

MORGENSTADT SMART CITIES – GLOBAL APPROACH, LOCAL SOLUTIONS

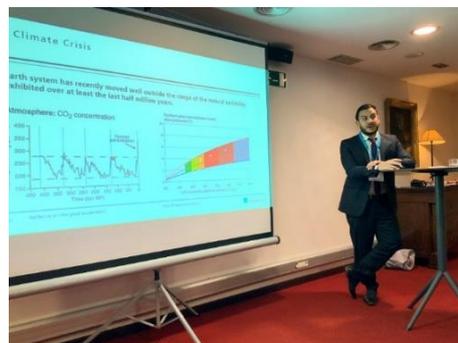
On the 18th of November 2019 the first official Kick-Off Event within the framework of the International Climate Initiative took place in Barcelona. Corresponding to the initiative's motto "global approach for local solutions", the meeting served as a possibility to discuss current urban issues from different points of view. The two days consisted of informative presentations, vivid discussions and plenty of networking opportunities. Representatives from the three pilot cities Cochin, (India), Piura (Peru) and Saltillo (Mexico) got together with partners of the Morgenstadt Network, the Fraunhofer Society, as well as external experts.

The conference was opened by Dr. Markus Schwegler, project leader of the Morgenstadt Global Smart Cities Initiative. He gave an overview on the current development and then passed the floor to the director and founder of the Morgenstadt Network, Dr. Alanus von Radecki. In the following, Dr. Alanus von Radecki introduced the Morgenstadt Initiative and its current outcomes, which include more than 50 projects.

After the introduction and welcome part, political representatives from Piura (Peru), Cochin (India) and Saltillo (Mexico) presented their respective cities:

Stella Schröder from the University of Piura gave an overview on current challenges the city of Piura is facing. Due to a lack of planification, the number of informal settlements has grown. Furthermore, the city is struggling with pollution of waste and water, as well as water scarcity. Natural disasters and recurring natural events, such as "El Nino" affect urban living conditions because the local populations often are insufficiently prepared.

The city of Cochin in India is facing almost identical challenges as Piura. Its representative, Raji R., described the problematic water conditions: recently, the area has been hit by floods that caused over 300 deaths in the summer, however, they are struggling with droughts of such severity that some parts are even below the sea level. Despite the challenges and obstacles, Raji R. expressed the aim of giving Cochin a vibrant identity.



Last, but not least, Xanin Garcia presented the third pilot city: Saltillo in Mexico. Compared to the rest of the country, the quality of life and the level of safety in Saltillo are exceptionally high. The manufacturing and automotive industry are both important economic factors and important job providers. However, Saltillo also faces difficulties: Since the city is very densely populated, the streets are busy. In order to offer a sufficient infrastructure to the inhabitants, the public transport system and bike lanes need to be extended. Additionally, the waste management and water supply need to be improved. For the sake of environment, Saltillo aims to plant more than one Million trees per year which will also improve the air quality on long term.

Concluding, the three presentations created a common understanding of the challenges the cities are facing and set the base for following discussions.

After these first speeches, the conference participants took a refreshing break and enjoyed an impressive view over the city on one of Barcelona's nicest rooftop terraces. The programme then continued with a best practice session in which smart solutions for the cities of the future were presented. Three speakers introduced promising concepts to meet challenges in the present and future:

At first, Lara Franziska Rogowski from Germany represented the Innogy smart pole factory. Innogy is a company that is mainly involved in network operations and energy sales but also plans, builds and operates renewable power generation plans. Mrs Rogowski stressed the many challenged public spaces are going to face in the next few years. According to her, connectivity, mobility, communication, safety and sustainability are all going to play a vital role and should be harmonised. Innogy has therefore developed several concepts for a smart urban future such as park and ride spaces to make cities more pedestrian-friendly, as well as digital solutions to give an overview over the current parking spots.

Mrs Rogowski's talk was followed by Nuria Saperas from Spain who works for the city council of Sabadell and its energy transition department. Sabadell is part of the Triangulum project and aims to implement Smart City solutions, for instance in the fields of energy and transport. Last year, an energy efficiency plan has been established in Sabadell's wastewater treatment plants. Until 2030, the percentage of generated energy in the plant is to be increased. Currently, biogas and heat that are created in the process are already being reused. Recently, wind turbines have been installed and in order invest further in renewable energies, photovoltaic panels are planned.

Further insights into wastewater reuse in Sabadell were provided by Oriol Ferrer Jimenez, who works as a technician in Sabadell's City Council. Instead of abusing resources such as water, energy and waste, they opt for recycling and responsible consumption. Currently, mines are already being recovered for urban uses. In the future, the distribution network and volume are supposed to be expanded.

After a networking lunch, Eliana Uribe (IAT, City Lab Lead Mexico) and Trinidad Fernandez (IAO MGI Co-Lead and Peru City Lab Lead) organised an energising part. The conference participants were put into groups and solved a task together. Questions about the development of the Morgenstadt Initiative, as well as about the pilot cities of the International Climate Initiative, reinforced the morning's theoretical input.

What needs to be done to make cities adaptive and resilient enough to resolve future challenges like the climate crisis?

The panel session after the group activity aimed to find answers to that same question. The cities' representatives shared their respective challenges, which were then answered by approaches and solutions of Fraunhofer Institutes and Morgenstadt partners.

Jose Antonio Ordonez from Fraunhofer ISI opened the first panel which focused on the field of energy in the face of climate change. He emphasised the need of action towards energy efficiency and a climate neutral future. With only seven years until "the point of no return", CO₂ emissions in areas like buildings, transportation, waste and material supply need to be reduced immediately. These actions require investments but are equally cost effective. Energy efficiency will not only pay off financially but also create multiple benefits for the environment and the people alike.

The Panel was then joined by representatives of the participating cities. The current challenges and situations within those countries were evaluated and implemented best practices within the sector of energy were briefly introduced. Finally, the panellists discussed possible approaches to a more efficient use of energy.

Which steps and innovations are needed to sustainably strengthen the sectors of energy, water and mobility? What was learnt in the past? And what challenges will the future bring?

The second panel focused on the sector of water. Using the city of Cochin as example, Marius Mohr from Fraunhofer IGB (City lab leader India) described the current state of development in India. The city's representatives could then, again describe the challenges within the sector of water their cities are currently facing. Saltillo, for instance, is dealing with wastewater in residential and industrial areas. Furthermore, the geographical inclination of the city is a critical point not only in Saltillo, but also in Cochin. The Indian government is approaching the local problem of rain and wastewater with wells, but water shortages persist. In Piura, attempts to reuse water have been made, however, heavy floodings caused by the natural disaster "el Nino" remain a problem.

In summary, the presentations in the morning, as well as the panel sessions in the afternoon have shown one key aspect: while the cities' problems are similar, they have different conditions. The MGI initiative therefore aims to develop individual solutions to meet these different needs. After an internal meeting of the MGI project members, the first day was concluded with a networking dinner.

The second day started with another meeting of the MGI project partners in Sabadell, hosted by the Project Triangulum, organized by Oriol Llevot. Afterwards, all conference participants reunited and visited the wastewater treatment plant in Sabadell which had been presented by Mr Jimenez on the day before. Thereby, they gained a real-life insight in best-practices for the water sector, such as the reuse of biogas that was created during the water treatment. Secondly, the group moved on to the urban bus company's headquarters. An inspection of their new hybrid fleet provided useful insights and inspiration for mobility solutions.

Ultimately, all participants returned to Barcelona, where they went on a tour through the lighthouse city. As Barcelona has already made several steps towards sustainability, the tour offered many insights into the implementation of best practices and urban solutions.



Barcelona already made its first steps towards a sustainable and resilient city
– making it the ideal location for the Morgenstadt Global Initiative meeting.

When the tour ended in the afternoon, two successful and insightful conference days came to an end. The conference has given room for a lively exchange on the development of future cities. In summary, the two days in Barcelona have highlighted the parallels between the cities' situations. Despite being located in different countries or different continents even, the three pilot cities share similar challenges and opportunities. In order to tackle them successfully and make use of their respective possibilities, a common approach roadmap within the Morgenstadt Global Smart Cities Initiative could play a key role. The meeting in Barcelona laid the foundation stone for a common approach to face global challenges.