

Water as Leverage Guidance for Urban Water and Climate Resilience



A summary

Making cities water and climate resilient

Water is connected to every aspect of our lives and livelihoods. Yet we globally experience crises of too little, too polluted and too much water. Roughly half of the world's population is experiencing severe water scarcity for at least part of the year¹. Water is polluted due to a lack of treatment, and about 90% of all natural disasters – floods, droughts, storms - are water related, causing loss of life and livelihoods, and damaging both critical infrastructure and ecosystems². Climate change is projected to intensify these challenges, further increasing the frequency and severity of hazards, while population growth will put more people under water stress³.

Urgent action is needed locally and across the globe, yet progress towards achieving the Sustainable Development Goals (SDGs) by 2030 remains significantly off track⁴ and adaptation planning, finance and implementation are slowing down rather than speeding up⁵. We need to move beyond incremental steps and leap towards transformative change that tackles urban water and climate challenges, enhances city resilience and meets globally set ambitions. A critical gap lies in the “how”: how to facilitate concrete action and on-the-ground and transformative change.

When managed sustainably and equitably, water can be a source of peace and prosperity, supporting the lifeblood of agriculture, and a socio-economic driver for billions of people⁶. Water can bring us together to do better. Cities are at the frontline, as hotspots for water and climate risks and with more than half of the world's population lives in urban areas⁷.

Rapid urbanization and climate challenges, coupled with cities generating over 80% of global GDP, make cities not only places of risk but also hubs of opportunity and providing the space for navigating innovation for water and climate resilience.

1. IPCC 2023, 2. UNISDR, 3. GAR special report 2023, 4. SDGR 2023, 5. UNEP 2023, 6. UN World-Water, Development Report 2024, 7. World Bank

Water as Leverage

Recognizing the need for new approaches and new solutions and inspired by the Rebuildby-Design competition held in the aftermath of hurricane Sandy in the New York region, the first Special Envoy for International Water Affairs for the Kingdom of the Netherlands, Henk Ovink initiated 'Water as Leverage' (WaL) in 2017. A program and approach set-up to address the water and climate challenges holistically and comprehensively, using an integrated approach, being inclusive and engaging with all stakeholders, building on the power of design. Lacking a steady flow of sustainable investments, WaL's aim was to secure the 'billions' for projects that can make a difference through investing in the process.

WaL puts attention to the essential early stages of Urban initiatives

The foundations for any project or initiative are established in the initial phases of development. And while funders seem eager to support projects, the ideation stage tends to receive insufficient attention and funding to develop the strong foundations for integrative and inclusive developments. Therefore, it is essential to invest early in deeply and collaboratively understanding local water system challenges and its' urban, social and institutional contexts, as well as cultural nuances, to developing innovative design solutions for future urban water and climate resilience.

WaL acknowledges the complexity of water systems

Water as Leverage takes a systemic approach, acknowledging the increasing complexities and interconnected aspects in the urban water and climate context and including social, institutional and cultural sub-systems. Its comprehensive method moves beyond treating symptoms and solving isolated water and climate related problems towards innovative systemic and sustainable solutions.

WaL moves beyond projects towards transformative change

A project in itself can be perceived as an incremental step forward, while leaving the underlying systemic failures intact. Moving from individual projects to concerted systemic action including people and process is vital to address root causes, allowing for a transition to urban water and climate resilience. WaL engages with a critical range of change agents to develop and invest in an enabling environment, integrates scaling and connects social, economic, and institutional contexts to facilitate sustainable impact beyond the single project.

Wal builds on practical experiences

WaL embraces learning by doing. It compiles and builds on experiences and learnings from various Water as Leverage initiatives and its predecessor Rebuild by Design. Various regions spanning the globe and including Latin America, Asia, Africa and north-west Europe contribute, while the community of practitioners is growing. WaL ideas are no desk-study insights but actually practiced.

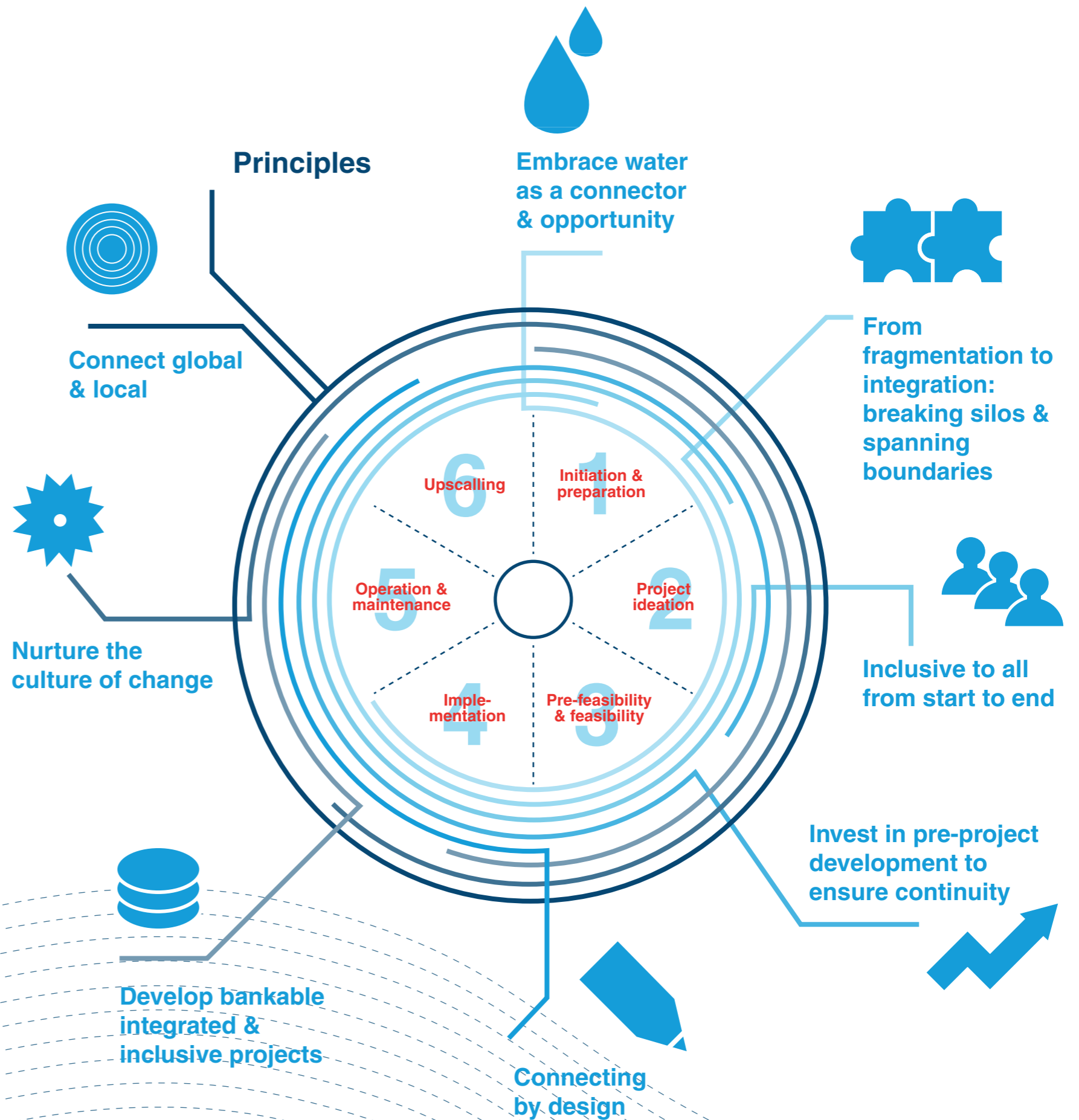


Support urban water and climate resilience and inspire action through a WaL Guidance

The intention of the WaL Guidance is to support the mission of creating 'urban water and climate resilience' and inspire action and transformative change in all regions subject to water and climate challenges. This is done by making WaL experiences and learnings available to assist leaders and change agents both locally and globally in improving and innovating urban water and climate resilience.

The guidance is organized around the 'WaL framework' comprising eight WaL principles and six stages in the urban development life cycle. Beyond the WaL framework 'deep-dives' and 'application formats' are to complement this framework with actionable background, (scientific) insights and tools. The eight principles are identified as key mechanisms for enabling urban water and climate resilience. Meaningful and lasting change necessitates integration of all principles. The principles offer an adaptable structure; rather than blueprint solutions, these must be tailored and integrated into local context, culture and specific stage in the life cycle. The way principles are implemented varies and depends on context, available resources, stage, novel insights and experiences. Continuous learning is crucial for ongoing improvement and impact.

The WaL framework recognizes six stages involving the full urban development project life cycle. Laying the foundation and getting started in initiation and preparations stage; delivering visions and integrated project proposals in the ideation stage; detailing the proposals in the (pre-)feasibility stage; moving from proposals to realization in the implementation stage; ensuring sustainable change in the operations and monitoring stage, and; leveraging impact in the scaling stage. For each stage actionable instructions are formulated - inspired by the various WaL and similar experiences - targeted at three different actor groups: change agents in the enabling environment, contractors and the executing organizations. Case studies provide the inspirations and examples to illustrate practice.





WaL Principles

Embrace water as a connector & opportunity



Water is the basis for life on our planet, supporting ecological balance, driving economic activities, sustaining human livelihood, and holding profound social and cultural significance. While 90% of natural disasters is water related, water can be a solution and an opportunity, bringing us to do better and inspire sustainable development.

Connecting by design



Design is a way to facilitate connections and integration between sectors and people, to achieve a comprehensive understanding of the water system and challenges, to envision the possible and desirable future situation and associated integrated projects proposals. Within WaL, research by design is applied in the process and design is conducted by 'multidisciplinary teams' comprising of designers and experts from other disciplines. Together, they create conceptual designs, urban visions, and project proposals tailored to specific locations.

From fragmentation to integration



Water systems are essential to every aspect of life. However, institutions and vested interests cause water issues to be addressed in fragmented ways, focusing on isolated problems like floods or droughts. WaL advocates for a comprehensive, systemic approach to tackling interconnected challenges across sectors and disciplines. This involves boundary-spanning actions and strong stakeholder commitment throughout the planning process.

Bankable projects



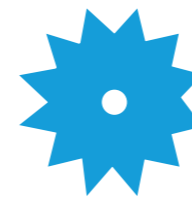
There is a gap between climate adaptation solutions that consider local needs and ideas and the translation of those ideas into 'bankable projects'—projects that are acceptable to funders. WaL aims to bridge this gap by developing projects that meet the criteria and parameters of (international) finance institutions, funds, investors, and banks, while maintaining their integral and sustainable nature.

Inclusive to all from start to end



All players contribute unique expertise and perspectives. WaL advocates an inclusive process where all stakeholders participate from start to finish including collaborative partners, stakeholders, experts, and funders and with special attention to groups that are typically less included, such as communities or youth. Inclusive approaches deliver better quality and more innovative project proposals, ensure ownership at different levels, and promote social justice.

Nurture the culture of change



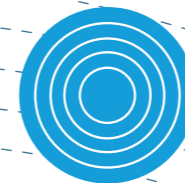
Achieving urban resilience requires transformative change beyond incremental improvements involving reorganization across technological, institutional, and social dimensions. By focusing on underlying structures and values rather than visible symptoms alone, WaL initiatives foster systemic and transformative change through scaling initiatives aimed at replication, institutional and cultural changes.

Invest in pre-project development to ensure continuity



Despite (climate) financing availability increasing, funding for pre-project preparation in water and urban climate resilience is still widely lacking. Jumping to solutions may appear easier or faster. Yet early on investment in research, building coalitions, creating connections and developing integrated designs will deliver sustainable, innovative and more effective projects addressing the urban climate and water needs, paying off in later stages.

Connect global & local



Globally innovative approaches are applied to enhance urban resilience. Water as Leverage builds on a global partnership with global and local partners including various cities that are navigating the WaL approach. Connecting global and local networks enables sharing of knowledge, successful models and resources while fostering collaboration, innovation, and resilience to address complex global challenges.



Stages

Six stages in the project development cycle to develop transformative and inclusive projects. Building on the insights and lessons from Water as Leverage and Rebuild by Design initiatives six project development stages are identified.

■ While the stages are presented in a simple and linear way, reality is always dynamic. Also, the stages are very interrelated. The basis for successful operation and maintenance or scaling is laid in the early stages of project development.

■ The eight WaL principles apply in each stage.
■ Executive organizations, contractors and change agents are equally relevant for success in each stage.

1 Initiation & Preparation

Become inspired, create focus, build a coalition

When traditional solutions do not work anymore, when water challenges have grown too large or complicated, or when a sense of curiosity or urgency emerges about the potential for a different approach to deal with existing challenges an initiative can start. What follows is shaping the initiative which involves: defining the initiative and its value for the context; scoping the geographical area and identifying challenges and opportunities, and; building coalitions with partners, securing resources and governance.

2 Project ideation

Research by design to transformative and inclusive ideas

Multidisciplinary teams are contracted to develop visions and project proposals that are comprehensive, inclusive and integrate nature-based elements. A 'research-by-design' approach links research on water systems across various dimensions—economic, environmental, social, and physical—with analysis of key challenges and the design of comprehensive visions and project proposals. Design workshops serve as platforms for co-creation and are crafted as "soft spaces," fostering an environment where participants share thoughts and feel safe.

3 Pre-feasibility & feasibility

Ensure continuity and develop implementable plans

Urban water resilience projects can only be successful when feasible from multiple perspectives, including economic, financial, technical, institutional, social, and environmental perspectives. Feasibility studies are performed to test, proof, compare and fine-tune project proposals and develop them into implementable plans, including the financial aspects. When project plans are further developed for feasibility, a point of attention is maintaining the comprehensive nature of the project proposals as well as keeping the coalition of partners engaged and involved.

4 Implementation

Bridging plans and reality: proof through construction and local value creation

To affect meaningful change, create local impact, and validate the visions outlined in project proposals, projects must be built. In this stage, the project is constructed and built. The challenge is to preserve the projects fundamental features while continuing to strengthen the coalitions. Handover strategies are imperative. Due to the scale, comprehensive nature and ambitions of project proposals, projects may benefit from a phased or modular approach for implementation.

5 Operation & maintenance

Ensure optimal performance

Operations and maintenance are a critical project component: badly maintained infrastructure often loses much of its ability to perform. As bad maintenance is often invisible (e.g. clogged pipes and drains) it can easily be an overlooked. However, it will manifest during a disaster. By monitoring performance and the development of adaptive management techniques, a project can be adjusted over time if needed. This is especially important for projects that involve nature-based solutions, since nature develops over time.

6 Scaling

Leverage impact by making institutions change, replicating projects and altering values and beliefs

Scaling is essential to make impact and drive change beyond the specific project at the specific location. While scaling is the sixth stage, scaling activities happen throughout the project lifecycle. Scaling happens at three levels: (1) scaling up, involving translating transformative ideas into laws and policies; (2) scaling out, referring to replicating and disseminating project concepts, and; (3) scaling deep, referring to changing relationships, cultural values, and beliefs. The intense and inclusive engagement process leads to new ways of working, new partnerships, and new cultures that alter future project development initiatives.