A conference on sustainable cities in the Middle East and North Africa region was organized by the Climate Change and Environment in the Arab World Program at the Issam Fares Institute for Public Policy and International Affairs at the American University of Beirut, in partnership with the Friedrich Ebert Stiftung, Lebanon office, on the 4th and 5th of November 2014.

The conference brought together experts and practitioners from a wide spectrum of stakeholders in the sustainable cities field. It aimed at forming a more coherent picture of what makes cities sustainable, highlighting their importance and benefits for moving sustainability forward in the MENA region, as well as discussing recommendations towards better planning and policy-making for cities.

This summary highlights the key points and recommendations that were addressed in the conference by the panelists and discussions in a comprehensive manner; all the content is attributed to the personal efforts of the speakers and is solely based on their corresponding presentations.

**Highlights**

- Cities need to be considered as a place and a tool for sustainability options and better development.
- Cities need proper governance and management to create possibilities for future generations.
- For better use of multimodal transportation, there is a need to promote a healthy environment with a sustainable infrastructure.
- Increasing supply of mass transportation, and promoting soft mobility options, especially inside cities, as better alternatives to opening new roads.
- Securing the supply of all sources through the adoption of a nexus approach to the water-energy-food resource management to build better city resilience, and to adapt to climate change impacts.
- Other alternatives towards building social inclusion are done through personal or civil efforts in the absence of governmental efforts.
- The need to improve the capacities of local council members in order to adapt to the new sustainable city planning techniques.
• A mindset change is required to make a policy change possible.
  » In a top-bottom approach it is important to develop a strategy that not only includes objectives, but also the will to make changes to reach said objectives in a manner that moves decision-makers and the citizens away from the business as usual.
  » In a bottom–up approach the success is in highlighting the aim of the cause to the public instead of focusing on the way.

I. Cities and Sustainability

Cities around the world have developed into symbols of crowded, fast-paced, and polluted areas. Regardless of these negative traits associated with cities, urbanization continues to rise and most country nationals still want to move-in, or get closer to cities; mainly to improve their economic status with the better amenities and job opportunities available there. As such, cities around the world witness a rapid and large inflow of citizens.

Cities play a very important role in our current times as they produce, on average, 80% of the Gross Domestic Product (GDP) while only using up to 3.5% of the earth’s total surface. The downside of the economic status that cities maintain is the ecological footprint they leave behind, that is mainly caused by the high CO\textsubscript{2} gas emissions of cities (constituting 75% of total global emissions) mostly from transportation and energy use (60% to 80% energy consumption). At the same time, cities are very vulnerable to many factors such as floods, water scarcity, earthquakes, and climate change risks, especially that most cities around the world are built close to water bodies.

Cities are not only a risk to climate change but are also at risk from climate change. Therefore the need to think of cities in a more sustainable context is important not only for the city’s continuity but also to reduce its impacts on the environment. Stressing on the thought that sustainable cities are an opportunity to a more sustainable life, cities need to be considered as a place and a tool for sustainability options and better development.

**Cities as a place for sustainability options to:**
- Implement smart infrastructure to ensure the economic stability (such as easy mobility)
- Ensure a good air quality inside and outside the city (by limiting emissions)
- Make sure the resources are shared equitably among the population
- Have access to resources and opportunities to improve life status
- Take into account future risks and work towards avoiding them

**Cities as a tool for sustainability options by:**
- Achieving sustainable development that starts within the city
- Matching jobs to ensure efficient employment, and the proper sharing of resources
- Providing easier access to education and health services
- Being used as an opportunity to have lower per capita CO\textsubscript{2} emissions

However, cities need proper governance and management to create possibilities for future generations. Cities are different around the world; therefore there is a need for a better understanding of the local culture, history, as well as the economic and political structure as a basis for proper planning. There is also a need for visionary ambitious leaders - where leaders here can come from the academia, the civil society and even the business sector – that:
• Have long term vision and goals, to be able to make a change, with a completely new approach
• Engage all stakeholders
• Have a comprehensive approach that includes all urban sectors: energy, food, water, waste, and transportation.

Don’t take a risk to solve a problem by causing a new problem somewhere else.

II. Components of Sustainable Cities

When considering cities, there are different components that need to be present in order to steer them towards sustainability. This section will discuss some of the main components, which include smart mobility and public transportation, social inclusion and public spaces, and resource management in an efficient manner to reduce ecological footprint.

A. Smart Mobility

The efficient mobility of citizens is important in any successful city planning, and smart mobility is one important factor in the planning of sustainable cities. Smart indicates efficient, well planned, and equitable; it derives more from a mindset and planning perspective rather than from a purely infrastructural and application concept. This includes, among others, proper public transportation, new concepts of ride sharing, and multimodal transportation systems that encompass cycling, walkability, public transportation, and private transportation. Smart mobility is the concept of harmonizing the different mobility options in the city.

Smart mobility is not only about governments providing easy access to transportation alternatives; it is also about people taking the initiative to adopt such alternatives.

Sustainable urban mobility planning:
• Starts by aligning a policy for urban mobility.
• Long term vision policy must be shared by all as only a common/mutual vision for proper coordination. A vision where inner cities are free of cars and private vehicles, and where cities provide public space for walking.
• Makes use of innovations in technical and conceptual design solutions for mass rapid transit networks.
• Is directed towards making public transport profitable by looking into potentials of transit oriented development by integrating transit hubs into private businesses.

Examples of some options that encourage smart mobility include:
• Adding biking protected tracks
• Adding Rapid Transit bus lanes that are more reliable and that make bus transportation faster than cars
• Pavement for a nice frontage
• Furniture zones for bike racks and for people to rest that provide all the amenities for cyclists
• Multimodal transportation system, shared between cars, bikes, pedestrians and bus tracks, with protected lanes for the cyclists and pedestrians
• Car and ride sharing facilities such as mobile applications
• One of the key sustainable mobility options is walkability and bikeability. As referred to the general theory by Jeff Speck1 of a walkable city, it is one that has:
  » More amenities and activities that revolve around, and aid citizens.
  » Safe infrastructure and comfortable environments that support people that are walking or biking
  » Attractive scenery to draw interest (pretty environment and interesting designs)

Smart mobility is not only about governments providing easy access to transportation alternatives; it is also about people taking the initiative to adopt such alternatives.

Policy perspective: promote healthy environment, walking and cycling, and how to make less use of cars.

B. Public transportation

An important aspect of smart mobility is a proper public transport system that makes access to and from cities smoother. As much as cities need to move towards soft mobility, public transportation is still very much needed for efficient mobility.

Arab cities are still lagging in terms of proper public transport systems. Most Arab cities have highly congested roads, with unreliable public transport systems. In Beirut for example, the traffic congestion is spread throughout the day with no peak times similar to those in western cities (6-9 am; 4-6 pm). There is continuous congestion, and high use of private cars due to the lack of better alternatives. This high use of private cars contributes to increasing carbon emissions and therefore has a heavy environmental impact. The economic losses from time spent in traffic to the amount paid for car maintenance and gas are other negative aspects of the high congestion level which could be avoided with proper public transportation. As such, demand for public transportation is very high but the supply does not meet the demand.

Problems that hinder the success of public transportation include social divisions, lack of planning, and lack of funding. It is important to consider balancing affordability and good quality when planning public transportation in Arab cities in order to attract both the lower and the middle socio-economic classes.

Some policy and planning guidelines that can help introduce and improve public transportation systems include:

a. Starting with a traffic management plan that includes solutions to optimize space through low cost parking management, with corridor enforcements rather than ad hoc interventions all around the city.

b. Assigning a focal unit to manage the system, management of such systems is usually dispersed among: Ministry of Interior, Ministry of Transport, Ministry of Housing, and Ministry of Finance.

c. Balancing the funding between national and local governments, and private entities.

d. Diversifying the funding sources between: ticket pricing, private car taxes (owning and operating), land and zoning to public transportation (taxes to develop public transport), land value, advertisements, climate funds, private sectors, and bonds and stocks.

1. Reference to Tarek Rakha's presentation at the Sustainable Cities Conference on November 5th at the Issam Fares Institute. http://youtu.be/i8xIF9Y6r6g?list=PL426A6D9D78D7EC02

Most Arab cities have highly congested roads, with unreliable public transport systems.
e. Good policy starts by:
  » The investment in a good transport system (reached gradually) from a low pricing - targeting the poor.
  » Gradually increasing the price of transportation while providing several other “greener” options.
  » The introduction of further costs could be through transport tariffs, adding subsidies or even removing fuel subsidies, until a behavioral change in society is reached.

f. Seeking new alternatives to opening new roads, by, for example, increasing supply of mass transportation, because building more roads will not solve the problem.

One way for building resilience and adapting to climate change impacts is by securing the supply of all sources through the adoption of a nexus approach to the water-energy-food resource management.

C. Resource Management and Concept of Resilience for Sustainable Cities

Due to the high consumption, low production, increase in population, and limited resources, city planners need to look for a balance between all resources in order to reach a degree of sustainable development and city resilience.

Resilience is the capacity of a system to absorb disturbances while undergoing change so as to still retain the same function and identity; whereas sustainability is meeting the needs of the present without compromising the ability of the future of meeting its own needs.

In an urban setting, resilient systems encompass: the governance system, the physical infrastructure, and the natural systems. Accordingly, resilience is reached under adaptive planning that helps in reducing risks. It is important to ask WHO is adapting and TO WHAT.

One way for building resilience and adapting to climate change impacts is by securing the supply of all sources through the adoption of a nexus approach to the water-energy-food resource management.

The application of the nexus approach in an urban setting is both apparent and hidden; there is a need to consume less and thus produce less waste. A new way of analyzing and studying all the connections between the sectors, rather than each sector separately, is needed for a nexus approach in management.

Examples of the nexus approach in action are:
- Harvesting rainwater on rooftops
- Installing solar and wind power generators
- Planning green roof tops and gardens

Roof top gardens are a way to harvest rainwater, to grow food and to reduce energy losses to the atmosphere, thus reducing the energy bill for cooling and heating. It also creates corridors and habitats for migrating birds, helping biodiversity.

Resilient does not necessarily mean sustainable, there is a need to manage resources in a way that guarantees welfare and promotes equity of current and future generations.
D. Public Spaces and Citizen inclusion

Public spaces are another very important component of sustainable cities, as they open the opportunity for more social equity, and for better alternatives to social interaction and leisure activities. Accordingly, in order to encourage citizen inclusion and public spaces in Arab regions, it is important to know the use of these areas, their current status, and ways in which they can be enhanced.

The social, ethnic and religious inclusion in the Arab cities is disappearing. Public spaces are diminishing, and are becoming more exclusive, and the previously active creators and managers of public spaces i.e.: municipalities and public societies are becoming less and less involved. Most of the public spaces are in fact closed to the public under vandalism threats, rendering these areas even more exclusive where security guards actually grant entry to a few chosen people of a certain societal class and background.

Public spaces aim “towards humankind and towards social inclusion and coexistence” as defined by Nahnoo NGO. In Lebanon the environmental laws and crimes are overlapping where laws are being modified to the personal benefits of the big investing companies, which go against all the definitions of public spaces and equity.

One way towards building social inclusion is through personal or civil efforts in the absence of governmental efforts. A Ghanaian experience undertook the following steps to transform a car park into a people’s park that took the community’s interests and needs into consideration:

• Started by identifying a social space with potential
• Then engaged the community to get their point of view on the space’s usability
• And finally collaborated with the community involved, the surrounding community, and used the available material (tires) to decorate the area

A positive thought on personal efforts comes by acknowledging that it is people’s readiness to approach the different public spaces that helps in realizing the social equity.

Public spaces that promote social inclusion have some or all of the following characteristics:
1. Accessibility for all
2. Availability of effective and safe walking networks with proper signage
3. Availability of mass transportation system and the addition of overlapping transportation points to pedestrian areas
4. Events and social activities that bring people together as opposed to the space itself
5. Commercial activity, such as the informal activities on the side of the roads that attract the different citizens. Example: food trucks
6. Accessibility and transport linkages that provide walkability and easy access
7. Supporting infrastructure such as chairs and shade creating inclusive environment
8. Safety and security spaces in which neighbors can come in and mingle in a way that builds social capital and forms a community

Public spaces are used when available.
III. Why Sustainable Cities?

When considering the economic and social aspects of sustainable cities, questions on social readiness of the cities to accept the components of the sustainable cities arise. The effect of enhancing the city components is more and more objectified given its benefits. The analysis can be made on both pre and post implementation, where the first shows the readiness of cities to accept such concepts and the latter shows the importance of carrying out the changes to a society and its citizens.

Following are key social and economic facts and benefits of different components of sustainable cities:

A. Socio-economic Aspects

The benefits of sustainable cities span across economic, health, and social benefits. Studies have shown that sustainable cities can help reduce GHGs, improve public health, increase productivity, save energy, enhance safety, and reclaim public spaces. Accordingly, it is important to note the impacts of having first a sustainable built environment and second a sustainable transportation system.


Sustainable cities, which usually include a proper built environment that promotes healthy and safe modes of mobility, would indirectly feed into health cost reductions, higher rates of physical activity, cleaner air quality, and a decrease in stress levels.

» Studies have shown that low physical activity can lead to: obesity, missing two extra school days per year, lower test scores, high healthcare costs, extra sick leaves, and premature deaths.

» Physical inactivity leads to a cost of $147 billion in USD, $26 billion in Russia, and $33 billion in China in terms of extra costs of health care and the opportunity costs (which are indirect costs quantified by such work absence, inefficiency due to high stress levels and low productivity). Global research studies on developed countries (only limited research on Arab countries is available) show that people with good access to public space achieve high level of physical activity and are at a higher probability (three times higher) of achieving the average amount of required physical activities (150 minutes or more per week)

» The proximity of parks and the safety are crucial factors in determining how likely or how often individuals are to visit it.

» There is significant decline in physical activity in the Arab world which is vital for the health and psychological wellbeing of citizens.

2. The benefits of sustainable transportation that span across national savings, health, and even real estate include:

» Savings equivalent to 50% of GDP, with the use of public or active modes of transportation in European cities.

» Lower air pollution which would lead to a decrease in respiratory diseases, and health care costs on one hand and improved efficiency on the other hand due to less sick leaves.

» Lower congestion which would lead to less psychological stress and therefore less costs for stress relief as well as time gains though trip duration saving.

» Higher value of real estate for locations farther away from main roads and transportation hubs (congestions area) vs. higher value apartment close to a quick and easy access (pedestrian) transit station (more sustainable area).
B. The Social Obstacles to Sustainable Cities

The social fabric, standards and values of Arab societies are not necessarily enabling factors for the promotion of social equity, an important component of sustainable cities.

Arab cities still face several psychological and social obstacles towards the development of more sustainable cities. Do we live in cities or compounds, are we involved in our surrounding, and to what extent are we able to impact our environment and society?

In analyzing the Arab social build up, the four identified areas that need to be enhanced for better social inclusion in cities include:

1. Democratization and public participation:
   The general governing and ruling systems in Arab countries do not always ensure that the needs of the general public are prioritized. This requires a general change in the system towards a better democratic ruling that takes into account the people’s needs.

   There is a need for transparency and accountability through public participation.

2. Social justice:
   Arab societies differentiate between social classes, a behavior which does not allow for equal opportunities towards the sharing of public services. This forms another obstacle for sustainable cities, since one of its main conditions is the ability of the citizens to interact and utilize these provided spaces in equal opportunities.

3. Local municipals:
   In most cities, the local council members are assessed based on their knowledge, skills, and attitudes. Whereas in Arab cities, the process of hiring municipals is vague; in some cases municipals are assigned based on personal interests rather than job needs and qualifications.

   So it is important to improve the capacities of local council members to have a more objectified vision in order to reduce the gap between their skills and their job requirements.

4. Violence, terrorism and vandalism:
   The most highly populated and low-income regions have highest rates of violence, terrorism and vandalism.

   Suggested solutions to overcome these obstacles include:
   » Behavioral modifications; creating a law that “forces” society to follow it.
   » Society needs to educate the new generations based on the cross gender and class equality concepts.
   » Psychosocial interventions.
   » Awareness and information.
IV. Policy Methods

When policy methods are discussed, the ability of our cities to host new pro-sustainable policies is questioned. Are Arab cities able to undertake new techniques, and to adopt the required legislation? Are the existing legislations and policies supportive of the new sustainable methods?

A. Bottom-up vs. Top-bottom

Bottom-up approach is the involvement of all stakeholders in setting up policies, finalizing the outcomes and posting the final results. Whereby, the top-bottom approach starts by circulating the policy between the main concerned stakeholders, and then involving the different relevant entities; an approach that has proven to be faster for urgent matters. The two strategies can be used together.

Motivating policy-makers to move towards sustainable cities could start with highlighting the importance of green policies and indicating the benefits and the returns of green economies, while focusing on the six dimensions of sustainable development: the environmental, the economic, and the social aspects, combined with the livable, the viable, and the equity pillars.

A policy decision resembles any other business deal, in the sense that it aims at satisfying both the consumer and the producer, and accordingly follows a business scheme, which includes:

- Proper planning
- Making sure the final result will satisfy the customer/consumer’s needs
- Setting proper goals
- Collecting and gathering required information
- Coming up with the guiding policies
- Project designs and implementation
- Monitoring and evaluation to properly identify the gaps

However, in the Arab countries some of the major obstacles that hinder the top bottom approach are: the low availability of technologies, the difficulty in operating these new technologies, the lack of information, social and culture barriers, economic and technical difficulties, and political conflicts.

A bottom-up approach, as learned from the German experience is commonly based on irritating the system and “getting out of the box”. The German experience comes from a project that brings energy and transportation together: “Sustainable Districts as Cornerstones of Urban Development”. A project based on renewable energy stations for car recharge that starts with a private scheme and moves to the public grid. The trick to the success of this project was to find the places that are not confined within the regular institutions, such as civil societies, NGOs, even private companies, and to work with them to achieve the intended goals.

In a bottom–up approach it is important to find innovative and unique steps such as decentralizing the project locations, and on finding the right places to manage the movements towards a more practical application of the concept/project.

It is also important to focus on the movements: Start on private ground and involve society and different stakeholders, get their interest, and return back to the public (in this case also governmental).
In a bottom-up approach to policy options the German case presents the following lessons learned:

- Technology is not the problem
- Policy is achievable through public attention
- There is no right way to get the win situation for all relevant stakeholders
- There is a need to set achievable and acceptable objectives, to encourage a strong need for a mindset change
- Lastly, obstacles such as administrative and regulative processes overrule the innovative movement, but should not stop it
- There is always a need to scale back to the bigger network (in renewable energy case and metaphorically in other examples), so however small the size of the project that was implemented is, it is important to move from micro grid to the larger public network by finding the suitable business model

It being a top-bottom or bottom-up approach, a mindset change is required to make a policy change possible. In a top-bottom approach it is important to develop a strategy that not only includes objectives, but also the will to make changes to reach said objectives in a manner that moves decision-makers and the citizens away from the business as usual. In a bottom-up approach the success is in highlighting the aim of the cause to the public instead of focusing on the way.

B. Public Space Policy-making in Light of Neoliberal Markets

Another trend towards policy-making is neither a top-bottom nor a bottom-up approach but rather public-private partnership policy-making in light of the neoliberal markets. This method is more of a top-top decision-making approach where the heads of equity influence the decision-making and governments based on agendas of their own irrespective of national agendas.

A comparison of MENA cities between current and previous times shows that the number of governmentally managed public spaces in the Arab cities has sharply decreased over the years and has instead been replaced with privately owned spaces such as malls and gardens. He as such questions the power of the “new policy makers”; those with money to invest in similar big projects.

The decision-making power is being given to private entities that are forming a new urban private governance system, causing the dispersion of the public spaces, as they are usually not integrated in the urban plan and are built based on private interests. The government is directly or indirectly subsidizing these projects through informal methods, by either selling publicly owned lands to the private sector, or by forming partnerships, or giving tax reductions to these companies.
V. Case Studies

Some Arab cities are already starting to move towards more sustainable planning from which many lessons can be learned. Such cities are Jbeil in Lebanon, Amman in Jordan, and Chefchaouen in Morocco.

A. Jbeil

Jbeil's municipality adopted a Development and Resiliency Plan that includes the following:

- Developing a city that can adapt to the continuous demands and growth of populations
- Implementing a multifunctional public garden to increase green space, and a 500 m$^2$ sports complex that creates social and community cohesion
- Promoting the pedestrian identity
- Increasing the public transport capacity
- Building a new town hall, with green standards

Jbeil is also planning to become a resilient city by being included in the 100 Resilient Cities – an initiative pioneered by the Rockefeller Foundation (100RC).²

The project will help Jbeil develop a system that would improve city resiliency by:

1. Identifying the city’s key assists and threats through data collection
2. Building the city composition profile
3. Targeting wider community participation of different stakeholders
4. And working on improving five focus areas
   a. Peacefulness of the city
   b. Preserve historical assets, and revive customs and traditions
   c. Understanding and protecting environmental limits (example the 2006 Lebanon oil spill)
   d. Regulating urban development and improving accessibility and linkages of the city
   e. Encourage and improve economic diversity (trade and economic hub, fishing, retail and business except for tourism alone)

B. Amman

Amman is one of the largest cities in the MENA region, with an area of 800km$^2$, that is striving to reach sustainability to be able to house the increasing population growth and increasing urban migration. The municipality has been working on six areas of sustainability:

- Environment and health
- Public works
- Planning and management
- Environment and culture
- Social connections
- Financial/economic stability

² http://www.100resilientcities.org/pages/about-us#/
Examples of Implemented Projects:

1. Transportation: BRT Rapid bus transit
   By 2020 there will be 1.9 million vehicles in Amman, the current total costs of transportation sector, is 2.5 million dollars with 40% of the total imported fuel going to that sector. Moreover, there are high congestion levels as well as a high occupancy rate in the public busses.

   A two-year study between the UK and Amman was conducted showing that the price of a metro would cost 20 times the price of BRT ticket, and there is no suitable infrastructure to have metro lines constructed. Moreover, the study showed that the BRT system works in highly populated areas given proper timetables.

   A new strategy was put together to improve public transportation in Amman. Proper bus lanes were assigned, with respective timetables and the highly central trajectory to benefit the highest number of passengers going to universities and public institutions.

2. Pedestrian friendly city:
   Another project included a plan to have a car-free downtown area with shuttle busses to transport pedestrians. The identified area is a highly commercial and retail area, which formed a very tricky obstacle in the face of the project.

   Problems faced:
   • Losses in the retail sector due to difficulty of access.
   • Clash between the culture of parking close to shopping malls as opposed to walking.
   • Street maintenance

   The municipality, accordingly, worked on each problem separately to keep the project on track.

C. Chefchaouen

   Chefchaouen is a Moroccan city located between two mountains, with a population size of 40,000 citizens; economically, it depends on tourism, local industries, and the retail of the local produce.

   Chefchaouen is a city that is able to sustain its needs as much as possible within its boundaries.

   The city is an example of:
   • Social inclusion of all its citizens regardless of the religious, political and cultural beliefs.
   • Environmental city:
     » That takes into consideration the biological diversity
     » Is based on cooperation and dialogue between all stakeholders
     » That preserves its cultural and historic properties
   • Adaptation of green techniques as it:
     » Studies solar water heating
     » Works on enhancing the technical aspect of the municipality to benefit from solar power as well
     » Came up with a Green Plan
   • Youth involvement in sustainable activities and trainings

   The case studies prove that change in the Arab cities is possible. Cities of the MENA region can become more sustainable just by taking some small steps towards the sustainability path and making smart choices in their planning and policy options.
Appendix – Panels and Speakers

- **Key Note Address: An Introduction to the Concept of Sustainable Cities**
  » Nicola da Schio, Urban Environment and Mobility Specialist, Sciences Po, Paris, France

- **Panel I: Top-Bottom or Bottom-Up Approach?**
  » Mohsen Aboulnaga, Professor, Department of Architectural Engineering, Cairo University, Egypt
  » Frank Christian Hinrichs, Director, Program Development and Intelligent City, Innovation Centre for Mobility and Societal Change, Berlin, Germany
  » Rami Daher, Professor, School of Architecture and Built Environment, German Jordanian University, Amman, Jordan

- **Panel II: Socio-Economic Impacts of Sustainable Cities**
  » Jad Chaaban, Associate Professor, Faculty of Agricultural and Food Sciences, American University of Beirut, Lebanon
  » Basel Al-Hamad, Civil Society Activist and former Consultant, Institute for Urban Planning, Amman, Jordan
  » Ziad Nakat, Senior Transport Specialist, World Bank, Lebanon

- **Panel III: Solutions for Small and Large Cities – Some Case Studies**
  » Anthony Sfeir, Resilience Officer, Jbeil, Lebanon
  » Rama Mohammed Elezzi, Executive manager of Licensing, Amman Municipality, Jordan
  » Nabil Chliyah, Vice President, Chefchaouen Municipality, Morocco

- **Panel IV: Which Sustainable Transportation or Smart Mobility Concepts for MENA Countries?**
  » Yussef Fawaz, Lecturer, Faculty of Engineering and Architecture, American University of Beirut, Lebanon
  » Tarek Rakha, Architect and PhD Candidate, Massachusetts Institute of Technology (MIT), Cambridge, MA, United States
  » Hans-Ulrich Fuhrke, Consultant and former Project Director, Sustainable Urban Transport Improvement Project (SUTIP), GIZ, Indonesia

- **Panel V: Sustainable Cities and Climate Change - Building Resilience and the New Urban Nexus**
  » Nadim Farajalla, Associate Professor, Department of Landscape Design & Ecosystem Management, and Faculty Research Director, Issam Fares Institute, Beirut, Lebanon
  » Yaser Abunnsar, Assistant Professor, Department of Landscape Design & Ecosystem Management, American University of Beirut, Lebanon
  » Raouf Dabbas, Senior Advisor, Ministry of Environment, Amman, Jordan

- **Panel VI: The Citizen and the City: Environmental Inclusion, Equity and Public Space**
  » Mohammed Ayoub, Director, Nahnoo, Beirut, Lebanon
  » Merve Aki, Urban Planner, EMBARQ, Istanbul, Turkey
  » Victoria Okoye, Community Planner and Communications Specialist, African Urbanism, Accra, Ghana