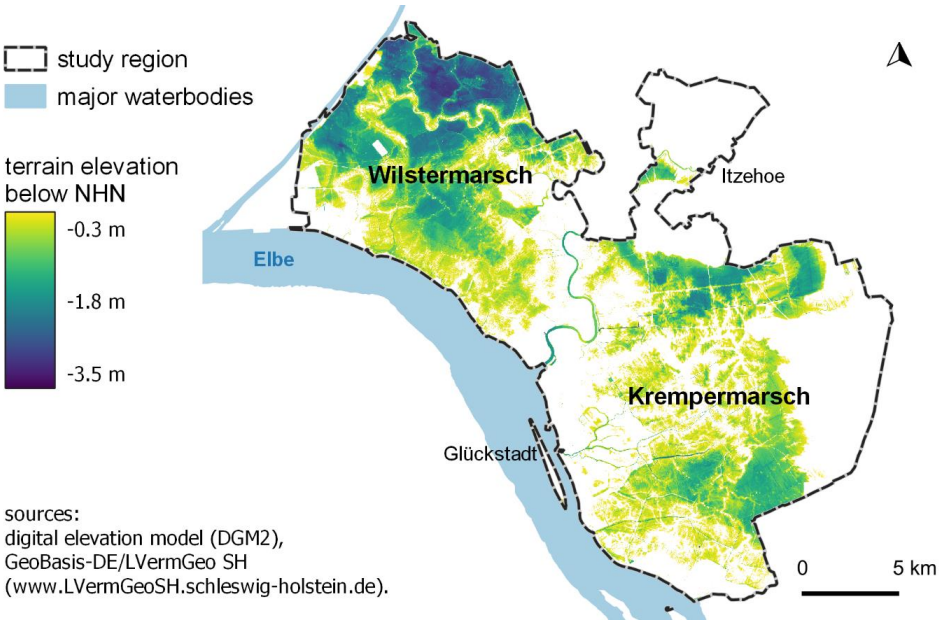

Figure 4 – Terrain heights in SEM (Becker et al. 2019).

Landscape change

The transformation of landscapes shows different dynamics both between and within the regions. Changes at the patch level took place predominantly in the eastern part of GGEW after Germany's reunification. The economic transition (and the pressure to adapt in agriculture) as well as the huge agricultural plot sizes created during GDR times resulted in substantial land cover changes (Figure 5). These changes mainly relate to agricultural land use such as the shift from arable to pasture land or vice versa (Schaffert and Steensen 2017). They can be considered as a reversible landscape change. Urban sprawl is another shaping trend and was observed in all study regions. It has modified local landscapes permanently. In the three regions we quantified urban sprawl since 1990 (Schaffert et al. 2016) and examined it in SEM additionally for a period starting from the 1870s (Figure 6; cf. Ickerodt et al. 2018).

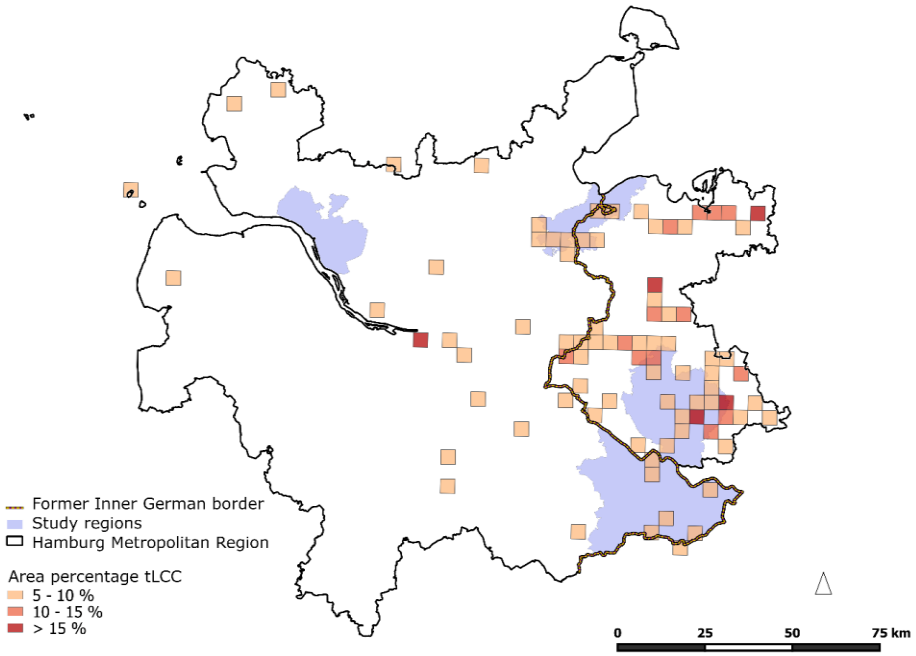

Figure 5 – From 1990 to 2000: Cells where the land cover changed on more than 5 % of the total area are indicated (tLCC: total Land Cover Change; Schaffert et al. 2016).

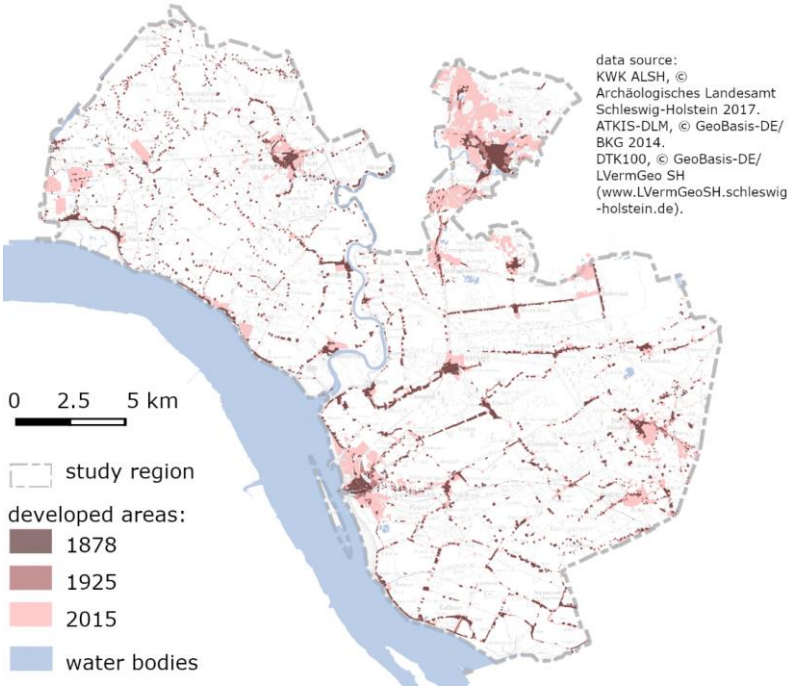

Figure 6 – Urban sprawl since the 1870s in SEM (Schaffert et al. 2020).

Transdisciplinarity and collaboration

The landscape analyses in Regiobranding were initially based on scientific interests of independent disciplines with predefined research questions. Since scientists from these disciplines all worked with GIS and partly the same spatial data, interdisciplinary cooperation quickly intensified (Schaffert et al. 2020). The added value that the spatial perspective offers for collaboration also unfolded between science and practice and led to new methodological ideas. For example, local partners from Lübeck began experimenting with mapping workshops quite early in the project. Their primary goal was to create a map showing places with positive connotations (*Glückspunktekarte*) to make the work on the local brand more tangible and visible for the public. Because of positive feedback on the workshops and a scientific interest in the generated datasets, the university partners started mapping workshops themselves (cf. Schaffert et al. 2020) and connected the user-generated content with scientific analyses (e.g. Bredemeier 2019). The mixed methods approach we have presented is hence a product of co-learning by the transdisciplinary scientific-practice-team and was not set in stone from the beginning.

Combining heterogeneous knowledge of people with different experiences, interests and knowledge was a central challenge for developing regional brands through a transdisciplinary approach. Working with spatial data and maps served as a common ground for bridging differences and actively involving local partners (Schaffert et al. 2020). This became particularly clear in the workshops, since participants quickly got into conversations and were able to do so at eye level. In cases where, for example, the location of a feature was unknown, the participants helped each other, leading to further mutual communicative exchange about landscape preferences. In our case, we did not see the effect of power gaps between stakeholders that have been identified elsewhere (Akbar et al. 2020) as a major obstacle to the proper use of spatial knowledge in public participation.

5. Discussion

Landscape change in the context of place branding

The transitions dynamics observed raise questions with regard to a branding of regions that is centred on landscape. Questions that should be reflected in future research are for instance: “Is it appropriate to jointly brand regions even if their landscape is subject to distinctive, and at the same time differing dynamics of change within?” The selection of the Regiobranding study areas, such as GGEW, was motivated not least by the desire to combine neighbouring but administratively separate regions into a single brand and to utilize similarities in the landscape for this purpose. But belonging to different - namely a capitalist and a communist - economic systems between 1949 and 1990 led to changes with spatio-temporally diverging dynamics in GGEW that still affect the landscape. The aforementioned agricultural plots, which to this day are significantly larger in the eastern parts of GGEW than in the west, need to be mentioned in this context. As a result, GGEW´s landscape has been developing differently in its eastern and western part. A joint landscape-based brand for a region whose landscape obviously evolves disparately may prove unsustainable over time.

Another question that arises is “Can landscape change itself be integrated in a brand? And if so, how?”. Research on branding has dealt with changes in many facets (e.g. Finney 2010, Cassinger 2017, Muratovski 2017, Joo 2018). Some of the knowledge gained in previous studies could support branding also in our regions. For example, Hansen & Machin (2008) or Gustavsson & Elander (2012) see climate change as a marketing opportunity. This use case seems close enough to SEM with its numerous wind farms. The functional parallels of today's wind energy plants to the historic wind-powered mills and pumping stations in SEM „could serve to illustrate the region’s energy transformation as a part of a longer development rooted in the region” (Schaffert et al. 2020: 164). However, it is worth bearing in mind that attitudes in the local population towards wind farms vary, and in part are negative (Knaps 2019).

Similar to the shift towards renewable energy in SEM´s historic marshlands, Griese Gegend´s vast agricultural plots could be seen as a remnant of the GDR's history and as such be integrated into the region's brand. This approach could additionally strengthen the synergies between place branding and agricultural landscape management in support of rural development, as proposed by Mettepenningen et al. (2012). However, the wind farms in SEM and the extensive agricultural areas in Griese Gegend are not in themselves a unique selling point, as these phenomena also appear outside these regions. It therefore seems reasonable to combine these with regionally specific landscape features and cultural traditions.

The question of how to deal with urban sprawl in this context remains unanswered. Integrating urban sprawl into a brand does not seem convincing, as this phenomenon can be found throughout the country and is seen by the majority in Germany as negative for the image of the landscape (Hildebrand et al. 2020). Moreover, it poses a threat to landscape assets in the undeveloped periphery of settlements, which in turn could support branding. An example of such assets are archaeological remains like burial mounds, which have largely disappeared from built-up areas and arable land (cf. Schaffert et al. 2020).

Spatial data and cartographic literacy in transdisciplinary projects

Working with GIS and maps can promote mutual learning in transdisciplinary projects with heterogeneous partners as described above. However, the use of spatial information leads to new challenges of which one should be aware. Maps, for example, are a visual information product that can spread quickly in the digital realm (cf. Gekker 2016). As a result, the map maker may lose the ability to explain his map to the recipients or to correct possible misinterpretations. This is likely to increase the risk of unintentionally "lying with maps" (Monmonier 2005), as explained on the example of the *Glückspunktekarte* in LNWM.

Figure 7 reproduces the original map made by the city of Lübeck that meanwhile found its audience in the region (e.g. Kühn 2015) and beyond (e.g. https:/www.ideen-fuer-das-land.de/regiobranding.php#10). The map shows places where people feel happy according to their own assessment. Many points are located in the Old Town of the city of Lübeck (UNESCO Cultural Heritage), along the Baltic Sea and other water bodies. The significance

of landscape elements, especially the proximity to water bodies, in relation to places where people feel happy is also visible in other areas investigated (Schaffert et al. 2020).

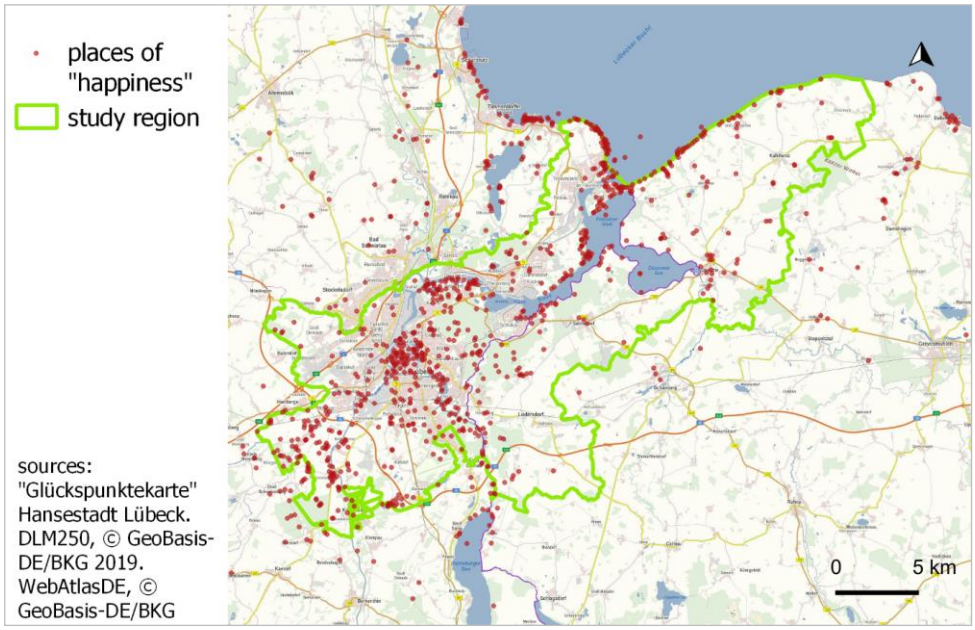

Figure 7 Glückspunktekarte – Places of happiness (City of Lübeck 2015, modified).

By cartographically altering the same data using the popular heat map approach (e.g. Stek 2020; cf. DeBoer 2015; Figure 8), the misleading message could be created that people are happier in the part of the region that did not belong to the former GDR. This fits with a survey that was widely discussed at that time (Deutsche Post's Happiness Atlas; Schupp et al. 2013), which said – or at least was interpreted by newspapers that way – that people in East Germany are less happy than West Germans (e.g. Welt 2010). However, this statement is inappropriate in our case as it does not follow from the data.

The high density of points in the western part can rather be explained by the fact that seven out of eight mapping workshops took place in LNWM´s west – and proximity to familiar surroundings seems to matter. By not presenting all points on a single map, but for individual workshops, this aspect becomes apparent: The points mapped in Kronsforde, for instance, are located mostly in or near this neighbourhood (represented by a grey dashed buffer that spans six kilometres). In addition, the Baltic Sea coast is popular, despite its distance (Figure 9).

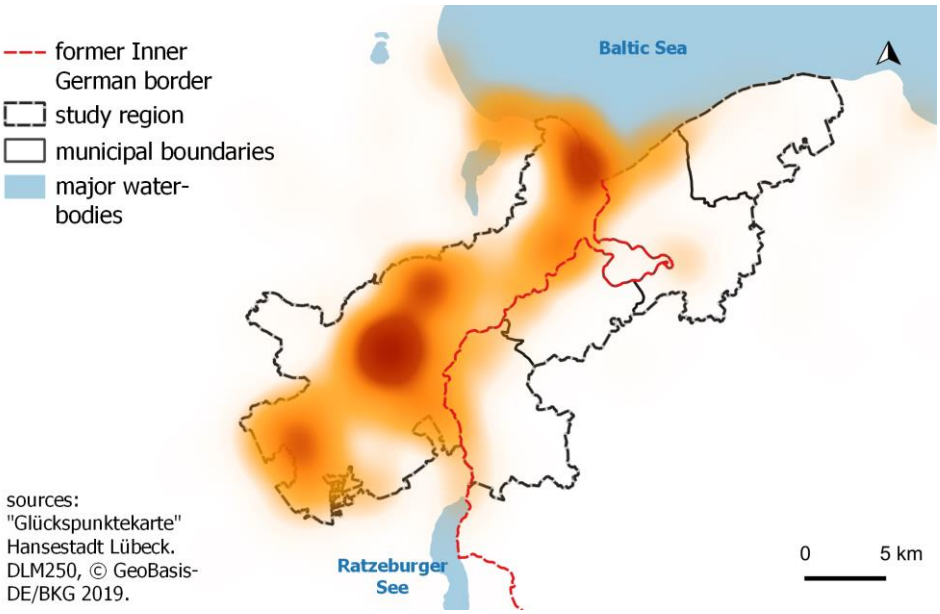

Figure 8 – Misleading cartographic alteration on places of happiness.

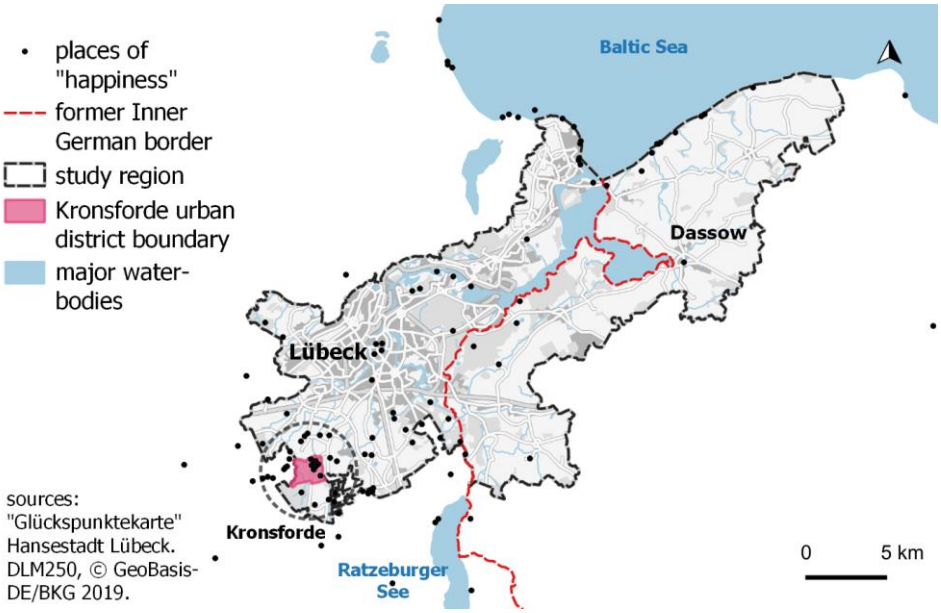

Figure 9 – Places of happiness mapped in Kronsforde.

The only village in the eastern part of the LNWM, in which a mapping workshop took place, is Dassow. Only 6.6% of the total number of places of happiness in LNWM were recorded in this event. A separate evaluation of these 70 points mainly results in places in the Dassow area. The Baltic Sea is also popular, but mostly within the territory of this village (Figure 10).

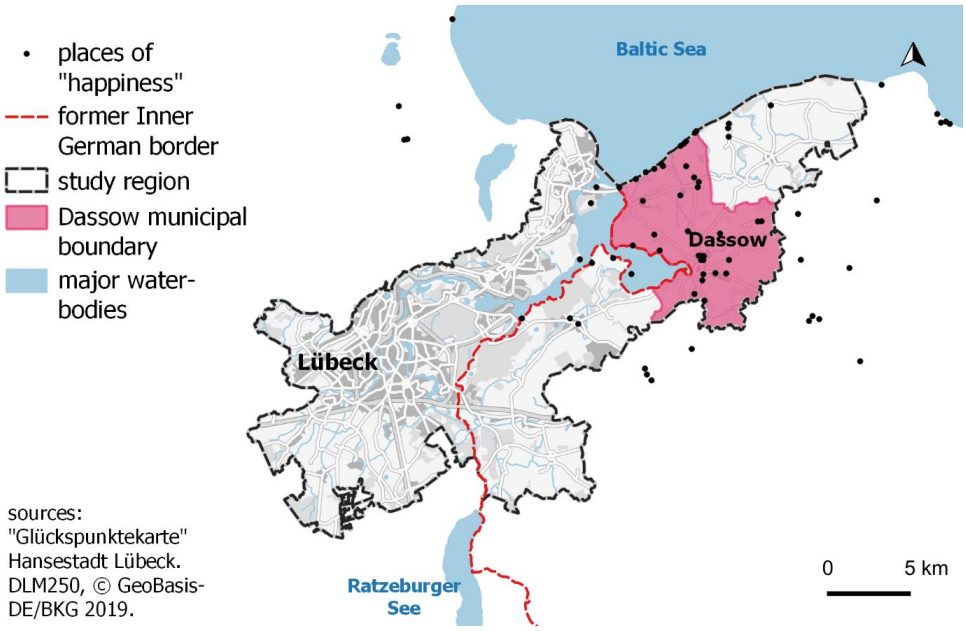

Figure 10 – Places of happiness mapped in Dassow.

A misleading map like the one in Figure 8 was not used in the Regiobranding. Nor was the original map made public without reference to the location of the mapping workshops. However, postings of the *Glückspunktekarte* elsewhere on the internet no longer carry this reference (e.g. https:/www.ideen-fuer-das-land.de/regiobranding.php#10).

6. CONCLUSION

Place branding is increasingly interested in tying the discipline more closely to spatial planning in order to foster sustainable regional development (cf. Grenni et al. 2020; Cleave & Arku 2020; Van Assche et al. 2020). A key contribution of branding in this context is the long-term, strategic view of a region and a vested interest in combining natural and social aspects with economic prosperity (Oliveira 2015). Local assets of a region, such as its landscape, are seen as the basis for sustainable place branding and were the focus of the project Regiobrading.

In this context, we identified characteristic landscape elements by combining quantitative and qualitative spatial analyses. The user-generated content from mapping workshops provided supplementary information to what we learned from the official authorities' geodata. Working with maps facilitated the exchange of knowledge between people with heterogeneous backgrounds. This made the transdisciplinary setup of Regiobranding easier to handle. Since working with maps can also contribute to strengthening citizen participation (Gagliardi 2017; cf. Kahila-Tani et al. 2019), the use of map-based methods could become more prominent in collaborative, transdisciplinary projects. Such an increase in relevance should go in hand with a raised awareness of the opportunities and risks of map-based knowledge transfer and a

sound understanding of different types of spatial data. In the case of user-generated spatial content, metadata about data capture is required when a map based on this content is shared.

ACKNOWLEGEMENT

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