Government of the Netherlands

~ Water as Leverage

Reflect

JANUARI 2021

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The photos in this report are from the series Water as Leverage by Cynthia van Elk. Van Elk documented the entire process of the Water as Leverage for Resilient Cities Asia program.

Being right there on the ground with the communities, the teams, experiencing the challenges of too much, too little and too dirty water first-hand, Van Elk was not just a silent witness of the needs of the communities, the often conflicting interests of the stakeholders, the many efforts by government agencies, NGOs and others, and the Water as Leverage set up. She also positioned herself as a reflector in that process, a mediator with her camera, and an enabler for connecting the different worlds of suffering and struggling, communicating the power of human resiliency along the way.

There are no easy nor clear ways forward in the context of climate action. It is a rough road. Cynthia van Elk helped us all to understand that roughness better. And to meet and engage with fellow travelers on that road. How to reach out to one another, holding hands. Van Elk partnered with the Water as Leverage program as an independent voice, using her strongest asset, her camera, to capture the critical moments, the key characteristics of the needs, the specifics of the places, but most importantly the hearts and minds of the people of Semarang, Khulna and Chennai. The images shown in this report are a selection of her journey and with that of our collective pursuit of a better world.

Bio: Cynthia van Elk is a Dutch independent photographer based in Amsterdam and Brooklyn, NY, with over 20 years experience photographing in many parts of the world, working for major newspapers, magazines, the United Nations, NGO's, the Dutch Ministry for Water Management. As a seasoned photo journalist she engages (long term) reportage assignments, and excels in her portraits, capturing the essence of a person and a moment.

~ Introduction

We are globally depleting our natural water supplies at a ruinous rate. Water is linked to the economy, geo-politics, the environment, climate change and more. Local action, local capacity and local needs must be leveraged with global commitments, with indigenous knowledge and cultural capacity contributing to reducing social vulnerability. If we continue replicating the past without addressing systemic barriers, we will end up with a more vulnerable, less equitable and more fragile world than ever before.

Water and climate change are directly linked. We know this by default and from disasters. The climate crisis is a water crisis. Nine out of 10 natural disasters are water related (UNISDR). Between 2001 and 2018, droughts, floods, landslides and storms caused over US$1.700 billion in damage worldwide, according to the UN, impacting over 3.4 billion people, the majority in Asia (UN World Water Development Report 2020: Water and climate change). Without water, there is no energy and no food. But too much water and ever-increasing 'extremes' also go hand in hand with far too little water – periods of drought align with the flow of refugees and increased conflicts (eg Ref 1, 2). We are globally depleting our natural water supplies at a ruinous rate, and sea level rise is jeopardizing our coastal cities and deltas. Water is linked to the economy, geo-politics, the environment, climate change and more.

No matter where in the world, in Afghanistan, China, Vietnam or Bangladesh; in South Africa, Mozambique, Egypt or the Middle East; in Europe or in the Americas. Water is life – it helps build a better future and inform sustainable actions, and it helps bring us together. Water empowers people and institutions; it helps to better capacitate us for the many and ever increasing and challenging tasks. Water inspires collaborative approaches to spur novel ideas, to identify opportunities and projects to work on. With water, we work collectively from the ground up to invest together in a better, more sustainable, more resilient and more inclusive future.

~ Local action, local capacity and local needs must be leveraged with global commitments, with indigenous knowledge and cultural capacity contributing to reducing social vulnerability

Local action, local capacity and local needs must be leveraged with global commitments, with indigenous knowledge and cultural capacity contributing to reducing social vulnerability. The understanding, skills and philosophies developed by societies with long histories of interaction with their natural surroundings inform decision-making about fundamental aspects of life, from day-to-day activities to longer-term actions. This knowledge is integral to cultural complexes, which also encompass language, classification systems, resource use practices, social interactions, values, rituals and spirituality. 'These unique ways of knowing are important facets of the world's cultural diversity and provide a foundation for locally-appropriate sustainable development' (UNESCO, Local and Indigenous Knowledge Systems).

In 2015, we as a world agreed collectively on the 2030 Agenda for Sustainable Development and the 17 Sustainable Development Goals (SDGs). Not to cherry-pick from but as a holistic, comprehensive agenda for sustainable development. Social, economic, cultural and environmental challenges and opportunities are all interlinked. These interdependencies determine the way we live and thrive, and the way we must invest. Investing in water, sanitation and hygiene (WASH) is the first line of defense and the first step towards a sustainable recovery. Never has the sixth SDG, 'Ensure access to water and sanitation for all', been more vital for saving and protecting lives as in this COVID-19 pandemic.

Water cuts across all Sustainable Development Goals (SDGs), beyond SDG6: investing in water has a trickle-down effect across all SDGs.

To deliver on our promise of meeting the SDGs, we need collective commitment, program continuity and consistency of ambition. Together, we must leapfrog ahead and invest more and better in water capacity, land management and infrastructure – blue, green and grey. It is time to scale up our investments in integrated, inclusive and sustainable water programs and projects. Doing so pays off, according to the World Meteorological Organization and the United Nations: Every US$1 invested in safe drinking water in urban areas yields more than US$3 in saved medical costs and added productivity. For every US$1 invested in basic sanitation, society earns back US$2.50. In rural areas, US$7 is gained or saved for every US$1 invested in clean drinking water. So far, we have largely failed to seize this opportunity. We continue to invest in infrastructure projects from the past, taken off the shelves, to fill economic stimulus packages. Focused on jobs alone for fast economic recovery, these projects offer no added value for integration, inclusion or sustainability. The 2030 Agenda for Sustainable Development and the 17 SDGs should lead the way for recovery, really preparing us for the challenging future ahead. Investing in water across the 2030 agenda is the added-value enabler we so urgently need.

We have to come up with new solutions to tackle our future challenges, since the solutions of the past will make the world a worse place tomorrow. By being proactive, we can understand our future and build resiliently. Our policies are based on our understanding of yesterday and not on our understanding of tomorrow. Innovation also involves the task of helping us change our policies and practices. For that to succeed we need a new approach, one that is rigorously inclusive, innovative and comprehensive, with everything and everyone working together from beginning to end. A mechanism through which future understanding becomes an inspiration and drives innovation forward, and which includes everyone in the process – bankers and investors are as much a part of this as policymakers and politicians, community leaders, NGOs, academics and the businesses that develop these solutions. Because with a better collective understanding of the future, we can gain a better idea of how to fund innovations arising from that understanding. These are the millions we need to invest to secure the billions for the projects that will really make a difference and prepare our society and planet for our challenging future.

~ Our policies are based on our understanding of yesterday and not on our understanding of tomorrow. Innovation also involves the task of helping us change our policies and practices

Water as Leverage for Resilient Cities Asia is the program I initiated to spur this collaborative action, to make it concrete, to identify needs and opportunities while building partnerships across all layers of society, across all institutions – local, national and international – and their silos, across everything and everyone. Water as Leverage is the living proof of both the need for action and the opportunities we can implement, if only we drive our actions inclusively, holistically and sustainably.

While we have great and inspiring examples, we lack a steady flow of sustainable investments. Our promises compete with outdated infrastructure investments. If we continue replicating the past without addressing systemic barriers, we will end up with a more vulnerable, less equitable and more fragile world than ever before. Our commitment is challenged by vested interests in past mechanisms. We need to overcome these vested interests that are grounded in the past, single focused and aimed for despair and a disastrous future. We need to accelerate and expand our promises and our commitments, by science and through solidarity. Investing in a pipeline of blue and green opportunities across the 2030 Agenda, means investing in people across the world. We must practice what we preach.

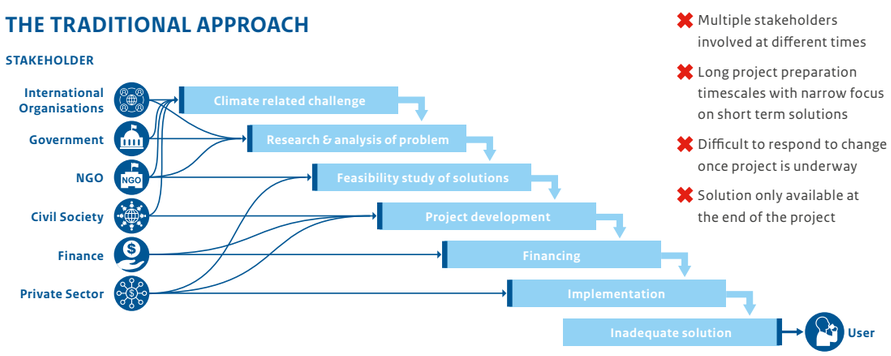
HENK OVINK

Text is in part extracted from the foreword I wrote for Kadir van Lohuizen's new book "After Us the Deluge" to be published in January 2021.

Water as Leverage
Rethinking the approach for urban climate resilience

The World Economic Forum ranked water crises number one in its 2015 assessment of global risks. Traditional project management cannot keep pace with the impact of climate change on global water supplies. A new approach is needed.

THE TRADITIONAL APPROACH



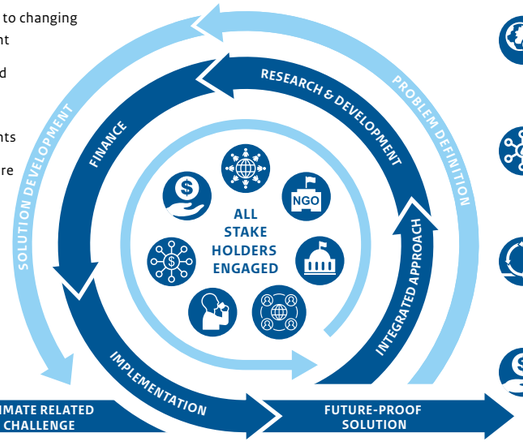
- ✖ Multiple stakeholders involved at different times
- ✖ Long project preparation timescales with narrow focus on short term solutions
- ✖ Difficult to respond to change once project is underway
- ✖ Solution only available at the end of the project

"Confidence is very high that the window of opportunity – the period when significant change can be made, for limiting climate change within tolerable boundaries – is rapidly narrowing."

IPCC report August 2019

THE WATER AS LEVERAGE APPROACH

- ✓ All stakeholders involved from day one
- ✓ Responsive to changing environment
- ✓ Scalable and replicable in multiple environments
- ✓ Risk of failure reduced



People
Combine the world's best expertise with local talent.

R&D
Catalyze innovative processes to understand vulnerabilities to future risks and uncertainties.

Integration
Co-ordinate closely with local communities and governments in an agile working environment.

Process
Ensure Government and community stakeholders work closely with experts from day one.

Finance
Source innovative project funding through public private partnerships, blended and private finance initiatives.

Water as Leverage is an initiative of the Government of the Netherlands

~ WAL described Henk Ovink

Goals, objectives and approach

'Water as Leverage' is a metaphor and stands for 'how we can use (use as in: organize, exploit, excel, connect, explore, develop, integrate, coalesce, ...) our integrated water approach as a lever for sustainable development'. Started as an initiative of Dutch Waterenvoy Henk Ovink and focused on climate action in the context of the 2030 Agenda for Sustainable Development, in partnership with the Asian Infrastructure Investment Bank (AIIB), the International Architecture Biennale Rotterdam (IABR), Architecture Workroom Brussels (AWB) and with the Dutch Ministry of Foreign Affairs (BZ), the Dutch Enterprise Agency (RVO), the Dutch Entrepreneurial Development Bank (FMO), the Global Center on Adaptation (then still in formation), and a number of knowledge partners (including the Dutch Environmental Assessment Agency (PBL), Deltares, Fabrications). With the goal to aim for climate action through interventions and projects that can really make a difference, that are catalytic and transformative and that have the capacity to be replicated and scaled up for accelerated impact.

There is an urgent need on water and climate action, we lack behind in delivering on the 2030 Agenda for Sustainable Development and the Paris Agreement. There is a gap between the urgently needed pro-active climate action and the reactive ("stupid infrastructure" with single focused targets, short term financial economic benefits and lots of negative externalities) approaches. This gap increases the vulnerability of our communities, rural and urban, our natural systems and our economies. Climate change exacerbates all challenges in a massive way. Delivering on the 2030 Agenda for Sustainable Development becomes an even more challenging task with an everyday increasing climate crisis. Bringing together the SDGs and the climate challenge turns out to be key for speeding up catalytic climate action. And a resilient water approach, where water can serve as a leverage for climate adaptation action, is crucial for that success. Water as Leverage is all about (and underscores the need for) this comprehensive integrated approach. Avoiding sectoral silos and vested interests and organizing innovation, transformation and real climate adaptation impact by collaboration, deliberation and design.

Water as Leverage is organized through a public-private-partnership process in which the market is challenged to co-invest. This partnership is build on the foundation that only through collective participation and ownership and a continuous process of engagement we can have the impact WAL aims for. The private sector is supported through the WAL program in three ways:

1. funding capacity: an 'award' for the delivery of the research and design objectives
2. organizational capacity support: connections with governments, (local) key-players/partners, (international) knowledge partners and the financial institutes (MDBs, IFIs, others)
3. collaborative (design) process: organizing local, national and regional sessions, events, meetings, and participating in international discourse) and partially with its own time and money. RVO is the implementing partner (administrator).

WAL tries to achieve three transitions:

I. **Breaking through the lock-in where worldwide there is still not enough money allocated nor accounted for funding the pre (or sometimes pre-pre) project-preparation phase (research, inclusive collaboration, coalition building, sparking the enabling environment, capacity building, design and innovation) through public-private collaboration, in a 'challenge' context (pressure-cooker). The model of the competition or challenge is taken from the IABR methodology, the Rebuild by Design challenge (launched post super storm Sandy by President Obama's Hurricane Sandy Task Force) and a number of RBD follow-up projects (Bay Area Challenge Resilient by Design; Resilience by Design University RBD_U; Policy Initiatives; 12 City Initiatives);**

II. **breaking through the – currently too often occurring and too much – fragmentation in the project development process/approach:**

a. the start of project-development can be ambitious and innovative, also through the (ambition of the) associated partners, but this ambition and these partners are most of the times not followed through neither involved in the follow-up phases, let alone all the way through implementation. In other words there is not a "life-cycle by design and collaboration approach" model;
b. the financial sector is missing/not involved in the beginning. Needed for real insight into bankability and feasibility from the start, but also needed in light of innovation driving/informing bankability and financial models, evaluations, standards and their procedures and processes;

~ Delivering on the 2030 Agenda for Sustainable Development becomes an even more challenging task with an everyday increasing climate crisis

c. real ownership for good maintenance & operations is not guaranteed from the beginning, and not consistently organized through the full life cycle, and it misses the most critical partners: the community, the marginalized groups, the people it's all about;
d. climate infrastructure (investment) is too often only aimed at the public sector. The need to increase opportunities for blended finance, public-private partnerships and market opportunities. An inclusive approach aimed at increasing opportunities for market value and fulfilling public needs.

III. **breaking away from the limited/narrow focus on projects, and broadening the scope to both projects ánd process, and the necessary enabling environment. It is about people, process and projects for sustainable impact.**

And all this through the truly integrated (design) approach, an investigation into the implementation of the 2030 Agenda for Sustainable Development and the Paris Agreement. Inclusivity, integrality and innovation by design for sustainability and climate impact.

Water as Leverage for Resilient Cities Asia

Water as Leverage first program focuses/d on South and South East Asia: 'Water as Leverage for Resilient Cities Asia,' where cities and societies are most vulnerable to climate change and water impact – too much, too little and too dirty (see also PBL report 'The Geography of Future Water Challenges, pages 16 and 17).

Update March 2020

We are now close to two years after the start in September 2018 (and the launch on Earth Day, April 22, 2018). In each of the three cities two interdisciplinary teams work with local and international experts and partners. They operate under the government-to-government umbrella of three MOUs between the Netherlands and India, Bangladesh and Indonesia. And supported by and in close collaboration with a great group of financial partners: FMO , RVO, KfW, AfD, AIIB, ADB, WBG (incl IFC), IsDB, GCF, PTSMI. These consortia have now developed 24 projects with provisional business cases that are guided (and brokered) to agreements regarding financing and implementation. All aimed at taking climate and sustainable action in the first year of the UN SDG Action Decade and the GCA Year of Action.

By example, Chennai

One of the projects that shows how this integrated and inclusive approach works is the 'City of 1,000 Tanks, Mylapore trail' project in Chennai (India). The coalition's proposal focuses on Nature Based Solutions that lead to CO_2 reduction, cost reduction (CapEx -30% and OpEx -50%), and an integrated approach that shows results on many SDGs right across the 2030 Agenda for Sustainable Development. This project gives us the opportunity to show in practice that WAL works and thereby helps in the further roll-out of WAL in India (India has indicated that it wants to scale up this approach to 200 cities in India) and elsewhere in the world.

With the funds obtained in December 2019 from Partners for Water, Government of Germany and Chennai partners, a pilot of this project can be implemented in 2020. The pilot will serve as an example, not only for WAL, but also as an inspirational example of a climate approach that is inclusive, comprehensive and transformative.

~ Local action, local capacity and local needs must be leveraged with global commitments, with indigenous knowledge and cultural capacity contributing to reducing social vulnerability.

~ Umbrella Note

1. Introduction

The Water as Leverage program was initiated in 2018 by the Dutch Special Envoy for International Water Affairs, Henk Ovink, in collaboration with a multitude of government, architecture, financial, and knowledge partners. It considers the business-as-usual approach in many south- east Asian cities to result in fragmented climate and water action. The Water as Leverage program (WaL), however, in line with its name, aims to use water as an opportunity. The program is based on the idea that water can be used as a lever to "improve our ecosystems, grow our economies, boost agricultural efficiencies, and tackle inequity" (Water as Leverage, 2019, p.1). In contrast to the traditional approach, Water as Leverage suggests an integrated water approach, which through a collaborative process with public and private stakeholders, pro-active engagement with local communities, and involvement of multi-disciplinary design teams is expected to result in integrated climate resilient strategies and ultimately in "innovative and transformative projects".

The program formulated a Call to Action report in 2018. This report outlined the water-related challenges in south-east Asia and identified and selected three cities in which the program would pilot. These cities are Chennai in India, Khulna in Bangladesh and Semarang in Indonesia. The Call to Action invited multi-disciplinary design teams from around the world to propose climate resilient strategies for each of these cities. Currently, the program has resulted in a strategy, as well as several projects in-the-making in each city.

While work is ongoing regarding the implementation of the projects, the transition from planning towards implementation is also an appropriate moment to reflect on the front-end and planning phase of the program. In order to do so, the Dutch Special Envoy for International Water Affairs asked the OECD, the University of Groningen and Architecture Workroom Brussels to embark on a mission to gain insight into the successful and less effective mechanisms of the program in order to understand how these might be used, altered or improved in the planning and development of the Water as Leverage program in other Asian cities as well as in other parts of the world.

Each organization concluded several interviews with involved actors (for the overview of the interviews and the working methodology see separate reports and appendix of the reports) and wrote a separate report, each with a respective focus. As we were struck by some of the common conclusions that could be drawn from these, we decided to draft an 'Umbrella Note'. This note tries to summarize, in a concise manner, the main conclusions that resulted from the reflection of these three partners. Details and more elaborate description of the reflection can be found in the three separate notes/reports of AWB, OECD and University of Groningen.

2. WAL installed a new

Method of working

WaL started from the observation that current water related projects and mechanisms (planning or implementation instruments and financing mechanisms) fall short of realizing the long-term strategic climate goals. WaL aimed to set up a process architecture that enabled collaboration of different parties across disciplines, scales and interests. The bottom-line was to create a common workroom where different stakeholders were involved in the pre-project preparation phase of integrated water related projects: the banks and financial advisors would be involved to counsel the project teams on the bankability of their designs, the local communities and governments would be working closely with the international design teams to ensure real ownership and local support for the projects and so on.

~ Bottom-line was to create a common workroom where different stakeholders were involved in the pre-project preparation phase of integrated water related projects.

WaL aimed to be a 'facilitator'. By putting pre-project preparation center stage, it wanted to ensure innovative research, design and innovation, inclusive collaboration, coalition building, developing an enabling environment, capacity building, thereby catalyzing innovative, integrated, holistic and locally embedded and supported 'climate action delivering' projects. WaL is a method of collaboration with multiple objectives. It has to ensure it fosters innovative design by bringing together different types of expertise. Equally the program aims to become a project preparation financing facility by working closely with banks and to be a capacity builder for the enabling environment by setting up a learning environment through and for project implementation. Finally through its day to day working it aims to set up a platform in which strong partnerships between actors in the climate field can be set up.

3. WAL as a process

A. Selection of Cities

The program formulated a Call to Action report in 2018. This report outlined the water-related challenges in south-east Asia, identified a longlist of hotspots and selected three cities in which the program would pilot. These cities are Chennai in India, Khulna in Bangladesh and Semarang in Indonesia.

B. Selection of Project Teams

The Call to Action invited multi-disciplinary design teams around the world to propose climate resilient strategies for each of these cities. Eventually, two design teams per city were selected and these were invited to mature their proposals into full-fledged climate resilient strategies and related 'transformative projects'.

C. Project Development

The design teams proceeded to do so, both locally in close collaboration with local government, knowledge and financial partners, and internationally through a series of international workshops, among others attended by international financial institutions as the World Bank and the Asian Investment and Development Bank. In this way, the Water as Leverage program aimed to develop a dynamic environment in which strategies and projects, beyond current boundaries, could be safely explored and developed.

4. Reflection

4.1 Apreciated Aspects

4.1.1 Creating soft spaces

The WaL working methodology allowed for a mission-oriented workroom and conversation table. All the actors embarking on the project were part of the search for innovative, inclusive and holistic water projects. In this way, WaL used this approach to develop 'soft spaces' – spaces outside of, but complementary to, the formal governance structures – for creating innovative ideas and new solutions. Soft planning spaces allow participants to freely share their ideas beyond their professional boundaries, as such they can overcome existing institutional siloes and understand problems in their interconnected-ness. This led to an innovative process of collaboration between different disciplines, where the actors on board were driven by the aim to provide holistic and integrated climate solutions adapted to the local context. It was clear from the reflection that the development of cross-sectoral and cross-disciplinary proposals within WaL has been very successful.

~ WaL used this approach to develop 'soft spaces' – spaces outside of, but complementary to, the formal governance structures – for creating innovative ideas and new solutions.

4.1.2 Spanning and bridging multiple boundaries

Within this process and through the development of such a 'soft space' Wal wanted to be radically integrative and inclusive, by co-creating cross-disciplinary visions and project ideas together with local communities and stakeholders. WaL stimulated 'capacity building' and created an 'enabling environment' by engaging multiple communities and stakeholders during the intensive collaboration and design process. A note has to be made here, that various suggestions for further improving this engagement were shared in the interviews held for WaL-reflect. Finally, WaL also contributed to building of the ability of stakeholders across various levels of government, and their networks to draw resources, rules and ideas for achieving policy outcomes, for the implementation of the vision and project ideas. During WaL various levels of government got engaged in the process. However, not all were committed to WaL from the start and investments had, and still have to be made, to create stronger forms of commitment and ownership of the WaL ideas and project initiatives.

4.1.3 Changing working cultures

As a mission-oriented process, WaL aimed to contribute to a cultural change within banks, local governments, design and engineer teams... One of the main aims of WaL was to drive innovation of financial models, evaluations, standards and their procedures and processes within IFI's and MDB's. The causality of these forms of cultural change is hard to measure, as they never come forth from a one on one relation but are always the result of an interaction between different factors. Even though

it takes a lot of time to materialize these intentions, the IFI's have expressed rising ambitions and thus the seeds of a slow but steady cultural change can be felt. At a minimum, WaL is well-aligned with - and can accelerate - the renewed ambition of IFIs and the development finance community for integrated water-related investments that contribute to multiple agendas (in particular the SDGs, the Paris Agreement). For example, the AIIB, one of the founding partners of WaL has been developing an urban water strategy, a form of integration between fields of action that did not exist before its interaction with WaL. We should develop more tools and instruments to measure these long terms and indirect impacts in order to value the impact of programs such as WaL.

4.1.4 Going beyond a focus on projects

WAL created an ecosystem of local and international architects, designers, engineers and other actors from within the water expertise, but equally local coalitions, that together start to form an enabling environment in which innovative solutions can develop. WaL was more than a project-focused facility. All the talks, negotiations and events that happened as side-activities of WaL were as important to foster this cultural change and helped in creating a momentum in which projects can be developed and get financed. In the following cycle, WaL should question whether these 'sidenotes' should not become part of the core working of WaL.

4.2 Points of attention

4.2.1 Wal With Whom?

On a process level the importance of structural collaborations or long term partnerships became very clear. It is a fundamental question with whom one wants to/has to work in order to realize the mission of WaL. The theory of change within WaL 1.0 focused very much on the ownership of designers over a certain project and idea: design was seen as the driving force of the development of a systemic approach. However, we might be in need for a more emphatic, integrating capacity of design, where what is drawn or sketched is used as a tool, as a language to connect different actors and views. It became clear that there are multiple levels of ownership that require attention: the banks, the national authorities, the local coalitions, all have to be engaged.

a) Collaboration with local partners (instead of call)

The WaL process connected the multidisciplinary design teams to local, regional, national and international networks of NGOs. However, the process' embeddedness would benefit in starting from local capacities. The local coalitions have a pivotal role in connecting with local communities and various stakeholders, as well as in selecting and translating critical information across various cultural, administrative and institutional boundaries. This also means WaL should invest more in building on local capacity. Therefore, a scoping of local coalitions should be part of WaL's process: what can we achieve (also based on local insights) and who can/should we involve in making this happen? This also means special attention should be paid to the composition of the design teams, where the selection of the international designers and experts should be complementary to their locally rooted team members. The 'theory of change' should not be oriented towards design as a matter of technical capacities (attract international expertise) but should invest in the building on and of social capital and local capacity on the ground. Here the projects and the technical design only becomes one element in a bigger process.

b) Collaboration with national government

Significant time was invested in building local coalitions as WaL wanted to be a locally embedded process. However this led it to bypass the national government in its negotiations. Because of this, an alignment with national priorities was often missing, which was a huge obstacle in implementing

projects, as the solutions and ideas developed by WaL require financial investments that reach beyond the financial abilities of a local government, the city government would need to convince the approval of a national budget from the national government. It equally posed a problem when trying to connect to IFI's, as development finance is aligned with national and usually has to pass by national government. The process of WaL focused very unilaterally on financing by IFI's, it would be advised to explore more diverse sources of financing (including domestic ones) in projects to come.

An agreement, and favorably a long term and stable collaboration with a national government is thus highly necessary in order to 'get things done'. A more structural partnership with the national government at the start of the project can help in collaboratively exploring innovative ideas and project concepts in accordance with national strategies and plans. The involvement of the priorities of a national government could possibly inhibit the capacity of WaL to respond directly to local needs, therefore the involvement of the national government should be combined with a local collaboration. (see 4.2.1.a)

c) Collaboration with the financial sector

Currently, IFI's follow strict review processes based on criteria and project concepts. WaL envisioned to stir up this process, but was not yet successful in doing so. WaL and the IFI's could enter in a mutual learning environment, where in a 'light' version WaL could become an advisor within an IFI or a bank, trying to push the boundaries and the level of ambition of projects from within. Or the bank and WaL could step into a structural collaboration and integrate the pre-project preparation into the process so that the bank receives more integrated, more qualitative proposals at a faster rate.

WaL should also diverge from its exclusive focus on IFI's and seek for more diverse sources of financing such as commercial banks, impact investors or even philanthropic organizations. For this more attention should be paid to the financing case itself and different parts of the project development or modules could be selected that can be linked to diverse (domestic and international; corporate, commercial and public; debt and equity. (see also modularity)

4.2.2 How to work within the process

a) Selection of cities: scoping for need, demand and readiness

WaL cities were selected on the basis of a scoping of 'needs' and pressing problems, not capacities or willingness to participate. This led to the investment of a lot of time by the design teams in building local ownership and support, as well as the lack of a 'local owner' for the projects in most cities, which is necessary in case a financing party wants to give out a loan. This should be altered in a follow up process by calling for interested cities. An open call instead of a quick partnership at the city level ensures more support locally: there should be demand for change and for a different approach. By starting from a local engagement, the embeddedness of the program is secured. It is no longer an international consortium that drops into foreign territory, forced to scope the local terrain and find local commitment in a short period of time, but an existing local coalition that sets up a collaboration with an international design team. Additionally, the cities can be selected based on a scoping exercise that looks at the pre-existing local capacity and the enabling environment in place. An enabling environment is seen as a pre-condition for developing and financing flood resilience and climate adaptation strategies. For this the existence of local institutional capacity is crucial. This could help WaL to have an impact in the short term, selecting cities that are mature enough to face the change WaL wants to push for, and could thereby provide a partial answer to the condensed and intensive project format, where the timeframe is way shorter than the usual development trajectory of projects.

~ WaL is a new addition to this still young and maturing line of approaches for developing resilience strategies, from which others can learn. It ambitions to combine innovative project design and institutional dynamics towards an enabling environment that supports replication and up-scaling.

b) Selection of teams

The design teams should be selected complementary to already existing local capacity. Also attention has to be paid to a greater diversity in profiles in each team. The project teams in WaL 1.0 consisted of international design teams, all having profiles related to design or knowledge and education institutions. These were often not organizations that had experience in project implementation or financing. The project concepts were strong and innovative, but lacked a practical project development aspect, as well as a socio-economic business case that could be used to leverage finance sources. In the first round this was attempted by involving the FMO and AIIB in order to build the business case for WaL's projects, however this proved insufficient. This could be solved by including different types of expertise. These profiles should be able to make a strong economic case for investment, as well as develop a financing case, potentially combing multiple financing mechanisms and sources.

c) Modularity: pragmatic route to implementation

One of the main issues in getting the WaL projects financed is that they are highly integrated, combining a range of actions and cut across a multitude of policy areas. Translating these to feasible projects would take a long time and demand sophisticated development, increasing transaction costs for project developers and financiers. The projects are designed in such ways that financers have to decide either to buy into the whole of it, or ignore the proposal. One way to increase the fundability of the projects is by designing projects that can be separated into different components and phases so they can be taken up by different financing instances. Here the projects have to be well identified, phased and sequenced, this will also help in the pathway towards implementation, as it is clear 'where to get started'. By designing the modules as one integrated project you can avoid cherry picking. Modularity increases the need for a local integrating facility that manages project implementation and coordination.

d) Clearer role division

In designing inclusive and integrative climate solutions, a lot of effort needs to be put into collaborative governance processes in order to bridge interests, professions, and organizations. It takes a lot of capacity to engage with a range of stakeholders across policy areas. In WaL 1.0 the designers were selected as boundary spanners and they had to stand in for the development of adequate relations with the national level, with local actors, with local communities and translate design concepts to bankable proposals in order to smooth the collaboration with the banks.
It is not yet explicit who should take up this role of boundary spanner in the future. An ecology of boundary spanners, consisting not only of the design teams but equally the program team, local boundary spanners and so forth. A 'WaL office' or program team could be established to ensure the continuation and integration of the relationships with national governments. Here a high-ranking official should be part of the team: The pre-program stage of WaL reveals the need for (international) networking, having access to high officials and crucial actors in order to secure support and lobby for the idea of Water as leverage. A local champion could stand in for the connection to the local context, coupled to the partnership with local actors mentioned before. Within this team a specific role for a local boundary spanner, someone with thorough knowledge of the local context should be included. Long engagement is needed in order to build up trust and relationships with local partners, this asks for preparational work and local grounding.

5. Outlook: The future of WaL

Several WaL project initiatives are under consideration for finance. Only time will tell which project initiatives will be implemented, and whether they are picked up by others and replicated, scaled up, and further developed. This also accounts for WaL as a program. Although WaL is unique, it is not the only design-led program that aimed at developing integrative, inclusive and implementable projects. However, WaL is a new addition to this still young and maturing line of approaches for developing resilience strategies, from which others can learn. It ambitions to combine innovative project design and institutional dynamics towards an enabling environment that supports replication and up-scaling. They are invited to build on the reflections presented in this note and the underlying reports.

Finally, the authors that worked on WaL reflect (OECD, AWB, University of Groningen, Special Envoy of International Water Affairs of the Netherlands) will all, each in their own way in their future work, capitalize on what they have learned from this reflection. They look forward to supporting and collaborating with others who take an interest in WaL, and its method, philosophy and ambition.

~ Section I. OECD

Water as Leverage Reflect & Prospect - Aligning financing approaches with SDGs ambition

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Rationale and ambition

Water can be the leverage to best manage the impacts of climate change and deliver on the Sustainable Development Goals, yet 'it takes millions to invest billions wisely'. The Water as Leverage programme aims to invest these catalytic first millions, with the aim of leveraging the necessary investment for the implementation of catalytic projects, which in turn leverage water to build urban climate resilience.

Three cities were selected for Water as Leverage to start pilots to develop a transformative design approach with a view to replicating its principles in Asia and the rest of the world. The initiative involves a dedicated group of partners from governments, financial institutions, investors, experts and innovators and community stakeholders committed to the aim of using Water as Leverage as a blueprint for other cities and regions facing water challenges.

BOX 0.1. WATER AS LEVERAGE – INITIAL AMBITION

Water as Leverage started as an initiative of Dutch Water Envoy Henk Ovink, focused on climate action in the context of the 2030 Agenda for Sustainable Development, in partnership with the Asian Infrastructure Investment Bank (AIIB), the International Architecture Biennale Rotterdam (IABR), Architecture Workroom Brussels (AWB) and with the Dutch Ministry of Foreign Affairs (BZ), the Dutch Enterprise Agency (RVO), the Dutch Entrepreneurial Development Bank (FMO), the Global Centre on Adaptation, and a number of knowledge partners (including the Dutch Environmental Assessment Agency (PBL), Deltares, Fabrications).

Bringing together the SDGs and the climate challenge turns out to be key for speeding up catalytic climate action. And a resilient water approach, where water can serve as a leverage for climate adaptation action, is crucial for that success. Water as Leverage is all about (and underscores the need for) this comprehensive integrated approach. Avoiding sectoral silos and vested interests and organizing innovation, transformation and real climate adaptation impact by collaboration, deliberation and design.

WAL tries to achieve three transitions, through a truly integrated (design) approach:
Breaking through the lock-in where worldwide there is not enough money allocated for funding the early project-preparation phase (research, inclusive collaboration, coalition building, sparking the enabling environment, capacity building, design and innovation) through public-private collaboration, in a 'challenging' context (pressure-cooker).
Breaking through the fragmentation in the project development process/approach
Breaking away from the limited/narrow focus on projects, and broadening the scope for both projects ánd process, and the necessary enabling environment.
On World Earth Day (22 April 2018) Water as Leverage launched its first Call for Action. Six international teams of water and climate experts, engineers, scientists, architects and urban planners were selected to develop ground-breaking, innovative approaches to tackle the immense climate and water challenges in three cities in Asia: Semarang (Indonesia), Khulna (Bangladesh) and Chennai (India). The aim is to develop impactful, innovative, integrated and bankable climate action project proposals that have gained local support by active stakeholder coalitions.

Two years after the start in September 2018, in each of the three cities, two interdisciplinary teams work with local and international experts and partners. They operate under the government-to-government umbrella of three MOUs between the Netherlands and India, Bangladesh and Indonesia. And tentatively supported by and in close collaboration with a group of financial partners: FMO , RVO, KfW, AfD, AIIB, ADB, WBG (incl IFC), IsDB, GCF, PTSMI. These consortia have now developed 24 projects with provisional business cases that are guided (and brokered) to agreements regarding financing and implementation.

At the end of the 2-year pilot, outcomes are mixed. On the one hand, project teams developed transformative and integrated projects, well aligned with the ambition of WaL. Ad hoc discussions are on-going with financial partners on selected projects:
In Khulna, Bangladesh: projects are aligned with the priorities of bilateral agencies (KfW, RVO), which may finance feasibility studies and some project implementation, if some conditions are met. In Chennai, India: an application to GCF financial support is being arranged, with support from the national government. In Semarang, Indonesia: opportunities for further development of selected projects are being considered by RVO and the World Bank, respectively.

On the other hand, WaL failed to stimulate the financing mechanisms that can facilitate project development and implementation and replication in other cities. Project teams have been asked by potential funders to further elaborate project preparation and pre-feasibility studies, but struggle to secure the resources to deliver. Projects' ambition, scope and scale and the process by which they developed are at odds with prevailing funding mechanisms and processes. Further progress in design and implementation highly depends on personal skills and stamina. It is not supported by institutional dynamics that would contribute to long term impact.

REFLECT is an initiative set up by the WaL team to learn lessons from programme implementation so far and explore options to reinforce and adjust the programme approach in order to better align with the initial ambition. REFLECT involves three partner organisations - University of Groningen, Architecture Workroom Brussels, the OECD - coordinated by the WaL team.

OECD's contribution is focused on analysing the mismatch between the value proposition of the projects that emerged from WaL – well-aligned with SDGs ambition and narrative – and the lack of finance attracted to advance the development of those projects. It aims to identify how WaL (or a WaL 2.0) could contribute to the development of an enabling environment (policy framework and institutional arrangements) and financing mechanisms that facilitate and mobilise financing for the projects that match WaL's ambition. The OECD focuses on Projects and Process. Cross-cutting lessons are learned and lead to a schematic PROSPECT scenario that combines some of the main suggestions for change.

CONTENT

1. A note on method

The method builds on a conceptual framework sketched by the OECD, derived from its own work on financing water[1].The framework identifies key features of water-related projects and the enabling environ-ment that affect access to finance. These features are summarised in the table below. Some of the items outlined in this table were explored during the interviews and are further analysed in the subsequent sections.

Table 0.1. *General features of the water – finance mismatch. Source: OECD*

Features of water-related projects that potentially affect financial sustainability	Features of the institutional environment that affect feasibility and financial sustainability
• Lack of revenue to support a sustainable financing model, with proper allocation of risks and revenues • High transaction costs due to the ad hoc character of each project • Lack of proof of concept or track record • Risks related to the physical environment, social acceptance and political interference • Split incentives and inconsistent policy frameworks • Capital intensive and long payback period • Challenges in demonstrating value and beneficiaries of avoided costs from resilience-building interventions	• Regulations, norms (including risk tolerance, implicit or explicit) and standards • Policy objectives, instruments and incentives • Trade-offs between policy objectives • Institutional capacity to lead and take action at both national and sub-national levels • Existing financing landscape, including the financing arrangements most commonly employed at national and sub-national levels • Distribution of liabilities

[1] For more information on recent OECD work on financing water, please visit the Roundtable on Financing Water

Information was collected to support analyses of how these (or previously unidentified) features conditioned access of WaL projects to finance and further implementation. Information was collected through a review of relevant literature on Water as Leverage, a series of brainstorming sessions with project partners, and interviews with financial institutions.

Interviews were organised with financial institutions involved in WaL, at different stages of the programme and project development. The list of interviewees is appended.

- The interviews were structured around the following questions:
- WaL was instrumental in supporting the development of innovative projects that can contribute to the resilience of three cities in Asia, well-aligned with SDGs' ambition and narrative. However, project developers and their local and national partners found it difficult to mobilise finance for further project development and implementation. Do you agree with this observation?
- How was your financial institution involved in project development? When and how was your institution invited to provide feedback on projects? How was the feedback that was provided to project teams reflected in subsequent stages?
- WaL projects are complex and require significant funding for (pre) project development. How to financially support project development (intense / in depth / thorough identification, assessement, inception, development and coalition building)? How to make sure that lack of funding at this early stage does not stifle innovation in project development? How to define a "pre project-preparation" phase that is useful for project developers and financiers?
- How to balance innovation in project design and financial feasibility? For instance, acknowledging that catchments often were the appropriate geographical and institutional scales of projects, how to make projects at catchment level financially feasible?
- Who/what was missing to bridge the gap between project teams and potential financiers?
- Other issues you would like to raise regarding the financial feasibility and sustainability of projects that emerged from WaL? Feel free to raise other topics, reflecting on your experience with building resilience cities in Asia, and Water as Leverage more specifically.

2. Project level. Project features to be considered to ensure financial feasibility and sustainability

With rare exceptions, interviewees confirmed that the projects that emerged from WaL were well-designed and well-thought out:

- The project concepts were strong and innovative, and showed a good grasp of the level of integration that was needed to support holistic change in the cities. Integration generally resonates with IFIs' strategic orientations (e.g. ADB and the concept of liveable cities, which combines inter alia housing, transport, water).
- The geographical scale of WaL-supported projects is appropriate, given urbanisation trends and evidence of potential for impact when working at the city level. Interviewees indicate they are looking for this type of opportunities, at basin or catchment scales.
- The inter-disciplinary nature of WaL is welcome. Many financiers are eager to ensure that both "hard" and "soft" elements are adequately covered in project design.
- WaL created well-designed terms of reference for the projects' economic feasibility studies (although the project design teams reportedly had varying levels of capacity/success in actually implementing the studies).
- WaL set up a valuable network of architects, designers, and engineering firms.

Notwithstanding the ambition and quality of WaL projects, REFLECT helps to characterise how a range of project features affect the ability to raise and secure funding. These features are listed and discussed below.

2.1 Apreciated Aspects

Project teams were driven by knowledge and education institutions, not by organisations with experience in project implementation or financing. This led to sophisticated project design, but not to practical project development and developing opportunities to mobilise finance. It follows that WaL projects lack a socio-economic business case extending to a limited financial case for investment. The teams did not have the expertise required to carry them out.

Potential financiers, in particular development finance institutions, assess projects in long lists of project concepts according to pre-defined criteria, which can vary across agencies. Further, the timeframe for developing projects is lengthy, requiring significant engagement with national level decision makers and stakeholders. In addition, projects funded by IFIs and other development actors must comply with rigorous safeguards in place.

Projects that emerged from WaL need to specify how they perform vis-à-vis some of the most common criteria:

- Local ownership, alignment with national and sectoral strategies. While significant time and effort were invested in building local coalitions, these coalitions did not always include institutions that make decisions. In addition, alignment with national priorities was not considered early on and was often missing, an issue when development finance aligns with such priorities and is channelled via national authorities (Treasury).
- Expected impact, beneficiaries, economic return and timings. While teams understood the need for a strong economic case for investment, they lacked the capacity to make that case. Beyond the economic case for investment, a credible financing case needs to be developed, that is well-linked to IFI (or other financiers') priorities and processes.
- Interdependence with other projects. Such interdependence can be considered as a risk, in case other projects do not materialise. Project planning and sequencing need to identify concrete options to get started and to move on, addressing uncertainties in the institutional environment.
- Procurement, eligibility of project owners. Notably, procurement rules can mandate a clear distinction between the different roles taken by project teams (design, assessment, implementation support, etc.). This links back to the broader issue of project ownership, which is discussed below.

Certain criteria can lead to elimination of projects (e.g. if project implementation requires resettlement). Timing matters as projects must fit into the cycle of development and implementation of national plans and priorities.

2.2 Sustainable financing model, with proper allocation of risks and revenues

The narrative of WaL highlighted attempts to take a distinctive approach to engage with financiers. Initially, AIIB and FMO were meant to play a distinctive role in clarifying financiers' expectations and helping to build the business case for WaL and the projects it supports. The review suggests several deficiencies in the ways financing was factored in project design.

First, most financing considerations focused on development finance and IFIs. While dependence on development finance was exacerbated by project design, the specificities of decision processes for development finance were not taken into account. As mentioned above, IFIs follow strict review

processes, with set deadlines and steps. Such processes are designed to build trust and ensure buy-in from IFIs' clients – particularly Treasuries – and alignment with IFIs' strategies. Ignoring such processes makes engagement with IFIs more complicated and generates risks of missing funding opportunities with existing project pipelines.

Second, this exclusive focus on IFIs distracted attention from more diverse and domestic sources of finance (commercial banks, property developers, or else). Some projects claimed they could mobilise public and private finance (for instance to develop new industrial estate, through real estate development). The zero-water industrial area in Semarang is a good illustration. However, these claims did not materialise and private finance aspects were forgotten in project development. In the end, governments (national and local) are expected to pay for further project development and implementation. Several interviewees claimed that many of the projects were fundamentally more appropriate for public than for private funding. The risk-return profile of projects and their components was insufficiently considered and developed to attract the attention of a range of potential financiers.

~ Review the enabling environment, understand the strengths and weakness and identify opportunities to make it more conducive to the development and financing of innovative projects.

Third, to explore a range of financing options requires an assessment of how conducive the institutional and policy environment is for such options: regulations on environment, land use, infrastructure, (water-related and financial) risks and liabilities, risk mitigation (including insurance), all contribute to – or potentially deter – investment opportunities for urban resilience. Such an assessment was beyond the scope and ambition of project teams' work.
Overall, the engagement with financiers could be improved if a larger range of financiers were engaged in the process of "co-creation" of projects, the process was better aligned and connected to ongoing project development pipelines (within countries, cities or development banks) and an iterative approach to integrating feedback and shaping project design is taken.

For more diverse financing models to materialise more attention to strengthening the enabling environment (policy framework and institutional arrangements) for investment is required. This highlights the need to review the enabling environment, understand the strengths and weakness and identify opportunities to make it more conducive to the development and financing of innovative projects. This includes making links to such issues as land value, its increase or allocation[2]; or payment for ecosystem services. Project teams did not demonstrate a strong understanding of - or orientation towards - gaining the support of private financiers (commercial banks; real estate; or else). Engaging with private finance would have required project teams with a different profile. These entities might have required higher fees, but would have been targeted at clients.

[2] In Chennai, real estate was considered as leverage to finance water security.

2.3 High transaction costs due to the ad hoc character of each project

Urban adaptation and water management are good examples of a field that requires robust integration of diverse policy objectives and considerations. This translates into strong requirements for robust and coordinated planning and engineering. This takes data and expertise; it also takes the capacity to engage with a range of stakeholders across policy areas. These stakeholders need to remain engaged throughout project implementation to sustain performance.

Integrated projects require detailed and complex feasibility studies, which increase transaction costs. This is an issue for WaL, which promotes integrated projects. Funds to cover these costs are limited. Some IFIs are exploring how to embark on philanthropies (Rockefeller Foundation used to be active on that front; Bill & Melinda Gates Foundation[3]), or dedicated facilities (e.g. the Swedfund Project Accelerator[4]). However, this ad hoc engagement does not provide a sustainable way forward to secure funds for project development at the appropriate scale.

Because the simplistic financing models explored by WaL projects are focused on IFIs, further project development (from project concept to feasibility) is locked in this staged and structured process. Exploring more diverse sources of funding may avoid such lock-in and facilitate access to financiers with varied requirements and processes (e.g. real estate). At the same time, other types of financiers, such as commercial banks, impact investors, institutional investors, or other, will impose their own exigencies in terms of risk-return profile, due diligence and timeline.

3. Enabling environment. Features of the enabling environment that affect access to finance

Multiple interviewees suggested that the WaL timeframe and intensive project format were too condensed to build sufficient local relationship and secure local buy-in, and could not align with the established longer timeframes used by local decision makers and IFIs. They stressed that most development projects take a minimum of 3-5 years to develop and build on decades of credibility and established co-operation between country authorities and development partners/financiers.

Such conditions apparently collide with WaL's ambition to fast-track much needed projects. Indeed, WaL was deliberately working outside of such frameworks and structures; its format meant that it could not easily align with or adhere to locally established processes and timelines. Yet, project teams ultimately needed to engage with the prevailing financing landscape. Anecdotal evidence and partial success stories indicate that it is not necessarily impossible for intensive/short interventions to be done in these contexts; but to work they have to be very well embedded in existing structures with adequate buy-in and support from the main decision makers.

This section unpacks how WaL did (or failed to) consider the foundational features of the enabling environment that supports project development and financing. A general observation is that WaL's focus

[3] In Conakry, the Foundation allocated USD 1 million for consulting services

[4] The fund can support project development in water, waste, energy, forestry... For more information, visit https://www.swedfund.se/en/the-model/#

on projects did not explicitly consider linkages to the enabling environment, broadly defined as the institutional and policy framework that potentially drives – or hinders – investments that contributes to urban resilience. Such an omission resulted in missing potential opportunities to create a stronger basis for investment. Attention to the enabling environment is critical to accelerate investment. On the one hand, project and financing schemes could be designed to align with the existing environment, and benefit from existing opportunities and incentives. On the other hand, project owners and their partners may wish to act on the enabling environment, so that it becomes conducive to projects that contribute to urban resilience.

One pending issue is to characterise the enabling environment for projects that effectively contribute to urban resilience, as defined by WaL. Such characterisation was not made in the context of WaL. Still, OECD work on financing water can help identify how several features of the enabling environment affect access to finance for projects that contribute to urban resilience. REFLECT provides information to characterise how these features operated in the context of WaL.

3.1 Regulations, norms (including risk tolerance, implicit or explicit) and standards

In Semarang, the project developed was not in line with land use policy and the Land Use Planning Act. This illustrates that some decisive features of the institutional or policy environment were not systematically factored in by project teams.

Existing regulations cannot be ignored. Even if they can be reformed, it is unlikely that WaL alone will ignite such reforms. And even if successful, such reforms take time, adding delays in project implementation, potentially creating a tension with WaL's ambition for an accelerated timeline.

IFIs and the trust funds set up to support project development have expressed rising ambitions to work on the enabling environment and favour policies and institutional reforms that are conducive to projects that are better aligned with WaL ambitions. However, it takes time for these intentions to materialise.

3.2 Policy objectives, instruments and incentives

National and local authorities develop strategies and plans, which drive investment decisions and the allocation of public and development finance. These policy documents are revised on a regular basis. These revisions provide opportunities to explore innovative ideas and project concepts. This is why timing matters and project development needs to fit into the cycle of broad strategies and plans.

In addition, IFIs have their own strategies and priorities. Urban development policy goes in multiple directions. It is closely linked to water-related investments, going beyond water and sanitation. Similar opportunities arise from strategic orientations towards agriculture and rural issues. Climate change also demands a distinctive perspective. Most IFIs have quantified targets of finance earmarked for climate-related activities. It is not always clear how water-related projects qualify, as assessment criteria have traditionally been biased toward mitigation (not adaptation).

Interviews indicated clearly that IFIs are not monolithic entities and that initiatives such as WAL should recognise the diversity of views and approaches within IFIs' decision making structures. For instance,

knowledge partners (usually based in IFIs' headquarters) may promote different visions than country officers; the aims of departments working on sovereign finance differ from those of departments supporting private sector development.

These observations are critical to build alliances that can lead to decisions making. Effective alliances require a thorough and detailed understanding of the distinctive priorities and modes of operation (including when it comes to project preparation and selection) within institutions (in different departments of a central government, or units of an IFI).

3.3 Project preparation and prevailing procedures in the development finance community

Project teams made a (more or less implicit) decision to essentially depend on IFIs for project development and finance[5]. IFIs will follow different processes for sovereign funding and for projects that involve the private sector.

On the one hand, sovereign funding processes focus on priorities identified by and discussed with central governments. Eligible projects need a detailed and informed design, which indicates an economic rate of return. Feasibility studies need to be developed, but limited funding is available for such studies. Multilateral institutions set up trust funds to finance such studies, which are replenished by bilateral financing institutions. On the other hand, processes that support private sector development consider clearly defined, typical projects (e.g. desalination plants, wastewater treatment plants) and are less likely to consider integrated projects that combine multiple works at different geographical scales. A PPP unit has distinctive criteria for project selection and review; it does not necessarily favour integration of multiple project components. Similarly to IFIs, bilateral agencies and omestic development banks have their own rules and procedures. For instance, several bilateral development finance agencies stipulated during interviews that they do not engage in structured project finance: they operate through bilateral co-operation with governments. Domestic development banks or financiers (e.g. PTSMI in Indonesia) have their own priorities in terms of localities and topics.

Similar to the point made above on norms and regulations, such processes and criteria for project development and selection are unlikely to change because of WaL. They derive from essential requirements for institutions' operations and accountability, as well as for building trust with clients and business partners. They are part of the enabling environment to be factored in while designing projects and considering viable financing strategies.

3.4 Securing commitments to take action at both national and sub-national levels

Project teams allocated a considerable amount of time to engaging with stakeholders and local institutions with a view to building ownership. Interviewees recalled distinct cases where certain stakeholders at the city level had been engaged quite effectively by WaL (e.g. the mayor). Ultimately, however, while in two cities, connections were well made with local authorities and stakeholders, commitment and support from local institutions that can drive decisions and support project implementation was lacking or unstable. A lot of time was spent by project teams to seek wide

[5] As mentioned above, more diverse financing strategies may have minimised such a reliance on international development finance.

engagement, with a view to enhance project design and social acceptance at local level. Engagement was not properly targeted to the institutions that could drive decision making in the short and medium term. The analyses suggest this derives from three root causes.

First, at the stage of selecting cities for project design, it is not clear whether WaL comprehensively assessed the extent of locally recognised need and demand, including the "readiness", within the cities for the envisioned disruptive project interventions. Not every city would be eligible for or necessarily seeking the type of disruption promoted by WaL. Capacities may be lacking, in particular in second cities, making direct collaboration with regional or national authorities necessary.
Second, as part of the project design process, the teams did not clearly identify and secure local owners for the projects – i.e. borrowers or clients that would ultimately receive and manage the finance for

~ Designing projects in components and phases solely for financial matching, challenges integration with greater financial risks.

projects and oversee project implementation (e.g. a local government authority or institution in the city). For the projects to receive finance and proceed with implementation, they need to be owned by in-country actors that would play the client role for financiers and ensure the projects would be carried through. Incidentally, interviewees reported that they were not aware of WaL having engaged with local financiers – including private (commercial) financiers. Domestic development banks can play a role in this process. In Indonesia, typically, PTSMI can channel WaL projects to partner institutions (IFIs, bilateral agencies, philanthropies; or corporates).

Third, government authorities at the national level were not consistently engaged from the outset of the projects. This was a major barrier to accessing finance from IFIs (e.g. multilateral development banks, bilateral donors). Interviewees noted that the project in Chennai, for instance, was beautifully designed but the leading Indian ministry was not aware of it. WaL needed national governments' early involvement both to ensure national buy-in and support for the city-level projects and to facilitate financing by IFIs, which essentially respond to national authorities' requests. National government engagement is also instrumental for ensuring that any new interventions arising through WaL would complement existing projects and initiatives in each city and country, thereby expediting assessment of the opportunity and access to finance.

3.5 Designing integration through modularity

Several financiers underscored that WaL projects provide general ideas of integrated responses to water-related risks, but no clear guidance on what the next steps might be and how and where to get started (Khulna, Semarang). Well-defined modules and appropriate sequencing could add practical value and relevance. One project team in Chennai may have been better able to move into that direction (small scale; modules; sequencing) and provide practical options for taking action.
Even if they were to cherry pick components of WaL projects to proceed with feasibility studies and eventual implementation, financiers would also need to manage the potential risks that could arise from

other contingent project components being managed and financed by other parties that were beyond the financier's control. This highlights that designing projects in such a way that they can be separated into distinct components and/or phases to be supported by multiple financiers may not only be an obvious challenge to integration, but also recognised as a key risk from the financier perspective.

4. Lessons learned and ways forward

Preliminary options to amend WaL derive from the analyses above. They need to be discussed in conjunction with research outcomes of other REFLECT partners. At this stage, the options highlight the need to make trade-offs. The practical ways these trade-offs can be addressed depend on options that go beyond the analysis and relate to the level of ambition of WaL and its positioning in the global landscape.

4.1 Innovation in practice. Pushing the boundaries of projects that contribute to urban resilience

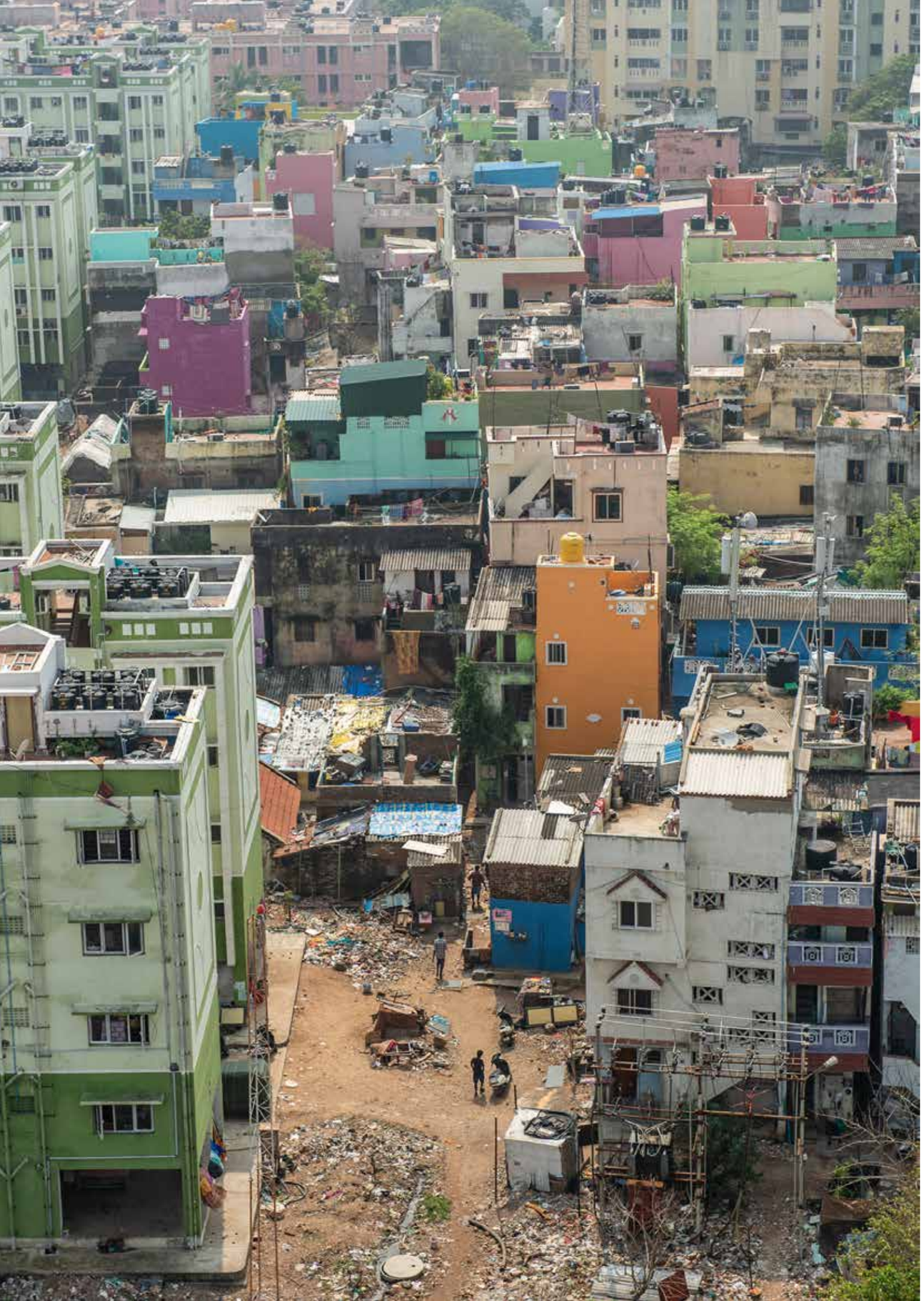
Experience with WaL begs the question of how to promote disruption and innovation in projects that contribute to urban resilience. Interviewees suggested that WaL may have been premised on a misplaced assumption that an excellent, innovative, prestigious and/or holistic project design would "speak for itself": it would be sufficiently compelling to local actors and financiers to potentially convince them to bypass standard channels for project assessment and approval. It was not clear that this assumption was correct and based on evidence from past experience in cities. Experience shows that project success depends just as much upon who characterises, expresses and supports the demand for disruptive projects, and the process whereby projects are designed and embedded in existing institutional, policy and bureaucratic environments.

An alternative option is possible to promote innovation and projects that are well-aligned with WaL ambition. It consists in joining forces with existing projects and trying to push their boundaries. IFIs and bilateral agencies pointed out that they cannot develop new projects from scratch: in each country/city, they already have long lists of projects and strive to narrow them down. Some features of WaL projects could be included in these long lists. Projects in the long lists can be amended, to push the boundary.

This strategy is more likely to deliver if some funding is available to finance costs driven by the expected addition[66]: additional finance provides some leverage to shape the formulation and direction of projects. An interviewee suggested the following illustration: in a USD 400 million project for coastal development in Southeast Asia, WaL could well contribute an additional USD 10 million to cover costs related to nature-based solutions or other components. In that context, WaL could operate as an advisor in the early development of projects financed by other institutions.

The choice of the most effective strategy (challenging prevailing initiatives versus embedding efforts in prevailing initiatives) depends on how innovation is conceptualised by WaL. The first option promotes innovation as a radical departure from prevailing approaches. The second one enmeshes innovation in prevailing modes of operation and practices.
Interviewees with extensive experience working at the city level suggested that projects might have attracted finance if project teams had partnered with financiers early on to ensure that the concepts

[6] One interviewee referred to this as the RVO model.



were aligned with potential financiers' activities, and with the overall aim of securing some down-stream finance for the projects' implementation. It was acknowledged that this may have introduced new parameters and constraints on innovation but the flipside was that WaL concepts were very difficult to advance to the feasibility study stage that would be required by IFIs.

PROSPECT

A practical way to address this trade-off would be to put enough time into laying the ground-work in understanding what is already ongoing, and existing players and initiatives which could have provided ways to embed WAL interventions within existing processes.

This would require a systematic scanning of on-going projects or initiatives already in the pipeline and an assessment of how their boundaries could be pushed in ways that align with WaL ambition. It would also require the formation of strong local relationships, early identification and continuous cultivation of project ownership by local actors, and a thorough and inclusive assessment of the enabling conditions that affect room for manoeuvre and projects' capacity to push boundaries.

A diagnosis of the enabling environment for investment, including strengths and weaknesses would be a strong complement to such efforts.

4.2 From needs to generating demand and ownership

Building on analyses above, three points deserve particular attention to gain support for project implementation:

- Who identifies, defines and expresses the demand for disruptive and innovative projects? Lasting project support requires that the case for innovation and integration is made by the institutions that ultimately make decisions at multiple stages in project development, financing and implementation.
- How to shift from (unstable) support from local institutions to commitment by the key decision makers that is sustained over time? While support in the context of project development matters, it needs to translate into active and sustained commitment, and ranking priorities for further development and investment.
- How to gain support from institutions that drive decisions? Considering that development finance transits through central ministries and ministries of finance, local support needs to be obtained from institutions that have the capacity to engage with national ministries (e.g. public works; urban development) and finance ministries, to ensure projects are listed among national priorities in discussions with development finance institutions. In the case of Khulna, ownership and support from KCC should have been supplemented by support at national level, as KCC cannot take a loan.

PROSPECT

At the early stage of selecting cities for the projects, WaL could undertake an initial process of scoping and gauging need, interest, demand and potential ownership for the projects' implementation at the local (city), provincial and national levels. WaL could consider a number of "enabling environment indicators" of cities' need, demand and readiness for disruptive/innovative projects (e.g. city authorities' demonstrated openness to new approaches in past projects; conducive local institutional settings, such as strong existing approaches to cross-sectoral policy coordination, or existing partnerships with financiers; presence of champions to build buy-in, etc.). Some of these attributes could be difficult to assess in any consistent way. However, if WAL was well-connected with local actors and others who have a robust understanding of the working environment (e.g. IFIs active in the region, local water/resilience champions) then it would be possible to develop a framework of both quantitative and qualitative criteria that WaL should look for in deciding to approach a city or in assessing a call from a city.

This could help to identify prospective project owners and formalise a partnership wherein they would be involved from the outset of the project design and play a sustained role in securing buy-in, finance and managing the project's implementation.

More attention could be paid to the role of local institutions, including domestic financiers, in making decisions that can support project development and implementation. From a financing perspective, ownership should come with the identification of a borrower, an institution that would take responsibility and be held accountable for project implementation and performance. In essence, projects were developed in such a way that RVO – not local governments - was the client of project teams.

Projects would benefit from prioritising the formation of strong relationships with national actors and demonstrating from an early stage how the WaL projects cohere with national policy priorities. This would be particularly important for projects seeking finance from IFIs, as all IFIs partner with national governments, have established country plans/strategies, and do not engage without a clear request from national authorities and project owners.

4.3 Intellectual property. Balancing innovation and the capacity to implement projects

A related issue is ownership of intellectual property (IP) of WaL projects. Project teams own IP. This is part of WaL's business model: WaL could only cover parts of the costs of project development and the deal was that project teams invest some of their own time in-kind and will recoup that investment through IP on project design and potentially through subsequent fees that may be gained in the later phases of project development and implementation[7].

This business model has several drawbacks:
It challenges the very notion of local ownership as project teams literally own the projects. This is particularly tricky as projects will need to evolve, when moving from pre-feasibility to feasibility and later stages of project development. There is a practical issue with the appropriate level of flexibility granted to institutions tasked with further project development and implementation.

[7] Note that IP is part of the on-going discussion with the GCF application

It makes working with project teams at later stages of project development mandatory, adding constraints and costs: a financier would need to give a contract to the consortium and further developments of the project would require additional fees and be tied to the consortium. Such constraints may be at odd with IFIs' procurement rules.

Such a business model suggests a foundational mismatch between WaL's aspirations to attract innovative, expert design teams through a competitive process, and the reality that WaL required a significant in-kind investment but was unable to guarantee that the design teams would have a formal role in project implementation.

In practice, project teams have a role to play in providing the "big picture", but they are unlikely to remain involved further down the line of project development and implementation. The initial ideas will need to be compromised: financiers will finalise project preparation, probably altering the initial concept and vision, but ultimately financing subsets of it.

PROSPECT
This issue should be considered in relation to previous discussions on how to foster innovation. In essence, the modalities of project teams' engagement should be revised to avoid lock-in that adds constraints and costs in further stages of project development and implementation. Experience suggests that intellectual property should be owned by the project owner, namely the institution on whose behalf the project is being developed.

4.4 Encouraging integration through modularity

Projects inspired by WaL combine a range of actions, at different geographical scales (from local, to city and catchment level) and cut across a range of policy areas (urban development and land use; water services and infrastructure; transport; etc.). They aim to prioritise integrated/holistic approaches.

Some financiers and other actors considered this a barrier to securing finance, emphasising that financiers' existing frameworks would typically interpret large, long-term projects as risky and demanding sophisticated (and costly) development to translate into feasible projects.
Stand-alone, integrated projects can only materialise if they manage to secure funding upfront.
This would require initial mapping of existing initiatives; alignment with priorities at city, regional and national level; and early commitment from project champions and sponsors. This typically takes time and needs to be initiated in sync with the development cycle of strategic and planning documents.

In the absence of sponsors to cover the distinctively high costs of such development stages, integrated projects actually incentivise financiers to "cherry pick" individual, economically viable components to make financing more feasible and timeframes more manageable. It follows that the expected benefits of WaL projects are more likely to materialise if distinct modules of integrated projects are well identified, phased and sequenced. The possibility of a staged approach is seen by financiers as an option to minimise risk.

PROSPECT

Project design would benefit from identifying key components and modules that are essential to securing expected outcomes. Project teams should then consider how key modules can be implemented in local contexts and provide options to support adequate sequencing.

4.5 Project owners, local partners, facilitators: a role for intermediaries

Intermediaries have a role to play to connect emerging projects with existing initiatives and funding opportunities. A distinctive savoir faire is required to understand funding opportunities and be able to engage with a range of financiers, domestic and international ones, private (commercial banks, property developers) and public (including, but not limited to, development finance). And a capable structure on the ground is required to manage interdisciplinary project development and combine multiple sources of funding and revenue streams. The absence of such a structure was the cause and the consequence of simplistic financing models for WaL projects.

In practice, a range of legal statuses may be considered. Parastatal agencies have an advantage; basin organisations can qualify, as they are multidimensional and designed to deliver long term benefits. One option might be to rely on a local development company, to make projects materialise, which is not the same as raising funds for further project development. The question is: how to structure a company that can make things happen? Such arrangements need to be set up on Day 1. They would translate into more realistic settings throughout project development.
The concept gains traction in other domains, most recently in renewable energy (cf. solar in Africa).
See some examples, such as Toronto (when dealing with Alphabet), Paris, the UK, Lagos[8], or deals with such investment funds as Mirova (which created a land degradation neutrality fund[9]). Another potential illustration is the development model pilot tested by WWF in the Kafue flats (Zambia): the project – still at early stages - aims to combine different value streams; no public authority can finance the whole project; an intermediary (SPV, city development company, or else) is required to design and support a combination of public and private investment streams (for illustrations, see OECD, 2019, Making Blended Finance Work for Water and Sanitation. Unlocking Commercial Finance for SDG 6, OECD Publishing, Paris).

PROSPECT

WaL could play a concerted role as an "intermediary" in the cities where it is active. This would entail presenting and discussing innovative project concepts with potential financiers at regular points within the year (ideally aligned with IFIs' time frames). This could maximise the chances of the concepts aligning with existing priorities, discussions and concrete processes of IFIs and national/local governments.

Alternatively, WaL could identify and assess existing intermediaries, or support the setting up of a new entity, able to facilitate project development and implementation over time. Discussions above suggested that different types of entities and statuses qualify, as long as they connect stakeholders, combine revenues streams and build trust.

[8] Eko Atlantic City is a land extension programme (https://www.ekoatlantic.com/); no public money involved, in a USD 5 billion project

[9] For more information, see https://www.natixis.com/natixis/jcms/rpaz5_74454/fr/premier-investissement-pour-le-fonds-land-degradation-neutrality (in French)

BOX 0.1. THE POTENTIAL RELEVANCE OF SPV TO MANAGE COMPLEX FINANCING MODELS

Partly because of the academic tradition of water specialists the outcome of IWRM master planning is normally a programme that is supposed to be financed by the public sector, while many private parties stand to gain from the programme (including property developers, land owners, farmers). The (future) private revenues are usually not expected to contribute to paying for the direct costs of the programme.
Special purpose vehicles (SPVs) may be considered to manage the financial process. An SPV is a separate legal entity created by an organization, usually for a specific objective, often to isolate financial risk. An SPV typically contributes to risk sharing, securitisation of loans, or asset transfer. SPVs can participate in multiple revenue streams in a controlled way.
An SPV could act as a dedicated intermediary to bundle private revenue streams: the SPV could be granted the right to partner with various private parties to bundle the revenue streams. This right can be considered as a concession, and should be issued via a transparent legal process. This requires distinctive skills (capacity to procure and manage concessions).
In Chile, Peru, the Philippines, procurement agencies can handle the issuance of concessions... with some limitations.
They are useful when accepted by all stakeholders. SPVs need to be adjusted to local conditions. In particular, if the city mayor claims such a development company or SPV already exists, it should be involved and its trustworthiness assessed.
The SPV can be project-specific. In many cities or regions, a public development bank can take that role. The SPV could also be promoted by a special investment fund to be set up by a legitimate and trusted organisation. A trusted global partner could be interested to set up a fund to create such SPVs. It takes 2 years for 5 people to set up an SPV. The global partner would get shares in the new SPV and then sell them down the road to replenish the fund and create more SPVs.
IFIs' experience with SPV is fragmented: teams that work with the private sector are likely to have some experience of the development of commercial propositions with a return. Teams that work on sovereign finance are not.

Source: OECD, based on interviews

4.6 Developing a clear and pragmatic financing strategy

Analyses above suggest that WaL was affected by the lack of pragmatic financing strategies to further support project development and implementation. It was argued that this derived from a gap in the skills of project designers.

Moreover, financing strategies in WaL projects were almost exclusively focused (and dependent) on international development (or climate) finance. This created some (procedural) constraints and might have been a missed opportunity to explore more diverse sources of finance, including domestic ones (national development banks, domestic commercial banks, land and property development, or else).

Prevailing strategies did not systematically consider (and align with) the institutional and policy environment or investment.

PROSPECT

Project teams would benefit from working with (or incorporating) experts with practical experience with diverse financing mechanisms and schemes. The capacity to engage with a range of potential financiers (from IFIs to domestic commercial banks and land and property developers) and reflect their priorities and expectations in project design can facilitate and accelerate discussions on financing options further down project development and implementation. It can also provide some space for project development independently from the procedures that prevail with IFIs.

Such expertise would be required at multiple stages in project design and development. This would ensure a financing perspective informs and influences that development, increasing the likelihood that the projects would be implemented.

To explore a variety of options and avoid false expectations, project teams would need to assess the enabling environment for investment in the host countries and cities, such as rules that regulate the operation of financing institutions (allocation of risks and portfolio management).

5. Features of a CALL

5.1 Towards an ideal situation driven by Water as Leverage

Building on the analyses above, it is possible to propose one scenario that matches WaL's initial ambition to support the development of projects that contribute to urban water resilience and an enabling environment (including financing mechanisms) conducive to implementation and replication of successful projects.

- Selection of cities for WaL. The selection is based on a call for interest that signals clear local recognition of a need and demand for WaL interventions. Cities' applications to the programme are assessed on the basis of their enabling environment and how conducive it is to the development and implementation of projects aligned with WaL ambition. This includes either fiscal capacity to support project development and implementation or support from higher level authorities (regional or national). This also includes consideration of the enabling environment for investment.
- Selection of project teams for WaL. Project teams include skills to develop pragmatic business models for project management and implementation. They either have the capacity to implement projects themselves or to identify or set up a local entity with such skills. They accept to "let go" and give up control over project development and implementation (including not owning the IP).
- Project development. Projects match stated priorities and explicit demand at local, regional and/or national levels. They contribute to pushing the boundaries by distinctive additional contributions, and embed innovation in prevailing dynamics, ideally supported by a grant. Project development contributes to transforming the institutional environment and ecosystem, and enhance its enabling character. Where and when possible, it explores options to diversify sources of finance.
- Project implementation. it is facilitated by ad hoc intermediaries (existing development companies, SPV or other arrangements), who deliver three sets of functions:
  - They connect project partners in the local environment
  - They engage with a range of financiers (public and private, as appropriate) and combine different revenue streams
  - They build trust in project implementation, now and in the long term.
- Replication and deployment. Intermediaries share experience and good practices, reinforcing capacities to develop and implement WaL-like projects globally.

These features call for expanding the timeframe of engagement, which requires a consistent and dedicated engagement at local level if WAL really seeks to be transformational, in selected countries and globally.

5.2 CALL. Options for Wal 2.0[10]

- To crystallise the capacity to connect and collaborate with institutions that do not usually collaborate, from architects and urbanists to domestic financiers in foreign countries.
- To support the development of projects that combine an integrated vision of urban resilience and a sequence of actionable elements. This may include developing new projects, but also working to influence projects already under development to shape them in a way that can deliver more impact.
- To encourage and facilitate the exploration of multidimensional financing strategies, which combine diverse sources of finance and revenues. IFIs and public finance have a role to play, less as primary financiers than as instruments that can mobilise other (domestic, commercial) sources.

[10] This sub-section builds on a note drafted by - and a fruitful conversation with - AWB

- To contribute to diagnosing and identifying opportunities to improving the enabling environment for investment, which can contribute to laying the foundation for sustainable financing strategies and moblilising financing.
- To support the emergence of local demand (in addition to acknowledging needs), possibly in combination with national strategies and priorities.
- To support the education of professionals and decision makers aligned with the ambition of using water as a leverage to fostering urban resilience. WaL could work in partnership with training and education institutions active at local, national and/or international levels to educate and train professionals active in cities and finance institutions, essentially in developing countries[11].

~ The capacity to raise seed money to set up the organisation, kick-start the development of new projects and support the development of supporting tools will possibly drive decisions.

These tasks would benefit from several tools and skills, which are sketched below. WaL could inspire and contribute to the development and dissemination of such tools, in partnership:

- A tool to assess the enabling environment for projects that use water as leverage to bolster urban resilience. The tool would build on an a priori inventory of essential features of institutional and policy environments that are conducive to the development, financing and implementation of projects in line with WaL's ambition. The tool would be used by project developers to rapidly assess the enabling the environment in a particular city or country and how that can affect project design. The tool can also be used by (domestic and international) organisations which can inspire and support reforms.
- Guidelines on how integrated projects can be sequenced in actionable elements, and supported by multidimensional financing strategies. The guidelines would characterise the skills required in project teams, to engage with and harness the series of stakeholders and decision makers required to make such projects materialise. The tool would be used by project developers and their sponsors as a check-list of the robustness of project organisation and management capacity.
- A library of successful projects in line with WaL's ambition, as a source of reference and inspiration or further developments. The library would keep track and institutional memory of the projects and the processes that sustained their development and implementation[12].

Several organisational models can support the functions and the development of the tools sketched above. They essentially vary according to the preferred level of integration of functions and partners. The models obviously vary as regards the level of finance required. The capacity to raise seed money to set up the organisation, kick-start the development of new projects and support the development of supporting tools will possibly drive decisions on the preferred organisational model. The initial model may evolve over time, when the successful development of projects, tools or training programmes can generate revenues to sustain WaL beyond the personal investment of its core founders.

[11] The success of Chief Resilience Officers, supported by the former 100 Resilient Cities initiative is a valuable reference.

Annex 1. *List of interviews*

INTERVIEWEE	OECD TEAM	PARTNERS	DAY
MINBUZA Roel MARTENS	Xavier		12-Jun
Cities Development Initiative for Asia (CDIA) Brian Joseph P. Capati *brian.capati@cdia.asia* Neil Chadderı *neil.chadder@cdia.asia*	Xavier, Kathleen, Stephanie		16-Jun
WB Francis Ghesquiere *fghesquiere@worldbank.org*	Xavier, Kathleen, Stephanie	Proos, R.M.W. (Robert) *robert.proos@rvo.nl* Serafina Van Godtsenhoven *svangodtsenhoven@architectureworkroom.eu* Bram Vandemoortel *bvandemoortel@architectureworkroom.eu*	17-Jun
KfW *christina.bartz@kfw.de'* *jan.alber@kfw.de'*	Xavier, Kathleen, Stephanie	daan.stoop@rvo.nl	19-Jun
RVO Sandra.Schoof	Xavier		19-Jun
IsDB Ahmed Al Qabany *AAlQabany@isdb.org* Nizar Zaied *nzaied@isdb.org* Daouda Ben Oumar Ndiaye *DNdiaye@isdb.org*	Xavier, Kathleen, Stephanie	daan.stoop@rvo.nl	22-Jun
FMO Pritha Hariram *p.hariram@fmo.nl* Nienke Uil *n.uil@fmo.nl*	Xavier, Kathleen, Stephanie	Serafina Van Godtsenhoven *svangodtsenhoven@architectureworkroom.eu* Bram Vandemoortel *bvandemoortel@architectureworkroom.eu*	23-Jun
PTSMI (Semarang) Delano Dalo *delano@ptsmi.co.id* Heddy Suryantono *heddy@ptsmi.co.id*	Xavier		06-Jul
ADB Thomas Panella *tpanella@adb.org* Joris G. Van Etten *jvanetten@adb.org* Anupma Jain *ajain@adb.org* Eric Quincieu *equincieu@adb.org*	Xavier, Kathleen, Stephanie	*daan.stoop@rvo.nl*	08-Jul
AIIB David Ginting' *David.Ginting@aiib.org* Frank Belitz *frank.belitz@aiib.org*	Xavier, Kathleen, Stephanie	*daan.stoop@rvo.nl*	15-Jul
EIB Karine Measson	Xavier		16-Jul
SIPCOT Hans Gehrels			
GEF Christin Holde Severin *cseverin@thegef.org*			

~ *Section* II. RUG

Reflection on the Water as Leverage for Resilient Cities Asia program: the case of Semarang

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CONTENT

1. Introduction

In many Southeast Asian cities, climate change is most profoundly felt through water impacts, ranging from long periods of intense drought to severe urban flooding as a consequence of heavy rainfall or sea-level rise; therefore, water is often perceived as a risk. The novel Water as Leverage program (WaL), however, in line with its name, aims to use water as an opportunity. The program is based on the idea that water can be used as a lever to "improve our ecosystems, grow our economies, boost agricultural efficiencies, and tackle inequity" (Water as Leverage, 2019, p. 1), and was initiated by the Dutch Special Envoy for International Water Affairs, Henk Ovink, in collaboration with a multitude of government, architecture, financial, and knowledge partners. WaL considers the business-as-usual approach in many Southeast Asian cities to result in fragmented climate and water action. In contrast to the traditional sector based approach, WaL suggests an integrated water approach, which, through a collaborative process with public and private stakeholders, pro-active engagement with local communities, and involvement of multidisciplinary design teams, is expected to result in integrated climate resilient strategies and ultimately in "innovative and transformative projects" (Water as Leverage, 2019, p. 2).

The program formulated a Call to Action report in 2018. This report outlined the water-related challenges in Southeast Asia and identified and selected three cities in which the program would pilot. These cities are Chennai in India, Khulna in Bangladesh, and Semarang in Indonesia. The Call to Action invited multidisciplinary design teams from around the world to propose climate resilient strategies for each of these cities. Eventually, two design teams per city were selected and these were invited to develop their proposals into full-fledged climate resilient strategies and related "transformative projects". The design teams proceeded to do so, both locally in close collaboration with local governments, knowledge, and financial partners, and internationally through a series of international workshops, which were attended by, amongst others, the World Bank and the Asian Investment and Development Bank. In this way, the Water as Leverage program aimed to cultivate an enabling environment in which strategies and projects, beyond current boundaries, could be safely explored and developed.

To date, the program has resulted in a strategy and several projects in each city. These projects now need to be implemented. Since work is ongoing regarding the implementation of the projects, the transition from planning towards implementation is an appropriate moment to reflect on the front-end and planning phases of the program. In order to do so, the Dutch Special Envoy for International Water Affairs asked the OECD, Architecture Workroom Brussels, and the University of Groningen to reflect on WaL thus far. This reflection aims to provide insight into the successful and unsuccessful mechanisms of the program in order to understand how these might be used, altered or improved in the planning and development of WaL in other Asian cities as well as in other parts of the world.

This report presents the reflection of the University of Groningen. Several key concepts and questions guided the reflection of the University of Groningen. These are described in the following section.

1.1 Key concepts and questions

Resilience by design

Inspired by, and building on experiences from the Rebuild By Design (RBD) program and Dutch spatial planning, WaL employs a resilience by design approach to envision flood resiliency and climate adaptation solutions in Chennai, Khulna, and Semarang. Resilience by design promotes a multi-disciplinary approach and an innovative planning process for stimulating urban transformation to flood resilience (Trogrlic et al., 2018). This design-led flood resilience building aims to create opportunities to reframe socioecological problems and to develop creative solutions. Instead of tacking existing or pre-defined problems, designers explore challenges together with local stake-holders and synthesise and visualise resilience design into programmatic solutions (Lochead, 2017).

According to Ovink and Boeijenga (2018), a resilience by design process is "opportunistic, inclusive, nd comprehensive, uniting people and places, addressing problems here and now with solutions that are feasible and workable" (p. 14). Resilience by design is operationalised based on a 3-step process (Lochhead, 2017): 1) a design competition for multidisciplinary design team; 2) engagement of selected multidisciplinary teams in both research and design with strong stakeholder collaboration; and 3) development of proposals for finance and implementation. In the United States, the resilience by design approach was operationalised through the RBD program by Hurricane Sandy Rebuilding Taskforce and the US Department of Housing and Urban Development (HUD) (Lochhead, 2017; Trogrlic et al., 2018). In Asia, WaL used this approach to not only develop "soft spaces" for creating innovative ideas and new solutions but also to fuel local capacity building and to develop an enabling environment in which holistic and integrated climate resilience solutions can be identified and implemented.

Soft spaces

Olesen (2012) conceptualises a soft planning space as "a mix of (i) new spatial imaginations promoting new informal planning spaces located outside the formal planning system and formal scales of planning and (ii) new networked forms of governance seeking to work outside the rigidities of statutory planning" (p. 911). Allmendinger and Haughton (2010) draw attention to soft spaces as they are situated alongside formal planning spaces, and complement, intertwine, and in particular situations even replace them. Soft spaces allow participants to freely share their ideas beyond their professional boundaries. They further allow the sharing of ideas for creating new (bold or wild) solutions while also developing insights into the connecting of these ideas to formal planning processes. As such, soft spaces encourage the systematic understanding of the interconnectedness of the issues detached from existing problem framing.

The resilience by design process in WaL provided soft spaces for the three targeted cities. WaL was not part of any local, regional or national (formal) planning systems. It was an international initiative with the ambition of upscaling and replicating in multiple cities and countries. In light of WaL's ambitions to upscale, replicate, and learn for future WaL(-like) initiatives, the first key question in our reflection was what sequence of events led to the initiation and creation of the WaL program that provided the resources to create soft spaces for the preparation and pre-development of the climate solutions.

Capacity building

WaL created soft spaces for the co-creation and development of proposals for strategic climate resilience programs. These programs present options for improving urban climate resilienceand have multiple societal, environmental, and economic benefits. The common challenge of such inclusive and integrative solutions is that they struggle to fit in the existing institutional system. These kind of solutions call for capacity building to create an enabling environment for their actual implementation.

Building local institutional capacities is essential for creating an enabling environment. An enabling environment is seen as a pre-condition for developing and implementing flood resilience and climate adaptation strategies (Gersonius et al., 2016; Restemeyer et al., 2015). According to Cars et al. (2017), "building 'institutional capacity' requires transforming, creating and mobilizing 'institutional capitals' of a place in the collective effort of shaping its future" (p. 54). In general, a distinction is made between three types of institutional capital (Healey, 1998):

- **Intellectual capital** refers to the ability to draw insights and expertise from a wide range of knowledge resources, and the ability to organise a learning process for understanding and exploring policy contexts and potential policy solutions (Khakee, 2010).
- **Social capital** refers to "the nature, reach and quality of the relational networks brought into the governance process by stakeholders" (de Magalhães et al., 2017, p. 54), that is, the ability to organise an inclusive and collaborative governance process that creates mutual trust and relational networks (Aldrich & Meyer, 2015).
- **Political capital** refers to the ability of stakeholders and their networks to pull together resources, rules, and ideas to achieve policy outcomes (Healey, 2003).

A second key question during the research was: how the WaL program enabled the building of local institutional capacities for the development and implementation of innovative climate resilience solutions. The assumption was that boundary spanning by design/designers played a crucial role in building local institutional capacity.

Boundary spanning

In designing inclusive and integrative climate solutions, boundary spanning can connect and bring together people, sectors, organisations, disciplines, values and perspectives (van den Brink et al., 2019). In these collaborative governance processes, multiple boundary spanners are often in play in addressing and overcoming the encountered boundaries, collectively forming an ecology of boundary spanners (cf. van Lente, 2003). Boundary spanners, such as spatial designers, are generally considered as individuals "who are especially sensitive to and skilled in bridging interests, professions, and organizations" (Webb, 1991, p. 231). However, the work of boundary spanners not only requires personal skills and competences, such as networking skills and experience, but also favourable conditional factors, such as a formalised role definition (van den Brink et al., 2019; van Meerkerk & Edelenbos, 2018). A third important third key question during the research was, therefore, which boundary spanning activities and roles did the involved spatial designers (as individual and as part of a design team) perform to build local institutional capacity and what were conditional factors for boundary spanning?

1.2 Methodology

This report contains the RUG-contribution to the WaL Reflect project, and builds on previous research conducted by the RUG-team on urban flood resilience (e.g. Restemeyer et al., 2015; Laeni et al., 2019), boundary spanning (e.g. van den Brink et al., 2019), regional design (e.g. Kempenaar et al., 2016), and Wal's institutional capacity building in Semarang (e.g. Laeni et al., in press). To build on previous research, the RUG-contribution to the Wal-Reflect project focused on WaL-Semarang. Moreover, the research for the WaL-Reflect project was aligned with research for the NWO SURF project "Spatial designers as boundary spanners in transformations towards a sustainable society" (2020-2021), in which WaL-Semarang was also one of the cases.

For the empirical research, the results of two interviews with the initiator of WaL in the spring of 2020 and 13 semi-structured interviews with key stakeholders involved in the WaL program were used, 7 of which were held in 2019 during previous fieldwork in Semarang for research on institutional capacity building. In the spring of 2020, an additional six stakeholder interviews were conducted in the context of the

WaL Reflect and NWO SURF projects, focusing more specifically on boundary spanning by design. The interviewees included, among others, international lead and local lead partners of the multidisciplinary design teams, a program officer, and an international partner of the program. Table 1.1 presents an overview of the interviewees. All interviews were audio-recorded and transcribed verbatim for data analysis.

***Table* 1.1** *List of interviewees for the WaL Reflect report*

2019: Individuals interviewed for RUG research on institutional capacity building by the WaL program in Semarang	2020: Individuals interviewed for the WaL Reflect and NWO SURF project
1. Resource Mobilisation Director and WaL knowledge partner (Indonesia Science Fund)	1. Landscape Architect and consortium design lead of Cascading Semarang Team (MLA+)
2. Urban planner and member of One Semarang team (Kota Kita - Our City Foundation)	2. Technical advisor to the Chief Resilience Officer Semarang, Lecturer, and member of Cascading Semarang Team (Diponegoro University (UNDIP))
3. Semarang Chief Resilient Officer and Head of Infrastructure and Environment Research and Development (Semarang Planning Agency)	3. Landscape Architect and consortium design lead of One Semarang Team (One Architecture and Urbanism)
4. Dutch government representative for water cooperation Netherlands-Indonesia	4. Program Director and member of One Semarang team (Kota Kita - Our City Foundation)
5. Program Director and member of One Semarang team (Kota Kita - Our City Foundation)	5. Former UN-Habitat Urban Design Lab Lead and international partner of WaL
6. Urban Designer and member of Cascading Semarang (Indonesian Diaspora Network (IDN))	6. Program Advisor Global Public Goods and WaL program officer (Netherlands Enterprise Agency)
7. Technical advisor to the Semarang Chief Resilience Officer, Lecturer, and member of Cascading Semarang Team (Diponegoro University)	

The aim of the 13 in-depth, semi-structured stakeholder interviews was to reflect on important lessons learned through WaL in Semarang, particularly in terms of institutional capacity building, and the emerging boundary spanning roles of the involved spatial designers. The interviewees were also asked to reflect on the WaL process and the implementation of the developed strategic proposals, and to formulate several recommendations for improvement. The data analysis was conducted using the computer program Atlas.ti. A deductive coding strategy was developed based on the concepts central to the research (the three capitals and the boundary spanning work – activities, roles and conditions - of the spatial designers involved). The two interviews with the initiator of WaL focused on the pre-program stage of WaL; the results of which were used to construct a sequence of events that led up to the launch of the WaL program with a call to action. Linkography (e.g. Goldschmidt, 2014; Hatcher et al. 2018), an analysis method developed in design research, was used to gain further insights into the interconnectedness of the events that led up to the inception and creation of WaL.

1.3 Structure of the report

The report is structured as follows. Chapter 2 presents the reflection on the conception and creation stage of the WaL-program. In Chapter 3, the reflection on capacity building takes centre stage, followed by chapter 4, which focusses on boundary spanning activities, roles, and conditions. Finally, chapter 5 contains the lessons that can be learned from the reflection.

2. The fuzzy front-end of WaL

WaL was set up as a one-off program. It, however, also had the ambition to create an exemplary approach that could be scaled up and adapted by other cities and regions in Asia and other parts of the world. The WaL approach itself was built on previous experiences in inclusive and integrated vision making and project preparation. This illustrates that inclusive and integrated climate infrastructure project preparation and development is not entirely new. These previous experiences were situated in the Western world where the institutional and socio-economic situation allows for experimentation with innovative approaches and their follow up. This, however, is not always the case in many other parts of the world, such as in Asia, in which International Finance Institutions have a critical role in financing large infrastructural projects, and where the resources and capacity to develop innovative, inclusive, and integrated climate infrastructure projects are limited. It is this particular gap that WaL aimed to bridge, and of which it is a rare and true innovative example.

The funding of the WaL program itself was no sure thing, as was derived from the analysis of the pre-program stage. The development of the WaL program was a fuzzy process of intended actions and coincidences. It took over three years to come from a first idea to the launch of the program in the spring of 2018 and depended on two lucky events for its funding. The sequence of events that led up to the WaL program is presented in Table 2.1.

Three stages can be identified in the development of the WaL initiative. The first stage, in which talks between the director of the World Bank Water Global Practice and the Dutch Special Envoy for International Water Affairs took place, led to the formulation of the first ideas for an inclusive and integrated climate infrastructure project preparation facility, which were documented in a memo. This, at first, did not lead to a follow-up. However, a meeting with the president of the Asian Infrastructure and Investment Bank (AIIB) one year later initiated a second stage.

Based on the memo written for the director of the World Bank Water Global Practice, a presentation was made to pitch the WaL idea to the AIIB. By a lucky coincidence, the idea could also be pitched on the same day to representatives of the Global Centre of Excellence on Climate Adaptation (GCECA), which was in formation at the time. This second pitch, combined with the AIIB's positive response to the idea, led to the funding of the development of the WaL idea into a program proposal and the initiation of the third stage in the development of WaL.

This funding, however, only covered the costs for developing the program; it did not provide funding for the program itself. Here, a second lucky event played a critical part. The team developing the WaL program was tipped off to seek contact with Invest-NL, an investment fund of the Dutch national government that was in formation at that moment. It had funding and was on the lookout for interesting projects and initiatives, of which the WaL program became one.

The story of the pre-program stage of WaL illustrates that funding for WaL-like initiatives is yet to have a permanent position in (global) planning and financing structures for climate infrastructure projects. Furthermore, it shows that developing such initiatives calls for taking risks and starting without financial guarantees for a follow-up. The analysis of the pre-program stage of WaL furthermore reveals the need for (international) networking, spanning boundaries between organisations, interests, and disciplines, and the skills and capacity to bring ideas, people, and resources together. These factors are crucial in the development of programs, platforms, facilities, or other (temporary) structures that provide spaces in which inclusive and integrated climate infrastructure projects can be developed.

Table 2.1 *Sequence of events leading up to the WaL program*

	1	Background in Spatial Planning NL
	2	2012 – 2014: Rebuild by Design competition
	3	2013: Start 100 Resilient Cities Network (100 RC Network)
2014	**4**	RbD initiator and ambassador at large Singapore on advisory panel NUSDeltares[1]
	5	October 2014: Meeting RbD initiator and senior director of World Bank (WB) Water Global Practice
2015	**6**	2015: 2030 Agenda for Sustainable Development and Paris agreement
	7	March 2015: RbD initiator appointed as Special Envoy International Water Affairs NL
	8	Talks special envoy & senior director WB Water Global Practice
	9	Initiative to create a UN High Level Panel on Water
	10	Special Envoy initiates PBL[2] research "Geographies on Future Water Challenges"
	11	October 2015: Special Envoy writes memo for senior director WB Water Global Practice
2016	**12**	April 2016: Installation of UN High Level Panel on Water
	13	November 2016: President AIIB visits NL; 30 minute meeting with Special Envoy
	14	2016: Vice President of the AIIB and Special Envoy meet at session UN High Level Panel on Water
2017	**15**	Collaboration Special Envoy, IABR[3], AWB[4] to prepare a pitch on WaL for the AIIB
	16	February 2017: Presentation of the WaL idea to Vice President of the AIIB
	17	February 2017: Presentation of the WaL idea to team GCECCA
	18	May 2017: publication 'Water as Leverage for transformative impact'
	19	Write proposal for WaL to GCECCA team
	20	Funding received from GCECCA for developing WaL initiative
	21	Commissioning Fabrications, Deltares, IABR, AWB, PBL for developing initiative
	22	Involve 100 RC Network in WaL initiative
	23	July 2017: Visit WaL team to AIIB water and sustainability practice team AIIB
	24	Longlist potential WaL cities
	25	Consultation Dutch Ambassies, AIIB, and others on the cities on the longlist
	26	Choice for Chennai, Khulna, and Semarang as WaL cities
	27	September 2017: Regional workshop on WaL in Singapore
	28	Fieldtrips to and research on Chennai, Khulna, and Semarang
	29	City reports on Chennai, Khulna, and Semarang
	30	November 2017: Pitch WaL at Fuji COP in Bonn
	31	Job switch member WaL team to Rijksdienst voor Ondernemend Nederland (RVO)
	32	Tip to talk to Invest NL for funding
2018	**33**	Funding received from Invest NL for WaL and involvement FMO[5]
	34	Organisation WaL by RVO
	35	Commissioning support team
	36	Involvement OECD for Water Governance and Finance expertise
	37	Preliminary bid WaL
	38	Market consultation WaL
	39	Installation WaL board
	40	April 2018: publication 'Setting the Scene for A Call to Action'
	41	22 April 2018: Launch call WaL

[1] NUSDeltares is an alliance between the National University of Singapore (NUS) and the Dutch applied research institute Deltares
[2] Plan Bureau voor de Leefomgeving, Netherlands Environmental Assessment Agency
[3] International Architecture Biennale Rotterdam (IABR)
[4] Architecture Workroom Brussels (AWB)
[5] FMO is the Dutch entrepreneurial development bank

Based on these reflections, the idea emerged for the active development of a "global breeding ground" for future WaL programs and WaL-like initiatives. Critical elements for such a global breeding ground are: 1) international multidisciplinary and multi-actor networks centred around the development and financing of integrative and inclusive climate infrastructure projects, 2) programs that provide the resources for creating "soft spaces" in which ideas for such projects can be developed in close collaboration with local stakeholders, and 3) financing structures and institutions tailored to finance these kinds of projects.

~ The development of the WaL program was a fuzzy process of intended actions and coincidences. It took over three years to come from a first idea to the launch of the program in the spring of 2018 and depended on two lucky events for its funding.

Such a breeding ground could benefit from:

- bringing together potential initiators, enablers, and beneficiaries of inclusive and integrated climate infrastructure projects to exchange knowledge and experiences;
- education and training programs (e.g. an international mid-career master) on boundary spanning and intermediation for climate adaptation, aimed at professionals stemming from different fields and organisations (finance, government, planning, design, engineering, civil society, and think tank);
- the development of a global knowledge facility that functions as a knowledge base for setting up a program for the development of integrative and inclusive climate infrastructure projects;
- availability of structural funds for setting up future WaL programs or WaL-like initiatives;
- in-depth comparative research on the critical mechanism, factors, and conditions for successful inception and execution of design-led, inclusive, and integrated climate resilience programs (e.g. WaL, Rebuild by Design, Resilience by Design, Room for the River, Internationale Bau Austellingen (IBA's), the UN-Habitat Urban Planning, and Design Lab).

3. Capacity building: Connecting sectors, actors, and levels

International partners and participants of the WaL program reflected that WaL is an exemplary process for initiating urban climate solutions, and that the resilience by design approach contributed to the boundary spanning activities and processes in Semarang. The WaL program was very much appreciated and praised in the interviews for its bridging or boundary spanning accomplishments between sectors and actors on multiple scale-levels. This section critically reflects on how boundary spanning across sectors, actors, and levels contributed to the building of intellectual capital, social capital and political capital for flood resilience building in Semarang.

3.1 Intellectual capital: Connecting multiple sectors

The two multidisciplinary design teams working on WaL-Semarang were able to deliver multisectoral solutions to the local water challenges, by combining their expertise from urban and regional design, spatial planning, water management, and engineering. This anchored the development of integrated technical ideas and outcomes in the proposed strategic climate resilience programs.

The teams consisted of both international and local experts. The international character of the teams went beyond the water and design expertise from the Netherlands and included experts working in the US. This composition of the teams combined with the involvement of various international organisations (e.g. WWF, UN-Habitat, 100 RC network) at the WaL program level took the character of WaL-Semarang away from government-to-government collaboration between Indonesia and the Netherlands, making it a truly international program.
The WaL teams developed an integrated regional vision for a resilient Semarang, from which multiple ideas for projects, often on a more local scale, or with a more sectoral character, were derived. Furthermore, the WaL teams combined international and local expertise, with an accent on the work of the international team members in developing integrated and feasible technical solutions, and on the work of the local team members in communicating and interacting with the local and national stakeholders. The teams were in that sense a critical boundary spanning unit in WaL, not only between sectors but also between various levels.

As one of the outcomes of the WaL process, the holistic and integrated climate solutions were identified and co-created by the multidisciplinary design teams with local stakeholders. The climate solutions in Semarang offered multi-sectoral perspectives on the complex urban flood and climate risks. The solutions presented multiple social, economic, and environmental benefits. One of the design team members reflected that the presented solutions are not stand-alone solutions. They are connected to the wide urban fabric and build on existing initiatives. These solutions also presented opportunities for replication and scaling up.
The co-creation process contributed to the building and strengthening of intellectual capital as it integrated a wide range of expertise in developing flood solutions. The program created the enabling environment and soft (design) space to combine local knowledge and experience, and international perspective and expertise. An Indonesia-based member of one the design teams reflected that the strength of international teams is the ability to share international models of flood resilience and provide a new perspective to existing flood and water problems. At the same time, the Indonesian members of the design teams could translate these ideas to the local context. This process was iterative, reflecting the dynamics of the design teams and the integration of knowledge for flood and climate solutions.

The design teams also reflected that the complexity of the context required trying out different approaches and learning-by-doing in the design process. While the co-creation process was able to integrate knowledge and expertise, mainstreaming and embedding ideas in the city context and continuous learning were not emphasised in the program. Intellectual capital was built through the learning process that unfolded in the process of creating innovative climate solutions for the city of Semarang. Experiences by participating in this process could enable the government and stakeholders to replicate and adapt the resilience by design process as a new planning approach when dealing with complex urban and climate risks. This "learning for replication" could, however, become a more explicit part of future WaL programs and initiatives as it builds an enabling environment for creating climate resilient cities and region.

Another critical point was made on the absence of financing expertise in the teams. This lack of engagement with financial actors could, furthermore, not be compensated by a sufficient level of engagement of financing experts at the program level, or availability of financial expertise in the program organisation or otherwise. According to the interviewed team members, they encountered the financial expertise late in the process, during the second regional workshop, which was halfway through the development of their plans and ideas. A consequences of this insufficient level of engagement with financial expertise was that it remained unclear what a "bankable" project - one of the described outcome requirements - exactly entailed. It also contributed to the fact that an intermediate phase was needed to translate and develop (some of the) WaL-ideas into projects feasible for financing.

3.2 Social capital: Connecting multiple actors

The broad actor involvement in WaL on multiple levels or scales was mentioned in the interviews as a positive factor of the program. The "Call for Action" that initiated the design competition of the program was able to mobilise a diverse group of experts in urban design, landscape architecture, engineering, hydrology, and spatial and urban planning to take part in the process. This process reflected the attempt to bridge and span boundaries between multiple sectors and actors on multiple levels. The diverse teams, with individuals originating from various countries and including multiple professions and perspectives, contributed to the "exemplary and innovative" process. WaL created new partnerships between organisations. The process stimulated capacity building within the team and instigated the local capacity building process for the stakeholders and design team members.

The willingness of local stakeholders to engage in the whole process, after some initial hesitation, was one of the appreciated effects of WaL. This inclusive collaboration was seen as an essential element in building social capital in the WaL program. The WaL process connected the multidisciplinary design teams to local, regional, national, and international networks of NGOs and developmental organisations. The interviewees

reflected that the design team was able to build trust with the local government stakeholders, who appreciated the insights for the city's mid- to long-term planning. In addition, the relationships between design experts and universities were highlighted as being strengthened by WaL.

While the design teams had a multidisciplinary and international characters, the local presence of the teams in Semarang was very limited due to the composition of the design teams. All members of both the One Semarang and Cascading Semarang teams were based in other cities or other countries. The design team lead reflected that it was challenging not having a permanent presence in Semarang. An increased presence of the teams and having Semarang-based NGOs as part of the design teams would have contributed to building social capital in the city.

~ The integrated and holistic climate solutions require the bridging of multiple organisations to enable the "horizontal" (water authorities, flood and river management, urban planning and transport) and "vertical" (national, regional, and local) integration of the ideas and projects.

3.3 Political capital: Connecting multiple levels

The challenges of how to embed the integrated solutions in the existing sectoral plans and regulations are evidenced in Semarang. The integrated and holistic climate solutions require the bridging of multiple organisations to enable the "horizontal" (water authorities, flood and river management, urban planning and transport, etc.) and "vertical" (national, regional, and local) integration of the ideas and projects. Initially, the WaL program was targeted at the local government to enable the co-creation and innovation of holistic climate solutions. However, the Semarang authorities only had limited mandates, resources, and capacities to adopt (and put forward) the designed solutions by themselves.

"Water as leverage came in like a cowboy" in Semarang, as expressed in one of the interviews. It had no, nor did it follow a proper procedure like other government to government setups. As a result, one of the issues was, and perhaps still is, the late involvement of the national government in WaL-Semarang. The national government is a critical actor in large-scale projects and developments in Indonesia. Their lack of involvement at the start or pre-start of WaL is considered a missed opportunity for a good embedding of WaL in the Indonesian institutional structures.

The solutions and ideas developed by WaL for Semarang required a large financial investment that reached far beyond the local government's (financial) abilities. The city government would need to convince the approval of a national budget from the national government. With the potential opportunities to receive the financial investment from IFI presented in the program, the financial arrangement in terms of loans or grants also required the involvement of the national government since it regulates such processes.

Interviewees also reflected that a sense of ownership of the solutions by the national government is essential for willingness to initiate the loan proposals to IFIs. In addition, explicit support and clear inputs from IFI experts are needed. Several team members also reflected in the interviews that not being based in Semarang hindered coordination with local counterparts. Building political capital through various levels of government is required in order to progress the proposed climate solutions to implementation. Embedding WaL programs into a formal policy context is necessary for the success and implementation of the developed ideas as well as for influencing policy alignment and government priorities.

Furthermore, several remarks from the interviewees indicated the need for stimulating financial mechanisms, calling for transforming, adjusting and even "disrupting" existing financial regulations. This process requires intense and active discussions and alignment between the financial parties, beneficiary countries, donors, and coalitions of local stakeholders and design teams. In addition, the implementation of ambitious projects in the local context could require the exploration of new financial arrangements, such as by connecting international-national-local and public-private finance opportunities.

The building of political capital to drive this process is important for mobilising resources and political supports for climate solutions. WaL contributed to the strengthening of political capital by collaborating with key resilience policy change-agents and front-runners such as the Semarang Resilience Office, Semarang Planning Agency, and universities. The involvement of local change-agents in spanning different multi-sector and multi-level boundaries is important to continue the resilience by design efforts especially for progressing from the design stage to its actual implementation.

4. Boundary spanning in WaL-Semarang

As described in the previous chapter, WaL managed to span multiple boundaries in the context of Semarang, and, as such, contributed to building intellectual, social and political capital. However, not all boundaries were spanned and several suggestions for improvement were made in the interviews. In this section, we zoom in on what we derived from the interviews regarding the boundary spanning activities and roles of the design teams and others involved in WaL-Semarang, and the conditions that enabled and hindered them in boundary spanning.

4.1 Activities

Boundary spanners undertake different activities in their efforts to span boundaries. Based on van den Brink et al. (2019) and Lehtonen and Martinsuo (2007), six kinds of boundary spanning activities were distinguished:

- **Connecting** actors from both sides of the boundary,
- **Selecting** relevant information on both sides of the boundary,
- **Translating**, as in interpreting and communicating information across the boundary,
- **(Re-)defining** the scope and content,
- **Isolating** or guarding the project/program from outside disturbances,
- R**epresenting** the project/program to the outside world.

Various activities have close connections and relationships with each other. We address the relationships between the different activities in the description of our findings. Furthermore, we focus on the activities of the design teams, but, when relevant, also address activities of others that influenced boundary spanning in WaL-Semarang.

Connecting

From all boundary spanning activities, connecting was the activity we encountered most frequently in the interviews. We found that connecting not only concerned the connecting of actors, but also connecting between, or integrating information and ideas from different disciplines and sectors, and multiple perspectives into a coherent set of ideas. This act of synthesising was used to develop solutions, but also various intermediate options to trigger, fuel and deepen the discussion with communities and stakeholders. The development of integrated solutions is at the heart of the WaL design-based approach because it extends across sectoral and disciplinary boundaries and connects different actors that normally would not work together.

The design teams consisted of actors that had not collaborated in this constellation before. The teams were composed and brought together by the team leads to work on WaL. The team composition was considered important for a solid connection to local culture, bringing local people together, and building trust with various actors and organisations. One of the interviewed team leads expressed the strategy of deliberately composing a diverse team to increase the chances of connections to different types of people. Furthermore, having bilingual (both language-wise and disciplinary-wise) team members was considered an effort to connect to various people, organisations and levels of government, as were the personal networks of several team members.

The teams had to connect to various actors and groups. Firstly, the team members had to connect with each other. Secondly, they had to connect to communities, administrative bodies, the WaL program team, the other WaL team working in Semarang, WaL partners, financial institutions, and other stakeholders. Various workshops were organised by the WaL program team to help establish the connections to various other actors and groups. The UN-Habitat, which was commissioned to organise and facilitate these workshops, was actively brokering between actors whilst preparing for and during these workshops. However, the teams also had to establish contact with, and connect to various actors, groups, and stakeholders themselves. On occasions, it was fuzzy who had the responsibility or the lead in establishing contact. This was, for example, the case with regard to the international financial institutions, and the national administrative bodies.
An important element in connecting local communities and stakeholders, which was referred to by multiple interviewees, concerned the presence on the ground in Semarang. While this was mentioned as a strong point in how WaL-Semarang was organised by one of the team leads, it was criticised by other interviewees. They indicated that the local workshops and/or spending time in Semarang was not merely enough, and would, in hindsight, preferred to have had a more permanent presence of WaL in Semarang to invest and connect to people, and to deepen and continue relationships.

Selecting

Gaining and “selecting” relevant information on the physical, climatological, geomorphological, ecological, social, economic, and institutional situation of Semarang was an important activity for both design teams. It was essential for the teams to become familiar with the issues and particularities of the situation in Semarang, for which the design team had to develop proposals. A design never starts with a tabula rasa. The city report, developed by the WaL program team in preparation for the WaL program, was the first source of information. However, more detailed information was needed to develop technically sound, socially fitting, and institutionally embedded proposals. In particular, information concerning the social, administrative, and institutional constellation of Semarang was only briefly described in the city report.

The different partners of the design teams focussed on selecting information across different boundaries. The international team members gathered and selected technical and physical information, and brought interesting international examples to the table. The Indonesian based partners collected and selected relevant social, administrative, and institutional information on the Semarang situation. They had no language barrier to overcome and employed their knowledge of the Indonesian culture and institutions in selecting relevant information. Furthermore, the Indonesian partners had a key role in connecting to and organising feedback from stakeholders and communities on initial ideas and draft proposals developed by the design teams. Other organisations involved in WaL, like partners for resilience, were helpful in establishing contact with local communities and stakeholders. These organisations however had a limited role in collecting and selecting relevant information for the design teams.

Spanning the boundary with the financial institutions and developing “bankable” projects were important goals of WaL. This turned out to be harder than anticipated. The teams initially lacked sufficient basic knowledge and contacts to connect with financial institutions and collect relevant information. Furthermore, as derived from one of the interviews, the teams did not perceive it as their task or priority, and were maybe expecting the WaL program team to take on an active role here. Contact with several funding institutions was established via the WaL program team, particularly during the second regional workshop12. The design teams were already well on their way to developing their ideas and proposals at that time, and perceived this input as coming rather late in their process. Moreover, as was observed by one of the interviewees, the financial institutions seemed very traditional in their way of thinking and mainly looked at how the projects could be structured to fit their existing programs, and, as such, did not initially help to span the boundary.

Translating

Closely connected to the activity of selecting is translating. At times this involved literal translations of information into another language to make it accessible for local communities or stakeholders, or the other way around for the international members of the design team, the program team, or other non-Indonesian

[12] During WaL, several workshops were organised: three so-called local workshops in each of the three cities, and two so-called regional workshops, in which all design teams interacted with each other, with the WaL program team, with representatives of WaL partner organisations, and with governmental representatives involved in resilience planning and development of the three cities.

based WaL partners. More often it involved reformulating, or "translating" information so it was useful and understandable to another group. Based on the interviews, we established that information was translated to cross boundaries within the design-team, between the design-team and communities, governmental organisations, financial institutions, and the WaL program team as well as between the WaL program team and both financial institutions and governmental organisations.

This back-and-forth translating of information across multiple boundaries by different actors made translating a real team-effort in WaL. Having several actors that related to two or more (sub-)groups was a valuable condition that enabled smooth translations on many occasions. The abundant use of visuals to communicate ideas, a known trait of design, was also mentioned to help in communicating information to other groups. It supported overcoming language barriers and explaining the interconnectedness between issues, projects, and solutions.

A particular development in WaL-Semarang was merging the ideas of the two design teams into one program for the city of Semarang. Having one team member being part of both teams was useful because it helped communicate and relay the ideas between the teams without information getting lost in translation. The idea of one program for the city of Semarang initiated a process of translating how the ideas for the different projects could be considered as part of one program, and, as such, triggered another boundary spanning activity: (re-)defining the scope and content.

(Re-)defining

We found that (re-)defining as an activity was frequently linked to selecting and translating in the interviews. Gathering and selecting information preceded interpreting and communicating information, which provided the basis for (re-)defining scope and content. This re-defining, which is based on a (renewed) interpretation of the situation and the issues at hand, is at the heart of a creative design process, as was expressed by one of the team leads in the interviews. Designing is an iterative process between problem framing and exploring solutions. The activity of (re-)defining continued throughout the process of developing proposals, often meaning refining or elaborating on ideas in more detail, thus instigating multiple and iterative rounds of fact-finding (selecting). Re-defining also took place while making the vision or ideas fit for purpose or use in other situations; for example, the development of the overall vision for a resilient Semarang into a roadmap and guidelines for the city of Semarang to act on, or the alignment and embedding of project initiatives into institutional and administrative structures.

(Re-)defining created clarity for further action and activities. For example, in the process of merging the ideas of both teams into one program for Semarang, it became clear that each idea or project required a different policy alignment, different institutions to be engaged, and a specific financing or investment strategy.

(Re-)defining took place at various moments and in many situations within WaL not only by the design teams, but also by the program team; for example, in shaping and structuring the workshops. Furthermore, other involved organisations such as the AIIB and the 100 RC network took part in selecting the beneficiary cities Chennai, Khulna, and Semarang, and as such also contributed to (re-)defining the scope of WaL. The city of Semarang had a particular defining role in WaL-Semarang, as it instigated the merging of the two teams' ideas into one program, and coordinated joint interaction with the city of both teams.
Critical remarks were made in the interviews concerning the limited alignment with what was already in existence (e.g. knowledge in the city, local coalitions, and relationships with existing communities). Moreover, embedding the ambitions of WaL in the beneficiary city/country before the design-teams started their efforts could be improved. This would enable collaborative defining of the challenges, and, as such, a deeper engagement and commitment of local actors and stakeholders with the WaL program and its outcomes.

Isolating

Only a limited number of remarks were made in the interviews with regard to the boundary spanning activity of isolating. These remarks predominantly focussed on managing and guarding a boundary, like the task and role division within the team, one's own role within the team, the project boundaries, and the boundary between the two teams working in Semarang. The latter boundary was particularly relevant to manage and guard during and after the ideas of the teams were merged into one program for the city of Semarang because the boundaries became fuzzy at this stage and had to be re-defined. For example, the teams merged ideas that were similar, and redistributed the subjects between the two teams so their work would become complementary.

Representing

The activity of representing is closely related to connecting. Various team members represented their teams outside WaL when they were establishing connections with other actors and groups. This also accounts for members of the WaL program team who also represented WaL to various stakeholders and interested parties. Although some clarity existed regarding who should represent WaL to which kind of actors and groups, this also developed and changed during the time in which the WaL program ran, and beyond. For example, bringing WaL under the umbrella of the Memorandum of Understanding (MOU) on water between the Dutch and Indonesian governments enabled the MOU liaison to represent WaL in formal talks between governments. Representing was considered a critical point of attention by several interviewees that should deserve more attention in the preparation of future WaL(-like) programs.

4.2 Roles

In WaL-Semarang, boundary spanning activities were performed in various ways, which resulted in different roles that the involved designers, program team and other stakeholders had in connecting, relating and embedding the program in the local context, in designing climate solutions and developing project proposals, and in mobilising funding for implementation. In previous research, we distinguished six boundary spanning roles (based on van den Brink et al. 2019):

- **Scout:** scans the environment and collects information and ideas
- **Guard:** guards the boundary, e.g. avoiding the release of information, protection from outside disturbances
- **Ambassador:** aims to persuade external actors and provide access to power structures.
- **Task coordinator:** coordinates activities, negotiates task division, and organises feedback activities
- **Interpreter-communicator:** translates professional languages and the routines of the different actors
- **Entrepreneur:** links different issues, agendas, and policies, and devises innovative arrangements to build coalitions and connect actors

Rather than one dominant role, a combination of roles was found, ranging from scout and task coordinator to interpreter-communicator and entrepreneur. These roles were not necessarily played by individuals but often also by the design teams as a whole, making role play a collective effort. In addition, boundaries were spanned not only by the spatial designers involved but also by specific local stakeholders, together forming an ecology of boundary spanners (van Lente, 2003).
To begin with, in the collaborative design process, the design teams used and combined their diverse domain expertise and knowledge to co-create the strategic climate resilience program. The WaL program was designed not to work on pre-determined problems but to facilitate the design teams to explore, synthesise, and narrate local problems together with local stakeholders. The design of the climate solutions was, therefore, a constant, iterative, and feedback process. It can be argued that the designers and local stakeholders that were part of the design teams acted as scouts during the exploration and identification of the local climate challenges and vulnerabilities. For instance, the design lead of the One Semarang team recalled that soliciting feedbacks from all different actors helped to create and refine a proposal that programmatically combined different social and local components. A WaL program officer added that the role of international designers and experts was important in scanning and subsequently introducing international examples of climate solutions that they had been working on in the past.

The introduction of international examples in the local context by the design teams stimulated the development of inclusive, holistic, and integrated solutions to local climate challenges. The design lead of one of the teams stressed that it was almost impossible to not address the issues in an inclusive way considering the multitude and interconnectedness of Semarang local water and climate challenges. The WaL program ensured the Intellectual Property Rights (IPR), which were given as an incentive to the design teams, and functioned as a tool to guard the implementation of resilience projects in an integrated and programmatic way.
Within the team, the team lead had the role of task coordinator in the set-up of WaL-Semarang. The workshops organised and provided by the WaL program also had a task coordinating function since they provided feedback within the program context. The local actors, including the Semarang Resilience Office and local members of the design teams such as UNDIP and Kota Kita, also coordinated by connecting the WaL program with the city's existing resilience networks and initiatives such as 100 RC, and by engaging with local governmental agencies including Semarang Planning Agency. These actors also facilitated the engagement of local communities and stakeholders. As such, the Indonesia-based and local members and partners of WaL enacted a role as local ambassadors. They persuaded different actors to participate and create favourable local coalitions for the collaborative, resilience by design process.

An important strength of WaL in Semarang was having various local partners, including local Indonesian knowledge partners, in the design teams, and several local government officials who were actively engaged during the initial set up of the program. This set of actors, termed by the former lead of the UN-Habitat Urban Design Lab as "interlocutors", was important to connect and embed the program and provided the entry point access to program activities in the local institutional context. A local design team member acknowledged the connections that were made with the local government and stakeholders as strengths of the program, and stressed the importance of connecting and building trust with middle-level government officials apart from the connection with high-level key decision makers. Another local team member had broad experience and expertise in the facilitation and local engagement to support the communication with local governmental agencies. These team members stimulated the local involvement in and ownership of the WaL process and the development of integrated climate solutions. In this context, one of the team leads indicated that it was important to have the right Indonesian base and local people as part of the team, especially to connect decision-makers in the initiation process of a long-term perspective and project initiatives.

Subsequently, the proposal development and mobilisation of local stakeholders required the ability to exploit windows of opportunity, to link different policy agendas, and to connect different actors of the implementation from different boundaries. The local members of the design teams and local partners of WaL played a pivotal role here by translating the ideas for the climate solutions, so that they could be related to and connected with the existing resilience initiatives and the formal planning process. It can thus be argued that they were working as interpreters and communicators.
These local members were also spearheading the teams to set-up the local "WaL taskforce" for institutionalising the strategic climate solutions and coordination with the regional and national government for funding and implementation. By embedding and aligning the solutions in the formal planning context, the local members and local partners were supporting the program as entrepreneurs in identifying opportunities to realise the climate solutions in practice. This role is evidenced in the current work of the local "WaL taskforce", in its attempt to outline the business case, find the right governmental and financial partners, and to conduct feasibility studies for project implementation.

The cooperation between both teams to present a joint program for the city of Semarang with six strategic climate resilience initiatives was also an interpretive and entrepreneurial result since it called for bridging insights, analyses, and solutions from the two teams and merging them in a coherent set of ideas. The design lead of the One Semarang team highlighted that there was a strong social component in WaL, which facilitated the formation of coalitions to figure out new types of solutions to address the local challenges. This social component was an important part of creating the enabling environment that allowed local actors to play different roles, not only as participants but also as actively connecting different actors, bridging the solutions to the local planning context, and identifying opportunities to improve the local planning process.

4.3 Conditions

The activities that boundary spanners undertake and the related uptake of boundary spanning roles depended on conditional factors. Here we elaborate on three sets of conditional factors that enabled boundary spanning in WaL-Semarang's resilience by design process.

First are the environmental conditions and particularities of cities. Several interviewees reflected that the city has strong existing social and relational capital, and that people are open to collaboration and working together with outsiders. The WaL program officer specifically indicated that the local partners were pleasant to work with. The knowledge partner from UNDIP also mentioned that Semarang has better

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social cohesion with multi-cultural communities compared to other cities in Indonesia. In addition, Semarang has broad experience in collaborating with international partners in the previous Asian Cities Climate Change Resilience Network (ACCCRN) and 100 RC programs. Building on this experience, the city developed strong capacities and willingness to continue working with international partners and connecting to local stakeholders for the implementation of resilience programs. A local team member pointed out that the city government has human resources to collaborate with international partners and experts. This distinctive characteristic of Semarang contributed to a conducive environment for bringing the resilience by design process into the local context.

~ Resilience by design turned out to be a fitting approach for creating a temporary enabling environment or soft space to explore and design inclusive and integrated climate solutions as well as build intellectual, social, and political capital for further project development and implementation.

The second set of conditions concerned the institutional embedding that had positive impacts on the boundary spanning activities in WaL. Three types of organisational support for the WaL program in Semarang could be identified. WaL became part of the implementation of Semarang's City Resilience Strategy in collaboration with the 100 RC network. Furthermore, the program was brought into the MOU water cooperation between the Netherlands and Indonesia to align with existing water cooperation and development programs in Semarang and other cities in Indonesia. Moreover, the collaboration for Semarang's climate resilience according to the proposal from the design teams in six strategic climate resilience programs was signed by the Mayor of Semarang, the Dutch Ambassador to Indonesia, and the Dutch Special Envoy for International Water Affairs during the International Seminar Water as Leverage Semarang in March 2020. This institutional embeddedness supported and enabled the governmental organisations and local stakeholders to work together and create a shared vision for different boundary organisations and professions.

Role definition is the third important set of conditional factors. Several boundary spanners had diverse and dynamic roles in WaL-Semarang, which enabled the connection of actors, disciplines and stakeholders throughout the process. The Chief Technical Officer of Semarang's Resilience Office was one of these boundary spanners, who was initially involved in WaL as an international partner representing the 100 RC organisation. The Chief Technical Officer later supported the implementation of the WaL program as a knowledge partner
by sharing her personal experience and close connections with the local government. She was also invited to be a part of both design teams to give advice and support the local engagement process. These multiple roles and role ambiguity required diverse interests and expectations to be balanced. At the same time, the various changing roles gave the Chief Technical Officer special abilities and a mandate to bridge and connect different activities, agendas, and stakeholders. Another example was the 100 RC Resilience Manager and Indonesia

Lead, who was the international partner at the strategic level while also being Indonesian, and as such able to translate and communicate closely with local knowledge partners and local governmental agencies. We found that this technical expertise and ability to work with international partners while also being closely connected to the local context and people, was an important boundary spanning ability in connecting stakeholders and delivering effective results for the international resilience programs.

5. Lessons learned and recommendations for future WaL(-like) programs

The overall image of WaL that arises from the reflection is that it was an ambitious, innovative, and generally much appreciated program. There are some critiques and remarks too. Several lessons can be drawn from the findings and reflections presented in the previous sections.

When we look at the overall ambitions of WaL, it aimed to create inclusivity, integrality, and innovation by employing a resilience by design approach that enables:
Breaking through the lock-in of no/very little funding for the development of integrative and inclusive climate solutions;
Breaking through the fragmentation of the project development process/approach; and
Broadening the scope to both projects and process, and the necessary enabling environment.

On many points, WaL has been successful in progressing towards these ambitions. However, not on all points. In this section, we summarise the important lessons that we have drawn from our research and reflection on WaL-Semarang and provide recommendations that are worth considering for future WaL(-like) programs and initiatives.

WaL provided funds for the development of integrative and inclusive climate solutions in three cities: Chennai in India, Khulna in Bangladesh, and Semarang in Indonesia. A follow up, replication, or extension to other cities was not guaranteed, as WaL was organised as a one-off program. We suggest investments, by multiple partners, in the development of a “global breeding ground” for future WaL(-like) initiatives to emerge and develop. Critical elements for such a global breeding ground are international multi-disciplinary and multi-actor networks on integrative and inclusive climate solutions, resources for the development of integrative and inclusive climate projects, and financing structures and institutions tailored to finance such projects. WaL here serves as a striking and truly innovative example, showing that integrative and inclusive climate solutions are within reach.

The WaL resilience by design process enabled boundary spanning across sectors, actors, and levels and the use of this boundary spanning to counteract the fragmentation in the project development process and to broaden the scope to both project, process, and the project environment. Resilience by design turned out to be a fitting approach for creating a temporary enabling environment or soft space to explore and design inclusive and integrated climate solutions as well as build intellectual, social, and political capital for further project development and implementation.

Based on our reflections we see that the building of intellectual capital and the development of cross sectoral and cross disciplinary proposals within WaL-Semarang has been very successful. The resilience by design process was noticeably innovative on this front. The set-up of the program with fact-finding missions in the pre-program stage, the call for multidisciplinary teams, and organising local and regional workshops contributed to realising this ambition.

Furthermore, the building of social capital was also successful. WaL stimulated ‘capacity building’ and created an ‘enabling environment’ by engaging multiple actors in ‘soft-space’ during the intensive collaboration and design process. This ‘soft-space’ enabled actors to reframe existing water and climate challenges and offer new perspectives on and solutions to these challenges. Having local team members, various locally connected program partners, and an explicit focus on including local stakeholders and communities were important factors.

However, based on various observations shared with us in the interviews, there is still room for improvement. The social dimension of climate project development could have benefitted from early attention in the program, such as an explicit part of the fact-finding missions in the pre-program stage. Furthermore, a stronger connection could have been made early on to what was already going on in the city. The suggestion was made to have Semarang-based NGOs included in the multidisciplinary teams to ensure better connection to local communities and to have these activities embedded at an early stage. Finally, having a continuing local WaL presence was suggested in multiple interviews as a way to enhance the conditions for social capital building.

Of the three capitals, the building of political capital might be considered least successful through the WaL resilience by design approach. Our findings show that progress has been made here, as illustrated by the connection to local and national administrative bodies, the embedding of WaL in the MOU on water, and the consideration of projects by international financial institutions. Suggestions were, however, made to take more time and join forces with the (local) authorities in preparing WaL or similar programs next time around. This would allow for embedding or relating the program to existing programs and institutional structures. It also could ensure stronger engagement and commitment of the administrative bodies that have critical roles in the implementation of projects.

Particular attention is needed concerning the involvement, engagement, and commitment of financial institutions. Although the program had high ambitions, spanning this boundary turned out to be much harder than anticipated. We argue that this could be improved by intellectual capacity building on 1) financial aspects of project development amongst (potential) team members, as well as on 2) the benefits and characteristics of integrative and inclusive climate solutions amongst IFI representatives. This will improve the understanding of each other’s worlds. For a more in-depth reflection on financing within WaL and its relationships with financial institutions, we refer the reader to the OECD’s reflection on WaL, which was also part of the WaL reflect project.

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~ Section III. AWB

Water as Leverage
REFLECT
PROSPECT
EMBED
CALL (Indonesia)

Architecture Workroom Brussels | AWB
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CONTENT

1. Rationale and ambition

In this REFLECT analysis we are trying to disentangle the cultural change WaL wanted to achieve by making sense of why certain of the ambitions of Water as Leverage did or did not take root, as well as how we can rearrange the process design of WaL 2.0 in order to attain the goal of developing and implementing holistic, innovative design projects that bridge the gap between the goals of the SDG's and the mechanism to reach these goals in reality. As such, the lessons learned frrom WaL's 1.0 programme in Khulna, Chennai and Semarang can function as an inspiration for other cities and regions facing water challenges.

REFLECT is set up by the Water Envoy Henk Ovink in order to harvest lessons learned from the programme's implementation so far and, together with the three partner organisations (OECD, RUG and AWB), explore future options and ambitions.

AWB was involved in the inception phase of the WaL Programme, co-writing the Pitch document for the AIIB, the programme's process architecture and its 'setting the scene'-document. AWB specialises in spatial transitions, acting both as (design) researcher and process facilitator of existing project contexts and as an incubator for co-launched new implementation programmes. Hence, AWB's main contribution to WaL_Reflect is focused on its process architecture, the transformative capacity of the projects, the enabling environment and their interdependence. It aims to identify, together with the other partners, how WaL could contribute to the development of an enabling environment that facilitates and mobilizes financing for the projects that match WaL's ambitions.

~ The project dynamics that exist today are often not systemic enough (very reactive or fragmented implementation), are socially too disruptive, are not at the right level of scale to have real impact or are too slow for the ever more rapidly recurring problems we are facing.

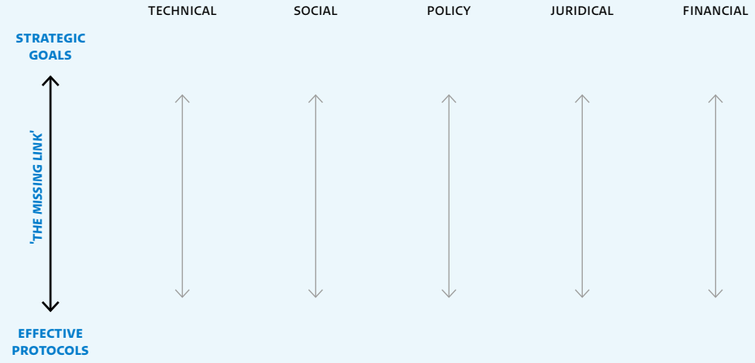
2. A note on method

WaL started from the observation that we will not achieve tomorrow's shared long-term strategic climate goals (the Paris Agreement, the SDGs) with the protocols considered effective today (planning or implementation instruments and financing mechanisms). There is a 'Missing Link' between the two. The conclusion is that the project dynamics that exist today are often not systemic enough (very reactive or fragmented implementation), are socially too disruptive, are not at the right level of scale to have real impact or are too slow for the ever more rapidly recurring problems we are facing. WaL's main answer to bridge this 'Missing Link' is a double hypothesis. On the one hand, water was positioned as a lever to address urbanisation processes in a more systemic way and to achieve more integrated cross-sectoral nature-based solutions. On the other hand, linking water and urbanisation also offered opportunities to make water projects, which are traditionally difficult to finance, possible by addressing the infrastructural project dynamics of the city.

Thereby, WAL introduced the capacity of design as an important integrator between innovation at the technical level (nature-based climate resilient), social level (inclusive), policy level (cross-sectoral, local capacity building and political support), legal (implementation-oriented) and financial (bankable). On these five fronts, WaL wanted to challenge today's effective protocols ('business as usual') to enable answers to tomorrow's strategic goals. Conversely, design had to translate the strategic goals into integrated and realistic project proposals. WaL therefore consciously stayed away from very well-trodden paths and was deliberately radically disruptive in order to aim as high as possible on the ladder of ambition.

In the following reflection, we will use this quintet of innovations to illustrate WaL's process until today and pinpoint where qualities, conflicts and compromises between different innovation fronts were located. For this we will use the template illustrated on figure A.

Figure A: *Template of WaL's five innovation levels*



3. REFLECT

WAL was a leverage for collaboration

The emphasis that was placed on interdisciplinary teams allowed to transcend the traditional siloed thinking and pushed the designs beyond technical solutions and towards integrated results. WAL started from the assertion that in order to formulate water projects that are adept to deal with today's problems, you need a way more diverse range of actors present around the table. It explicitly invested in setting up a process where financiers were brought to the table from the start, where technical and social design was integrated within multi-disciplinary teams and local capacity building and collaboration with the policy level was an inherent part of the program. This new method of working together towards integrated projects is probably one of the main assets of WAL.

~ The idea that you could develop a program that would be hyper integrated and include a lot of different voices, but will equally be implementation-oriented was perhaps conflictual in such a short time frame.

WAL as leverage for culture change

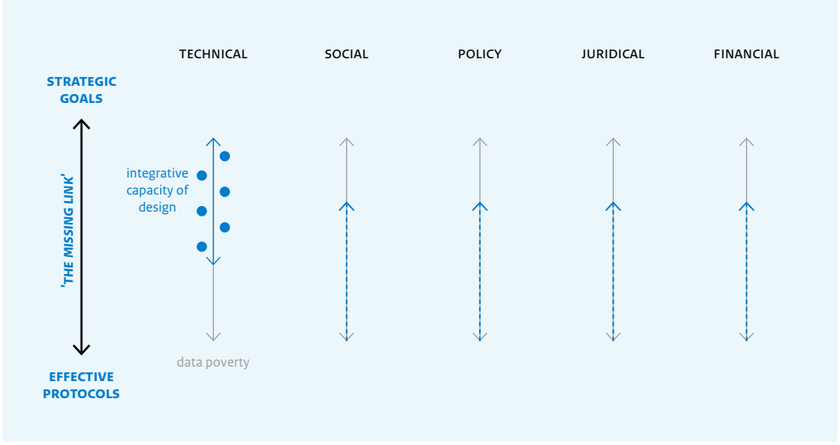
A radically disruptive program has to deal with deeply ingrained ways of working, lock-ins and vested interests. Even though the pathway towards implementation proved to be a hard one, WAL impacted a lot more than just project outputs. WAL created an ecosystem of local and international actors from within the water expertise that together start to form an enabling environment in which innovative solutions can land. Additionally we could see that seeds of the 'WAL way of working' managed to land even in very strict and inflexible environments, such as the IFI's. It was stated in the interviews that even though three workshops were not sufficient to change the internal working procedures of banks, it was clear that some of the participants became more receptive to the ideas.

WAL as leverage for innovative design

WAL can be seen as an actual leverage in developing innovative concepts. As far as the design components were concerned, the interviewees stressed that WAL did create the space for the development of innovative, holistic design concepts. The teams came up with way more innovative proposals than many other projects that are known to the people we've talked to. The teams were asked to 'think big', to do a scoping of possible problem areas and to come up with holistic designs. Finally, the 'pressure cooker element', the fact that the project was couched in a challenge context propelled the design teams to go the extra mile and invest in-kind, which increased the quality of the proposals.

This led to high technical designs, but lacked a pragmatic route to implementation

The big thinking also led to 'fantastic proposals' in the sense that the ambitions were big, the story that was told was big, but there was too little attention paid to the constraints of local planning conditions, or how the proposals would be brought to implementation. In short, the designers were asked to depart from a blank slate. This made the proposals super innovative, but this consequently made it very hard to get



the ideas to land. Even though the design teams embraced their role as integrators of different types of expertise, the teams did not all have the same capabilities to run a project through from conception to implementation.

What was actually needed was a 'step by step guide'; a lay-out that would transform the design to a manageable scale and would take you through the 100 steps that were necessary to achieve it. WaL was therefore by some interviewees regarded as a highly innovative design competition that had as an objective to deliver bankable projects and solicit IFIs for their funding. But it was not, however, an implementation program.

Here there was a noticeable discrepancy between the design teams and the engineer led teams. Whereas the former provided very holistic designs, the engineers tended to be more pragmatic and implementation oriented, but also tended to go for the so-called 'low hanging fruit' within their proposals. However, one of the interviewees termed all teams 'knowledge institutional types of teams' that provide high technical designs but were unable to go into the practical development of the project. They didn't have the skillset suited for project structuring or implementation. Equally, the timing of the project might have been too tight to begin with: the first 6 months were maybe sufficient to develop innovative ideas, but in the consequent process the ideas have to be developed into implementable concepts through feasibility studies and a socio-economic business case, for which the teams now lacked the suitable support.

The idea that you could develop a program that would be hyper integrated and include a lot of different voices, but will equally be implementation-oriented was perhaps conflictual in such a short time frame. Towards WAL 2.0 this is something to take into account: the problem of the gap between fantastic designs and implementability could be circumvented by either looking for the right skills, based on the assignment, or by providing clear conditions within which the proposals need to be developed. This still differs from the terms of reference that were included in the call for projects, as these were conditions of what the design should look like, not constraints to which the execution of the project should adhere to (see reference 3).

The designers had too many boundaries to span

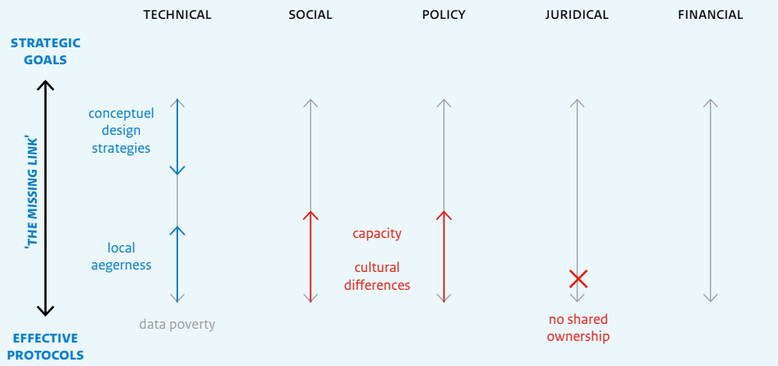
Designers were involved as boundary spanners in order to overcome the fragmentation within standard project development. They had to stand in for the development of adequate relations with local actors, with local communities and translate design concepts to bankable proposals.

However, the combination of all these roles posed a problem. Longer engagement with the local context was needed in order to build up trust and relationships with local partners. But equally more preparational work and local boundary spanners could have been a great help. Right now there were local people involved in each city to help the international design teams to find grounding, for example in Chennai the 100RC resilience officer acted as a boundary spanner: he was engaged from the beginning and served as the connection between the program level and the local environment. He proved to be key on the ground as he organized the meetings between the project team and the officials, he introduced them to the program and made the officials comfortable with its principles and so on. However, it was stated: 'we overestimated perhaps that the local partners in the design teams could be a steady voice on the ground.' This was equally emphasized in another interview, where it was stressed that a local city expert or local city expertise was missing for each case. Here 'pre-call groundwork' and a stakeholder mapping should be part of the program, so it is clear within each city what projects are already going on, as well as who the important actors are. It was not possible for the design teams to develop thorough knowledge of these elements in such a short period of time. More attention to this should allow the program to have more connection to the local context, the different processes and actors involved.

WAL enabled mutual learning and capacity building

WAL also introduced the possibility of local capacity building. Many of the local administrations and organizations know that there is a problem that they cannot fix through their end of pipe solutions and expensive infrastructure, therefore they embraced the innovative and socio-spatial approach of WAL. This led to a very good collaboration at the beginning of the project: they were eager to learn from each other. The international design teams brought in cutting edge design knowledge that was new to many of the local teams and the local teams brought in contextual knowledge that could strengthen the embeddedness of the project proposals.

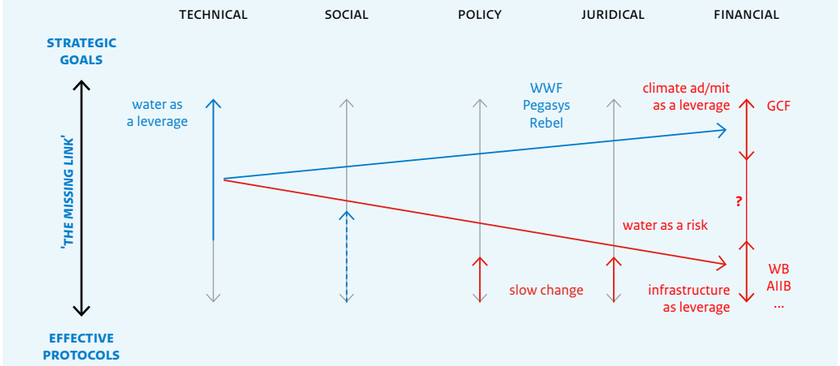
However, it was mentioned that on the one hand too little attention was paid to capacity gaps: the government employees in Chennai for example are mostly hard core engineers that were educated in the '60s and '70s. Trying to get them to work with nature based solutions is way too far off from their daily practice. More attention should be paid to bridging these capacity gaps and supporting local capacity building.



Equally, as the process continued, the relation between the local and international teams strained. High local representatives mentioned they were not treated well at all by the international design teams, that their capacities were not sufficiently valued. There was equally a sense that the project proposals were owned by the international teams and not locally. This was strengthened even more by the problem of intellectual ownership where the international design teams held the property rights, and the fact that the WAL representatives met often with the Dutch based design teams in the Netherlands, excluding the local partners.
How can WAL evolve to a more mutually supportive structure, engaging international knowledge but equally valuing local capacity? And equally how can WAL evolve to a truly local process, with real ownership by the actors that will have to implement and carry the projects in the years to come? We will uncover some of the possible scenarios in the prospective document.

The theory of change, where design would act as a lever for political and financial involvement, did not take the constraints of existing governance structures into account
There was the fundamental belief that the excellence of the technical design would act as a lever for the enabling environment as well as the financiers to get on board. Within the process of WAL there was a clear gap between the first two phases of the project - the selection of the cities and the project teams - and the project development and the implementation. This led to the situation where the project teams had to start looking for finance from the moment the design was delivered. However, there were a couple of issues regarding this underlying theory of change: it allowed the design ambitions to become so big that the reality on the ground was left out . The existing institutional arrangement structures were not seen as a fixed constraint. However, both the cities as well as the IFI's function according to a governance structure that is hard to bypass: it is a complex web that needs to be untangled, embraced, negotiated and this takes time.

Throughout the interviews and the workshops multiple aspects of this problem were highlighted. WAL wanted to stir up the involvement of financial institutions as well as provide a programmatic approach for a whole city where different challenges were tackled in an integrated way. They opposed this to the traditional way of working, where IFI's have specific focus areas and strategies that lead to scattered approaches. It was the clear ambition of WAL to hack into this system, but the existing structures should have been considered more as constraints to work with than a blank slate. First of all, the IFI's and MDB work according to fixed



programs and in clearly delineated partnerships with national governments. The way it is currently set up is that IFI's and MDB's have a country plan, working on specific topics and projects in a given area. Within their current processes and procedures they will not finance a new track or project without the clear demand of the national government, therefore these governments have to be involved from the start. Even more so because the governance structure in these countries is very top down, so without a formal demand of the highest ranking government, the local authorities cannot pursue any projects.

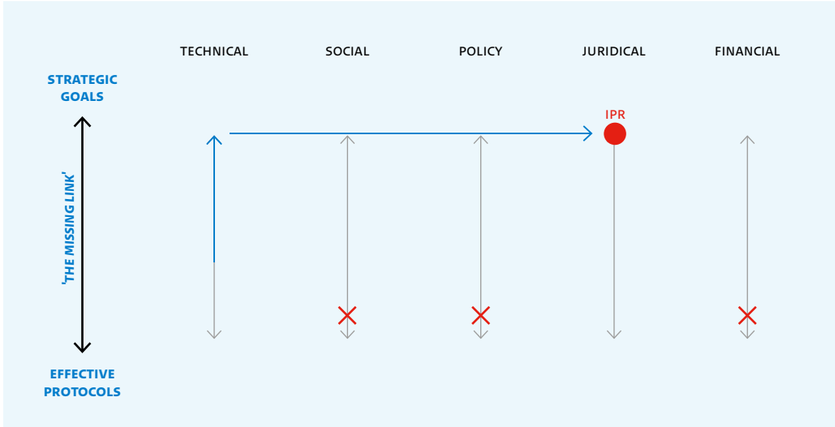
Furthermore, what was lacking was a project owner: the municipality was the assumed end client and the supposed implementer of these designs, however they were often not consulted or taken on board from the start of the process. This poses a problem for the financing of these projects: the financers need a borrower, an end client. Without the municipality as a demanding party, the financial institutions will most likely not provide a loan. In short, there was no clear demand for WAL from within the participating cities/countries. Within the WAL program the design teams acted as the end client, but this is not the case, the end client is the one who implements the project. The designs were all of a very high-quality, but they were not in line with what the cities wanted. More local scoping of cities' priorities and areas of interest should be considered in the following trajectory.

~ Financing pre-project preparation remains a catch 22: for the financiers to finance complex design proposals such as the ones proposed by WAL, an extensive feasibility study already has to be carried out beforehand, but for the design teams it is impossible to do all this work without funding.

Finally, WaL tried to break through the lock in where still insufficient money is allocated to the pre-project preparation phase (of which research, coalition building, inclusive collaboration, the strengthening of an enabling environment,... are all part). It did this by organizing the pre-project preparation with a fund from RVO. However, we see that the problem of financing pre-project preparation remains a catch 22: for the financiers to finance complex design proposals such as the ones proposed by WAL, an extensive feasibility study already has to be carried out beforehand, but for the design teams it is impossible to do all this work without funding. In this sense it remains unclear how to bridge this funding gap between the design proposal and a financeable proposal.

Overinvestment in the R&D phase led to the need to compensate in implementation

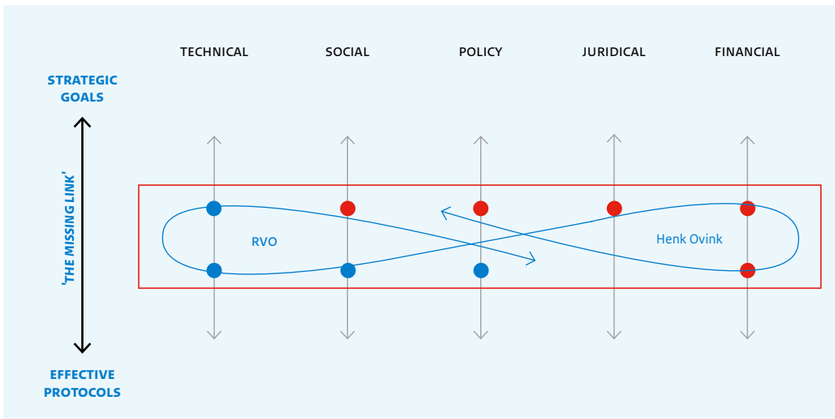
The design teams retained the intellectual property rights as compensation for the in-kind investment they made in the concept phase. However, the reimbursement for conceptual design in the R&D phase can not depend on compensating too much in-kind investment by guaranteeing involvement in the implementation phase. As this is at odds with the Public Procurement Act, both for the financing Dutch government (which allowed it exceptionally) and for the different local contexts, it caused problems in the implementation phase (both for the financial sector and for the local context). It is also important that a correct non



exploitative culture is upheld within the conceptual R&D phase. Water as Leverage put a lot of pressure on the design teams, sustaining a hard culture of over hours and overinvestment (which led to the need to compensate for this afterwards). Apart from that, many teams expressed that they had the capacity, desire and ambition to go from concept to implementation. From a content point of view, continuity of designers is recommended, but this requires a different contractual context. Instead of divided phases that are always put out or subject to public tender, a blanket or call-off order could be used from the start. Other legal constructions may be possible, but should also be compatible with local legislation and ambitions.

Boundary spanners of boundary spanners

In the current process the framework was carried by Henk and Sandra, who could be named 'the boundary spanners of boundary spanners'. They set up the program from scratch, but they equally played the brokering role, there where the demands superseded the capabilities of the designers. They talked to the national government, set up meetings with financiers etc. This however was at times very demanding and the ad hoc character of these interventions should be avoided. In the prospect a more structural and balanced division of tasks should be thought out.



4. PROSPECT

As already suggested within our reflect part, the analysis points towards a need to or for;

- Sharpen the proposals from innovative conceptual to more implementation oriented ones;
- More long-term in depth local engagement as well as a local problem definition supported by the end client
- Investment in local capacity building in order to support implementation and upscaling, a collaborative process with the IFI's
- A longer term engagement of the designers should not be dismissed from the start, adequate juridical constructions can be thought out to this end.

We decided to focus on four different prospect scenario's, based on the conclusions from our reflection thus far and we chose to seek alignment with OECD's five phases. However, we as AWB mostly have expertise in phase 1,2 and 5, hence our focus on the lay-out of these elements.

4.1. Types of projects

Water as Leverage as scoping-based project machine

4.1.1 Selection of WaL cities (Phase 1)

This scenario remains the closest to WaL 1.0. After all, it departed from a mission, which was immediately translated into an international scoping exercise; where in the world do the biggest urban (demographic) problems come together with the biggest water problems? This quantitative and qualitative strategy certainly has its raison d'être. It is able to be disruptive, to bring innovative ideas to the surface, but the scoping will have to be more locally driven in the future. An open call instead of a quick partnership at the city level ensures more support locally. WAL will set an ambitious framework for the designers to work in, where, consistent to the first program period, integrated, pro-active and cross-disciplinary designs are expected as a baseline and the design criteria still figure prominently. Since the selection of the cities does not emerge from a partnership, WaL as the sender of the call must be sufficiently strong. It will have to have a clear mission, clear ambassadors and start-up funding.

4.1.2 Selection of External Expertise (Phase 2)

A content-driven scoping exercise has the advantage that it is described as a clear assignment for external expertise, as is the case with Wal 1.0. However, since financial, national and local support will all still be embryonic at the start of the project, the external expertise will have to invest a lot of time in the inclusivity of the process, the bankability of projects and securing national support, pushing design teams to become boundary spanners, facilitators, process managers etc. once again.

4.1.3 Replication and deployment (Phase 5)

The advantage of working with types of projects as a selection criterion is that lessons can be learned more quickly: the focus content wise leads to clear products (design and project proposals) and can already provide substantive insights before implementation. This way, things can be put on the agenda more rapidly (via policy briefs, manifestos, etc.) or inspire other contexts. A possible major risk in this scenario is that the focus on implementation will get lost and WaL will evolve from a project machine to a pilot project vehicle or a design contest with only 'paper projects' as its output.

REFERENCE 1: PILOT PROJECTS PRODUCTIVE LANDSCAPE (PPPL) (BE)

The PPPL were launched by a coalition of several Flemish government actors. It started with research that defined 5 sub challenges on the theme. On the basis of this, a first call was made to clients who had a possible matching project assignment. After selection, a second call was made, this time to a process manager (intermediary) and a designer per project. The subsequent process was financed by the government and led to 5 detailed design proposals.

Lessons learned from PPPL for WaL:
Initial project ideas formulated by a (local) client that responded to an ambitious framework
Next to designers, there is the need to also have a sufficiently independent and fully equipped intermediary that can manage the process locally

Challenges for PPPL:
Implementation depended on the client's capacities, which were not always sufficiently developed

4.2. Local needs

Water as Leverage as mission-oriented local incubator

4.2.1 Selection of WaL cities (Phase 1)

WaL could also focus its content mission more radically on the local context and organize a specific open call to this end. As an organization, WaL could take on the negotiations with the national government, and similarly with the financial world. After all, its core mission in this scenario is to empower the local context at all times.

The selection of cities then starts by positioning the local context as project implementers: one of the main bottlenecks in Wal 1.0 was after all, the lack of a project owner. The way the cities were selected to participate in the first WAL trajectory did not depart from local interest or readiness to embark on the transformative journey, but was based on external selection criteria. WaL's mission, to which they must respond in this call phase, is precise in 'what' must be done (for example, very quantitatively), but 'how' it is designed (qualitatively) is largely left to the local coalition that signs up. WaL's main function is to help facilitate the process and act as a quality controller (for example, by building in phases and deliverables in exchange for support).

4.2.2 Selection of External Expertise (Phase 2)

This also radically changes the way in which external expertise is linked to the local context. First of all, a broad survey needs to detect what the local coalition itself can do, and on which fronts it needs support (in terms of design, finance, organisation, knowledge, capacity, etc.). This expertise is then attracted, but does not take over the project authorship, and works rather as an advisor or consultant.

4.2.3 Replication and deployment (Phase 5)

This scenario has the advantage that local support and capacity building is the starting point and implementation is very high on the agenda, but will take time. Not every local context lends itself to this (already).

REFERENCE 2: BROOD & SPELEN (BS) (NL)

BS is a design competition that launched a call for projects in which a coalition of landowner/ client and designers was sought. In the first phase, the programme organisation also facilitated the matchmaking between the two parties.

Lessons learned from BS for WaL:
- Initial project ideas formulated by a (local) client responded to an ambitious framework, at the same time design ideas were developed

Challenges for BS:
- Implementation depends on the client's capacities, which are not always sufficient

4.3. Partnership with national government

Water as Leverage as programme incubator for national governments

4.3.1 Selection of WaL cities (Phase 1)

In this prospective scenario Wal should partner with a national government. As discovered during the reflection assignment, the lack of an agreement with the national level posed problems to the smooth development of the program. Even if some cities were willing and enthousiast to work with the teams, the necessary brokering with higher authorities stood in the way. As stated in one of the interviews: 'if you really want something to take off, you need a dual partnership with the national government in these countries'.

In first instance a collaboration with a national government should be secured, followed by a call for participating cities within this country. Similar to scenario A, the selection process of WAL cities needs to be based on a scoping of local interests. This way local authorities that are already engaged with topics such as water resiliency have the capacity to get on board in a demanding program such as WAL, with the backup of the national authority in place.

It was once considered

It is important to note that WaL1.0 effectively attempted to launch a dual call, first inviting cities selected from a longlist (and each supported by national governments), after which a call to designers would be launched. Budgetary constraints and the fact that WaL had no implementation credibility on the ground yet, reduced this set-up to a call for designers only, where local co-commissioning was sought through MOUs and existing contacts. The present reflection, and that of the other partners, shows that this manner of harvesting co-commissioning was insufficient. It caused WaL to be delayed during the process, designers had to put much more energy into convincing the local context, and little or no insight could be given into funding or implementation methods. In a second version of WaL, the delays and additional costs that this entails can be avoided by investing in a dual call.

Partnership with National Government

A call for or partnership with national authorities leaves the freedom to first make an internal national call to interested cities. This may take into account any existing national project rhythms (a limited number of cities will be eligible in the coming years) or set a framework with national objectives (less importance attached to which city fulfils them). It is important to build in sufficient freedom for the local cities. For example, clear objectives can be formulated at the national level of 'what' to do (quantitatively and qualitatively), but there must be a certain local autonomy of 'how' local programmes and projects respond to this.

4.3.2 Call for External Expertise (Phase 2)

WAL will set an ambitious framework for the designers to work in, where, consistent to the first program period, integrated, pro-active and cross-disciplinary designs are expected as a baseline. But additionally the main challenges of an area to which the designs should respond should not be determined by an external team of experts, but should be scoped in collaboration with the local client. By starting from a local engagement, the embeddedness of the program is secured. It is no longer an international consortium that drops into foreign territory, forced to scope the local terrain and find local commitment in a short period of time, but an existing local coalition can set up a collaboration with an international design team. The international project teams will be coupled to a local consortium and asked to conjointly develop a proposal that at once upholds the ambitions and innovativeness of WAL, but is equally aligned to local priorities and in accordance with local planning regulations. The joint effort can, as stated, stand in for the lack of local city expertise that was experienced in the current program, as well as provide a solid basis for the 'pre-call groundwork' and a tighter connection to already running projects and initiatives. This could equally tackle the challenge of the unequal footing on which local and international partners were working in the first trajectory. Instead of having a supportive - and in some instances a bit of a demeaning -

> ~ We need ambassadors that diffuse the idea of WAL at international summits and plant the seeds of the methodology on a less formal level.

position, they can be equal partners in a joint project development. Here the role of the designers as boundary spanners still stands, as they are the main actors in place to integrate the necessary inter-disciplinary knowledge and are expected to lift the ambition of the local coalitions by providing innovative insights from the design field. Their role within process guidance could thereby shift more from a need to find connections to local institutional actors and securing their own enabling environment, towards a collaborative engagement with local initiatives, organisations and citizens.

4.3.3 Replication and deployment (Phase 5)

Due to the strong involvement of the national government, the lessons can flow back to both institutional organization and content-related follow-up steps. Working within one country has the advantage that the context of cities is generally more comparable (than working more globally) and that it is therefore likely that strategies in one city will also generate learning effects for another. In this way, the government can also adapt its own investment logic more quickly.

REFERENCE 3: WATER+LAND+SCHAP (WLS) PROGRAMME (BE)

The water landscape programme was launched by five Flemish government bodies, three knowledge institutions and a non-profit organisation (AWB) to tackle the increasing water problems in agriculture, with the aim of creating a climate-robust landscape. This programme consisted of the following phases:

0. The five government bodies integrated existing policy objectives into a shared ambition text, which was fed by the knowledge institutions. AWB was remunerated as process supervisor, while the investment of the knowledge institutions was in-kind in exchange for the use of the projects within the programme in their own research. One government actor linked an existing implementation instrument ('Landinrichting', which is a flexible and modular instrument containing a wide variety of measures) and corresponding public funds to the programme (max 80% of the required implementation budget/project). The ambition text formed the guideline for an open call to local coalitions to pitch a project proposal.
1. A jury selected the 14 entries that came closest to the objectives (but were not necessarily asked to provide sufficient guarantees that they could achieve them at that time). Based on the jury's report, those selected were advised to refine their project proposal, coalition and co-financing. To this end, they were supported by the government and knowledge institutions (which provided tailored data) and by external designers (funded by all five government bodies), who were asked to help coalitions with improving the integration between the proposed measures and the overall plan per project. After 6 months, a final project proposal had to be submitted.
2. A second jury (mandated by the Minister) confirmed the final project proposals and only then allocated the implementation budget
3. Implementation (for a maximum period of 10 years)

Lessons learned from WLS for WaL:
- Clarity about the (flexible) implementation method and process (10 years) before the start of the design process
- Initial project ideas formulated locally
- Co-financing (80-20%) between regional and local public money (and in some cases private money as well)
- Integrating design power into a pressure cooker (6 months) came at a strategic moment in the process and was temporary in nature (clearly defined and reimbursed assignment).
- Pre-set limited (but still extensive) set of measures from which the design could been made of
- Central programme team, consisting of a horizontal cross-sectoral coalition of knowledge institutes and government bodies offers all necessary and known information and monitors the quality of the projects at the same time

Challenges for WLS:
- Projects were supported with an implementation budget, but local actors had to be able to provide 20% co-financing and 100% of personnel costs themselves (through the pooling of different resources).
- Continues to rely largely on public investment (future runs of the programme would require European funds or mainstreaming)
- The subprojects are locally very well supported (social innovation), but must therefore sometimes compromise to meet the programme's high state of the art content requirements (technical innovation).

4.4. Partnership with a bank

Water as Leverage as design advisor within an bank programme

4.4.1 Selection of WaL cities (Phase 1)

Here you are embedded within a banking programme, this means there is a prefigured agreement with the national government, financing is secured and thus support and the roadmap towards implementation is laid out. However, it will be hard within the current way of working of the banks to do a call for participating cities and thus respond to immediate local concerns. Most probably, the priorities of the banks and the national governments will have to be followed.

4.4.2 Selection of External Expertise (Phase 2)

Within this scenario the solution directions seem to be twofold:
Either a bank is willing to enter into a partnership in an intermediate space and play an advisory role. This seems to be a key question in the reflection process, for which no format has yet been suggested. The question also remains whether the bank is still prepared to be the financing party. This scenario is still compatible with (1).
Or the banks cannot possibly deviate from their standardized programmes and WaL has to consider acting as a design advisor within them. It will make it possible to better understand the assessment procedures and to organise, from that context of pre-set modules, instruments or measures, a fascinating and integrated design dynamic, pushing for more radical proposals.

It was conceived this way

WaL focused from the onset on a new approach with financiers. Initially, AIIB and FMO were meant to play a distinctive role. However, the reflection makes clear that they may have not been the best placed party in clarifying financier's expectations and helping to build the business case for WaL and the projects it supports. We have to get grip on the reasons why the collaboration with them as a primary partner did not pay off. The role of advisor was projected on them in addition to the fact that they were called upon as a funding party (among many others). This dual role was not clear and could not be fulfilled due to the complexity of the financial institutions (many different actors with not always a mandate to take positions).

4.4.3 Replication and deployment (Phase 5)

Part of the mission in this scenario is to change the financial assessment procedures from the inside as well. By working within a banking program, the 'rules of the game' become increasingly clear for WaL. WaL therefore acts as a 'Trojan Horse' to help think from the inside about how the bank's objectives and WaL's mission can converge more effectively in practice. As an organization, WaL must therefore be sufficiently equipped to make this translation possible.

4.5. What with 'the facility' of wal?

Even if we couple WAL to a financing track of an IFI or set it up as a collaborative program with a national government the need for structural funding for WAL as a facility still stands. We need ambassadors that diffuse the idea of WAL at international summits and plant the seeds of the methodology on a less formal level. We need to involve high ranking officials that can stand in for the initial lobbying and integration of the program in a certain international context. We need someone that steers and coordinates the next moves of WAL, a scoper that determines the future countries to settle down in, someone that has a grasp of the needs and priorities in different countries and contexts. This profile is needed in all of the scenarios described.

Annex 1: List of Interviewees

Conducted interviews

1. Manager of Deltares' corporate market team on Urban Resilience
2. Director of Ooze Architects
3. Programme Manager Water as Leverage at Netherlands Enterprise & Development Agency (RVO)
4. Regional Director, APAC Resilient Cities Network
5. Urban and Environmental Planning Specialist at UN-Habitat

Co-conducted interviews

1. Leader of WWF Freshwater Practice, Leader of WWF's Resilient Asian Deltas Initiative, Global Lead Finance & Freshwater at WWF
2. Head of the Secretariat for the Global Facility for Disaster Reduction & Recovery (GFDRR)

Annex 2: Key illustrations of the Process Architecture of the WaL Programme

Figure 1: *The 'sabbatical detour' as used in the 'Rebuild by Design' Programme*

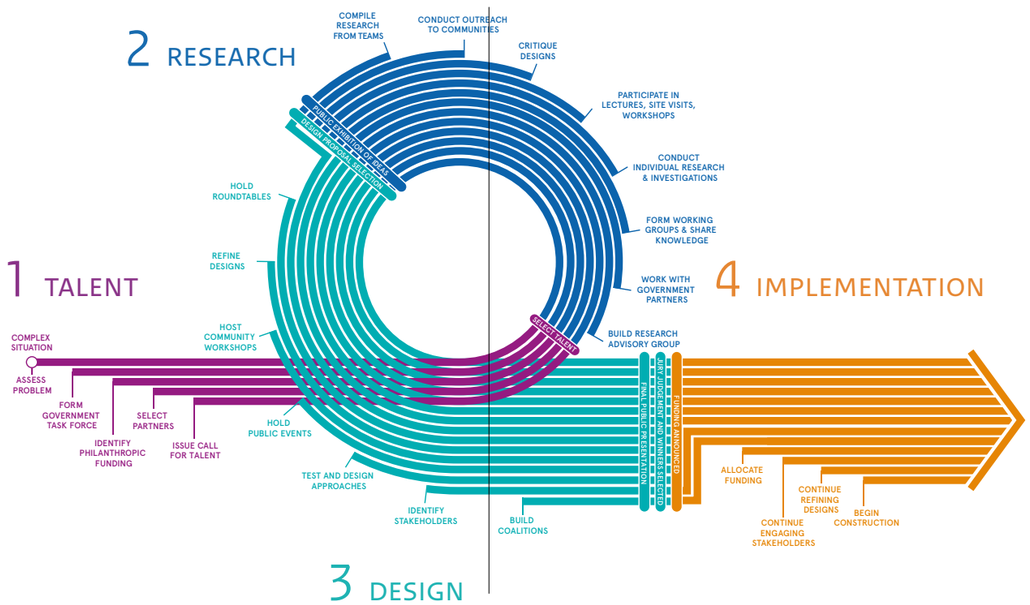
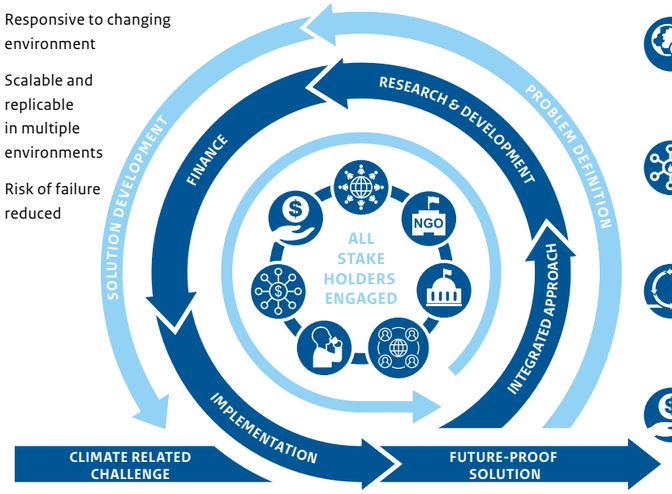


Figure 2: *The 'sabbatical detour' as used in the WaL Programme*

THE WATER AS LEVERAGE APPROACH

- ✓ All stakeholders involved from day one
- ✓ Responsive to changing environment
- ✓ Scalable and replicable in multiple environments
- ✓ Risk of failure reduced



People
Combine the world's best expertise with local talent.

R&D
Catalyze innovative processes to understand vulnerabilities to future risks and uncertainties.

Integration
Co-ordinate closely with local communities and governments in an agile working environment.

Process
Ensure Government and community stakeholders work closely with experts from day one.

Finance
Source innovative project funding through public private partnerships, blended and private finance initiatives.

Figure 3: *WaL's process (Setting the Scene document)*

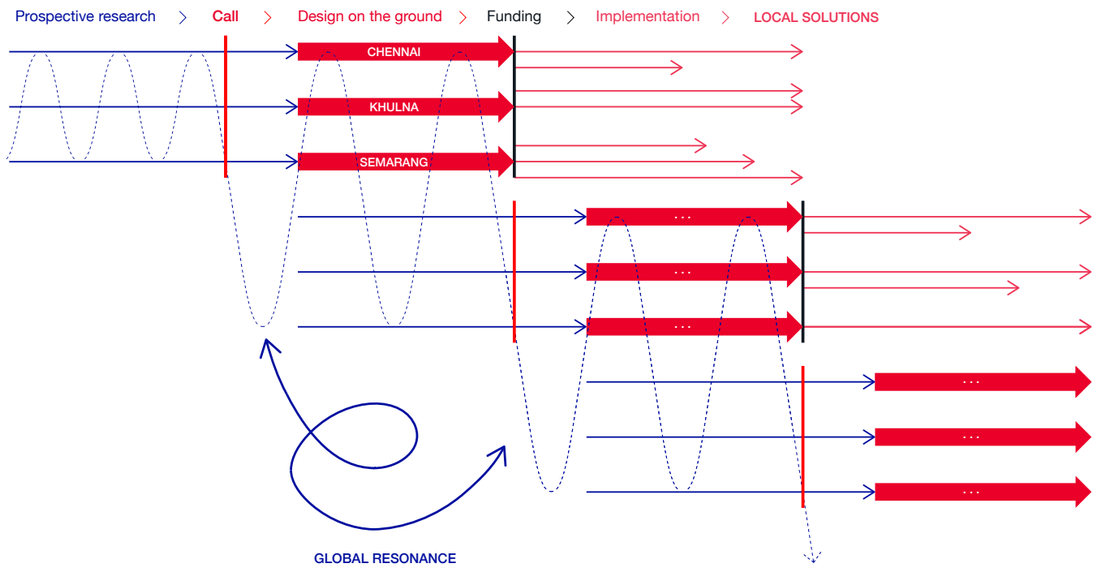


Figure 4: *WaL's Theory of Change*

Contribution to SDG 6 (clean water & sanitation), 8 (decent work and economic growth), 11 (sustainable cities and communities), 13 (climate action), and 17 (partnerships)	Impact
Water as leverage for impactful and catalytic change in urban regions worldwide	Long-term outcome
• Enabling environment for climate resilient project development • Match between longterm comprehensive planning and shortterm innovative transformation • Design-driven solutions to strengthen cities' resilience to water-related challenges • Follow-up project proposals by AIIB and FMO • Adherence to *HLPW Princples on Valuing Water* to ensure sustainable, efficient and inclusive allocation and management of water resources	Outcome
• 6 bankable proposals for innovative and integral project s with local support (2 per city) • Integration of *HLPW Principles on Valuing Water* in project proposals	Output
Track 1: Call • Coalitions with both local and global partners that combine research, design and implementation • Dutch companies involved in project proposals • Lessons learned using SBIR and recommendation for further use of SBIR • Selection process & judgment of quality of work • Connection of local and global partners • Organizing and informing about the content and the process • Using SBIR as innovative pre-procurement tool	**Track 2: Support** • 9 local design workshops (3 per city) • Local network • Evaluation and learning activities (incl. organisation of local design ateliers) • Cooperation with MFA missions in region • Cooperation with local stakeholders • Capacity building • Analysis of local network • Integrating *HLPW Principles on Valuing Water* in project design and learning activities	**Track 3: Facility** • Use of pre-project preparation phase as innovative financing method • Match between longterm comprehensive planning and shortterm innovative transformation • Expansion to other cities/regions/world • Paper for G20 Group reviewing global financial governance • Think tank group early adopters • Regional workshops • Reflections from participating teams, cities and funders during the pilot call and proposed recommendations for revisions of future calls • 2nd call Water as Leverage (2019-2020) • ToR pre-project preparation financing facility • Organisation of 3 regional workshops • Regional research as input for regional workshops • Organisation feedback loops • Cooperation with MDBs (AIIB, ADB, etc.) and capacity building MDBs • Development of ToR pre-project preparation financing facility	Activities
Budget MFA	Staff hours and expertise	Partnerships with AIIB, GCECA, 100RC, FMO	Partnerships with cities of Semarang Khulna and Chennai	input

Figure 5: *WaL's Process Diagram*

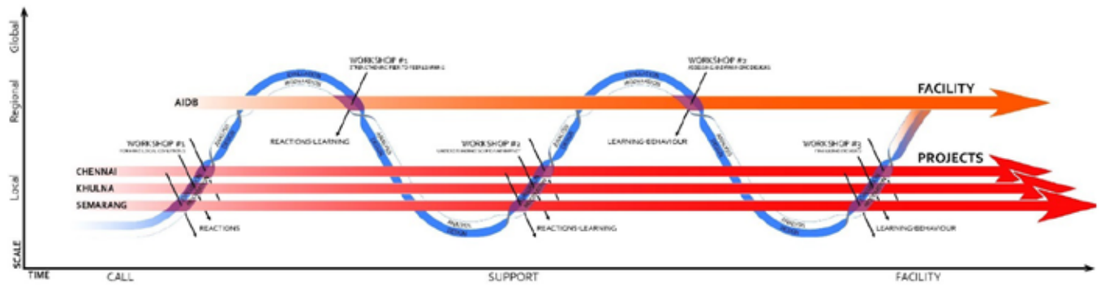
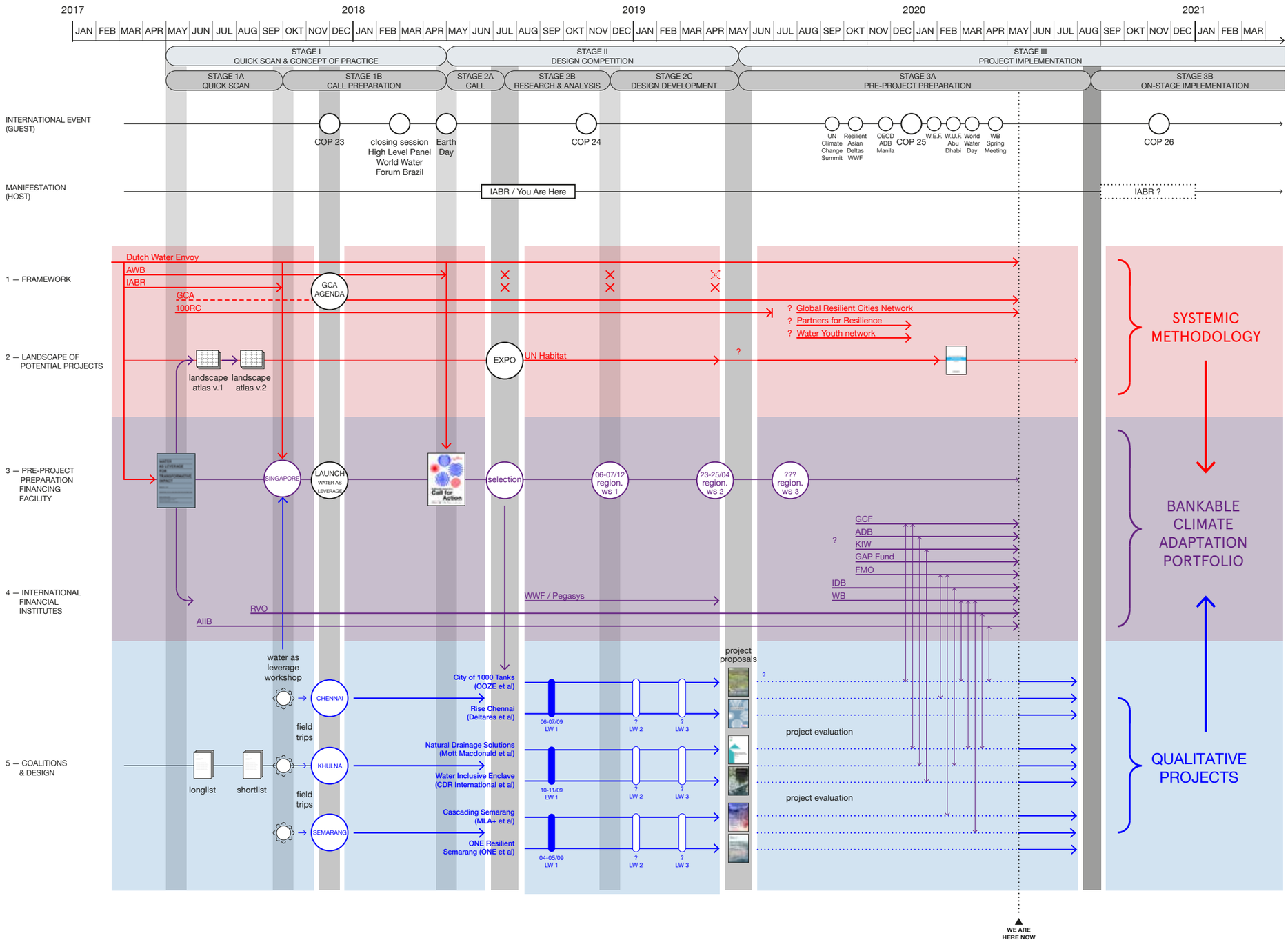


Figure 6: *Reconstructed Process (AWB)*



~ Appendix I

PARTNERS OF WATER AS LEVERAGE

Government of the Netherlands
~ Special Envoy for International Water Affairs
~ Ministry of Foreign Affairs
~ Ministry of Infrastructure and Water Management
~ RVO - Netherlands Enterprise and Development Agency

Government of India
~ City of Chennai

Government of Bangladesh
~ City of Khulna

Government of Indonesia
~ City of Semarang

Core partners
~ AIIB - Asian Infrastructure Investment Bank
~ AWB - Architecture Workroom Brussels
~ FMO - Dutch Development Bank
~ GCA - Global Center on Adaptation
~ IABR - International Architecture Biennale Rotterdam
~ OECD
~ Pegasys
~ PfR - Partners for Resilience
~ UN Habitat
~ WWF
~ Water Youth Network
~ Global Resilient Cities Network

With the help of
~ Deltares
~ Fabrications
~ Netherlands Environmental Assessment Agency - PBL

Financial Institutes
~ Asian Development Bank
~ Asian Infrastructure Investment Bank
~ FMO Dutch Development Bank
~ Green Climate Fund
~ Islamic Development Bank
~ KfW Germany
~ RVO - Netherlands Enterprise and Development Agency
~ World Bank

Teams:

City of 1,000 Tanks:
~ OOZE Architects, Madras Terrace, Care Earth Trust, IIT Madras, Paperman Foundation, Biomatrix Water, Pitchandikulam Forest Consultants, Goethe Institut, IRCDUC, Uravugal Social Welfare Trust, TU Delft, IHE Delft, HKV Consultants, Rain Centre

~ **Rising Waters, Raising Futures:**
Deltares, IGCS, IIT Madras, Care Earth Trust, Karlsruhe Institute for Technology, Waggonner & Ball, Benthem Crouwel Architects, Arcadis and VanderSat.

Creating inclusive and natural water synergies in Khulna urban region
~ Euroconsult Mott MacDonald B.V., Khulna University of Engineering & Technology, Urban and Regional Planning (KUET-URP).

Khulna as a Water Inclusive City
~ CDR International, Defacto Architecture & Urbanism, DevConsultant, Nelen en Schuurmans, RoyalHaskoningDHV, Khulna University, Wageningen University and Research.

One Resilient Semarang: Water(shed) as Leverage
~ One Architecture & Urbanism Inc. (One), Deltares, Wetlands International, Kota Kita, Sherwood Design Engineers, Hysteria Grobak, Iqbal Reza, UNDIP.

Cascading Semarang - Steps to inclusive growth
~ MLA+, Deltares, FABRICations, PT Witteveen+Bos Indonesia, UNDIP, UNISSULA, IDN Liveable Cities.

~ Appendix II

Winner
Dutch Design Awards 2020
Best commissioning

Jury
Water as Leverage (WaL) takes the Netherlands to international levels with an approach that is refreshing, not only for governmental agencies. The Rijksoverheid shows that we can approach even large, global issues as an opportunity instead of as a threat. This is the daring mentality for which the Netherlands is internationally known, especially when it comes to water management. The urgency is apparent and WaL focuses immediately on taking action with three concrete pilots, while the working method offers all kinds of opportunities for scaling up the approach. This demonstrates a strong confidence in the power of design. The jury thereby also sees possibilities for other (knowledge) domains that should see WaL as a shining example.

~ With Water as Leverage, the Rijksoverheid shows that we can approach even large, global issues as an opportunity instead of as a threat.

Government of the Netherlands

Architecture Workroom Brussels

OECD

university of groningen

Water as Leverage reflect, an in-depth analysis and reflection on the program, its inclusive, integrated and sustainable approach, the process, the design methodology, the partners, the places, the impact and follow-up

This is a publication of **Watergezant**

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