FOREWORD

Our world is facing tremendous challenges to secure a healthy, prosperous and sustainable future for the next generations. The global response to the COVID-19 pandemic shows that unexpected new threats can upend decades of economic, social and development progress and reshape society as we know it in the span of mere months. Climate change is not unexpected, but it is a threat poised to provoke even greater upheaval, as it reshapes the foundation of our very existence on this planet and the socio-economic systems that we rely on. The impacts of climate change manifest most strikingly through water: longer periods of droughts, shifting patterns of– more intense – rainfall, more and bigger floods, diminished snowpack, heavier monsoon and cyclones and increasingly degraded water quality.

The conjunction of health, climate and economic crises, combined with rapid urbanisation, land conversion and uncoordinated infrastructure investments, poses an existential challenge for our conventional modes of development. In particular, siloed and short-sighted infrastructure project designs, based on historical norms, are simply not up to the task to meet the current challenges, let alone those of the future.

Further, conventional modes of project design and investment fail to reap a massive opportunity: to use water resources – not merely as a risk to be managed and the focus of attention of a community of experts – but as leverage for resilient development. The cross-cutting and systemic nature of water requires a comprehensive, inclusive and highly innovative approach that addresses and directly involves actors from across the political, economic, demographic, environmental and social spectrum. From such an inclusive process, holistic projects with a long-term vision for resilience can emerge, that secure the commitment of decision-makers and financiers and translate vision into reality. Only with such an approach and a dedicated solution-oriented way of thinking and working, are we able to meet the challenges of our time.

Where water is at the centre of the impacts of climate change, water also provides the key opportunity to turn the tide. This central inspiration, to use water as a lever to drive climate-resilient development, has been the backbone of the Water as Leverage initiative since 2017. The Government of the Netherlands, the Asian Infrastructure Investment Bank (AIIB), the International Architecture Biennale Rotterdam, the Architecture Workrooms Brussels, the Global Centre on Adaptation, the Dutch Environmental Assessment Agency, Deltares and Fabrications teamed up with additional partners, including the Organisation for Economic Co-operation and Development (OECD), UN-Habitat, WWF, FMO and RVO, to cooperate on Water as Leverage’s first Call for Action, or challenge, to develop innovative and integrated proposals for infrastructural projects in three cities. Every team under the Water as Leverage’s challenge consisted of local and international partners from all backgrounds and expertise. This shows how collaboration is written into the DNA of Water as Leverage. Water as Leverage aims to craft – by collaboration and inclusion – highly innovative concepts and project proposals that strengthen cities’ resilience, help secure political support at regional and national levels, and engage financiers to mobilise the needed investments for implementation, capacity building, maintenance and operations. From the ground up, there has been continuous investment in a process of engagement to strengthen the enabling environment in these cities: institutional, informal and individual.

Water as Leverage’s ambition is to bridge the gaps between communities, experts, policy makers and financiers in developing best solutions for a sustainable future for all. These include the gap between outdated solutions from the past and sustainable processes of investing in people and our planet, along with our economies; the gap in funding for inclusive, innovative preparatory phases of project development; and the gap in investing in people and the necessary enabling environment for project implementation. These enduring gaps prevent us from dealing with the conjunction of challenges in a resilient and sustainable way. That is why Water as Leverage started working with the national and city governments of Chennai (India), Khulna (Bangladesh), and Semarang (Indonesia) – and with their financial partners.

All development banks and agencies face the same challenges: how to develop business cases for projects that are sustainable and have a return on investment? Projects that are locally grounded while tackling global challenges? Solutions that are complex enough to deal with interconnected risks, while simple enough to warrant successful implementation, and possibly replication and scaling-up? Teaming up from the start with development partners and agencies like the World Bank Group, the Islamic Development Bank, the Green Climate Fund, the Asian Development Bank, the German Development Bank (KfW) along with founding partners like AIIB, FMO and RVO helped build mutual insight and understanding, and capacity within project teams and financial partners to step up to our global challenges together.

Only with concerted, collaborative engagement and a strong – institutional, informal and individual – enabling environment, can we promote highly innovative and comprehensive solutions that operate at different geographical scales, mobilise local and international knowledge and savoir-faire, and combine a range of green and grey technologies. Only these solutions can avoid making investments that will generate further risks and liabilities for future generations.

This Call to Action distills the essence of Water as Leverage, as illustrated through the pilot projects in Chennai, Khulna and Semarang. It shows what we have learned and how we can scale up and replicate this experience and approach in other parts of the world. To keep pace with the increasing consequences of climate change and our experience of the conjunction of multiple crises, this paper calls upon your organisation’s leadership. We need all Governments and their departments, NGOs, architects, engineers, planners, politicians, policymakers, diplomats, city corporations, private and public financiers and, last but not least, local communities to join us, to co-invest, and to replicate and scale Water as Leverage, as an innovative, inclusive and integrated approach securing a resilient and sustainable future for all.

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WATER AS LEVERAGE: REDESIGNING THE APPROACH TO URBAN CLIMATE RESILIENCE

DEFINING THE CHALLENGE

Access to water resources is a cornerstone of sustainable development and human survival. This makes water a critical source of vulnerability, especially in urban centres where climate change and rapid urbanisation amplify unprecedented challenges in the management of water resources. As headlines across the globe regularly remind us, this is a crisis of “too much, too polluted and too little”. Torrential rains and floods are wreaking havoc across the world, affecting hundreds of millions of people. Simultaneously, the stacking of pre-existing water-related stresses in many cities — exacerbated by decades of chronic underfunding of water infrastructure, poor urban planning, the destruction of our environments (wetlands, forests and other ecosystems), outdated water allocation regimes, and economic and population growth — is putting a large share of the global population at worse risk in the face of COVID-19, making challenges more evident and pressing. Climate variability will only make water crises worse.

Yet, if managed well and leveraged for positive impact, water can be a critical part of the solution. It can be a source of resilience, and act as a catalyst for promoting adaptation and sustainable urban growth. Water acts, albeit at times implicitly, as a connector among landmark global and national commitments, including notably Agenda 2030 and the Sustainable Development Goals (SDGs), the Paris Agreement on climate change, and the Sendai Framework on disaster risk reduction.1 There is also a compelling economic case for strategic investment in water, with the triple dividend generated by avoided losses, socioeconomic and environmental benefits estimated in the trillions of dollars by 2030.2

This strong case for investment in water has, however, largely failed to translate into a compelling case for financial investment at scale. Projections for global financing needs for water infrastructure range from US$6.7 trillion by 2030 to US$22.6 trillion by 20503, demonstrating the enormous opportunity to use investments in water for transformative and sustainable impact.

We believe that a proactive approach is needed to formulate preventive, resilient solutions that embrace complexity and food security and economies in the long run.4 The critical challenge is, therefore, to move from reactive and siloed processes that result in unviable infrastructure, to proactive and inclusive approaches that support the development of transformative projects that attract financing.

1 UN Water, 2019
2 Global commission on adaptation, 2019
3 These figures do not cover the development of water resources for irrigation or energy (OECD, 2018)
4 Alexander, et al., 2019
5 Ovink, 2020

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WATER AS LEVERAGE: WORKING TOWARDS A SOLUTION

An initiative of the Government of the Netherlands and its active and committed partners, Water as Leverage (WaL) is built on the recognition that a result-driven, holistic and inclusive project preparation approach is the only way to kick-start and scale sustainable urban solutions, which are supported by decision makers locally and nationally, have long-term and sustainable impact, and are bankable.

A constellation of gaps prevents impactful innovation, to a lack of bankable projects, limited and unrealistic financing strategies, and an insufficient involvement of key stakeholders and decision makers early in and throughout the project lifecycle, which prevents their meaningful commitment. Moreover, the institutional and policy environment often lacks the enabling capacity and incentives to support the design, implementation and operation of urban water solutions that contribute to resilience at the least cost.

Recognising that physical infrastructure projects are embedded in complex socio-economic and planning contexts, Water as Leverage promotes and funds processes that foster an understanding of urban, ecological and societal systems in the broadest possible sense and cultivate broad support from day one. This is achieved by seeking to establish early and active engagement with all the main stakeholders to support co-creation – from local communities to the public, private and financial sector – and promoting lasting coalitions between global and local partners. Innovation plays a key role in this process. The transformational and catalytic nature of the interventions identified help stakeholders to go beyond their lock-in policy solutions, moving them away from replicating the mistakes of the past and towards sustainable acting. The emphasis is also on generating clear ownership throughout the project development cycle and supporting the development of a conducive enabling environment and local expertise that can carry selected and innovative urban concepts and projects forward.

The transformational and catalytic nature of the interventions identified help stakeholders to go beyond their lock-in policy solutions, moving them away from replicating the mistakes of the past and towards sustainable acting. The emphasis is also on generating clear ownership throughout the project development cycle and supporting the development of a conducive enabling environment and local expertise that can carry selected and innovative urban concepts and projects forward.

1. Driving conceptual innovation grounded in a holistic problem definition.

Projects are often designed in sectoral silos. Their planning is shaped by their unique funding streams, priorities and timelines, and a larger evaluation of potential trade-offs and co-benefits among multiple sectors or opportunities is often missing. As a result, costs and benefits are not fully identified and optimised, especially when masterplans are absent or fail to drive decisions. Water as Leverage bridges this gap through an inclusive design-driven approach that combines indigenous and international knowledge, and empowers local capacity. Interdisciplinary teams and a wide group of stakeholders are engaged from the start – from local governments, leading ministries and public authorities to donors, multinational and local business, financial institutions, investors, academia, local communities and civil society. Together, they help generate a holistic understanding of a specific urban landscape, develop an overarching vision that has buy-in (conceptualisation phase) and catalyse concrete sustainable projects (design development phase).

Building on our three successful Asia pilots – which focused on the cities of Chennai (India), Khulna (Bangladesh), and Semarang (Indonesia) – and the lessons generated through them, the Water as Leverage approach and processes target three critical gaps from the earliest stages of project preparation to unlock the complex challenges that hamper climate-resilient urban water projects.

Insufficient systemic understanding and engagement promote siloed projects and failed processes ...

- Insufficient upstream strategic problem definition across multiple projects and sectors in the ecosystem
- Multiple stakeholders involved in different projects and at different times
- Siloed planning processes, with projects mostly evaluated in isolation at the approval stage, make it difficult to respond to change
- Long and disconnected preparation timescales with narrow focus on short-term solutions

... with the Water as Leverage approach water issues are systematically linked to urban dynamics

- Water issues systematically linked to urban dynamics through holistic problem definition and understanding
- All stakeholders involved from day one through early engagement, training and coalition building
- Early evaluation of projects and strategic planning to identify their cumulative, ecosystem-scale impacts, seizing mutual benefits and opportunity for innovation
- Expanded focus on resilient solutions that address current and future infrastructure needs

Set to become a regional hub for trade and commerce, Semarang faces multiple challenges. The two WaL design teams and local stakeholders adopted an integrated approach that leverages the city’s growth and ongoing physical transformation to develop a comprehensive vision for water in a future resilient Semarang. This consists of five strategic programmes – addressing water security, land subsidence, urban floods, sea level rise and community-based adaptation.
2. Forming coalitions to build a shared understanding and facilitate resource mobilisation.

While the imperative for action and the benefits are clear, money is not flowing at the pace or scale needed to deliver transformational urban projects. A key challenge lies in the mismatch between the broader interest in, and understanding of, innovative urban design ideas, and the awareness and interests of potential funders. Too often, key considerations and metrics are not consistently built into projects from the beginning in a way that would support investment and financing decisions due to a lack of understanding by the project proponents. Similarly, insufficient market sounding and early engagement prevents investors and implementing partners from gaining an appreciation of, and shaping, innovative projects from the design phase, paving the way for their implementation. By supporting the development of broader coalitions, Water as Leverage has created inclusive ‘learning-by-doing’ environments for partners, where they can build a common language and understanding through regular and concrete involvement. Our “Resilient Cities Asia” pilots were especially effective in supporting the involvement of local governments, communities and experts. In addition, workshops and interactive market sounding exercises generated important feedback from the lender and development community that was fed into the preparation of the pilot proposals in real time, showcasing the importance of prioritising direct and concrete involvement. Our “Resilient Cities Asia” pilots were especially effective in supporting the involvement of local governments, communities and experts. In addition, workshops and interactive market sounding exercises generated important feedback from the lender and development community that was fed into the preparation of the pilot proposals in real time, showcasing the importance of prioritising direct and concrete involvement.

3. Supporting the development of bankable projects from early design.

The Water as Leverage approach is grounded in the belief that the bankability of green and grey infrastructure projects, especially low-carbon and innovative initiatives, is determined early in the project design stage. Thus, we deploy an enhanced design protocol to help mitigate the risks of non-completion and support the selection of the best projects. This relies on interdisciplinary teams and covers early project feasibility considerations and preliminary cost-benefit analysis, as well as social and environmental assessments. Simultaneously, early engagement is leveraged to support broad awareness creation and identify the best national and international partners to develop, prepare, and implement resilient urban projects. Our pilots have illustrated the importance of generating clear ownership across all phases of the project development cycle, and supporting the development of institutional and societal capacity to scale up adaptive concepts. They have also brought to the fore the importance of early engagement with a variety of potential funders (domestic and foreign, private and public), with the capacity to build on their distinctive profiles and capacities to bear risks and expectations in terms of revenues.

Our process and timeline

Our programme in Mylapore is an example of how Water as Leverage programmes can be scaled up citywide

9 Schools
1.000 students
72,000 litres/day
Feasibility Study
Detailed Project Report
Water Detention
Water conveyance + Recharge
Greywater Treatment
Eco-Heritage Centre
Public Events
Knowledge Building + Training
Inclusive engagement
Social Media Campaign

The City of 1,000 Tanks – Advancing Mylapore’s Heritage Programme

Alternating droughts and destructive floods over recent years have made water security a hot issue in Chennai, the capital of India’s Tamil Nadu state. Rapid economic and demographic growth and lack of long-term urban planning have resulted in the overexploitation of water resources and made the city susceptible to weather extremes, with climate change further exacerbating the city’s water crisis. Unpredictability and extremes are the new normal in Chennai, and the city has to adapt accordingly. The City of 1,000 Tanks project, developed under our Water as Leverage for Resilient Cities Asia programme, has, therefore, been working with local and international stakeholders to offer a holistic solution to Chennai through blue and green strategies, and build effective, efficient and inclusive co-operation in water management.

One of the seven proposals identified by WaL, the initiative focuses on Mylapore. Located in the historic centre of Chennai, this neighbourhood was originally endowed with resilient infrastructure capable of retaining water in the monsoon season for use in the dry season. Recent development patterns have, however, erased the functionality and knowledge of its temple tanks. The pilot project in the PS Higher Secondary School and adjacent HR&CE Temple grounds focuses, therefore, on demonstrating the potential of Nature-Based Solutions in public spaces by introducing new detention tanks that collect rainwater run-off and constructed wetland-treated wastewater for recharging the aquifer to increase groundwater levels. It also provides an educational and community programme for awareness and capacity building. The project, which has recently secured funding following rigorous preparation, has the potential to be replicated in 415 schools in Chennai, and 1.5 million schools in India, while also contributing to the broader Mylapore flagship project, which targets 61,000 beneficiaries.

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A more integrated and inclusive planning approach, underpinned by progressive and impact-driven partnerships across the project development cycle, is the only way to achieve a step-change in sustainable urban planning and infrastructural project development. Water as Leverage has been designed to respond to this recognition and has already played a distinctive role in stimulating new urban resilience concepts in Asia. Since their launch in 2018, our pilots in Chennai, Khulna and Semarang have delivered a set of propositions that have triggered the attention of potential investors and have the strong potential to attract funding to move towards bankability. For instance, the concepts, projects and programmes developed for Semarang have been embraced by city-level departments and, with further support from Water as Leverage, are being translated into concrete project proposals for national-level funding.

To achieve further progress and promote a genuine and enduring paradigm shift, the philosophy and approach of Water as Leverage needs, however, to be adopted more broadly. This requires the active commitment and support of a broad range of existing and new partners – from local and national governments and multilaterals, to practitioners and civil society. Building on our early successes and the lessons learned to date, Water as Leverage is, therefore, expanding our network of strategic partnerships, which are aimed at supporting the adoption of approaches that catalyse urban adaptation, and building continuity across the project cycle.

Our pilots have demonstrated Wal’s unique contribution in stimulating new urban resilience concepts. New and expanded partnerships sit at the core of our vision for the next phase of work.
Building Critical Partnerships at Three Stages of the Project Development Cycle

Water as Leverage is building on our distinctive value at three critical stages of the project development cycle to increase impact, and has already attracted a formidable set of international partner institutions. These extend to key partnerships aimed at supporting climate action and the adoption of the best practices identified by Water as Leverage and programmes with similar approaches at the global level. These include notably a partnership with the Global Centre on Adaptation (GCA) of which all three countries participating in our Asia programme are convening partners.

WAL is building strategic partnerships to scale the development of innovative resilient urban projects and build continuity across the project cycle

Recognising that Water as Leverage’s strongest added value lies in generating innovative and holistic approaches to building urban resilience, our primary focus lies in supporting the creation of innovative concepts (‘concept factory’). Water as Leverage’s investments in this area focus on running and optimising the processes that bring best-in-class multi-disciplinary expertise together with policymakers and the local population to generate interdisciplinary system analysis (conceptualisation) and cultivate local and international support (documenting needs and potential benefits and building coalitions).

Building on our experience in Asia, we are, therefore, seeking additional partnerships and opportunities where our approach can be deployed to add value. While some of these partnerships will be led by the existing Water as Leverage team, we have been working with partners such as the WWF to develop affiliated programmes that will be supported in replicating and adapting our core philosophy, approach and tools.

Cross-Fertilising the Resilient Asian Deltas Initiative

Launched in 2019, Resilient Asian Deltas (RAD) is a WWF-incubated initiative that aims to tackle systemic damage to six of Asia’s largest delta systems – Chao Phraya, Ganges-Meghna-Brahmaputra, Indus, Irrawaddy, Mekong and Pearl.

By facilitating a broad coalition of public-private champions, including delta governments, investors, insurers, CSOs and private companies, the initiative will tackle the complex challenges facing Asia’s deltas and build more resilient societies, economies and ecosystems. To achieve this vision, RAD will catalyse unprecedented political support for and financial investment in ‘building with nature’, thereby protecting and restoring the natural river and coastal processes that replenish deltas and will keep them above the rising seas. The initiative draws inspiration from Water as Leverage’s design processes. As Water as Leverage evolves and considers new cities, we will look for opportunities to directly collaborate with RAD.

Resilient Asian Deltas initiative

- Pearl River Delta: 120 million population
- Mekong River Delta: 17.5 million population
- Irrawaddy River Delta: 13.81 million population
- Chao Phraya River Delta: 13.81 million population
- Mekong River Delta: 12.7 million population
- Pearl River Delta: 3.7 million population
- Indus River Delta: 1.7 million population
There is a demonstrated appetite from development funders and potential investors to engage with innovative urban resilience projects – for instance, annual climate finance flows (including but not limited to infrastructure) rose on average to US$579 billion over the two years of 2017/20186 with significant investment in urban projects. Yet, our pilots have confirmed that many funders, and even more so private investors, do not yet have the organisational incentives, processes and procedures that support investment in non-traditional, and often early stage, projects.

Water as Leverage’s pilots have confirmed the benefit of engaging with a broad range of financiers – from property developers to domestic commercial banks or development finance – and the need to understand and embrace the complexity of combining different sources of finance, with distinct capacities and expectations. The networks of the Government of the Netherlands, RVO and the GCA have, therefore, been deployed to support and enhance coordination efforts, and early results point to the potential creation of a dedicated funding window within the Dutch Fund for Climate and Development (DFCD).

The Climate Resilient Infrastructure Development Facility (CRIDF) is a project preparation facility that focuses on building climate and water resilience through infrastructure delivery in Southern Africa. Supported by the UK Department for International Development and operating with the endorsement of the Southern African Development Community (SADC), CRIDF provides technical skills to support the detailed design of resilient water projects as well as access to expertise in financial and institutional structuring. CRIDF is excited about the potential for Water as Leverage to launch new urban resilience initiatives in Southern Africa. By collaborating with CRIDF, WAL would be able to access the right skills to take projects towards feasibility stage.

The Dutch Fund for Climate and Development (DFCD) is a €160 million fund to attract €0.5-1 billion private sector investment in projects aimed at strengthening climate adaptation and mitigation in developing countries. DFCD is supported by the Government of the Netherlands and delivered by a partnership led by FMO and involving WWF, SNV and Climate Fund Managers. DFCD is innovative because it originates bankable projects by deploying a holistic landscape approach. Because of its good alignment with WaL, we foresee many opportunities for cooperation in the near future.
Partners recognise WAL’s unique contribution, attracted by its focus on holistic problem definition, innovative project design and meaningful coalition building.

WAL PARTNERS & NETWORKS

Partnership sits at the core of the Water as Leverage’s philosophy, which embraces and leverages deep relationships at all levels. These range from government-to-government relations that support and facilitate high-level dialogue to the support and insights from globally recognised institutions, and the extensive in-kind contributions of our partners, including the multidisciplinary teams involved in our Asia pilots. As we mature and work on expanding our impact with new city-level programmes, we are, therefore, looking for new partners. This opens up exciting opportunities to get involved in the coming months, supporting the ambition of generating sustainable urban adaptation and making cities affected by major water challenges better living environments.

Wal welcomes new partnerships at 5 levels as we move into an exciting new phase of work

- **Project Preparation Support**: Work with Wal and our existing partners to progress the projects emerging from the Asia pilots towards implementation
- **Funding**: Work with Wal and our existing partners to progress the projects that have emerged from the Asia pilots towards implementation
- **In-kind Contributions**: Provide co-sponsorship to new Wal initiatives with in-kind contributions, participating in the co-creation process
- **Budget Support**: Co-invest in new Wal initiatives, shaping the next phase of work and expanding its potential
- **Affiliated Programmes**: Leverage existing budgets and initiatives to scale up and replicate the Wal approach across portfolios, and promote supportive enabling environments and capacity development

**How can you get involved?**

**Partnership** sits at the core of Water as Leverage’s successful pilots across Asia have demonstrated that our catalytic approach is both needed and effective. By encouraging a holistic problem definition and forging broad, meaningful coalitions, the initiative has supported the development of proposals for projects that have the potential to provide real and sustainable solutions in cities facing complex water challenges made worse by climate change.

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Semarang – Cascading Semarang - Steps to inclusive growth: MLA+, Deltares, FABRICATIONS, PT Witteveen+Bos Indonesia, UNDIS, UNISIULA, IDN Livable Cities.