SF 65: Stormwater management (strategic planning and implementation of measures)

Fr	B	C	NY	S	T	Total
2	4	9	8	6	8	37

Beispiel:
Freiburg: The topic has played a role in the development of Vauban and Rieselfeld.

Berlin: Rather high groundwater level, but no flooding; heavy rainfall forecast due to climate change; water supply concept and Rainwater Exemption Ordinance

Copenhagen: Stormwater management is a core issue in Copenhagen with regard to climate change adaptation. Due to flooding after heavy rains in 2010 and 2011, the issue is very acute.

NYC: The topic is highly important, not least because of the flooding caused by Hurricane „Sandy" in 2012. Strategic urban development and the application of measures including those of the „Sustainable Stormwater Management Plan".

Singapore: This city has already solved the issue (efficient discharge of heavy precipitation into the sea).

Tokyo: Due to the risk of flooding, people are aware of the topic. Several measures have been implemented.

1. Differentiated description of the key field

The threat of flooding caused by extreme weather events is on the rise due to the effects of climate change and the increasing amount of sealed surfaces in cities. This can lead to, among other things, considerable damage to the city infrastructure and the environment.

Countermeasures, such as increasing the number of green spaces and local percolation measures, can be implemented at different levels. Urban planning is of particular importance with regard to rainfall management.

2. Reference to sustainability:

Impact on the following levels: social, ecological, economic, resilience of the city system

Well-functioning rainfall management is essential for the sustainability of a city, especially if flooding events may occur more frequently due to its location and the prevailing climate.

A lack of precipitation management can result in flooding, which, for one thing, significantly disrupts the everyday operations in a city and can cost the city infrastructure and the private sector dearly. This topic deserves special attention in cities that are close to the sea.
Flooding due to extreme weather events can have significant negative consequences for the environment as well as for society. In addition, damage caused by flooding is, in general, associated with high costs, which has major economic impact, too.
Reducing flooding through effective precipitation management enhances the overall resilience of the city system.

3. Relevance to industrial sectors?

Mobility:	High
Energy:	Low
Production & logistics:	Medium
Security:	High
ICT:	Low
Water infrastructure:	High
Buildings:	Medium
Governance:	High

Brief description of the high level of importance:
• Storm-induced floods can have huge adverse effects on the transportation system and thus also on the areas of production and logistics, which are closely linked to the transportation of goods.
• In terms of protecting the city infrastructure against extreme weather events, it is also of great importance to the security sector.
• The field is of relevance to the governance sector since, for the further implementation of the decentralized elements of water infrastructure to take place, the main drivers at the local level must be identified and defined in order to then create decisive incentives via control elements and to generate implementation.

4. Impact (positive & negative)

Positive:
- Increase in the resilience of the city system
- Increase in the quality of life which is adversely affected by floods and their consequences.

Negative:
- Investment measures required

5. Implementation measures:

• Recognition the local urgency of the problem
• Designation of possible technological measures to reduce the urgency of the problem.
• Inclusion in the strategic planning for sustainable urban

development
• Creation of incentives; if necessary, changing of the rules
• Initiation of implementation measures
• Regular review of the implementation status

6. Actors: Who can shape things?

• Individuals, citizens: Individual implementation measures at household and possibly building level (e.g. rainwater tanks, percolation on land, greening of sealed surfaces including roofs).
• Planners, contractors, construction companies: Development and implementation of concepts for optimised local precipitation management.
• City council/public utilities: Definition of possible approaches to solving a problem, inclusion in the strategic planning for sustainable urban development, initiation of implementation

7. Prerequisites:

8. Obstacles/barriers:

9. Indicators:

• Querying of the relevance of the topic in strategic urban planning (strategic plan, etc.).
• Amount of the total expense at the city level of the damage caused by extreme weather-induced flooding.

10. Special features/remarks: