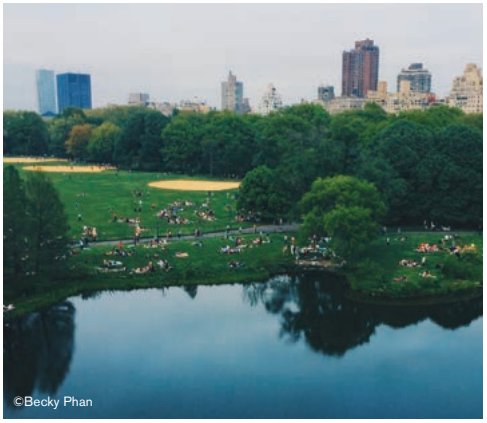
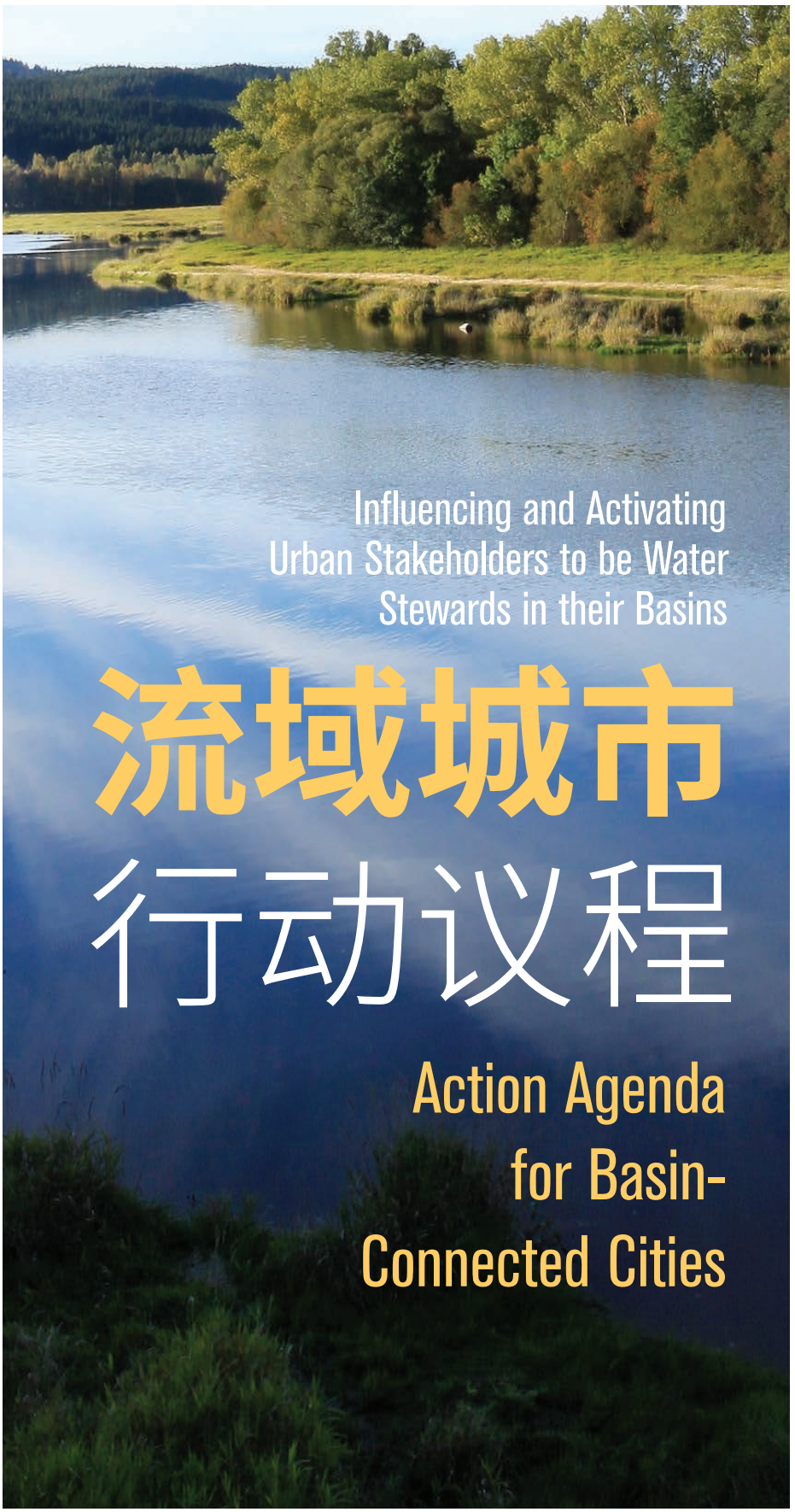
the international water association

Influencing and Activating Urban Stakeholders to be Water Stewards in their Basins

# 流域城市行动议程

# Action Agenda for Basin-Connected Cities

“流域城市行动议程”旨在提示、影响、鼓励城市利益相关方协同流域和集水系统组织对水资源进行保护和投资。该议程概述了城市利益相关方在认识其作为水资源管理者以及实现可持续水资源管理的不同途径和活动方面的示范作用。“议程”包括行动的驱动因素，例如极端事件、水质退化和水供应；其次是通过评估、规划和实施行动的实践途径；以及从确立目标到建设能力到改善治理的行动依据。

世界**7.4亿人口**中

**21亿人**
房舍内缺乏即时可得、
不受污染的安全饮用水供应

**4.5亿人**
没有安全管理的卫生服务

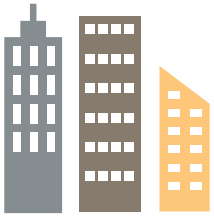
*资源:High Level Political Forum 2018 – “Transformation towards sustainable and resilient societies”.*
*https://www.un.org/sustainabledevelopment/high-level-political-forum-2018/*

## 背景

流域保护和恢复已经退化的流域是确保均衡发展以维持城市及其所依赖生态系统的前提。**可持续发展目标**聚焦于此，特别是通过其专门的水和卫生目标。该目标(SDG6)旨在为所有人提供水和环境卫生并对其进行可持续管理。

流域的城市利益相关方在保护他们赖以生存的淡水资源方面发挥着关键作用。城市淡水资源供应的中断可能会对社会经济、环境和公众健康产生重大影响。而随着全球预测显示城市人口持续的增长，供应中断的风险在未来将会增加，因此加强水资源安全和保护城市赖以生存的水资源是当务之急。

到2050年**70%的人口将居住在城市地区**
**额外25亿人口居住在城市**



**气候变化**
可用水资源不均衡分布

**人口增长**
资源需求增加

**水资源用户**
水资源竞争

近水城市和工业的社会经济持续发展需要保障用水安全，其主要有赖于健康的流域生态系统耦合有效的水治理。不能仅由个体独自面对水质、水量和应对极端事件弹性力的挑战，因为更广泛的流域通常在个体职责范围之外。而城市政府和公用事业部门可以发挥主导作用，但也必须与代表环境、社会和经济利益的流域利益相关方进行互动。因为城市在寻求水及其相关资源的同时，也对他们所依赖的河流和流域施加了巨大的压力。

鼓励城市领导者（如市政厅、公用事业和工业部门）与流域管理组织、私人和民间社会、环境团体以及农业和商业利益方共同合作支持水资源保护，对于确保所有利益相关方的参与是非常关键的。此外，城市对其他流域利益相关方负有确保水质和水量的责任。因为城市依赖其流域来满足当前的用水需求、维持未来的增长以及管理与水相关的风险。与此同时，周边的农村地区依托城市作为经济中心。因此，与流域利益相关方共同管理或影响重要资源（如水资源）的方式可以促进或阻碍流域内的繁荣发展。而联系城市和农村将能够确保上下游用户得到可持续的流域管理。

“行动议程”概述了城市利益相关方在认识其作为水资源管理者以及实现综合水资源管理的不同途径和活动方面的示范作用。该议程的结构包括城市及其流域当前和潜在的问题以及如何通过确定行动的驱动因素（例如，风险是什么？）来应对这些问题，和可能的解决途径。该议程构建了一个最佳实践框架以确保实施这些解决方案的基础到位。

## 流域城市

“流域城市行动议程”基于国际水协会提出的“水智慧城市原则”，后者旨在将水资源整合到不同层面的规划管理中。该“原则”辅助城市领导者为所有城市居民规划面向未来的安全用水和卫生设施获取途径，同时为人类和自然发展提供更适宜环境。该原则包括四级行动计划：

1. 可持续的水资源服务
2. 水敏型城市设计
3. **流域城市**
4. 构建水智慧社区

“流域城市行动议程”认为城市本质上是连接于并依赖于其邻近流域的。积极参与流域水资源管理的目的是确保水、粮食和能源资源安全，减少洪水和干旱风险并增进有助于流域经济和环境健康的活动。基于对当今水资源的全面了解，和气候变化影响我们未来资源所产生的不确定性水平，我们需要：


**利用水资源综合管理**（IWRM）框架，在流域内通过用户（即所有对流域和城市经济做出贡献的生态系统、农业部门、工业部门、能源部门以及其他城市）共享的方式保障水资源安全。

**通过维持水源和受纳水体**（河流和溪流、湿地、地下水、沿岸海洋环境）生态健康来保护水质安全，以实现分质供水以及低能耗处理要求等。

**通过管理河流的流态**、保持流域中足够的植被，以预防应对如洪水和干旱等极端事件的发生。投资沿岸风暴风险减缓措施和洪水干旱预警系统。

# 行动驱动因素

研究发现，城市面临的三大风险是极端事件（如洪水）、水质退化以及由于持续加剧的水资源紧缺而导致的供水不足等挑战。城市利益相关方（包括城市政府、公用事业和工业部门）可以通过与流域层面的组织及其网络和其他流域利益相关方（如农业、矿业、环保、原住民和当地社区）合作，积极参与并促进流域管理，从而解决这三大风险的根本问题。对于上述每种风险，一系列对城市区域的影响都已经被识别。

### 极端事件

**经济活动和供应链中断**

流域内的洪水和干旱可能会对城市内部的经济活动产生负面影响并且扰乱和限制城市获取其所依赖的资源，不仅指水资源，还包括粮食和能源。

**基础设施受损**

洪水和干旱可能对基础设施造成巨大压力因其需要大量资金进行维修和更换。土壤侵蚀可能会增加营养盐和沉积物的负荷从而破坏供水基础设施并干扰其正常运营。

**公共健康危害**

洪水和干旱可能增加水生传染疾病的传播几率。

### 水质退化

**高昂的运营成本**

当沉积物和污染物被富集时可能需要更多的投资用于水的处理。同时也可能需要采用新兴的高成本水源替代方案，例如抽取深层地下水和海水淡化。

**信誉和信任的丧失**

供水服务提供者尤其容易受到由于工业活动和面源污染造成的水污染影响。因为水污染可能导致服务提供者无法供应充足的安全饮用水从而失去信誉和消费者的信任。

**环境、文化和健康影响**

品质水资源可能导致疾病爆发和重大的环境影响（如渔业生产力下降、珊瑚礁损失和土壤退化）。这些不良影响将直接导致大量额外资金投入于全流域保护。

### 水供应

**供水中断**

跨规模不同用户之间可用水资源的不合理分配可能会干扰对城市环境、健康和社会经济产生影响的水及其相关服务的提供（如能源、粮食）。

**经济增长的制约因素**

供水不足可能会限制城市经济增长从而减少供水基础设施的投资导致人们无法获得安全可靠的饮用水供应。此外，供水不足还可能导致水资源的无管制使用，例如深层地下水的过度开采使得民众无法承担水资源消费支出并且难以获取可用水资源，由此形成了一个恶性循环。

**生活质量下降**

低效应对水资源短缺可能会导致争端、危害生产，并对健康和教育，以及整体GDP产生负面影响。

# 行动实践路径

当今的城市需要采取什么措施以应对“行动”强调的驱动因素？城市如何在未来实现流域的可持续管理发挥作用？公用事业如何更加主动地参与水治理？

该议程旨在作为城市利益相关方根据其背景（即，发达和发展中国家；小型和大型流域等）定制方法并识别可用资源的出发点。以下通过评估、规划和实施采取行动的途径可以应对在联系城市及其流域的“行动议程”中概述的驱动因素所产生的影响。


## 评价

**投资于潜在促进流域内水资源决策的价值观**。这些价值观可以被统一然后凝练形成一系列书面原则。一系列经协商达成一致的价值原则可以为城市和全流域内的用水确立共同的目标。

**投资于城市内外的数据、信息系统、研究和专业知识**。决策需要科学合理的数据支撑以了解系统并有效实现目标。投资于数据监测、水信息系统（WIS）和模型模拟可以提供一个共同的合作平台。这类系统必须辅以知识与技能以便在决策中解释和应用数据。

**将传统水资源管理与科学联系起来**，以建立并反映当地的知识和需求。这包括公众科学和对提供可持续及可靠监测系统的现有知识和实践的使用。

## 规划

**基于风险的规划方法**（如水安全保障规划）可以积极地将城市利益相关方（例如水务行业、工业部门）与他们赖以获取水源的流域联系起来。

**水资源分配机制依据水资源综合管理原则**在不同用户之间分配水资源并且考虑了不同用水部门之间的影响。例如，能源和农业用途的取水可能会影响潜在饮用水的供应。

**因为城市对粮食、能源和水资源的需求日益增加**，城市发展与流域管理的整合应该被纳入规划。例如，将污水的再生利用和营养资源捕集纳入城市水管理中以降低水资源运输成本并发挥营养资源重复利用的经济潜力。通过这种多尺度目标的建立，循环经济可能更容易得到设计和实施。

**利益相关方参与规划和管理**需要影响城市和其他用户供水质量和经济可承受能力的利益相关方持续参与。鼓励各行业部门认识和理解流域状态并将其纳入决策过程将为改变人们的行为创造有利的环境，同时发现经济发展的机遇。

## 实施

**应用经济和融资机制**，包括水市场、流域服务支付、投资方法（如公私合作模式），以及管理气候相关风险的金融工具（如衍生合同和保险产品）。

**整合基于自然的解决方案**以改善流域质量、减少养分淋失和侵蚀/沉积物径流损失。上述解决方案与气候预测和经济模型联动可以推进农场和景观层面的管理变革。同时建立到位的监控机制以持续评估和验证这些解决方案的效益也是非常重要的。

**建立面向从水源到水龙头的跨领域和跨规模伙伴关系**可以促进水质改善以及水体与城市之间的健康水循环。循环经济建立在合作共识的基础上并在流域和城市之间得到扩展。例如，农业部门可以重复利用城市产生的污水和废弃物。伙伴关系的建立以确保清晰的参与机制为前提，包括明确联系城市及其流域的各组织机构的角色和责任。

**利用数字技术以支持从上游水资源管理到消费者的整个水务部门的信息获取**。充分的信息获取可以为如干旱和山洪等与水资源相关的灾害提供早期预警。对水质和流量的预测可用于为公用事业部门提供充分的预警以优化生产（同时也降低成本）。数字化工具可以为消费者和其他利益相关方增强意识和主动参与创造机会。如果其得到有效应用，还可以实现信息获取与收集的群力群策，构建面向水源-水龙头-水源完整过程的城市水系统框架。

因为没有一种解决办法可以应对所有问题的产生，所以**解决方案的定制化十分重要**。规划人员和流域管理者需要借鉴不同流域的最佳实践案例。将城市与其流域联系起来的方法不仅需要根据其物理特征进行定制，还需要考虑社会政治和文化的问题。

# 行动的依据

“水智慧城市原则”的基石是实践可持续城市水资源管理行动途径的基础 - 包括目标、治理、知识和能力、规划工具和实施工具。上述基础原则已经经过调整并用于反映城市及其流域的联系。基于对城市及其利益相关方将可能处于不同发展阶段的考虑，这些基准并非适用于所有情况。有些人可能需要专注于目标的建立，有些人可能试图完善当下推进的事项而其他人则致力于展示他们目前如何实施这些方法。

### 目标

与利益相关方共同构建一个总体框架以确立远大的目标、价值观和愿望。该框架可以激励利益相关方为实现城市及其流域更大的利益而确立一系列共同的目标。一个共同的目标可以作为确保政策和战略最终实施的重要前提。一个涵盖城市及其周围流域的弹性城市建设目标能够促进跨规模和跨学科工作的协同开展。该目标可以支持需要投资于长期措施的政治意愿。该目标还可以保持长期措施在不同政治周期下的连贯性。

### 治理

和制度为利益相关方提供了共同实现从水源到水龙头管理的合作框架。政策可以规划如何管理水资源并且激励城市利益相关方进行投资同时成为其流域内活跃的水资源管理者。多种需求和利益在流域尺度上有效的整合需要适当的机构设置和利益相关方的参与，例如基于多利益相关方平台。

### 知识和能力

建立过程始于对城市利益相关方目前能够有效促进流域管理能力的认知。该认知可以通过知识交流和借鉴其他城市和流域应对共同挑战（如水资源短缺、洪水、海平面上升、潮汐活动、废物管理和水质问题）的解决方案进行。方法包括学习使用新工具、整合资源，并对其他领域采用的方法措施保持开放态度。

### 规划工具

包括决策支持系统、水资源综合管理计划以及分别基于风险和权利的可用于整合城市发展与流域管理的方法。由从供应者到消费者的跨部门团队开发和使用的这些规划工具，可用于评估和监控风险、确定项目直接与间接效益、定义服务水平以及各利益相关方的所有权。

### 实施工具

包括将规划付诸行动的方法，这些方法可以改善水量和水质，以及保障粮食和能源安全。实施工具包括：

- 可以激励城市利益相关方改善水资源管理的监管法规。
- 注重解决方案适应性并建立应对变化和极端事件弹性的金融工具（可以管理投资）和融资机制（可以帮助提供资金）。
- 利用能够促使城市利益相关方积极提升其对流域管理贡献（例如，实现资源回收的清洁技术和提高用水效率）的创新技术。
- 以水 - 能 - 食物关系形式综合管理资源的方法，该方法提供一框架以确定各行业部门之间的权衡问题和共同利益，同时在不影响环境保护的情况下提高城市弹性和资源效率。

## 目标受众

本行动议程针对多个在采取行动以改善其水源和流域方面发挥不同作用的利益相关方，包括水和污水处理行业、城市政府、工业部门、政策制定者和监管机构。这些主要利益相关方与流域组织、水资源机构、民间社会和环境团体合作以确保公平有效的水资源管理。次要受众包括城市当中的水资源密集型用户，如农业、能源、自然资源开采和其他商业利益。各方需要积极合作以确保从集水区到消费者各个部门的用水安全。

## 贡献者和评审人名单

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[1] *Sustainable Development Goals – https://www.un.org/sustainabledevelopment/sustainable-development-goals/*
[2] *IWA Principles for Water Wise Cities – http://www.iwa-network.org/projects/water-wise-cities/*
[3] *Source: Carbon Disclosure Project (CDP) – https://data.cdp.net/Cities/2017-Cities-Water-Risks/qaye-zhaz/data*


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The "Action Agenda for Basin-Connected Cities" aims to inform, influence and activate urban stakeholders to protect and invest in water resources, together with basin and catchment organisations. The Agenda outlines the rationale for urban stakeholders to lead the way in realizing their role as water stewards and the different pathways and activities towards achieving sustainable water management. This includes the**Drivers for Action** such as extreme events, declining water quality, and water availability; followed by the**Pathways to Action** through assessment, planning and implementation; and the**Foundations for Action** from developing a vision to building capacity to improving governance.

In a world where population stands at **7.4 billion**

**2.1 billion**
**lack access to safe drinking water***

*on premises that water is available when needed and free from contaminants

**4.5 billion**
**lack access to safely managed sanitation**

*Source: High Level Political Forum 2018 – "Transformation towards sustainable and resilient societies". https://www.un.org/sustainabledevelopment/high-level-political-forum-2018/*

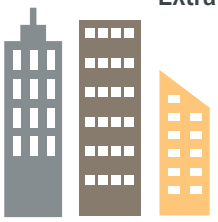
# Context

Protecting basins and restoring those that are already degraded is a priority to ensure a balanced approach to development that sustains cities and the ecosystems they rely on. The **Sustainable Development Goals** (SDGs) focus on this, specifically through SDG6 which aims to ensure availability and sustainable management of water and sanitation for all[1].

Urban stakeholders of a water basin play a critical role in preserving the freshwater resources on which they depend. A disruption in the supply of freshwater resources to cities can have significant socio-economic, environmental and health consequences. The challenges are expected to grow in the future, as global projections show a continued increase in urban populations thus improving water security and protecting water resources on which cities rely must be an urgent priority.

**By 2050** **70%** of population in urban areas

Extra 2.5 billion in cities



**Climate change**
**Irregular patterns of water availability**

**Population growth**
**Growing demand for resources**

**Water users**
**Competition for water resources**

Continued socio-economic development for cities and industries within a catchment area requires water security which depends mainly on healthy basin ecosystems coupled with effective water governance. Challenges related to water quality, quantity and resilience to extreme events cannot be solved by individual entities alone, as the wider catchment is usually beyond their mandate. Utilities and city governments can play leading roles, but must also engage with basin stakeholders representing environmental, social, and economic interests.

It is critical to encourage urban leaders (e.g. cities, utilities and industries) to champion water resources protection in collaboration with basin and catchment organisations, the private sector and civil society, environmental groups as well as agricultural and business interests, to ensure participation of all relevant stakeholders. Cities have a responsibility to other basin stakeholders to ensure water quality and quantity, especially as the quest for water and related resources (e.g. food and energy), puts increasing pressure on river, lake and aquifer basin. Cities are dependent on these basins for current water needs and to sustain future growth, as well as managing water-related risks. At the same time, the surrounding rural areas are reliant on cities as economic hubs. Consequently, the way a key resource such as water is collectively managed or influenced by basin stakeholders can make or break prosperity within a basin. Connecting the urban and rural context will ensure sustainable basin management for upstream and downstream users.

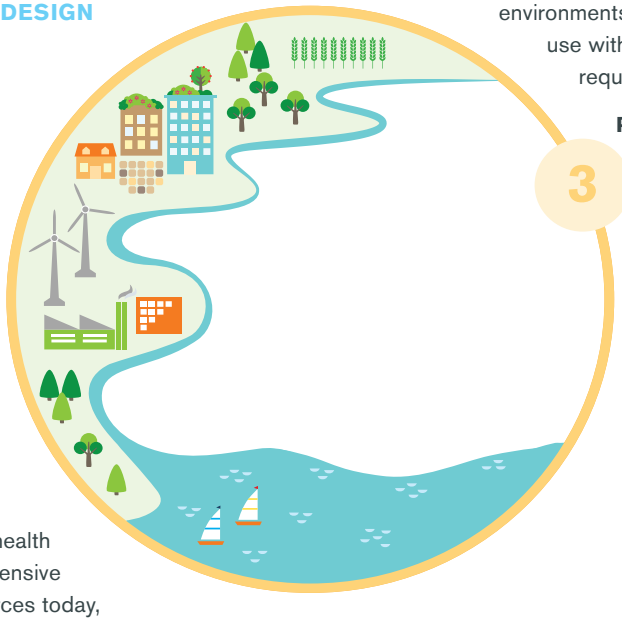
The Action Agenda for Basins-Connected Cities outlines the rationale for urban stakeholders to lead the way in realising their role as water stewards and the different pathways and activities towards achieving integrated water resources management. The structure of the Agenda reflects the current and potential issues between cities and their basins and how to deal with them by identifying the drivers for action (e.g. what are the risks?), and the possible solution pathways. It builds a framework of best practice to ensure that the foundations to implement those solutions are in place.

# Basin-Connected Cities

The Action Agenda for Basin-Connected Cities builds on **IWA's Principles for Water-Wise Cities**[2], which aim to integrate water in planning across scales. The Principles support city leaders planning a future-proof access to safe water and sanitation for everyone in their cities, while delivering enhanced liveability for people and nature. The Principles include 4 levels of action:

1. **REGENERATIVE WATER SERVICES**
2. **WATER SENSITIVE URBAN DESIGN**
3. **BASIN CONNECTED CITIES**
4. **BUILDING WATER-WISE COMMUNITIES**

The Action Agenda for Basin-Connected Cities acknowledges that the city is intrinsically connected to - and dependent on its surrounding basin(s). Proactive engagement in managing water resources in the basin aims to secure water, food and energy resources, reduce flood and drought risk and enhance activities contributing to the economic and environmental health of the basin. Based on a comprehensive understanding of our water resources today, and the level of uncertainty resulting from climate change impacting our future resources, we need to:




**SECURE THE WATER RESOURCE** using an integrated water resource management (IWRM) framework by sharing water among users in the basin, namely ecosystems, agriculture, industry, energy, and other cities who all contribute to the basin's and city's economy.

**PROTECT WATER QUALITY** through sustaining the ecological health of source and receiving water bodies (rivers and streams, wetlands, groundwater, coastal marine environments) to ensure fit for purpose use with low energy and treatment requirements.

**PREPARE FOR AND RESPOND TO EXTREME EVENTS** such as floods and droughts, by managing flow regimes in rivers, storage, and adequate vegetation in the basin. Invest in coastal storm risks mitigation as well as flood and drought early warning systems.

# Drivers for Action 行动驱动因素

The **top three risks** for cities are extreme events such as flooding, declining water quality, and challenges to water availability due to increasing water stress and scarcity[3]. Solving the root problems of these top three risks can be supported by urban stakeholders, including city governments, utilities and industry, to actively engage and contribute to watershed management by working with basin level organisations, their networks and other basin stakeholders (e.g. agriculture, mining, environment, and indigenous and local communities). For each of these risks, a set of impacts on the urban area has been identified.

## EXTREME EVENTS

**Economic activities and supply chain disruption**
Impacts of extreme events including flood and droughts can negatively affect economic activities within cities and also disrupt and limit access to resources that cities rely on, not only water, but also food and energy.

**Damage to infrastructure**
Flooding and droughts can cause huge pressures on infrastructure requiring significant funds for repairs and replacement. Soil erosion can increase nutrient and sediment load that can damage water supply infrastructure and disrupt operations.

**Public health hazards**
Floods and droughts can increase the transmission of water borne communicable diseases.

## DECLINING WATER QUALITY

**High operating costs**
More investment may be required to treat water as sediment and pollutants are concentrated. There may also be the need to adopt new high cost water options for cities, such as tapping into deep aquifers and desalinization of sea water.

**Loss of credibility and trust**
Water service providers are especially vulnerable to water contamination due to industrial activities and diffuse pollution. This can result in service providers not being able to supply sufficiently safe drinking water and consequently losing credibility and the trust of consumers.

**Environmental, cultural and health impacts**
Water of poor quality can result in disease outbreaks and substantial environmental impacts such as declining fisheries productivity, loss of coral reefs and soil degradation. These impacts will require extensive investment in protection and conservation across the basin.

## WATER AVAILABILITY

**Water supply disruption**
Inequitable allocation of available water resources between different users across different scales can disrupt water and related services (e.g. energy, food) which has environmental, health, social and economic impacts on cities.

**Constraints to growth**
Water availability can constrain economic growth in urban areas and reduce investment in water supply infrastructure leaving people without access to safe and secure drinking water supply. Furthermore, this can lead to unregulated use of water resources, such as exploiting deep aquifers creating a vicious cycle which reduces affordability and access.

**Declining quality of life**
Inefficient response to water shortages can lead to conflicts, harm production, and negatively affect health and education, and overall GDP.

# Pathways to Action 行动实践路径

What actions need to be taken by cities today to address the drivers for action? How can cities play a role in achieving sustainable management of basins in the future? How can utilities participate more actively in water governance?

The Agenda is intended as a starting point for urban stakeholders to answer these questions and tailor the suggested approaches to their context (i.e. not just in developed countries but also developing countries; small and large basins, etc.) while identifying available resources. The following pathways for action through assessment, planning and implementation respond to the impacts outlined in the drivers for action to connect cities and their basins.


## ASSESSMENT

**Invest in values** that will motivate water decision-making within the basin. These values can be agreed and then systemised into a written set of principles. A negotiated set of value principles can clarify mutual objectives for using water within the city and the whole basin.

**Investment in data, information systems, research and expertise** within and beyond city limits. Scientifically sound data is needed for decision-making in order to understand the system and effectively implement a vision. Investing in data monitoring, Water Information Systems (WIS) and modelling can provide a common platform for cooperation. Such systems must be complemented with knowledge and expertise to interpret and apply the data in decision making.

**Linking traditional water management with science** in a way that builds and reflects on local knowledge and needs. This includes citizen science and use of available knowledge and practices that provide a sustainable and reliable monitoring system.

## PLANNING

**Risk-based approach to planning** such as water safety and security planning can actively link urban stakeholders (e.g. water utilities, industries) with the catchment they rely on for water sources.

**Water allocation mechanisms to share water resources** between different users based on IWRM principles and which considers the impacts of water used in one sector on another. For example, abstraction for energy and agriculture purposes can impact the available drinking water supply.

**Aligning urban development with basin management** is necessary as the implications of increased food, energy and water demand for cities needs to be included in planning. For example, the reuse of wastewater and nutrient capture included in city water management to reduce costs of water transport and capture economic potential of nutrient re-use. Circular economy approaches may be easier to design and implement through this multiscale vision.

**Stakeholder participation in planning and management** with those that impact and are impacted by the quality and availability of water supplies to cites and other users. Engaging all sectors in understanding and translating the basin status and involving them in the decision-making process will create an enabling environment for changing people's behaviour, while shedding light on economic opportunities.

## IMPLEMENTATION

**Application of economic and financing mechanisms** including, water markets, payment for watershed services, investment approaches, such as public-private partnerships, and financial instruments to manage weather related risk, such as derivative contracts and insurance products.

**Integration of nature-based solutions** to improve catchments, reduce nutrient leaching and erosion/sediment runoff. Linking these to climate forecasting and economic modelling can drive management changes at farm and landscape level. It is important to have monitoring mechanisms in place to continually assess and validate the benefits of these solutions.

**Building partnerships from catchment to tap** across sectors and scales can catalyse action in sustaining and improving water quality and flows to and from cities. The circular economy is built on partnerships, common understanding and extends between basins and their cities. For example, agriculture can reuse water and waste products from cities. To build partnerships it is essential to ensure that a clear engagement mechanism is in place, including defined roles and responsibilities across institutions that link the urban areas with their basins.

**Using digital technologies** to support availability and access of information (e.g. real time data and forecasting) across the water sector from upstream water management to consumers. Digital tools create opportunities for increased awareness and engagement through approach such as crowd sourcing of information from citizens to develop a more complete picture of their water systems.

**Customisation of solutions** is important since there is no one size fits all solution. Planners and basin managers need to learn from best practices across different basins. Approaches for connecting cities with their basins need to be customised for not only physical characteristics, but also socio-political and cultural issues.

# Foundations for Action

The building blocks of the Principles for Water-Wise Cities are the foundations for the pathways to action to deliver sustainable urban water management – including vision, governance, knowledge and capacity, planning tools, and implementation tools. These have been adjusted to reflect connecting cities with their basins. It is recognised that cities and their stakeholders will be at different stages and not all of these building blocks will be applicable. Some cities might need to focus on development of a vision, some might want to improve on what they are doing and others showcase how they are implementing these approaches.

## VISION

**A vision commonly shared with stakeholders provides an overall framework defining long-term ambitions, values and aspirations.** It motivates stakeholders to define a common set of objectives for the greater benefit of both city and the basin. A shared vision can be the stepping stone to ensure implementation of policies and strategies. A resilient city vision which includes the connection to the surrounding basin enables people to work together at different scales and across disciplines. It supports the political will needed to invest in long-term measures. It provides consistency beyond political cycles.

## GOVERNANCE

**Governance and institutions provide the framework for stakeholders to work together from catchment to tap to achieve a joint vision.** Policies can frame how water is managed and provide incentives for urban stakeholders to invest and be active water stewards in their catchment. Effective integration of multiple needs and interests at the basin level requires appropriate institutional setup and stakeholder engagement, for example through multistakeholder platforms.

## KNOWLEDGE AND CAPACITIES

**Building process starts with understanding what are the current competencies and capacities for urban stakeholders to effectively contribute to basin management.** This can be through knowledge exchange and learning from other cities and basins about solutions to common challenges such as low river flows due to water scarcity, flooding, sea level rise, tidal events, waste management, and water quality. Approaches include learning to work differently with new tools, pooling resources, and being open to other sectors approaches and methods.

## PLANNING TOOLS

**Inclusion of planning tools such as decision support systems, integrated water resource management plans, as well as risk-based and rights-based approaches that can support the alignment of urban development with basin management.** These tools, developed and used by cross-sectoral teams from catchment to consumer, allow for assessing and monitoring of risks, identifying benefits and co- benefits of projects, defining levels of service and ownership by stakeholders.

## IMPLEMENTATION TOOLS

**Moving from concept to reality to put planning into action, which improves water quantity and quality, as well as food and energy security. Tools for implementation include:**

- **Regulations which create incentives** that can drive improved water management by urban stakeholders.
- **Financial tools** (which can manage investments) **and financing mechanisms** (which can help source funds), that value adaptive approaches and build resilience to changes and extreme events.
- **Use of innovative technologies** that can enable urban stakeholders to actively improve their contribution to watershed management (e.g. clean technology for resource recovery and improved water efficiency).
- **Approaches for integrated management** of resources in the form of the water-energy-food nexus, which provides a framework for determining trade-offs and co-benefits between sectors, while increasing urban resilience and resource efficiency, without compromising safeguards for environmental protection.

## Target audience

The Action Agenda targets multiple stakeholders with different roles in taking action in improving their water sources and watersheds including water and wastewater utilities, city governments, industry, policy makers and regulators. These primary stakeholders work with basin organisations, water resources agencies, civil society and environmental groups to ensure equitable and effective water management. The secondary audience includes stakeholders that use water in basins which cities rely on for their water security such as agriculture, energy, natural resource extraction and other business interests. All parties need to actively work together to ensure water across sectors from catchment to consumer.

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