

## Policy Guidance on China-Europe Cooperation on Sponge Cities

### 1. CEWP Policy Dialogue Process

The China-Europe Water Platform (CEWP) is designed around three strategic pillars - Policy Dialogue, Research and Innovation and Business Cooperation - with, at the same time, four thematic Focus Areas, namely Water Management and Ecological Security, Rural Water & Food Security, Water & Urbanization, Water & Energy Security.

Aiming to raise and to deepen the Policy Dialogue, there are ongoing activities between Chinese and European partners under each of these themes and in additional cross cutting issues as New Visions on Integrated Approaches, Business Cooperation and Climate Change.

And due to the fact that CEWP-EU has five Grant Contracts with EUDEL, this Policy Dialogue, being a key element for the EU Partnership Instrument, constitutes a major project output.

In the context of this water cooperation under CEWP, the Policy Dialogue can be described as the process of assisting and contributing to subnational, national and/or international decision making processes for water policies and their potential implementation, involving relevant stakeholders and key players.

Every CEWP project has developed a specific policy dialogue process, matching their own objectives and identifying or organizing the relevant arenas for this dialogue.

So, each output produced must trigger a dialogue process among the Focus Areas, resulting in a **policy report**, that is the result of the work of each LOT at a project level. The outputs of this report, being under the responsibility of the partners of each LOT, can be disseminated and, through a process of consultation with Secretariats, evaluated in order to proceed to a higher level of decision.

In case of agreement on an output merit, it should be converted into a **policy guidance**, agreed between the two secretariats in order to be endorsed by the Joint Steering Committee (JSC). After endorsement, it can be disseminated or can be leveled up to the High-Level Dialogue Ministerial Meeting for decision. In case the High-Level Dialogue Ministerial Meeting agrees on its merit, it becomes a **policy recommendation** that will be integrated in the policy making of each region and it can be further disseminated.

Both secretariats must ensure the involvement of and uptake of policy guidance and recommendations by a wider range of stakeholders, such as relevant ministries or research institutes in China and Europe, that play a critical role in some of the Focus Areas' prioritized issues.

The Chinese and European CEWP secretariats have the role to manage and control the policy dialogue process at JSC Meetings, for CEWP conferences and at High Level Events, having in mind the need of sharing lessons and good practices aiming to improve the performance on every possible domain.



## 2. Key findings on Sponge cities

The project China-Europe Cooperation on Sponge Cities (CECoSC) aims to enhance Europe-China cooperation on water management in urban areas. Project outcomes include policy, regulation and management recommendations.

Both Chinese and European cities face increased risk of floods and droughts, as well as a shortage of clean water. In both China and the European Union, the traditional responses to those challenges, particularly related to stormwater, are predominantly reactive and problem-driven rather than pro-active and opportunity-driven, maximizing the benefits emerging from these adaptations. This new approach is emerging in China and many European cities which are transitioning towards a sustainable and water-sensitive urban future, using ecological principles and deployment of Blue-Green Infrastructure (BGI), as a Sponge City (SC) Approach.

In 2014, China adopted a national policy referred to as the Sponge City Program. Similar ideas on stormwater management emerged in Europe and the United States, with the focus shifting from the application of traditional 'Grey Infrastructure (GI)' measures to Nature Based Solutions (NBS) that improve cities' capacities to retain, detain and purify water, thereby strengthening their liveability.

Globally, cities are increasingly under pressure to adapt to rapidly changing socioeconomic, climatic and environmental conditions. Governments are compelled to consider cities' current and future water challenges while also handling other related emerging challenges, including climate mitigation, social inclusion, ageing infrastructure, resource shortages, financing and pressures on cultural heritage. The increased frequency and intensity of extreme weather events are driving cities to become more climate-resilient. Long-term planning strategies that result in flexible, enabling infrastructure that can be adapted easily to respond to changing climatic, economic and demographic conditions are now a necessity. 'Traditional' Integrated Water Resource Management (IWRM) needs to be replaced, gradually and consistently, with a nexus that also includes energy, transport, food and material flows creating SC solutions, which maximize benefits, while minimizing risks. And we cannot forget the cumulative effects of external floods impacts (high tide levels at seaside areas). The progressive transition to BGI must take into consideration the complement role of existing grey infrastructures to tackle the extreme events. In addition, a successful transition towards the adoption of such a new, more holistic, SC Concept will require new governance and institutional frameworks.

Both China and Europe are making progress in the operationalisation and wider uptake of the SC Approach, which minimizes the economic and social risks and maximizes benefits of SC planning and practice. This requires to connect water to many other fields, in alignment with the indivisible nature of Sustainable Development Goals and its interconnections, in particular SDG 6 (Water) and SDG 7 (Energy) and SDG 11 (Sustainable Cities and Communities) and SDG 13 (Climate Action). This development will shift SC implementation responsibilities from the national to the provincial and local government. This subsidiarity trend is occurring in China, as well as subsidiarity and flexibility principles are key in European Water Legislation, although, in some Member States, its implementation is still top down.



### 3. Recommendations to policy makers to translate key findings into action

#### **Promote the use of the Three Point Approach (3PA)<sup>1</sup> to plan a resilient urban water system.**

The principles underlying the 3PA are valid for each city, irrespective of the differences in local conditions. However, the scope (position or range) of the three domains may differ from city to city, dependent on the return periods of rainfall, droughts and inundation depths.

Consequently, standards and solutions will depend on the local conditions, now and in the future. That is why there is a need to allow for flexibility in the design standards for urban drainage infrastructure, (i) adapted to each place and with a long-term view and (ii) considering the broader environmental, social, cultural and economic value of such infrastructure. Too stringent national standards may lead to maladaptation.

However, the historical practices, data management and planning, in many places, must be improved as they will impact the implementation path of this transition. Therefore, 3PA must be regarded as a method for gradual exploration.

#### **Upgrade existing (grey) infrastructure using BGI**

In many cities, the existing (subsurface) urban drainage system has reached the end of its lifetime and/or does no longer comply with the prevailing standards (such as design storm criteria, or cumulative effects at seaside) and/or comprises a Combined Sewer System (CSS). Installing BGI will help reduce runoff into the piped sewage system, by managing water above ground, by retention, detention and infiltration.

BGI plays an important role in realizing this 3PA, to minimize damage of extreme rains and to maximize ecosystem services, health and added value every day. BGI, however, needs to be carefully planned and designed, as requires integration in the urban space, above ground, subsurface and in buildings.

In general, the use of BGI reduces capital costs and operational costs while environmental and social co-benefits are maximized, with BGI contributing to the amenity of the city as a whole. Tools to evaluate this cost-benefit balance are increasingly available, but require customization to the national and local financial and institutional system.

#### **Engage Citizens and Experts from other disciplines in BGI implementation.**

Communities, citizens and experts from other disciplines need to get acquainted with BGI and its benefits and terminology. Successful implementation requires their engagement, right from the the beginning of the planning process. BGI planning, design, implementation and maintenance also requires a multi-disciplinary approach.

#### **Improve Strategic, Tactic and Operational Asset Management**

In support of efficient and effective (strategic, tactic and operational) asset management of our Blue, Green and Grey Infrastructure, a quantitative framework should continually assess the performance of infrastructure, at the level of each individual intervention, as well as across the whole system. These insights will enable decision makers to anticipate on timely interventions to provide safety for now and for the generations to come.

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<sup>1</sup> The Three Points Approach (3PA) offers an integrative framework to facilitate the design and decision making process when managing stormwater. Point 1 represents the traditional planning practice of technical optimization, designing facilities that protect us up to the level of the Design rainstorms. However, one day an Extreme event will occur and the protective system is overloaded and fails. Minimizing the damage in case of such Extreme Rain events is the second planning objective (Point 2). The domain of Normal Rain represents the everyday situation. Instead of being a hindrance, drainage and protection facilities ought to provide added value and services to society every day. Maximizing these benefits is the third objective of planning a resilient 'Sponge City' water system (Point 3).



### **Gradually Initiate establish an Asset Register of BGI**

An essential precondition for this asset management is the availability of an up-to-date, standardized (imposed by regulation or directive) and accessible register - data base and digital maps - of all water management assets in each individual city. This might require an implementation (suitable) period of several years (Efforts should be made to establish an asset register of BGI on the premise that relevant conditions are in place). Data in this system should be reliable and, to that end, be verified regularly.

### **Enable vertical and horizontal interactions (and learning) to support new Governance arrangements**

Foster education and knowledge exchange between national and local governments, and for example planners, designers, engineers and ecologists, between governmental organisations, practitioners, researchers from many disciplines and a wide range of stakeholders to operationalize the 3PA and effectively implement BGI. Stimulate learning by doing and knowledge sharing in communities of practice, aligning top-down and bottom-up approaches.

### **Look for Synergies with other Sectors**

A total systems perspective across spatial scales and disciplines requires SC planners to take a broader scope. They have to integrate other elements and objectives in their plans and make sure that other sectors include relevant SC constructions in their plans. Though this cross-sectorial cooperation is challenging due to differences in procedures, approaches, language and so on the benefits of aligning SC constructions with other national and local objectives and policies.

## **4. Ways for future cooperation**

Ideas and suggestions for future cooperation are now considered, as potential funding options.

An overview of approaches, tools and governance arrangements needed to implement a 3PA in European and Chinese cities was outlined, and it was agreed that collaboration on **Joint Research** challenges should focus on three selected topics:

- 1) Advanced planning support toolbox for holistic, nature-based urban water management.
- 2) Smart technologies/digital tools to support nature-based urban water management
- 3) Assessment criteria for holistic urban water management

In addition, we should continue this collaboration through **Knowledge Exchange and Joint Learning**. Here, the preferred form would be under the umbrella of a continued EU-China program for collaboration on urban water management. Prioritized activities are staff exchange, as visiting scholarships to be exchanged between alike institution, the continued development of joint publications, bilateral collaboration between a European and a Chinese partner institution, and continuation and extension of educational programs and students' assignment.

Key to address the above mentioned Joint Research and Knowledge Exchange will be the continuation of this long-term collaboration through a dedicated EU-China common **Funding Programme** for research and innovation. The proposed 3PA-matrix could serve as a framework on which this program could be built.

