

Benchmarking Greater Bogor's Water Sensitive performance

Water Sensitive Cities Index

As cities seek to adopt a water sensitive approach, they often need a better understanding of their current system and how it compares to best practice. This will help establish their short and long-term priorities for achieving their sustainability goals.

The Greater Bogor region of Indonesia has been benchmarked and profiled as part of The Australia-Indonesia Centre's Urban Water Cluster (UWC). Greater Bogor was benchmarked against water sensitive city performance standards using a new tool developed for this purpose – the Water Sensitive Cities (WSC) Index.

Benchmarking approach

The WSC Index was developed by the Australian Government's Cooperative Research Centre (CRC) for Water Sensitive Cities with a holistic and integrated approach to water system benchmarking.

The WSC Index measures performance against 34 indicators reflecting WSC attributes that support a city's resilience, liveability, productivity or sustainability. These indicators are organised under 7 thematic goals to help compartmentalise the scoring process.

Scoring involves engagement with key sectoral stakeholders, expert judgement and evaluation of evidence to determine a score out of 5 for each indicator.

Benchmarking using the WSC Index not only generates important insights into Greater Bogor's water system, but also ways the WSC Index itself can be refined for developing economies.



CRC for Water Sensitive Cities



Water Sensitive Cities Index

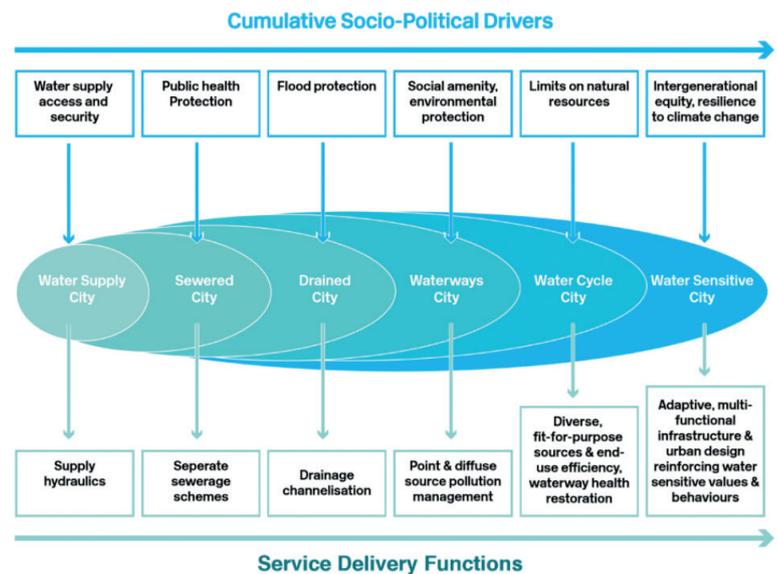


Fig. 1 Six stages of Urban water management (Brown, Keith and Wong 2009)



Fig. 2 Participants scoring Greater Bogor WS stage at workshop in November 2017

CRC WSC Index results for Greater Bogor

The following figure summarises the performance of Greater Bogor, averaged across the indicators for each of the 7 goals of a WSC. The average scores are relatively even for the goals, mostly in the range of 2.4–2.8. The highest average goal score was for **Increase community capital (2.7)** and the lowest was for **Ensure quality urban space (2)**. A brief rationale for these indicators' scores is provided here.

Fig. 3 7 Goals of a WSC

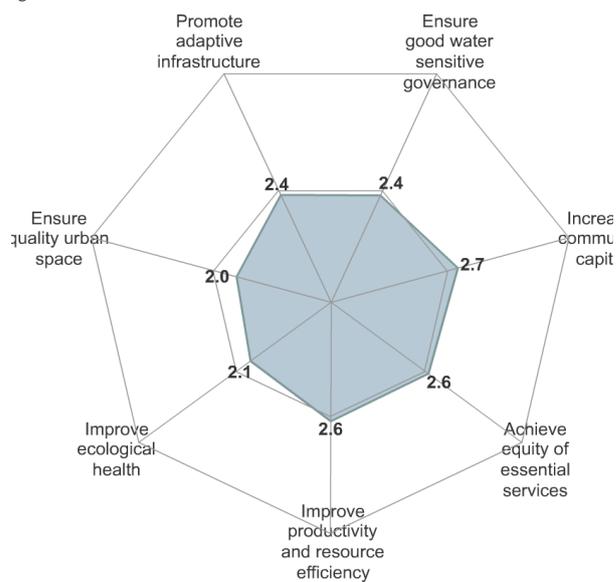


Image credit: CRC for Water Sensitive Cities

Increase community capital (2.7 out of 5)

There is increasing community participation in water-related education activities. Environmental education is institutionalised at different levels of schooling. Some parts of the community in Bogor have strong connections with their local waterbodies and environments, such as residents of Pulo Guelis, which lies between two river streams, or of Griya Katulampa, which relies on locally sourced groundwater. There is a high level of community management of water assets such as wells and wastewater distribution systems, though there are gaps in responsibility for resource management and maintenance that have affected groundwater supplies in the city.

Disaster response is generally well planned and coordinated. Social media and other messenger services strengthen community responses to disaster as they are used to share information about imminent events or to assist in disaster responses. Some agencies facilitate flood preparation and mitigation, including large-scale community operated rainwater infiltration wells. Public awareness of disaster response plans should be increased.

Ensure quality urban space (2.0 out of 5)

Pleasant urban green space is scattered throughout the city, but is difficult to access and not well-connected. There is policy to improve connectivity and accessibility, centred on the botanical gardens. There has been some implementation of green infrastructure, though overall only a small proportion of urban space functions as an integral part of the water system.

Focus on Bogor: The Urban Water Transitions Framework

The indicators of the WSC Index are mapped to six states of water system performance (see Fig. 2), reflecting the Urban Water Transitions Framework. Cities achieve certain performance markers associated with the priorities of the six developmental states of the Urban Water Transitions Framework as they journey towards a water sensitive city. This transition journey is not necessarily linear, as a city may show indicators of later developmental states (e.g. waterways, water cycle and water sensitive city) while not fully satisfying earlier states (e.g. water supply, sewerage and drained city).

Fig. 4 summarises the benchmarking results for Greater Bogor analysed and measured against progress represented by the city-states.

Fig. 4 Assessment by Urban Water Transitions Framework developmental state



Image credit: CRC for Water Sensitive Cities

Most cities begin their progression to a water sensitive city by achieving high levels of equity in access to safe and secure water supplies and safe sanitation. For Bogor to leapfrog to a water sensitive city, its challenge is to invest in water infrastructure and institutions that will not only meet basic water supply and sanitation needs, but also deliver broader benefits. These include ecosystem protection and restoration, security of supply, flood control, public health, amenity, liveability and economic sustainability, among others.