Urban Health Transdisciplinary Forum

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Hochschule für Gesundheit in Bochum

Machbarkeitsstudie Urban Health Ruhr

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Welcome address

23uhtf01 (01)

Transdisciplinary knowledge integration on urban health

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Urban health is a key aspect of the overall health and well-being of individuals and communities living in urban areas. Home to around 5 million people, the Ruhr region in Germany is a densely populated urban area. The region is known for its industrial past in coal mining and steel production. Although the coal mining industries are a thing of the past, they have left several environmental and health challenges for the region's residents as well as a diverse society rooted in migration from different countries. Understanding these challenges and resources is essential to addressing the region's health needs.

The Ruhr area is facing some major health challenges: Air pollution and noise from industry and high levels of traffic, lack of access to green and blue spaces, heat during heat waves and long periods of extreme heat, and also flooding, which is an emerging threat to urban areas due to the increasing sealing of surfaces (with asphalt or concrete), social inequality and segregated neighbourhoods with higher rates of poverty and unemployment.

Urban health is an issue of social determinants the social and economic conditions in which people live, work and play have a significant impact on their health outcomes [1]. It encompasses a wide range of factors including physical, social, environmental, and economic determinants of health. They include income, education, housing, access to healthy food, transport and social support networks. Urban environments can be particularly challenging for health because they often have higher levels of environmental pollutants, social inequality, inadequate infrastructure for physical activity and access to social participation. Urban residents may also experience social isolation and reduced access to green spaces, which can negatively affect mental health [2].

Transdisciplinary research is an approach to scientific inquiry that seeks to integrate the knowledge and methods of a range of disciplines to address complex problems. In contrast to interdisciplinary research, which involves collaboration between researchers from different disciplines, transdisciplinary research involves stakeholders from a variety of fields outside of academia, including members of different communities, policymakers and practitioners. By engaging with stakeholders from outside academia, transdisciplinary research seeks to bring different perspectives, values and types of knowledge into the research process [3].

The Urban Health Transdisciplinary Forum is part of a research project on the feasibility of urban health in the Ruhr area in Germany. The project aims to build a network of stakeholders from academia, society and the public and private sectors.

Correspondingly, the transdisciplinary forum is an approach to bring together stakeholders from different fields, including academics, policymakers, urban planners and community members, to discuss and develop solutions to urban health challenges. The forum aims to address the complex and interrelated health challenges faced by urban communities by promoting collaboration and the exchange of knowledge and expertise.

The Urban Health Transdisciplinary Forum took place on February 15, 2023, in the facilities of the University of Applied Sciences, Hochschule für Gesundheit in Bochum. Together with international and national researchers, practitioners, policymakers and society the following topics were addressed and discussed:

- Urban green
- Urban mental health
- Environmental justice
- Monitoring
- Climate adaptation
- Homelessness

The various provided contributions and practical examples allowed the speakers and participants to experience a large number of practical impressions and stimulated a vivid discussion among the guests.

The abstracts of the individual contributions can be found in this conference volume. Each session begins with an introduction by the moderators of the relevant session, followed by the abstracts of the speakers.

It concludes with an interview about participating in the Forum and a plea for open, transparent and inclusive science. A science that is accessible to all.

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Urban green

23uhtf02 (02)

Session Summary: Urban green

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Background: Urban green performs significant functions in our cities and is of high value to people. It offers numerous possibilities for use and assumes important functions for our quality of life and health [1]. Multiple studies show the effects on our health. Those effects can be various: reducing air and noise pollution, cooling effects, encouragement for physical activity or promoting social interactions [2], [3].

A transdisciplinary forum on urban health was held at the Hochschule für Gesundheit, University of Applied Science in Bochum. The forum offered a transdisciplinary learning space for scientists, practitioners and interested people from all over the world. The forum dealt with the multiple challenges of the Ruhr Area in the context of urban health and how the region can learn from the experience of other regions worldwide. One session was focused on urban green.

In times of urbanization, urban green has a high impact of decreasing the negative impacts coming along with the rise of urban life [2]. Therefore, the session focused on the benefits of urban green for health and tries to find answers.

Contributions: Different views on urban green and health were presented in the session on urban green. The first presentation by Ellen Hilal discussed the Heinz Nixdorf recall study's results, focusing on the association between neighbourhood greenness and body mass index. The presentation showed how to combine health data and NDVI. The audience agreed that those approaches need to be integrated more into urban green planning. One interesting thought would be to compare the place of work/and place of residence, but this would be a huge methodical challenge. It needs to be pointed out that NDVI is just one variable, which doesn't include what kind of green is in the neighbourhood. It makes a difference if there is a public urban park or a private garden that is not open to the public.

The second presentation by Christin Busch and Eva Rademacher was looking at the framework of ecosystem services and health-oriented urban green space planning. Critical discussed were that, with a social media analysis you know nothing about the people who wrote the comments about different green spaces. To deal with this challenge there was a survey afterwards based on the findings from the analysis. It showed that the findings were generally comparable. The main goal was to create a GIS toolbox to show if people's planning has positive effects.

In addition, practical input on productive green infrastructure for post-industrial urban regeneration was given by Dagmar Knappe. It showed how integrated planning could work in a project like this. The Department of urban renewal worked closely together with the Department for green spaces. Critically discussed could be the lack of participation of the health department as the presented project has an impact on people's health.

Overall discussion: After the three presentations, there was a general discussion. Different questions were discussed.

In the first step, we talked about the existing knowledge overall and what we learned from the previous presentations. We agreed on knowing a lot about the health benefits (physical and mental health) of urban green. The challenge is the distribution of urban green. One major topic of the discussion was that participation is obligatory. The second presentation showed that needs analysis and transformation of green spaces. The use of inhabitants' experience and participation is obligatory and still needs to be strengthened. The spatial component of data and the use of those have a high value for improving people's health.

We still have knowledge gaps regarding different (vulnerable) groups and how to increase their use of urban green. One of the main challenges is to know more about "how to come from know about to come to use it for health". There is also a gap in regionalised health data.

The needs for action, which are discussed, were to take urban farming and agriculture as part of urban health into consideration. More local rules for greener cities must be implanted. A suggestion for those rules was the "3–30–300" (3 trees from every home, 30% tree cover in every neighbourhood – 300 meters from the nearest green space). An open data pool (health, environment, spatial) is needed. Especially for the Ruhr Area better cooperation between cities is pointed out. For improving inhabitants' participation those responsible need to talk to and with the people. There still needs to be more integrated planning.

One innovative approach, which was brought up, is to install "urban health managers" similar to already existing climate managers in the municipality, to follow the principal health in all policies. We still need more experts in the intersection of health and planning. Nature-based solutions co-created with actors from different sectors and residents are one way to improve people's health and a participatory approach, where different interests come together in dialogue. There haven't always been flagship projects, you can also focus more on the principal "think little": solutions can be pocket parks/tiny forests or mobile solutions.

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23uhtf03 (03)

Assessment of cultural ecosystem services in the Ruhr area for health-oriented urban green space planning

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Introduction: The World Health Organization (WHO) declared health to be one of the most important indicators for sustainable urban development [1]. This statement is supported by growing scientific evidence [2]. However, health is not yet an integral part of spatial planning policies. Especially urban green planning plays an essential role in this matter, as urban Green Infrastructure (GI) has positive effects both on mental and physical health as well as social justice through the provision of space for sports, relaxation and enjoyment [3]. A promising approach to assess the health-related benefits of tailored GI-measures and to enable planners to create synergies in different spatial scales through practical indicators are cultural ecosystem services (CES). But despite all ongoing process, there are still scientific gaps in the mapping and analysis of context-based and regional CES.

Material and methods: Against this background, we developed an approach to assess the health-related contributions of GI in the cities of Bochum and Gelsenkirchen as well as Shanghai and thus pave the way to sustainable, health-conscious urban planning. In order to do so, we carried out a social media analysis offer around 650 green spaces. Using qualitative content analysis, 18,130 comments were analyzed with regard to the mentioning of CES and GI assets (trees, water bodies, etc.) leading to the provision of CES.

Results: In both German cities, aesthetic experiences played a major role in the use of GI with relative frequencies of over 40.0% (Figure 1). Active movements such as jogging as well as passive, observational interactions were also frequently mentioned. In Shanghai, active (32.5%) as well as passive interactions (24.0%) played a bigger role than aesthetic experiences.

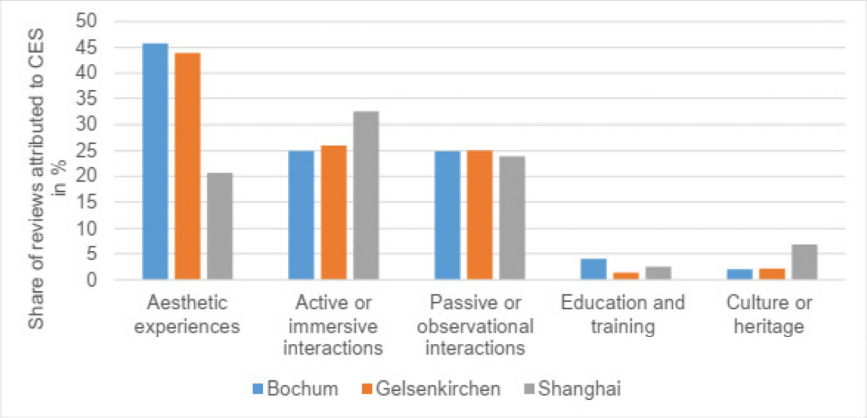

Figure 1: Share of reviews (n = 18,130) attributed to CES in %. CES with shares below 2% are not shown.

Using the example of active or immersive interactions, water bodies and lawns were the two most frequently mentioned natural elements in Germany and Shanghai (Table 1). With regard to the built environment, sports facilities make an important contribution to active movement in both countries. In Germany, the path structure was also mentioned, in China playgrounds. In addition, references were made to factors related to user perception, such as the cleanliness in Germany or the proximity in Shanghai.

	Bochum + Gelsenkirchen	Shanghai
Natural elements	1. Water bodies	1. Water bodies
	2. Grass and lawn	2. Grass and lawn
Built elements	1. Paths	1. Sport facilities
	2. Sports facilities	2. Playgrounds
Perception/Soft factors	1. Cleanliness	1. Proximity
	2. Size	2. Amount of people

Table 1: Overview of the two most frequently mentioned natural elements, built elements as well as perception/soft factors for active or immersive interactions in Germany and Shanghai.

Conclusion: CES provides information on the general provision of health-related benefits and helps to explore opportunities to further improve the implementation of nature-based health measures in urban areas. In order to promote health equity, not only planners and actors from the health sector have to be involved in planning and research processes, but also different user groups. A methodological challenge will be to identify the diverse needs of different users, especially those of vulnerable user groups and to integrate health-data into spatial analysis.

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Urban mental health

23uhtf04 (04)

Session summary: Urban mental health

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Background: The environment we live in sets our living conditions, influences behaviour and interactions, and has a profound impact on mental health and well-being. Recent studies indicate that the quality of a city's environment significantly predicts the quality of life of its inhabitants [1]. The interaction between the built environment and mental health was the central topic in the session on urban mental health.

As more and more people move to urban areas, cities are becoming the most important living spaces of the future. While city life offers many benefits, which can act as health-contributing factors, such as improved access to medical and social care, educational opportunities, and social and cultural diversity, it also comes with the risk of being exposed to a variety of health-threats [2]. Compared to people living in rural areas, city dwellers show a higher prevalence of various mental illnesses such as depression, anxiety and other stress-related disorders [3]. In other words, living in a city can be considered a risk factor for the development of poor mental health.

This is a critical issue for urban planning and one that is becoming more and more important in the light of increasing urbanisation. As cities grow in size and population, so does the need for urban planning that favours a needs-oriented design, contributes to health and safety and fosters the well-being of its inhabitants.

Contribution:

- Inger Heine-Fuster, Javiera Mella, Casa Enjambre Foundation: "Your look tells": young people's expression through photography in Santiago, Chile.

Plenary discussion: In plenary and smaller group discussions, participants identified the existing state of knowledge and addressed potential approaches to incorporate mental health aspects in urban planning processes.

In the context of existing knowledge, participants named a variety of potential stressors of urban living e.g. the hectic rush of big cities, loneliness, and social isolation in the presence of overcrowding. Several physical environmental factors that pose a threat to health and well-being, such as noise or heat pollution and inadequate quality of air and water, were named as well. As counteractive measures participants mentioned green and blue spaces most frequently. Their various positive effects on mental as well as physical health were well known within the group. The participants further agreed that cities should not only meet the basic needs of their inhabitants to "have a roof over their head", but should also provide spaces and facilities that make people feel safe, at home, and help them thrive. It was discussed that cities should preserve safe spaces for disadvantaged groups, places to relax and unwind, and places that encourage people to socialise and interact with each other.

Regarding current knowledge gaps, participants agreed that although mental health plays a key factor in subjective quality of life, it has been given far too little attention in urban planning up to now. Mental health was recognized as a stigmatized topic that needs to be addressed more openly to discuss its influences not only in the context of pathology but in daily life as well.

When talking about the need for actions and possible approaches the factor of social inequality came into play. The built environment not only reflects social inequalities but also contributes as a risk factor to maintaining and reinforcing them. People with lower socio-economic status often live in areas that have less green or blue spaces with higher exposure to health-threatening factors (e.g. noise and overcrowding) and are less likely to be involved in political planning and decision-making processes. Participants advocated for a low-threshold policy approach that aims to reach out to disadvantaged communities in particular and encourages them to point out their personal needs. A city government's key responsibility in urban planning was deemed the fair distribution of environmental resources and health opportunities to mitigate social inequalities and create a city worth living for all.

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23uhtf05 (05)

"Your look tells": Young people's expression through photography in Santiago, Chile

Inger Heine-Fuster, Javiera Mella

Educadora popular, Casa Enjambre Fundación, Universidad de Chile

Casa Enjambre is formed by a group of women who offer their artistic, cultural and environmental tools to the community. They carry out recreational and educational activities to create safe public spaces for meaningful learning, with a focus on popular education for children and youth.

We develop our project in the Lo Hermida borough, in the city of Santiago. This neighborhood, since its origin in the 70s, is confronted with inequitable rights of disposition and access to basic social services (educational facilities, health care, political decision-making spaces) and is considered at risk areas for flooding. Lo Hermida deals with very high rates of population density with the lack of social opportunities, which leads to drug trafficking and violence. It has few safe public spaces for recreation, with few green areas.

The relevance of our work in Lo Hermida increased, especially during the social protests starting in 2019 and the COVID-19 pandemic, due to the greater inequality. The suspension of schools for almost two years led to many mental health problems. The state institutions are not guarantors of access to mental health and safe public spaces.

In the Urban Health Transdisciplinary Forum Inger Heine, biologist, and Ph.D.(c) in ecology, environmental educator, and Javiera Mella, psychopedagogue, will present how our multiple strategies of socio-educational intervention makes visible practices of domination (e.g. gender relations) and class division, as well as other possible forms of popular knowledge that can empower children, youth, and families, for instance, to perceive inequalities related to health and environment as a structural problem. Inger and Javiera are popular educators, who link academic knowledge with the territory. In addition to being inhabitants of the territory, developing several educational activities.

Our presentation will focus on one of our transdisciplinary activities, which we organized together with photographers from the Arcos Professional Institute: the documentary photography workshop. The main goal was the expression of the identity of young people between 12 and 18 years through their personal history, daily life and relationship with their environment. Photography is then a means of artistic expression, where the look of the world is valued from their perspective, and they generate archival material, which is essential for the memory and history that we build as a society. In the workshops, we discussed the photos with the participants in relation to questions of structural exclusion and created practices of care as well as relationships of collaborative to understand and reflect on how to change education and health inequities and gendered, classist and environmental injustices. We will present (PowerPoint with videos and a poster) the project modules and results, as well as the different actors with whom we have cooperated.

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Fair opportunities & environmental justice

23uhtf06 (06)

Session Summary: Fair opportunities & environmental justice

Heike Köckler

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Background: Health inequity is a major issue of urban health as the urban population is very diverse in income, education, sexual orientation, chronical diseases and by attributes associated with racism. Different diversity dimensions are associated with unfair opportunities for health (eg. [1]). Simultaneously, environmental determinants of health like access to green or blue spaces, walkable neighbourhoods or exposure to air pollution, noise or heat are distributed unequally within cities [2]. If specific communities have less access to healthier environments and face more environmental burdens this is a distributional environmental injustice. Environmental justice is a vision following the goal of a fair distribution of environmental qualities as well as meaningful involvement in decision making.

During the transdisciplinary forum on urban health [3] at the Hochschule für Gesundheit, University of Applied Science in Bochum, one session focused on fair opportunities and environmental justice. The contributions of the session have highlighted various facets of urban green (see below).

Contributions: The contributions of the session consisted of the following presentations:

- Thomas Claßen Odile Mekel, Raphael Sieber, Division Healthy Settings, NRW Center for Health (LZG.NRW), Bochum, Germany: Intersectoral municipal public health action plans – wrapping up 10+ years of experiences.
- Katherine Ogurtsova, Barbara Hoffmann: Long term air pollution and brain – results from Ruhr area observational studies.

Overall discussion: After the two presentations, different questions were discussed in the plenum. The discussion included questions on existing knowledge, knowledge gaps and innovative approaches to action.

As the contribution by Katherine Orgutsova and Barbara Hoffmann showed we have clear evidence for example on the effect of air pollution and socially unjust distribution. We also know in general about multiple burden effects.

Most of all the group agreed upon an implementation gap. Therefore more knowledge on implementing goals, plans based on the models, evidence and community knowledge we have is needed. Facing the input by Thomas Claßen, Odile Mekel and Raphael Sieber it became once again clear that the implementation of innovative concepts and address mainly the needs of communities with less access to resources power of endurance (in German: Durchhaltevermögen) is needed.

The discussion agreed upon a lack of structures and processes to deal with fair opportunities. Due to silo mentality and different disciplinary backgrounds, a common language in administration is missing for joint action on the promotion of environmental justice and health. "How can the knowledge we have – for example on the effects of air pollution –be implemented in structures and processes?" was one open question in the discussion. The health action plan is one option, others, also mandatory ones, have been seen as essential. The role of politics and politicians was also seen as key for implementation. Therefore formats for transdisciplinary processes including politics have been required. For the implementation, the participation of different communities was seen as challenging, but essential.

The relation between sectoral plans, like the health action plan and integrated plans (like integrated urban development plans and/or land use plans) could be clarified including a debate on political decisions at different spatial levels from the region (Ruhr) to neighbourhoods as well as national settings.

How can the effect of the health prevention law be increased on urban planning/urban renewal?

In the final debate, different actions have been identified as relevant to follow:

- The empowerment of diverse communities as well as professional actors dealing with urban health, including politicians is needed.
- Transparency in accountability and data was required.
- Evaluation of implementation is needed including cost-effectiveness.

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23uhtf07 (07)

Inter-sectoral municipal public health action plans – wrapping up 10+ years of experiences

Thomas Claßen, Odile CL Mekel, Raphael Sieber

NRW Centre for Health

An inter-sectoral municipal public health action plan is meant to be an instrument of Public Health authorities within the municipal planning context and is intended to incorporate activities along the public health action cycle, thus from problem analysis and needs assessment to action planning and implementation [1]. It provides a proactive contribution of municipal health authorities e.g. to urban development, and thus a path that is not regularly taken.

Although initial steps in fostering local health authorities to set up Inter-sectoral municipal public health action plans were taken especially by LZG.NRW more than a decade ago, is not yet an established instrument. However, there have recently been a number of new initiatives in German municipalities to put the instrument back on the local agenda in one way or another.

The presentation introduces the idea behind inter-sectoral municipal public health action plans. It displays the instruments' function in the local planning context and outlines its major objectives and possible stakeholders. Experiences deriving from plans that were already set up or are currently being carried out are shown as well. Thus, a comprehensive overview as well as more detailed insights into the characteristics and results of specific planning processes will be presented.

Following the presentation we would like to discuss requirements for future Inter-sectoral municipal public health action plans. The aim is to gather hints about how further contributions by public health authorities to urban development can look like, especially considering the ongoing effects of multiple major crises on human health (such as climate change, loss of natural resources, pandemics, energy crisis, etc).

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23uhtf08 (08)

Long term air pollution and brain – results from Ruhr area observational studies

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Introduction: Air pollution has deleterious effects on human health promoting a wide panel of chronic non-communicable diseases both in adults and children. Recent evidence raises concerns about the potential effects of air pollutants on brain structure and function. The objective of this contribution is to show the results of extensive research in a cohort of adults in the Ruhr Area. The results provide evidence of associations between higher exposure to air pollutants with disadvantageous outcomes in older populations.

Material and methods: The Heinz Nixdorf Recall (HNR) study is an ongoing population-based cohort study of 45–75-year-old men and women that started in the year 2000 in Bochum, Essen and Mülheim/Ruhr [1]. The first and the second follow-up examinations were performed in 2006–2008 and 2011–2015. From 2011 to 2016, partners and children of HNR participants were invited to participate in the HNR-Multigeneration Study (HNR-MGS). 1000BRAINS is another ongoing population-based cohort study started in 2011 for characterizing the interindividual variability of brain structure and function. Participants were recruited from the second follow-up of the HNR study as well as the HNR-MGS.

Results: We found that higher exposure to air pollutants and road traffic noise was independently associated with poorer performance in a range of cognitive tests as well as with a higher prevalence of mild cognitive impairment in the HNR population [2]. Moreover, in 1000BRAINS, we observed that air pollution and noise were both associated with reductions in language and short-term/working memory performance and with local atrophy in a functional network in a brain associated with these cognitive processes [3]. Also, we investigated the strength of functional connections between different brain regions and found that high exposure to air pollution and noise were associated with changes in the brain that are similar to changes of a one-year increase in age [4], [5]. The results suggest that chronic air pollution and noise exposure may harmfully influence the physiological aging process of the brain.

Conclusion: These results highlight the urgent need to take into account exposure to air pollutants and noise in urban settings whenever urban interventions are planned. Moreover, areas with higher exposure to pollutants are often socio-economically deprived, putting a double burden on the people living there and creates a systematic inequality in the society. Reducing emissions of air pollution and noise, for example by providing opportunities for active transport, will positively influence health, quality of life and social equality in urban settings.

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Climate adaptation

23uhtf09 (09)

Session Summary: Climate adaptation

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Background: Climate change is increasingly impacting all sectors of society and is already intensively discussed in the context of environmental, political, health, and social issues. Climate adaptation and its strategies have been in public discussion for several decades. Yet, there is no single definition for climate adaptation. The purpose of climate adaptation is to mitigate unavoidable and already occurring direct and indirect consequences of climate change, to avoid further damage, and to strengthen defences and resilience.

The most used definition comes from the Intergovernmental Panel on Climate Change (IPCC). It defines adaptation to climate change as “initiatives and measures to reduce the sensitivity of natural and human systems to actual or expected impacts of climate change” [IPCC 2007, 86]. Adaptation to climate change also requires dealing with different climate change-related health challenges. This means that climate adaptation is closely related to the protection of human health and, among other things, to ensuring universally accessible and high-quality health care. The strategies and actions identified in the context of climate change adaptation and health are aimed at adapting behaviour, changing conditions and adapting structures. These changes, in turn, can have an impact on a person's health and well-being.

It’s not uncommon to hear the demand that climate adaptation measures must be designed in a **cross-sectoral** and **multidimensional way** and implemented in different living environments and organizational units. There are also parallels with the **setting approach** known in public health or the HIAP (Health in all policies) strategy. In the discipline of spatial planning, we discuss, for example, structural measures such as the unsealing of surfaces, the preservation and promotion of fresh and cold air paths, the greening of the city or climate-adapted building structures. From a public health perspective, instruments such as heat action plans are discussed, which address both conditions and people’s behaviour. Other questions deal with challenges of climate stress and health care facilities, two topics that have been discussed in the session “Climate adaptation” at the transdisciplinary international forum on urban health.

Contributions: The contributions of the session consisted of the following presentations:

1. Dr.in Wiriya Puntub; Institute of spatial planning; Technical University Dortmund: Future-oriented planning for climate resilient urban health care services.
2. Dr. Thomas Claßen, Dr.in Odile C. L. Mekel, Dr. Raphael Sieber; Abteilung Gesunde Settings, Landeszentrum für Gesundheit NRW (LZG.NRW), Bochum, Deutschland: The status quo of heat health action planning.

Plenary discussion results: Before the first post, the audience was given to post something about their interest in this topic. On a second poster, the audience positioned themselves to share a prefabricated thesis:

“Dealing with urban heat in combination with other stress factors (air pollution, noise, lack of green spaces e.g.) is a central task in the Ruhr area”.

In the first discussion, it became clear, that there was a broadly distributed spectrum of interests in the topic of the session. Views on this thesis were closely divided.

The presentations were followed by a plenary discussion between the presenters and the audience along with the following guiding questions:

- What do we already know in the context of climate adaptation and health, but what do we not know? and
- Where are innovative approaches to action that we can use for and in the Ruhr region?

Conclusion and outlook: The presentations and the constructive and inspiring discussion at the end show that there is already a lot of knowledge about climate adaptation in the context of urban health, both internationally and in the Ruhr Area.

It seemed important to the discussants to translate knowledge into action. Instruments such as the heat action plan are very valuable for this purpose. The sensitivity to the topic is there. There is a lack of measures at the implementation level.

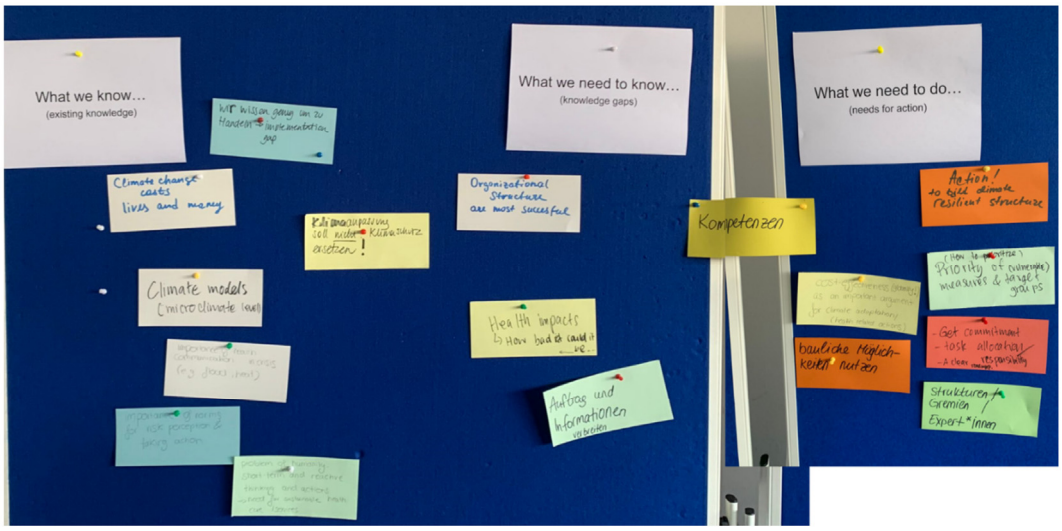

Figure 1

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23uhtf10 (10)

Future-oriented planning for climate resilient urban health care services

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Introduction: Unaware and insufficient understanding of possible climate-related hazards in the future may lead to investment in health care services in hazard-prone areas, which manifests in high exposure of the health care facilities and health population to climate risk. Vice versa, lacking integration of future-oriented climate risk-informed spatial planning, urbanization often presses cities to compromise hazard-prone areas for development, which demands public infrastructure service. This dilemma could exacerbate a local public health service to deal with high service demands due to urbanization and at the same time confront intensified climate-related hazards.

Material and methods: This research presents Health Integrative Climate Resilience and Adaptation Future (HICRAF), a collaborative scenario planning framework to help the local public health service address the potential impact of climatic and non-climatic change interactions. The framework encompasses the local public health care to tailor and operationalize their climate resilience and adaptation target(s) in the long-term, considering the deep uncertainty of the bandwidth of possible future conditions. This mixed method of quantitative and qualitative techniques enables the local stakeholders to manifest their future urban development envisions and future climate trajectories and then debate them through a spectrum of possible futures and their intertwined potential impact on the local public health services. With collaborative scenario planning highlighted backcasting approach, the local stakeholders determine their own desirable future versions and shape the way how to realize them. Then, composite indicators come to play as an innovative element in assessing the potential impact of future climate-related hazards that helps to track climate resilience interventions in both spatial-based settings and network-based operations. The assembly of scenario

planning and composite indicator tool helps fasten the day-to-day public health operation and long-term strategic planning aspect, which public health care operators and policymakers often ignore.

Results & conclusion: Nevertheless, local stakeholders in Khon Kaen City, Thailand, well embraced this future-oriented and humble planning approach for integrated urban health climate resilience. However, there are still vast gaps in addressing the reality of spatial-system risks entangling in our urban health infrastructure, such as hybridizing spatial-system risk in urban health care services in a forward-looking manner and identifying barriers and transformative solutions for mainstreaming spatial-system risk concerns to climate-resilient urban health care investment and operation.

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23uhtf11 (11)

The status quo of heat health action planning in North Rhine-Westphalia (Germany)

Thomas Claßen, Odile CL Mekel, Raphael Sieber

NRW Centre for Health

Climate change will have significant impacts on human health. The increasing number and intensity of heat waves are probably the most relevant climate trends in Central Europe at present. In 2020 the German ministers and senators of health on the federal and state level considered developing local heat health action plans within 5 years to be necessary [1].

Heat health action plans are an effective tool to mitigate negative health effects due to heat extremes. They can incorporate different types of strategies and measures, e.g.

1. risk communication to the population and institutions,
2. management of acute heat events especially for vulnerable populations, and
3. long-term measures to adapt to and protect against heat extremes [2].

However, heat health action plans are a relatively new instrument and have not been established yet. Only a few examples have been set up in practice to date. The involved stakeholders learn by doing and by sharing their knowledge. Administrative bodies especially at the local level are asked to prepare for the tasks ahead.

The presentation addresses local and international scientists and practitioners who are interested in heat health action planning. Different approaches to enhance resilience to heat stress and consequently keep people healthy will be displayed. The input sums up preconditions, fundamentals, comprehensive guidelines and best practice examples of heat health action planning in Germany. In addition, it outlines specific activities by LZG.NRW to support local plans in the state of North Rhine-Westphalia.

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Homelessness

23uhtf12 (12)

Session summary: Homelessness

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Background: Homelessness is recognized as a multifaceted hazard to human health. It is closely associated with premature mortality and an increased prevalence of various pathological conditions. As of 2020, around 1.6 billion people lived in inadequate housing conditions globally. Despite a general rise in global wealth over the recent decades, however, a critical rise in homelessness is observed.

Structural and individual risk-factors are considered determinants for producing and sustaining homelessness. These apply to individuals who are suffering from poverty and low socio-economic status. Meanwhile, wealth inequality is on a constant surge in most countries. A call for political action in conjunction with hands-on initiatives to prevent, redress and alleviate homelessness appears warranted.

The keynote presentation provided insights into health data and structural issues of homeless people from Lahore, Pakistan. Dr. Atif Bilal Aslam is an associate Professor at the University of Engineering & Technology in Lahore Pakistan, where he teaches research methodology, comprehensive urban planning, as well as project planning and management. This international frame of reference was subsequently complemented by the reports of Ms. Pempel and Mr. Doering, two social workers from the cities of Bochum and Dortmund, who shared their practical experience from the field. This was concluded by two real life reports by Ms. Yahiaoui and Ms. Frantzen, two affected individuals from the city of Dortmund who provided first-hand experience and insights on homelessness. Each contribution was followed by a plenary discussion.

Contributions:

- Dr. Atif Bilal Aslam: The Vicious Circle of Homelessness and Urban Health: A Study of Homeless People in Lahore, Pakistan.
- Bianka Pempel, Michael Doering: Reports from the field.
- Ms. Yahiaoui, Ms. Frantzen: Reports of experience as affected individuals.

Plenary discussion & perspective: A need for a more differentiated and consensus-based framework of definitions was initially stated, due to diverse circumstances for people suffering from inadequate housing conditions. This would constitute a necessary basis for communication between stakeholders in science, policy and practice.

It was further emphasized that the lack of availability of legal documents for affected people is a common issue in Pakistan and the Ruhr area of Germany. The main reasons are the absence of acknowledgement in the administration and bureaucratic obstacles. This results in an impediment to recourse to welfare services and an aggravation of the living conditions.

The concept of “billbeds” from Pakistan was newly introduced and raised significant interest. It comprises commercial billboards that can be transformed into sleeping accommodations for homeless individuals at night. This project was successfully implemented in the city of Lahore as a pilot program, financed by an advertising company.

A key take-away was the imperative for participatory research projects to gain a more comprehensive understanding of urban health regarding the needs of the homeless population. The results are expected to provide a basis for the development of extensive health care services.

A first follow-up project was initiated by Leonie Wieners of the Hochschule Bochum with Atif Bilal Aslam from the University of Engineering & Technology of Lahore. The project aims to conceptualize and apply a survey targeted specifically to homeless participants of the Ruhr region and derive indicatory data that may be implemented in urban development programs.

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23uhtf13 (13)

The vicious circle of homelessness and urban health: a study of homeless people in Lahore, Pakistan

Atif Bilal Aslam[1], Rizwan Hameed[2], Ayesha Zulfiqar[2], Tuba Suhail[2], Hamza Saleem[2], Ayesha Noor[2], M Sanaullah Khan[2]

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Introduction: Urban homelessness is a common issue faced by both developed and developing countries due to the interplay of various causes, thus inviting a contextualized response mechanism to deal with the issue. In Germany, low income- and medical issues have been reported as the two most dominant causes of homelessness [1]. Another study by the authors about the homeless people staying in the Shelter Homes (locally known as Panah Gahs) of Lahore depicted that medical issues have been the cause of around 18% of all such homeless people. On the other hand, urban health is also impacted by urban living arrangements. More closely, the physical environment, social structures, and access to social services and health facilities affect urban health the most [2]. Many of the urban homeless people live in unhygienic conditions, have disconnected social lives, and at times, have been denied access to social and medical services for not having valid identity documents. All such issues significantly affect the physical and mental health of homeless people. This postulates a situation where poor health conditions not only contribute to urban homelessness, but also further exacerbate urban health, and together, they form a vicious circle in which homeless people get trapped.

Material and methods: By applying a mixed-methods research approach, 100 face-to-face interviews of homeless people found on the roadsides and open spaces in Lahore were conducted through random and convenience sampling to find out the socio-economic dynamics of their daily urban life.

Results: It has been observed that 91% of such homeless people found in Lahore were economic migrants. 94% of the homeless people were found living either on roadsides/medians or in parks/open spaces, thus becoming vulnerable to harsh weather conditions and epidemics such as COVID-19 and Dengue. Around 90% of the respondents disclosed that their household members live outside of Lahore, and they are not very much connected with their household members, which is putting a toll on their mental health. Around one-third of the homeless people were also found not to have valid identity documents, which hindered their access to government-established Shelter Homes and other social services.

Conclusion: The evidence provides a clue to the endangered health of the homeless people in Lahore. The study recommends, among others, an inclusive planning character that is sensitive to the needs of the homeless people with respect to their living/housing, and accessing social and healthcare services.

Figure 1: Homeless people found sleeping in the road median, Lahore.
Picture Credit: Authors: 2020

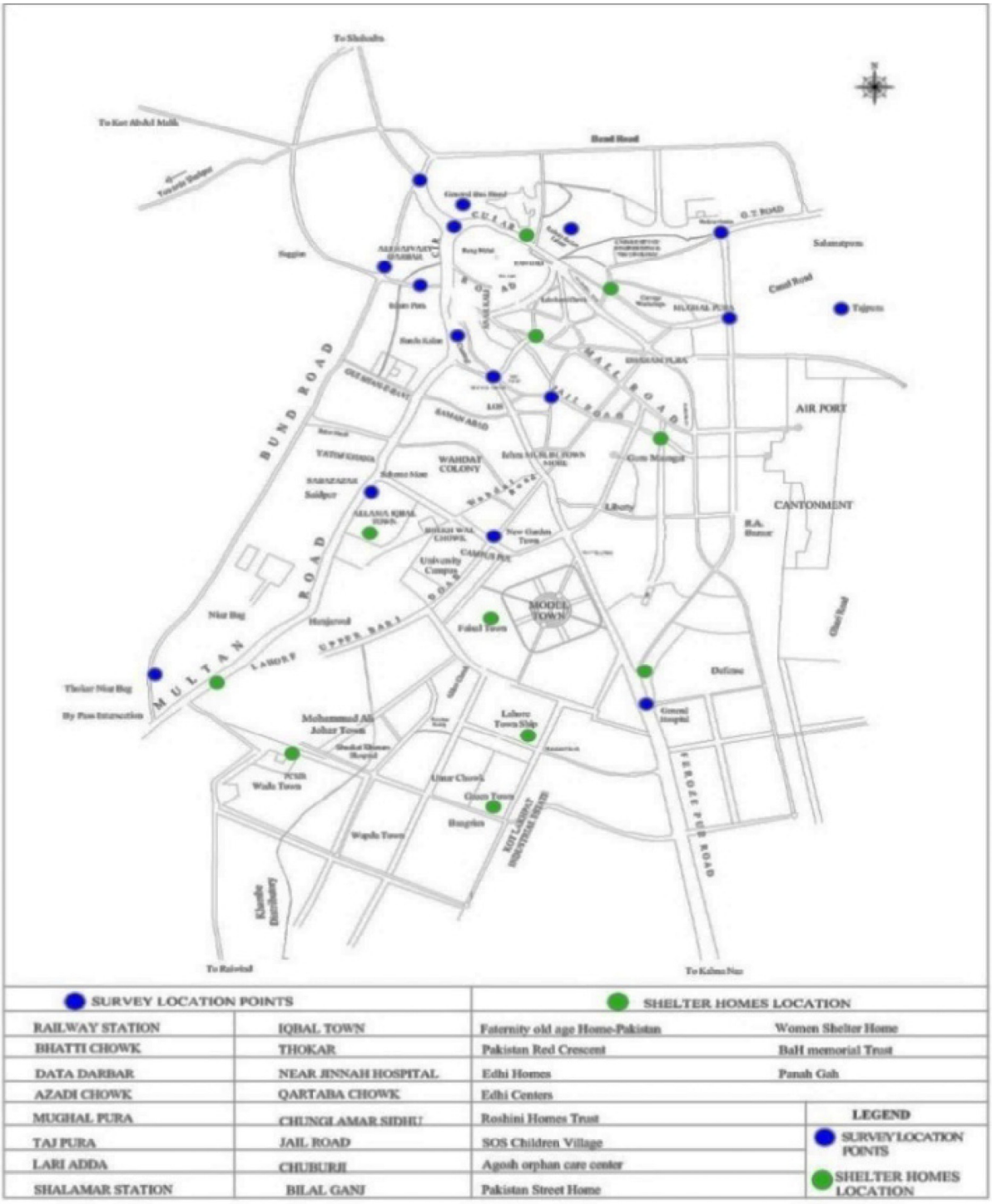

Figure 2: Location of homeless people key spots and shelter homes in Lahore

Key spots of homeless people in Lahore and number of conducted interviews				
Lorry Adda: 7	Azadi Chowk: 10	Bhati Chowk: 8	Railway Station: 7	Chungi Amar Sadhu: 3
Chauburgi: 8	Bilal Ganj: 6	Qartaba Chowk: 5	Mughalpura: 6	Ghazi Ilm Din Darbar: 7
Data Darbar: 10	Jail Road: 5	Tajpura: 4	Iqbal Town: 7	Ravi Road: 1
Shalimar Garden Chowk: 5		Thokar Niaz Beg: 1		Total : 100

Table 1: Survey location points in Lahore

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Monitoring

23uhtf14 (14)

Session Summary: Monitoring

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Background: Given the increasing density of cities, designing healthy cities is becoming more important than ever [1]. The Ottawa Charter of 1986 emphasizes the relevance of reaching people by creating health-promoting environments [2].

To monitor the social determinants of health and derive local health promotion measures, detailed information on health at the municipal and urban level is needed in combination with geographical, socio-demographic and environmental data. In addition, these data play an important role in resource allocation and decision-making [3].

Below, one of six sessions at the transdisciplinary forum [4] at the University of Applied Sciences in Bochum is presented. The session "Monitoring" aimed to present existing national and international knowledge and, in a subsequent plenary discussion, to identify knowledge gaps and innovative approaches for action. One focus for the derivation of approaches for action was the transferability to the Ruhr area. The three contributions are named below, followed by the results of the plenary discussion.

Contributions: The contributions of the session consisted of the following presentations:

- Dr.in Rehana Shrestha (Institute of Public Health and Nursing Research, University of Bremen, Germany), Narayan Thapa (Youth Innovation Lab, Nepal), Reshma Shrestha (Department of Geomatics Engineering, Kathmandu University, Nepal): Supporting data driven decision of municipality – case of mapping rooftop farming using geospatial technology.
- Monika Mensing (Landeszentrum Gesundheit NRW (LZG.NRW), NRW Centre for Health), Dr.in Odile C. L. Mekel (Landeszentrum Gesundheit NRW (LZG.NRW), NRW Centre for Health), Michael Sprünken (Stadt Bochum, City Administration of Bochum): The place standard tool: German adaptation and piloting in the Ruhr area city of Bochum.
- Julita Skodra (University of Bremen, Institute of Public Health and Nursing Research): Integrated Urban Health Monitoring: Supporting implementation of Health in All Policies in Bremen for healthy and sustainable urban development.

Plenary discussion results: A plenary discussion between the presenters and the audience followed the presentations.

The discussion began with a reflection on what is already known, based on the presentations. The audience pointed out that the data repeatedly emphasize the link between living conditions and health. Overall, the results show: Plenty of data is already available. Participants emphasized that political commitment and the Health in All Policies (HiAP) approach play an important role and that close cooperation with practitioners is needed. The audience underlines the importance of transdisciplinary approaches and participatory methods in this context. However, despite the available tools and approaches, implementing participation is still difficult.

Subsequently, knowledge gaps in monitoring were discussed. In this context, the audience identified that there is still a gap in how best to combine, use and implement the available data and evidence. In addition, it is often not clear how to involve disadvantaged population groups and how to identify their needs sustainably.

In the end, innovative approaches to action in the context of monitoring were discussed. It was noted that intersectoral cooperation, transdisciplinary approaches, participatory approaches and tools, as well as the involvement of citizen researchers can be understood as innovative approaches. The audience emphasized that it is valuable to collect and combine available data and knowledge and to disseminate and share it at local and regional levels. Participants

recommended increasing the accessibility of open-access monitoring tools and providing training. The use of geospatial technology can be considered beneficial. However, the issue of data protection needs to be taken into account. In addition, the audience mentioned e.g. the socio-medical data network "Digital Health Factory Ruhr" https://digital-health-factory.ruhr/ as an innovative approach.

The presentations as well as the constructive and inspiring discussion in the end show that there is already a lot of knowledge about monitoring in the context of urban health, both internationally and in the Ruhr Area. This existing knowledge already contains innovative approaches to action. To avoid duplicate structures, it must be used first and then extended. Existing and newly collected data should be available to all stakeholders at local and regional levels. Overall, the relevance of intersectoral, transdisciplinary and participatory approaches is emphasized.

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23uhtf15 (15)

Supporting data-driven decision of municipality: A case of mapping rooftop farming using geospatial technology

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Many municipalities in Nepal are growing rapidly. Due to rapid urbanization, agricultural lands have been converted into buildings and infrastructures. This has negatively impacted the urban environment with a decrease in greeneries, local food production. Urban farming is considered as one of the strategies to address social, economic and environmental gaps in cities. Beyond improving food security and local food production, urban farming has the potentials to improve microclimate, mitigating the adverse effects of urban health island, promoting psychological well-being, contribute in waste management [1]. Among various forms of urban farming, one of the unused resources or capacities of cities is flat roofs, especially in densely populated inner-city areas where other open spaces, gardens may be lacking [2].

Research on rooftop farming in the context of Nepal is being conducted to understand people's response, interest and motivation towards rooftop farming. In practice, municipalities and local non-governmental organization started a few initiatives such as providing training on farming technique, distributing farming kits to a few residents, providing funding support to households, to encourage rooftop farming among residents. Nonetheless, rooftop farming has not been developed in every household. Besides social factors, uncertainty and fear in building structures, lack of training is considered as barriers to wide adoption. This suggests that a comprehensive approach to the development of strategy promoting rooftop farming is needed in cities. Nonetheless, due to a lack of comprehensive information on the current situation and potential of rooftop farming in municipalities, promoting rooftop farming in municipalities has been carried out on an ad hoc basis.

Against this background, this project intended to develop data-driven support for the municipality on the identification and assessment of rooftop farming in municipality. Using geospatial technology together with OpenStreetMap, UAV and adopting volunteered geographic information (VGI) approach, the project mapped the current state and analysed the future potential rooftop farming in Banepa municipality. Municipal practitioners were also involved at various stages of the project, however, not without challenges. In total, 7 female and 20 male volunteers were engaged for two months in mapping of rooftop gardening and other features in the municipality. Results on mapping shows that currently only 19% of overall households (n=11,757) are engaged in rooftop farming. Out of those households that are suitable for rooftop farming (e.g. there is roof access, n=7,221), only 30% (area=0.11 sq.km) are found to be engaged in the rooftop. Further, the results show that 0.58 sq.km area is still available in the municipality for future rooftop farming. All this information was made accessible to municipal practitioners via a web application (Figure 1). Nonetheless, the use of such information in municipal planning is yet to be fully realized.

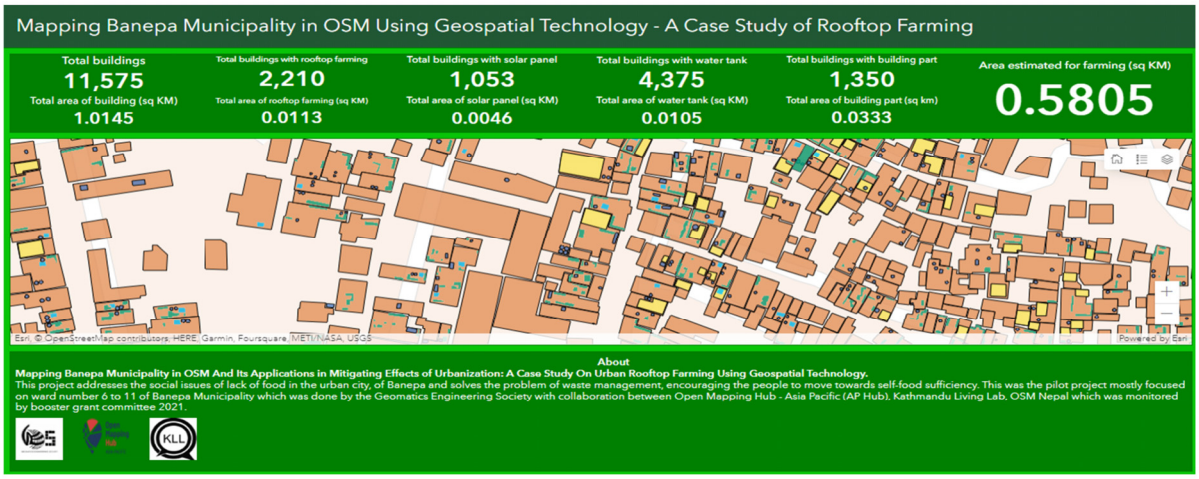

Figure1: Interactive dashboard providing information on rooftop farming in Banepa Municipality

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23uhtf16 (16)

The Place Standard Tool (StadtRaumMonitor): German adaptation and piloting in the Ruhr area city of Bochum

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The “StadtRaumMonitor” is a survey instrument for designing health-promoting living environments with the participation of citizens. It is an integrated discussion guide in the form of 15 questions about various surrounding aspects determining health, based on which the exchange about a specific living environment is facilitated and promoted. With the participation of citizens, it is possible to work out in detail what strengths, weaknesses and potential for improvement an environment has.

The tool is based on the Scottish “Place Standard Tool – How good is our place?” and was adapted for Germany from 2019–2021 by the Federal Centre for Health Education (BZgA) together with the North Rhine-Westphalia State Centre for Health (LZG.NRW) and the Baden-Württemberg Ministry for Social Affairs, Health and Integration (MSGI) and piloted in municipal practice, also in the Ruhr area, in the city of Bochum-Hamme. Based on the pilot, which was scientifically accompanied by the University of Applied Sciences (Hochschule für Gesundheit) in Bochum, the tool was revised and made available as a new online tool in August 2022.

In the context of the Forum, an interdisciplinary team of state representatives and practitioners on the community level will introduce the revised StadtRaumMonitor. We will also introduce qualification possibilities, give an outlook on the new tool model for climate adaptation and discuss chances and challenges when implementing the tool in the context of urban districts.

German tool: https://stadtraummonitor.bzga.de/

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Participation in urban health

23uhtf17 (17)

A plea for an open and inclusive science: Encouraging diverse participation in conferences

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Introduction: The inspiration for this text comes from our participation in the Urban Health Transdisciplinary Forum at HS Gesundheit Bochum, at the University of Applied Sciences, as part of our project ParStaR (Participatory Methods for Urban Health in the Ruhr region). Before the interview in the next abstract, there is a brief introduction to the origin and rationale of the text and the author's message and plea. The Forum was held within the framework of the MUHR project, which is also where the ParStaR sub-project is located. In ParStaR, we work with people with disabilities (specifically, those with learning difficulties) to promote inclusive urban development. Together, we develop participatory for-mats for promoting urban health, on an equal footing and with a focus on inclusion. Our goal is to develop recommendations for those interested in promoting inclusive and participatory social space design in the context of urban health. In the process, we had the opportunity to participate in the forum. To achieve this, we asked members of our team with disabilities who had the time and interest to participate in the forum. Initially, we felt some hesitation from them. While they were excited about the topics and the opportunity to visit the university and exchange ideas with others, they were also unsure about their ability to communicate effectively in English. We gave the individuals time to consider participating in the forum, and they were initially unsure about their English language abilities. We reassured them that we would provide support, including translation and interpretation, and that the event was intended to be bilingual, allowing participants to speak in either German or English. Eventually, we were able to persuade one person to join us at the forum. Based on our collective experiences, we decided to write this text together, sharing our experiences and encouraging others to take similar steps. After Pia Bruchhage shared her positive feedback about the event at one of our ParStaR meetings, expressing how much she enjoyed it and never wanted to miss such an opportunity again, other team members expressed a desire to attend future events as well. Hearing about these experiences firsthand was important, as it gave them the courage to participate and helped them understand the potential benefits of attending such events.

Message and plea: Our participation in the Urban Health Transdisciplinary Forum reminded us of the importance of creating an open and inclusive academic community. By working together, with a focus on inclusion and participation, we can promote urban health and social space design that benefits everyone. We must continue to advocate for and support diverse participation in conferences and events, to ensure that everyone has an equal opportunity to contribute to the advancement of science and society. To enhance collective participation, key factors include individual support measures, empowerment processes, trusting relationships, experiences of self-efficacy, appropriate support and interpretation services, joint preparation, and sharing firsthand narratives. Creating an inclusive environment requires embracing new approaches to support individuals with disabilities in academia, such as providing interpretation services, clarifying concepts, and actively listening to individual needs. We should be open to trying new things. By doing so, we can create something truly beautiful. As academic community members, we have a shared responsibility to create a space where everyone can thrive, regardless of their background or abilities. Embracing diversity, learning from others, and being open-minded and inclusive are crucial. By working together, we can build a welcoming and supportive academic community.

In conclusion, our experience highlights the importance of sharing experiences, encouraging participation, and providing support. Promoting diversity and inclusion relies on creating a comfortable space for individuals to share their perspectives and experiences. By fostering an inclusive and empowering environment, we can drive positive change not only in academic events like our forum but also in university education and teaching practices.

Figure 1: Photo: HS Gesundheit/Markus Mielek

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23uhtf18 (18)

To courage to participate. An interview with a Co-Researcher from project ParStaR

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This text is structured as an interview between authors Julia Brüggemann and Pia Bruchhage, with Julia asking Pia about her attendance at the conference. In the beginning, Julia Brüggemann is explaining the context of how the interview came about.

Julia Brüggemann: As a social scientist, interested in merging urban health and disability issues, I am passionate about creating a more inclusive and accessible higher education environment for individuals with disabilities. Prof. Dr. Heike Köckler provided the occasion and the space to try this out. So, I had the privilege of attending a forum where a person with a disability participated in an event entirely in English. The experience was eye-opening and highlighted the importance of creating a welcoming and open community for all.

Julia Brüggemann: What did you like about the conference day?

Pia Bruchhage:

1. I was able to gain a lot of knowledge and insights. For example, I attended sessions on mental health and homelessness.
2. I enjoyed the introduction given by Prof. Dr. Heike on Community Health. She explained the content clearly and provided important insights. She also presented “the main determinants of Health” by Dahlgren, G. & Whitehead, M., which we discussed and worked on in our project. We called it the Rainbow Model and discussed each dimension and our factors in an easy-to-understand language. Many factors have an impact on our health, and all determinants of health together determine the extent of our health opportunities and the likelihood of illness and premature death.
3. I particularly appreciated the opportunity to ask questions at the end of the presentations and contribute to the forum.

Julia Brüggemann: What did you learn?

Pia Bruchhage: Mental health is affected by psychological instability, loneliness, and lack of social contact. One can counteract this by engaging in enjoyable activities and spending more time with friends. We can strengthen our mental health through positive experiences. Homelessness and housing insecurity are increasing due to rising prices. Thanks to the organization “*Bochum hilft*”, which offers a lot of support to the homeless and provides them with food,

we know how to help these people. Through our participation, we are more aware of homelessness and better understand their needs. I now know that there are various reasons why someone can become homeless.

Julia Brüggemann: The forum was mostly in English, and some of our group members were hesitant to participate. What motivated you to join in?

Pia Bruchhage: I have some English language skills, and I thought I would be able to understand. One just needs to have the courage to participate.

Julia Brüggemann: What would you say to the other ParStaR group members or what would you like to share at our next meeting?

Pia Bruchhage: I will report on what I learned and the insights gained. I also want to stress that I am glad I participated. The day has changed my perspective, and I will not forget it. Everything was easy to understand, and one just needs to have the courage to participate.

Both: Despite the initial concerns from our team members, we decided to go ahead and participate in the forum, with the support of other colleagues. We recognized the value of creating a space for people with disabilities to share their experiences and perspectives, and to contribute to a more inclusive and diverse academic community. Through this experience, we learned that it's important to be proactive in creating opportunities for diverse participation and to provide support and resources to enable everyone to participate fully.

Figure 1: Foto: HS Gesundheit/Markus Mielek

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