

Architecture as a Bridge Between The Rich and The Poor? In a World Struggling with Climate Crises, Population Growth and Globalisation – The Example of Bali

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Abstract This academic paper explores the potential of architecture to act as a bridge between social inequalities, particularly in the context of a world struggling with climate crises, population growth and globalisation. Using the specific case of Bali, the study examines the global trends of population growth, climate crisis, the widening gap between rich and poor and the crucial role of architecture in shaping living conditions. Through an analysis of slums, their architectural characteristics and the contrasting affluent globalised architecture, the project aims to explore whether architecture can act as a catalyst for social inclusion. In addition, the concept of “home“ will be analysed to provide insights into the emotional and functional dimensions of living spaces. Finally, based on a comprehensive evaluation of relevant literature and examples, a forward-looking perspective on the changes needed in architecture to overcome social inequalities will be presented.

Index Terms— architecture, gap, home, poor, rich, slum

I. INTRODUCTION

On 7 October 2023, a devastating series of earthquakes measuring between 4.3 and 6.3 on the Richter scale struck Afghanistan. The death toll rose to over 2,000 and well over 1,500 people were injured. Many houses were destroyed, including nearly 700 in the village of Chahak. Buildings that were already in poor condition due to their simple construction.

The humanitarian situation in Afghanistan has been deteriorating since 2018. The country is wracked by poverty and violence. Many people are forced to live in makeshift huts and slums without access to basic services and decent living conditions. The current series of earthquakes is exacerbating this already precarious situation and placing an additional burden on affected communities.[1]

This disaster is just one example of the severe impact of climate change, especially on people living in poverty. Indonesia is also affected by climate change. Jakarta, for example is sinking: More than 50% of the city is already below sea level, and by 2030 it could be almost. 80%.[2] The consequences of climate change affect everyone, but

poor people living in slums, for example, who lose their homes as a result of such disasters, suffer particularly badly. Disaster related mortality rate (excluding COVID-19 deaths), 2005 -2021 (deaths per 100,000 population) [3]

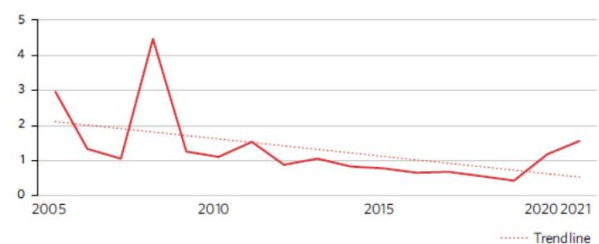


Figure 1. Disaster related mortality rate.

And the gap between rich and poor is widening fast. According to a report published on 16 January by the charity Oxfam, for the first time in 25 years, social inequality is increasing rather than decreasing. More and more people are suffering from hunger and poverty, while corporations are making record of profits and the world's richest people are getting richer.[4] In Bali, too, there is a huge gap between the living conditions of the local population, who often live in slums and the booming tourism sector, which is often characterized by the construction of villas and luxury resorts.

Architecture plays an important role in shaping our urban environments. In a world facing complex challenges such as climate crises, population growth and globalisation, its importance as a link between different social classes is becoming increasingly relevant.

II. LITERATURE REVIEW

In order to write this scientific paper, an overview of the existing scientific literature and sources was made. Firstly, the quantity of existing sources was analysed and then the quality. There is an outstanding amount of scientific research on slums, climate catastrophes, population growth and the ever increasing poverty in the world. There are also many studies on these topics. Unfortunately, there is very little literature on the pros and cons of the effects of architecture and what architecture can achieve socially. There are still gaps in the research.

Scientific articles by professors at Udayana University were used as search aids, as well as online literature from the Udayana University database and the Springer Nature database. The websites of aid organisations in the respective countries were also used as sources, as they provide information that is close to the situation.

The paper draws on an extensive source base, including both printed and online literature. There is a wide range of literature on the social challenges, negative aspects of slums and globalised architecture. In contrast, research on the specific characteristics of informal settlements, the learning opportunities for architecture and the potential benefits is still comparatively limited. Similarly, there is a paucity of research on the impact of architecture on social problems.

TABLE I
LITERATURE REVIEW

Article	Slums	Architecture	World Problems
The Metonymic Slum [...], Gusti Ayu Made Suartica	X		X
Planet of Slums, Mike Davis	X		X
Afghanistan: Aktuelle Lage [...], Aktion Deutschland Hilft			X
Indonesiens großer Umzug, Redaktions Netzwerk Deutschland		X	X
Umsteuern für soziale Gerechtigkeit, Oxfam Deutschland			X
Bevölkerungs wachstum, Christina Felschen	X		X

Cambridge Dictionary	X		
What is a slum?, Habitat for Humanity Great Britain	X	X	X
Eine Milliarde Menschen [...], Amnesty	X		X
Lokale Eigenverantw ortung [...], E+Z	X	X	X
Ein Slum als Lebens- und Arbeitswelt, Antje Stiebitz	X	X	X
Architektur ist unser zweiter Körper, Süddeutsche Zeitung		X	
Was Architektur heute leisten muss, Grohe		X	X
Green Village, Bali		X	X
Bali Life Foundation	X	X	X
GBC Indonesia	X	X	X
Menschenwür dig leben in der Stadt, Misereor	X	X	X

III. METHODS

The paper is based on several references that provide an overview of the topic and the amount of information. The first step was to write a one-page summary to form the basis of the academic work. Further sources were then read and analysed in order to sort out lines of thought and sharpen the topic. As a result, the initial idea changed again and this title was created: "Architecture as a bridge between the rich and the poor? In a world struggling with climate crises, population growth and globalisation – the example of Bali".

The work was then structured. First an overview of some facts about global growth, climate crises and the widening gap between rich and poor is given, with a closer look at the situation in Bali. These facts will be used to explain and define slums and their architecture, as well as "rich" globalised architecture. The term "home" will also play an important role, what it means and how architecture relates to it. This information will be used to Analyse whether architecture can be a bridge between the rich and the poor, or whether architecture is in fact a crucial indicator of the widening gap between the rich and the poor. The research is based on case studies particularly in the region of

Bali/Indonesia. Finally, it looks to the future to identify opportunities and/or necessary changes.

IV. RESULTS AND DISCUSSION

In 2022, there will be almost 8 billion people on the planet. World population projections indicate that by 2080 there will be almost 10.4 billion people. About 80% of them will live in the southern hemisphere. These are the regions most affected by poverty and most vulnerable to population growth. Resources that are already scarce, such as water, food and land, will come under even greater pressure, potentially leading to further poverty.[5]

At the same time, the effects of climate change are being felt around the world, including rising temperatures, natural disasters and rising sea levels. This is a huge challenge, especially for an island like Bali. On top of this, flooding and earthquakes are on the rise. Although there are always new laws or efforts to combat climate change, many disasters means that money meant to fight climate change is often used for reconstruction or other emergencies.[6] In addition, the gap between rich and poor continues to widen, as described in the introduction. Despite economic growth and increased tourism, a large proportion of the population still lives in poverty and is unable to benefit from economic growth.

All of these factors threaten the livelihoods of people, especially those who are already struggling to survive on a daily basis. Increasing population growth, the destruction of cities and homes by climate disasters and social inequality are also increasing the demand for housing, forcing many people to live in slums and trapping them in a vicious cycle of poverty. Here are some facts.

- 1.6 billion people live without adequate shelter (8.03 billion people global population)
- 1 in 7 people on the planet currently lives in a slum
- 1 in every 4 people will live in a slum by 2030
- 1 in 3 urban residents live in slums in developing countries
- There are some countries, where as much as 90% of the urban population live in slums

Urban population living in slums or informal settlements, 2018 (millions of people)[7].

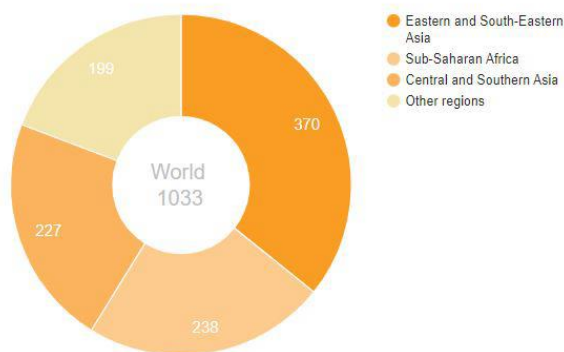


Figure 2. Urban Population Living

It is clear from these figures that slums make up an increasing proportion of cities and of the population. Moreover, they are now often the main type of housing in ever-growing cities. It should not be forgotten that this type of housing has little to do with housing as we know it, especially in Germany. Globalisation is another factor in the growth of slums, as many low-income people are forced to live on the outskirts of cities, in areas without good infrastructure or safety.

A. But What Exactly are Slums and How Can They Be Defined?

According to the Cambridge Dictionary [8], a slum is “a very poor and crowded area, especially of a city” or “a very untidy or dirty place”. However, Habitat for Humanity Great Britain [9] believes that a slum cannot be defined in one or two sentences. Rather, a definition can only be arrived at by looking at the “slum problem” from the ground up:

In general terms, a slum is an area characterized by a very dense population of the lower classes and poor infrastructure. Slums are also known as informal settlements.[10] Houses in slums are usually unsafe or cause health problems, for example due to mold, leaking roofs, dirt, etc.. Many are also overcrowded or lack basic facilities such as water, electricity or toilets. Structures are also often unstable, as buildings often have to be constructed quickly and many resources are not available. Materials have to be found and collected from the surrounding area. Life in the slums also becomes a vicious circle [11] due to the poor conditions: people are often ill and therefore less productive and children cannot go to school as a result. This in turn leads to a lack of education and opportunities to escape slum life. In addition, many job-seekers are marginalised because they do not have a registered address.[12] Furthermore, the authorities usually do not feel responsible for slums because they are illegal settlements where people have no rights.[13] Attempts are made to make cities “slum-free”, often by clearing the slums. However, this only postpones the problem and usually makes the situation for slum dwellers much worse.[14]

On the other hand, slums are also a functioning system in themselves. Gusti Ayu Made Suartika writes in her article “The Metonymic Slum: Home in the Developing World”: “[...] slums are considered unnatural, undesirable, illegal and contaminated, rather than viewing them with some hope, as creative working environments with pre-existing social capital and the capacity for economic production.”[15] There is also a growing view that the term “slum” is to blame for the whole situation. It is a term imposed on people and their housing from the outside. The term has a negative connotation, so residents are given a bad image of slums from the outset. However, many slum dwellers do not consider their place of residence to be a “slum” at all, as places that are considered to be a home often go hand in hand with compensation for a lack of material things. In other words, many people feel at home

in a slum even though certain externally imposed globalised standards of living are not available. This house is made up of informal architecture.

Slum architecture can be described as extremely diverse, built from whatever people can find, such as plastic, tin, wood, etc.. As there are few regulations in slums, new possibilities and potentials often arise. People build their houses side by side, next to each other or on top of each other. This often creates a community that does not exist in many new neighborhoods in large cities. In addition space is often used much more efficiently in slums.

One example is a slum in the Dharavi area of Mumbai. The slum has developed between two railway lines and is now home to nearly 600,000 people. The houses are built close together and made of concrete, wood, tin and plastic. [17]



Figure 3. Slum in th City

Alongside the dwellings, however, other structures have developed: There are churches, temples, a hospital, small shops, etc. – the slum has become a city in its own right and you wouldn't really call it a slum if you looked at the infrastructure.

However, because the architecture and infrastructure are still not up to globalised “standards”, the term slum continues to be imposed, even though life there continues to develop. In the beginning, for example, the houses were small shacks made of thin corrugated iron and plastic. [16]

Slums do exist in Bali, such as Teuku Umar, Sesetan and Renon, but by and large Bali is not characterised by slums, as most of the island is dominated by tourist infrastructure and luxury architecture – the construction of luxury villas and resorts in Bali is in stark constraints to the informal settlements that exist in some parts of the island.

B. “Luxury Architecture” in Bali and its Characteristics

As described above, there is an increasing amount of luxury architecture in Bali. This can be characterised by features such as size, style and furnishings. Villas, for example, are characterised by a large plot of land or a pool. But also a large bathroom or a generally very high standard of furnishings. It is usually a private residence. The location is also very different from slum houses. Villas are usually in exclusive locations, with good views or in remote areas. And unlike densely populated slums, villas tend to have few

residents in a lot of space. According to Wikipedia, a villa is an expression of a prestigious lifestyle. This should be seen in a positive light. [18]

Based on what we know about slums, we can assume that people who live in villas have better chance of moving up the social ladder. This is because better living conditions usually go hand in hand with better schooling and thus greater chance of later professional success. In other words, better architecture can raise living standards. Comparing the characteristics of villa architecture with those of slums, the differences are immediately apparent. But there are also similarities, such as the feeling of home that residents have, whether they live in a villa or a shack in a slum.

The meaning of “home” is central to this discussion. It will therefore be analysed and defined in more detail. Before we do that, however, we need to illustrate the difference between a house and a home. The most obvious difference is probably the visible one. A house has walls and a roof. A house is a building that someone lives in. A home, on the other hand, is something abstract. It can be a villa, a house made of plastic and wooden walls, but also a boat, a tent, a place or a feeling. Home is more a feeling that a person has. [19] So according to the Duden dictionary, a home is a “*dwelling in which one is at home [and feels comfortable]; home, dwelling*”. [20] However, this term also has a deep emotional and functional meaning, so it is not just the physical place where you live, but also a place of security, well-being and belonging. A place to retreat, relax and enjoy privacy.

C. The Influence of Architecture

So what influence can architecture have on home or on the quality of life? Tanja Vollner, a German architectural psychologist, describes it this way: “[...], denn Architektur ist unser zweiter Körper. Er beschützt uns, gibt uns Sicherheit, [...]. Wenn wir unseren Nachbarn nicht vertrauen, dann schließen wir den Körper eher ab, nutzen ihn als Festung.“ So if we translate it, it means that architecture is our second body. It protects us, gives us security and if we don't trust our neighbors, for example, we tend to close off the body, to use it as a fortress. This is all the more important when people don't feel comfortable in their homes and neighborhoods, which can sometimes lead to serious psychological problems. For example, if you spend a lot of time in a very small room, you may perceive the space as getting smaller and smaller, making you feel cramped or even claustrophobic. This in turn leads to frustration and makes the whole world seem small – as Tanja Vollmer describes it. [21]

There are now studies that show that children and/or young people who have grown up in cramped spaces have lower self-esteem and therefore often have worse chances in the world of work later on. Mental health problems are also more common. Security in the home is also important for well-being; if you don't feel safe, you're under constant stress, which has a negative impact on your health. In other words, everyday life, or rather the vicious in slums.

So architecture is an important part of a home and the better it is, the more comfortable you feel. There are many other ways in which architecture can have a positive or negative impact on life, such as interior design, lighting and acoustics, but also sustainability and accessibility. The construction of large projects such as shopping centers, hotels or office buildings can create jobs and boost the local economy. At the same time, they promote cultural exchange and international awareness of the region. Townscapes can be enhanced by architecturally appealing buildings, which can increase the attractiveness of a neighborhood. Anyway, this often results in the displacement of low-income residents, creating social divisions and making social integration within the community more difficult.[22]

Traditional local architectural styles and design elements can also be displaced, leading to a loss of local identity. In Bali, some projects are attempting to combine traditional styles with modern elements, such as the buildings in Green Village Bali. Here a community of villas has been built using natural materials, mainly bamboo, combined with modern design elements.[23] However, there are also negative impacts, such as the sealing of surfaces, increased water and energy consumption during construction and operation. Increased traffic and infrastructure needs can also place an additional burden on local communities.

D. Architecture as a Bridge?

But the question remains: can architecture really bridge the gap between rich and poor? An examination of references and case studies shows that it can, if architectural is socially designed and uses. If it is not, architecture can also widen the gap between rich and poor. Initiatives that create affordable housing, establish educational centers in disadvantaged communities and protect the climate through sustainable architecture are impressive examples of how architecture can act as an instrument of change. However, large-scale projects, highways or luxury housing that makes way for slums are the negative aspects that can be created by architecture.

Bali is a region where architecture can help to bridge social divides. One example is the Bali Life Foundation, which has launched the Casa Lestari project to provide housing for families in need. Traditional Balinese building techniques are used to create affordable and sustainable housing.[24] The NGO Bali Green Building Council promotes sustainable architecture and construction in Bali. It provides training and resources for architects and builders to implement environmentally friendly construction projects.[25] Outside of Bali, there are as well a number of organisations that are trying to bridge the social divide. The SDI movement works to make cities “slum friendly “. Slums are to be rehabilitated and upgraded through various projects instead of being cleared. These upgrades can range from the renovation of huts to sophisticated infrastructure. In addition, residents should be given a right to their own property in order to motivate them to improve their own

living conditions. There are different approaches to this: the bottom-up approach, where the residents are the driving force and the top-down approach, where the authorities are the driving force. Nowadays, both approaches are often combined, with local communities taking on the responsibility of governments to support their projects through appropriate programs.[26]

Misereor has a similar approach to strengthening local initiative. With the help of experts in architecture, social work, urban planning and law. After all, people living in informal settlements are used to improvising and doing almost everything themselves. The aim is for residents to organise themselves to make their neighborhoods and homes more live able, sustainable and environmentally friendly and to fight for their rights and against displacement. The aim is also to give people the opportunity to participate in political and social decision-making processes, to shape their cities and to help design neighborhoods and public spaces.[27]

V. CONCLUSION

In summary, the world’s growing population, the effects of climate change and the widening gap between rich and poor are global challenges that can, in some cases, be addressed through architecture. Slums, informal settlements with precarious living conditions, are one of the main results of these global developments. They are characterised by cramped living space, inadequate infrastructure and a lack of basic amenities. Yet they also have an intrinsically functional and exciting system from which much can be learned. On the other hand,, there is the luxurious architecture of the mansions, which are mainly found in wealthy regions.

Architecture plays a crucial role in people’s well-being and quality of life. It can affect physical and mental health. While good architecture provides a sense of security and safety, poor living conditions can have a negative impact. Architecture can therefore make a crucial contribution to overcoming social inequalities, but in order to make a greater difference, architecture must increasingly focus on the creation of inclusive housing, inclusive planning, sustainable construction methods, innovative solutions and informal settlements.

The paper presented makes it clear that architecture can and should learn from the unique organism that is the slum. There are many more points to consider, but this is a start. The need for inclusive, sustainable and socially responsible design is becoming increasingly urgent. It is time for architects around the world to work together to build a bridge between worlds and create a future where architecture creates not only aesthetics but also justice.

However, it is important to emphasize that architecture alone cannot solve all social problems; that would be too utopian an idea. A holistic approach, taking into account political, economic and social aspects, is essential to reduce the gap between rich and poor and to create an inclusive society: Climate change has to be tackled, solutions have to

be found to close the gap between rich and poor.

REFERENCES

- [1] Afghanistan: Aktuelle Lage und humanitäre Hilfe, Aktion Deutschland hilft [23.09.2023]
(<https://www.aktion-deutschland-hilft.de/de/fachthemen/news/afghanistan-aktuelle-lage-humanitaere-hilfe/>)
- [2] Indonesiens großer Umzug, Redaktionsnetzwerk Deutschland [23.09.2023]
(<https://www.rnd.de/panorama/indonesien-klimawandel-zwingt-regierung-zu-bau-neuer-hauptstadt-42YVTI73TZCP5G6PZCWBLLY7SY.html>)
- [3] The Sustainable Development Goals Report 2023, United Nations [25.11.2023]
(<https://unstats.un.org/sdgs/report/2023/>)
- [4] Umsteuern für soziale Gerechtigkeit, Oxfam Deutschland [23.09.2023]
(<https://www.oxfam.de/ueber-uns/publikationen/oxfams-bericht-sozialer-ungleichheit-umsteuern-soziale-gerechtigkeit>)
- [5] Bevölkerungswachstum, Welthungerhilfe [30.09.2023]
(<https://www.welthungerhilfe.de/informieren/themen/gesunde-ernaehrung-sichern/bevoelkerungswachstum-definition-entwicklung#:~:text=Laut Prognosen zur Entwicklung der,den 2080er Jahren erreicht sein.&text=80 Prozent der acht Milliarden,Entwicklung der Weltbevölkerung verantwortlich sind.>)
- [6] The Metonymic Slum: Home in the Developing World, Gusti Ayu Made Suartika [10.09.2023]
([https://repositori.unud.ac.id/protected/storage/upload/repositori/ID_1_19691018199412200130091311905gamsuartika-j.-basic.-appl.-sci.-res.,-3\(1\)400-406,-2013.pdf](https://repositori.unud.ac.id/protected/storage/upload/repositori/ID_1_19691018199412200130091311905gamsuartika-j.-basic.-appl.-sci.-res.,-3(1)400-406,-2013.pdf))
- [7] The Sustainable Development Goals Report 2023, United Nations [25.11.2023]
(<https://unstats.un.org/sdgs/report/2023/>)
- [8] Slum, Cambridge Dictionary [30.09.2023]
(<https://dictionary.cambridge.org/dictionary/english/slum>)
- [9] What is a slum?, Habitat for Humanity Great Britain [30.09.2023]
(<https://www.habitatforhumanity.org.uk/what-we-do/slum-rehabilitation/what-is-a-slum/>)
- [10] Slum, Wikipedia - Die freie Enzyklopädie [04.10.2023]
(<https://de.wikipedia.org/wiki/Slum>)
- [11] Planet of slums, Mike Davis [10.09.2023]
- [12] What is a slum?, Habitat for Humanity Great Britain [04.10.2023]
(<https://www.habitatforhumanity.org.uk/what-we-do/slum-rehabilitation/what-is-a-slum/>)
- [13] Eine Milliarde Menschen weltweit leben in Slums, Amnesty [05.10.2023]
(<https://www.amnesty.de/mit-menschenrechten-gegen-armut/wohnen-wuer-de/eine-milliarde-menschen-weltweit-leben-slums>)
- [14] Lokale Eigenverantwortung macht Slum lebenswerter, E+Z [05.10.2023]
(<https://www.dandc.eu/de/article/da-informelle-staedtische-siedlungen-nicht-abgeschafft-werden-koennen-muessen-die-dortigen>)
- [15] The Metonymic Slum: Home in the Developing World, Gusti Ayu Made Suartika [30.09.2023]
([https://repositori.unud.ac.id/protected/storage/upload/repositori/ID_1_19691018199412200130091311905gamsuartika-j.-basic.-appl.-sci.-res.,-3\(1\)400-406,-2013.pdf](https://repositori.unud.ac.id/protected/storage/upload/repositori/ID_1_19691018199412200130091311905gamsuartika-j.-basic.-appl.-sci.-res.,-3(1)400-406,-2013.pdf))
- [16] Ein Slum als Lebens- und Arbeitswelt, Deutschlandfunk Kultur [21.10.2023]
(<https://www.deutschlandfunkkultur.de/mumbais-stadtteil-dharavi-ein-slum-als-lebens-und-100.html>)
- [17] Going offbeat in Mumbai - a trip to Dharavi slum, timesofIndia [25.11.2023]
(<https://timesofindia.indiatimes.com/travel/things-to-do/going-offbeat-in-mumbaia-trip-to-dharavi-slum/articleshow/69891676.cms>)
- [18] Villa, Wikipedia die freie Ezyklopädie [21.10.2023]
(<https://de.wikipedia.org/wiki/Villa>)
- [19] What's the difference between a house and a home?, The Britannica Dictionary [30.11.2023]
(<https://www.britannica.com/dictionary/eb/qa/what-s-the-difference-between-a-house-and-a-home#:~:text=House%20refers%20to%20a%20building,boat%2C%20or%20an%20underground%20cave.>)
- [20] Zuhause, Duden [28.10.2023]
(<https://www.duden.de/rechtschreibung/Zuhause>)
- [21] Architektur ist unser zweiter Körper, Süddeutsche Zeitung JETZT [28.10.2023]
(<https://www.jetzt.de/gesundheit/architektur-nachbarn-wohlbefinden>)
- [22] Was Architektur heute leisten muss, Grohe [02.11.2023]
(<https://www.bauberufe.eu/images/doks/WasArchitekturheuteleisten-muss1.pdf>)
- [23] Green Village Bali [02.11.2023]
(<https://greenvillagebali.com/>)
- [24] Bali Life Foundation [02.11.2023]
(<https://www.balilife.org/>)
- [25] Green Building Council Indonesia [02.11.2023]
(<https://www.gbcindonesia.org/structure>)
- [26] Lokale Eigenverantwortung macht Slum lebenswerter, E+Z [18.11.2023]
(<https://www.dandc.eu/de/article/da-informelle-staedtische-siedlungen-nicht-abgeschafft-werden-koennen-muessen-die-dortigen>)
- [27] Menschenwürdig leben in der Stadt, misereor [18.11.2023]
(<https://www.misereor.de/informieren/stadt>)