



# Innovation requirements of a climate-smart location

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In innovation promotion and local economic development, we often emphasise the importance of developing competitive advantages in order to survive or even advance in a competitive and innovative locational environment.

### “Smart” vs. “Climate smart”

Being smart in this context means being able to compete and to innovate, ideally in a more advanced way than other regions. There is a clear need to widen the scope and support not only economically “smart” development paths, but also “climate smart” locations.

“Climate smart” adds an additional dimension. It is based on the belief that smart and lateral thinking people are needed to devise new solutions that decrease greenhouse

gas emissions and increase protection against climatic events, while economies continue to grow. Thus “smart” is understood not only in terms of competitiveness, but also in terms of climate resilience and eco-friendliness.

Rankings of medium-sized European cities use six classifications for smart locations (see Figure 5), of which the smart economy criterion is only one of these. Accordingly, the growth of urban and rural sites can become more sustainable and resilient as long as “smarter” environmental technologies, natural resource management priorities, new governance and network formats are based on people’s creativity and interdisciplinary approaches. Integrated systems consisting of new mobility solutions, renewable and energy-efficient technologies, less resource-intensive production and consumption processes, etc. need to be created to achieve balanced and innovation-oriented growth combined with a high quality of life.

### SMART ECONOMY (Competitiveness)

- Innovative spirit
- Entrepreneurship
- Economic image & trademarks
- Productivity
- Flexibility of labour market
- International embeddedness
- *Ability to transform*

### SMART PEOPLE (Social and Human Capital)

- Level of qualification
- Affinity to life long learning
- Social and ethnic plurality
- Flexibility
- Creativity
- Cosmopolitanism/Open-mindedness
- Participation in public life

### SMART GOVERNANCE (Participation)

- Participation in decision-making
- Public and social services
- Transparent governance
- *Political strategies & perspectives*

### SMART MOBILITY (Transport and ICT)

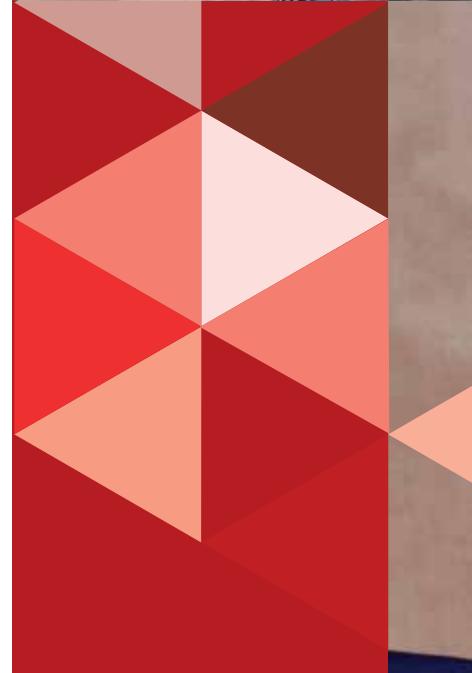
- Local accessibility
- (Inter-)national accessibility
- Availability of ICT-infrastructure
- Sustainable, innovative and safe transport systems

### SMART ENVIRONMENT (Natural resources)

- Attractivity of natural conditions
- Pollution
- Environmental protection
- Sustainable resource management

### SMART LIVING (Quality of life)

- Cultural facilities
- Health conditions
- Individual safety
- Housing quality
- Education facilities
- Touristic attractiveness
- Social cohesion



**Figure 5:** Six characteristics of smart cities  
Source: Giffinger R., et al., 2007.

## Climate-smart cities, towns and villages

The discussion on a model of “climate-smart locations” initially targeted metropolitan and medium-sized cities, towns and villages in developed and developing countries that needed to adapt to climate change risks due to climatic events such as flooding, storms, heat waves, droughts, changing rain patterns, etc. In the meantime, the topic has become more mainstream and is being extended to climate change mitigation and has become the centre of attention of many European locations as well. Climate-smart commune contests are organised in many EU countries, especially targeting smaller towns and villages that want to become more energy efficient and independent. The ranking criteria in Figure 5 are based on efforts in medium-sized cities in Europe to become more environmentally friendly and attractive. Being a climate-smart location in Europe has become a vehicle for locational marketing as well as being an indication of innovative and future-oriented locational management. In developing countries, fast-growing cities and their environmental boundaries as well as locations vulnerable to climate change have additionally encouraged this discussion.

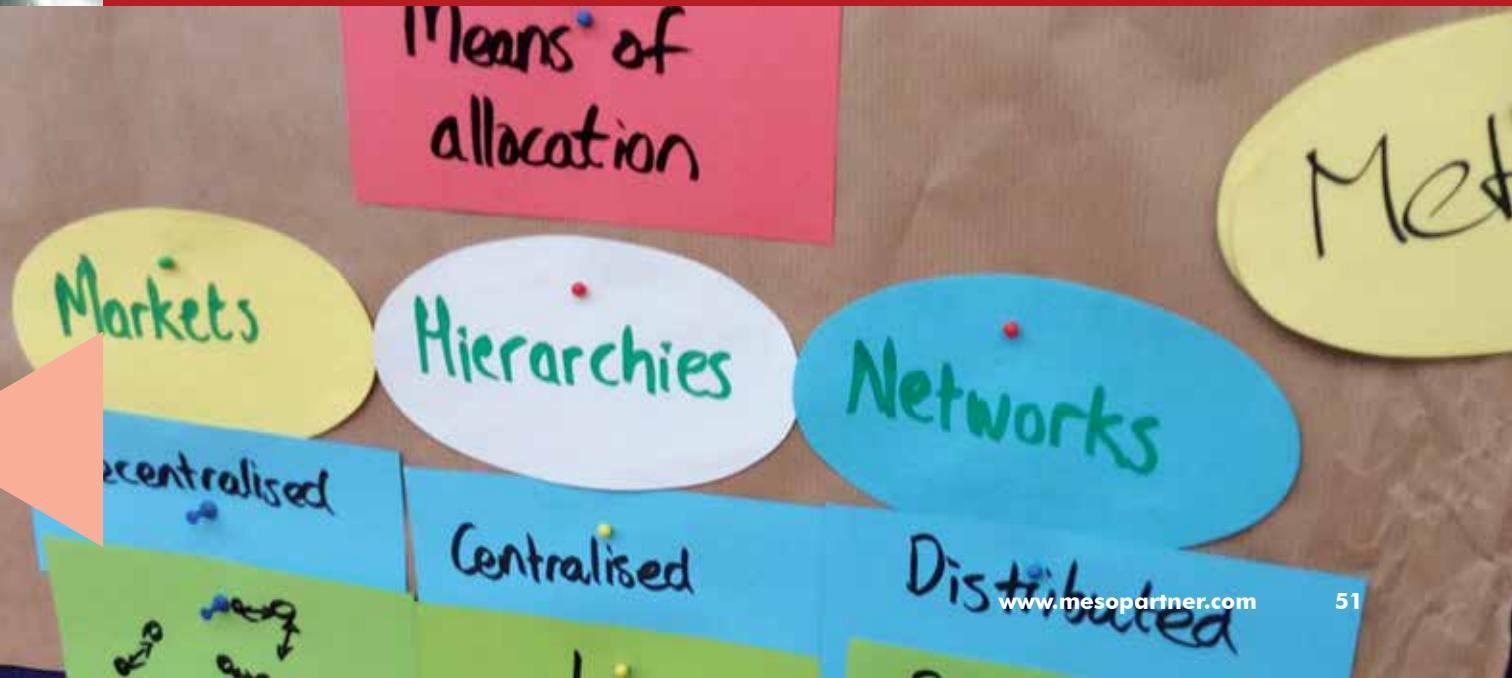
## Requirements for learning

What does this all mean for our work? What kind of learning is required from us as consultants, for development organisations and for local stakeholders responsible for the management of locational growth? What does it mean for businesses?

We have identified two main challenges:

- The complex and interdisciplinary solutions required for climate-smart locational development.
- The need for more holistic approaches to promoting climate-smart solutions.

The complexity and interdisciplinary learning requirement “Masdar City” is a city-building project in the United Arab Emirates close to Abu Dhabi. It is an eco-city that was built from scratch with the most suitable mobility, water and renewable energy solutions. Mostly “smart” international experts and engineers have been involved in building this city. Although Masdar City is expected to become a climate-smart city, it will probably not serve as a model for the majority of other locations. Not every city will be able to follow this cost-intensive and external





expertise-based approach. More difficult than bringing in investment capital and expert support is to figure out how tailor-made climate-smart strategies could be developed on a realistic basis. This requires information on the availability of the required knowledge and expertise inside the country or region, the identification of driving forces (see article *Driving forces for greening urban and rural locations in the EU*) and motivated stakeholders plus the joint identification of system solutions in which renewable energy, energy-efficient efforts and mobility as well as infrastructure and production processes are analysed and mutually connected.



Referring to the six characteristics of smart locations in Figure 5, we can identify places such as the capital of Luxembourg or Aarhus in Denmark as first-ranked medium-sized European “smart” cities which build their development on those six characteristics. Unlike Masdar, such locations are not set up from outside by centralised decision or by technical expertise alone. Their approach is rather based on integrated and systemic solutions within an open-minded societal model in which local experts, knowledge providers, technological capabilities at the business and institutional level, interactive knowledge and learning flows merge together. Instead of developing and implementing whole system solutions from the outside, we need to understand how to support the transformation processes in those places by increasing the capabilities of relevant actors and systemic solutions from the inside.

### **More holistic knowledge requirements**

The climate-smart location approach considers different entry points (see Figure 6). It not only focuses on productive or service-driven business sectors, but also requires knowledge and expertise in key areas that contribute to or are challenged by climate change and pollution. Our partners and us need to identify and learn more about technological solutions and different areas of concern with a wider target group. Not only businesses and their supporting institutions are involved, but also public actors such as utility providers, private households and others along different kinds of chains, such as transport, logistics and waste.



**Figure 6:** Sectoral entry points  
 Source: <http://www.climatesmartcities.org>

The partners in developing countries will have to approach local economic development with a climate-sensitive mindset that is related to the development of endogenous potentials along the six characteristics mentioned above. Urban and rural locations in Europe might be interesting cases to learn from in this respect. On the other hand, European or German technology transfer institutions, donor and government organisations need to consider more strongly that the sustainability of climate-smart locations in developing countries depends on the involvement and upgrading of local human and institutional knowledge, not just on using imported green technologies and external expertise. Masdar City in this respect cannot be the role model.

### Reference

Giffinger, R. et al. (2007) Smart cities: Ranking of medium-sized European Cities, Vienna.

