



# Breakfast Inspiration Workshop - Water

13 June 2023



NAB

**Laure Wessemius-Chibrac**

Managing Director



## Program of the Day

1. Welcome and opening: Laure Wessemsius-Chibrac
2. Presentation: Floor Van Den Elzen & Sven Renon
3. Presentation: Alex van der Laan & Daphne Roovers
4. Presentation: Jim Brands
5. Presentation: Femke Bos & Nanda Aung
6. Q&A
7. Closing: Laure Wessemsius-Chibrac

**NAB**

**Impact Institute**

**PGGM Investments**

**Climate Fund Managers**

**Invest International**

**NAB**



Impact Institute

**Floor Van Den Elzen**

Manager in the Energy, Water and Infrastructure consulting  
department

**Sven Renon**

Manager in the Sustainable Finance consulting department

# Impact For Breakfast Water

13 June 2023

[impactinstitute.com](https://impactinstitute.com)



# AGENDA



- 1** Introduction to Impact Institute
- 2** What is Impact? Theory & Practice
- 3** Impact Measurement and investment lifecycle
- 4** Water impact
- 5** Example of a water project
- 6** Q&A



# IMPACT INSTITUTE | INTRODUCTION

## Company overview



Amsterdam-based social enterprise



80+ employees: data, software, consulting, training...



10+ years of existence and active R&D



Diverse ecosystem, cross-industry foundations and working groups

## Our purpose



Empowering organizations to realize **the Impact Economy**



Practical approach to **Impact Measurement and Valuation**



Two expertise levels: **proprietary data tools** and **bespoke advisory services**



Focus on **professional capital providers to the world economy**

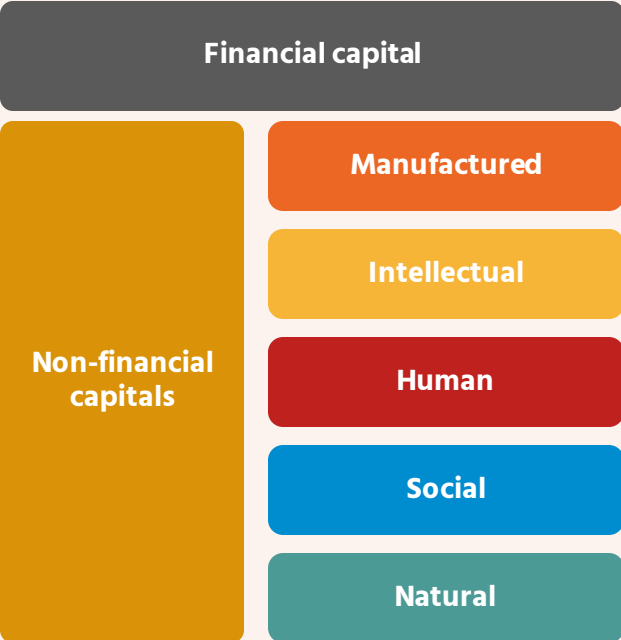


# WHAT IS IMPACT? | THE THEORY

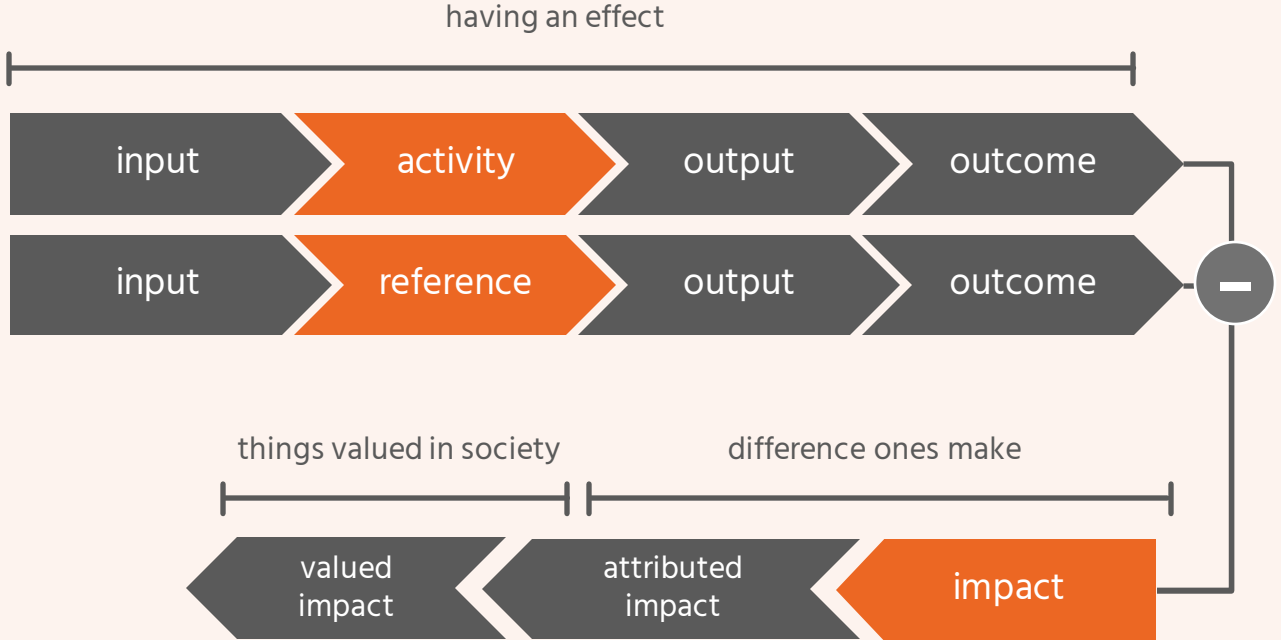


Impact is the difference one makes in the world by having an effect on the things valued in society

## Beyond financial capital



## Impact Pathways





# WHAT IS IMPACT? | IMPACT INVESTING

## Definition



Investments made with the intention to generate positive, measurable social and environmental impact alongside a financial return ([link](#)).



**Intentionality**



**Use evidence and Impact Data in Investment Design**

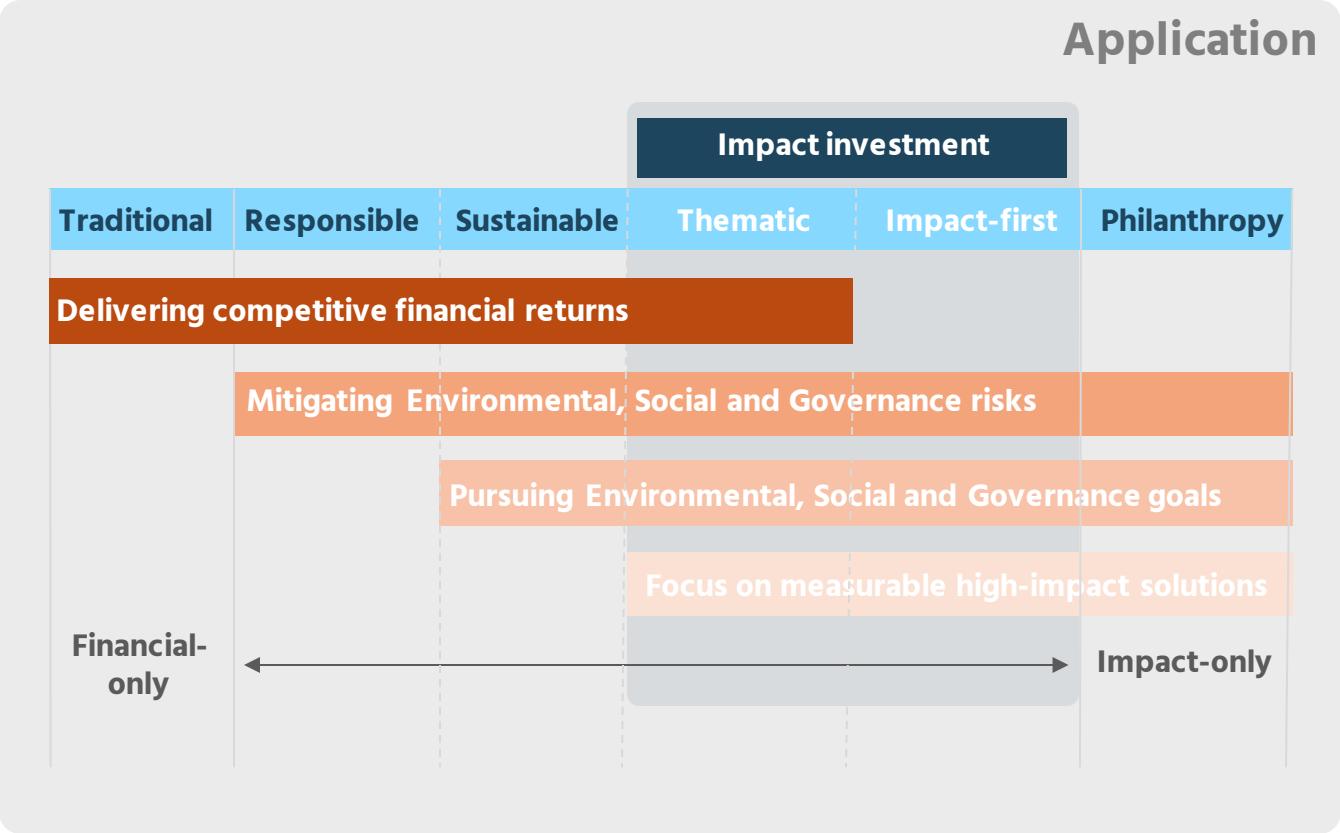


**Manage Impact Performance**



**Contribute to the growth of the industry**

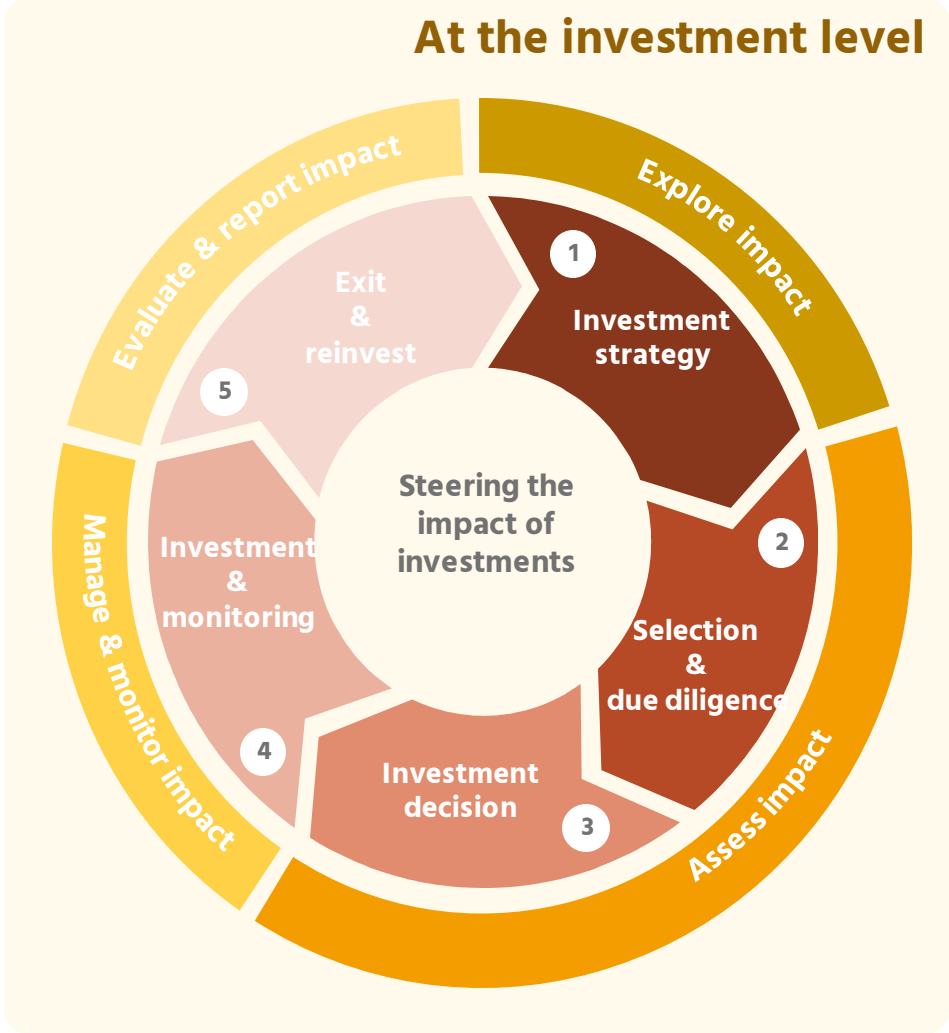
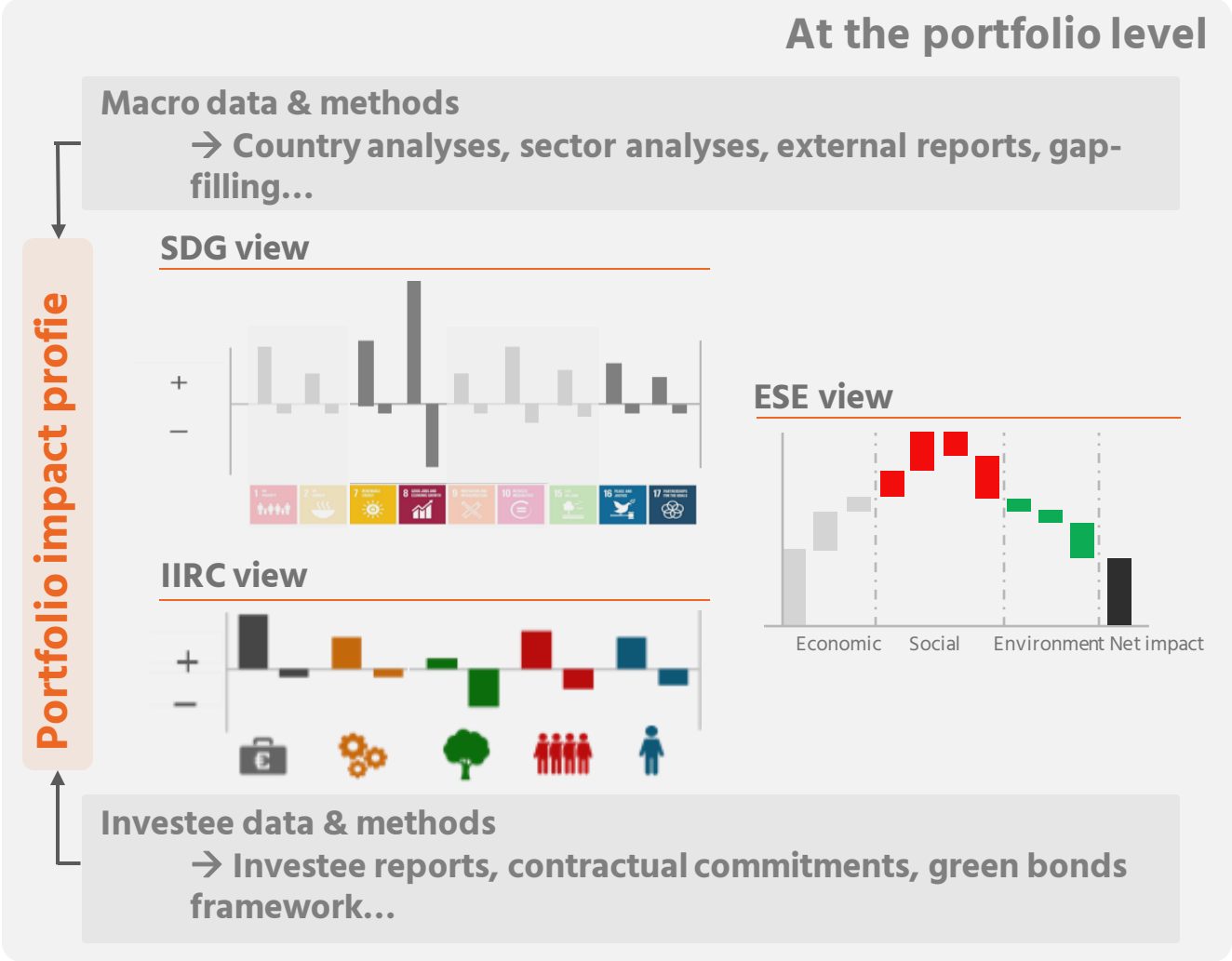
## Application



**Examples**



# IMPACT MEASUREMENT | PORTFOLIOS PROFILE AND INVESTMENT LIFECYCLE

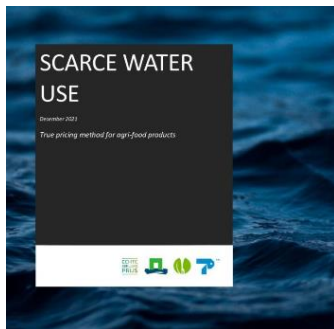


# WATER IMPACT | OUR APPROACH

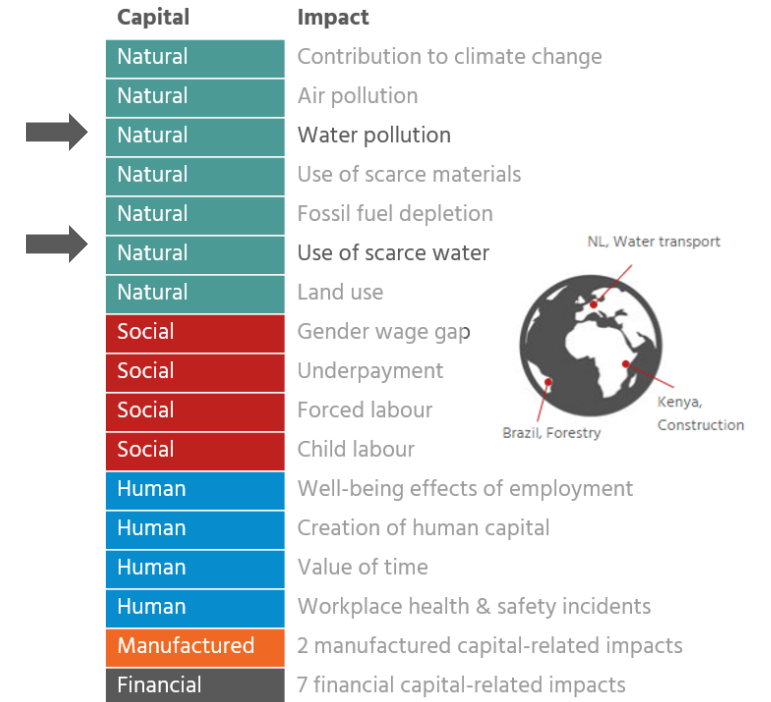
## Bottom-up



Water pollution	Freshwater eutrophication	kg P-eq to freshwater	
	Marine eutrophication	kg N-eq to freshwater	
	Toxic emissions to water	Human toxicity	DALY
		Terrestrial ecotoxicity	kg 1,4-DCB emitted to industrial soil eq
		Freshwater ecotoxicity	kg 1,4-DCB emitted to freshwater eq
		Marine ecotoxicity	kg 1,4-DCB emitted to seawater eq



## Top-down



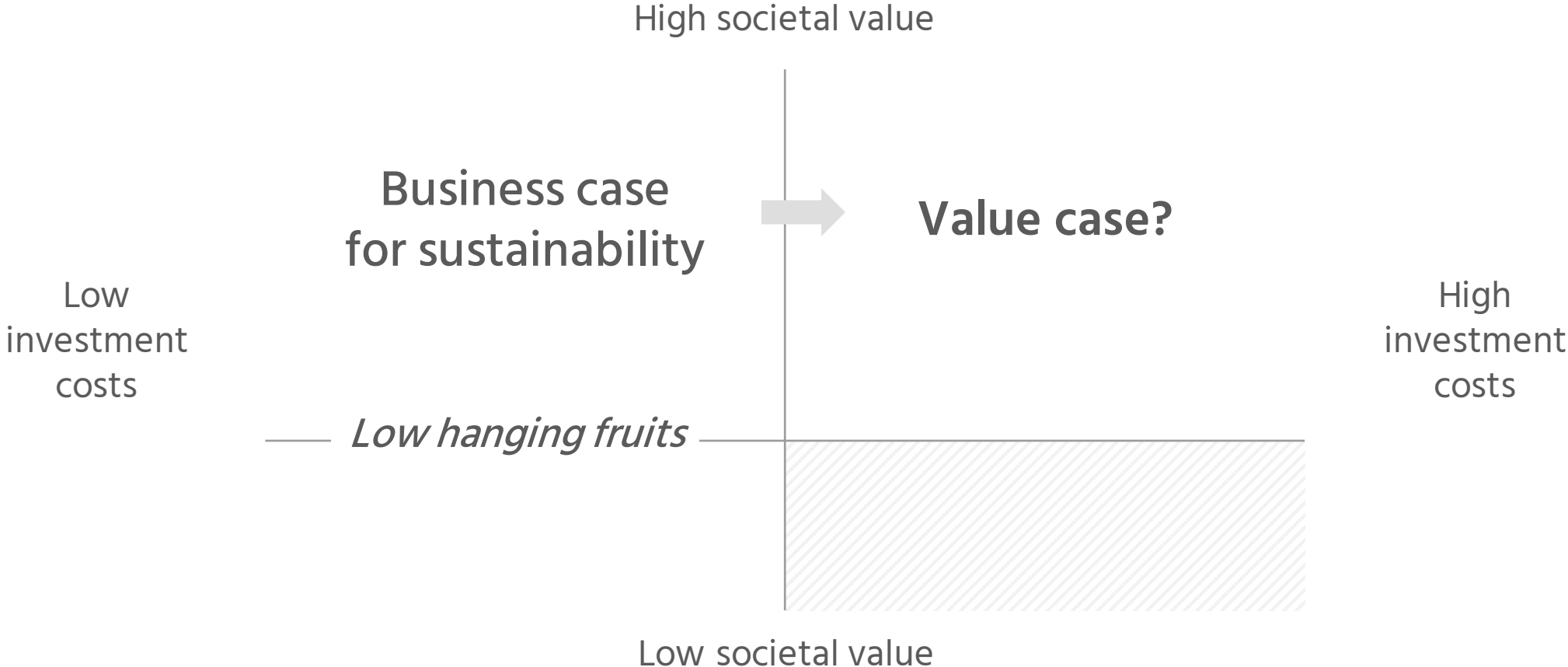
# EXAMPLE OF WATER IMPACT PROJECT



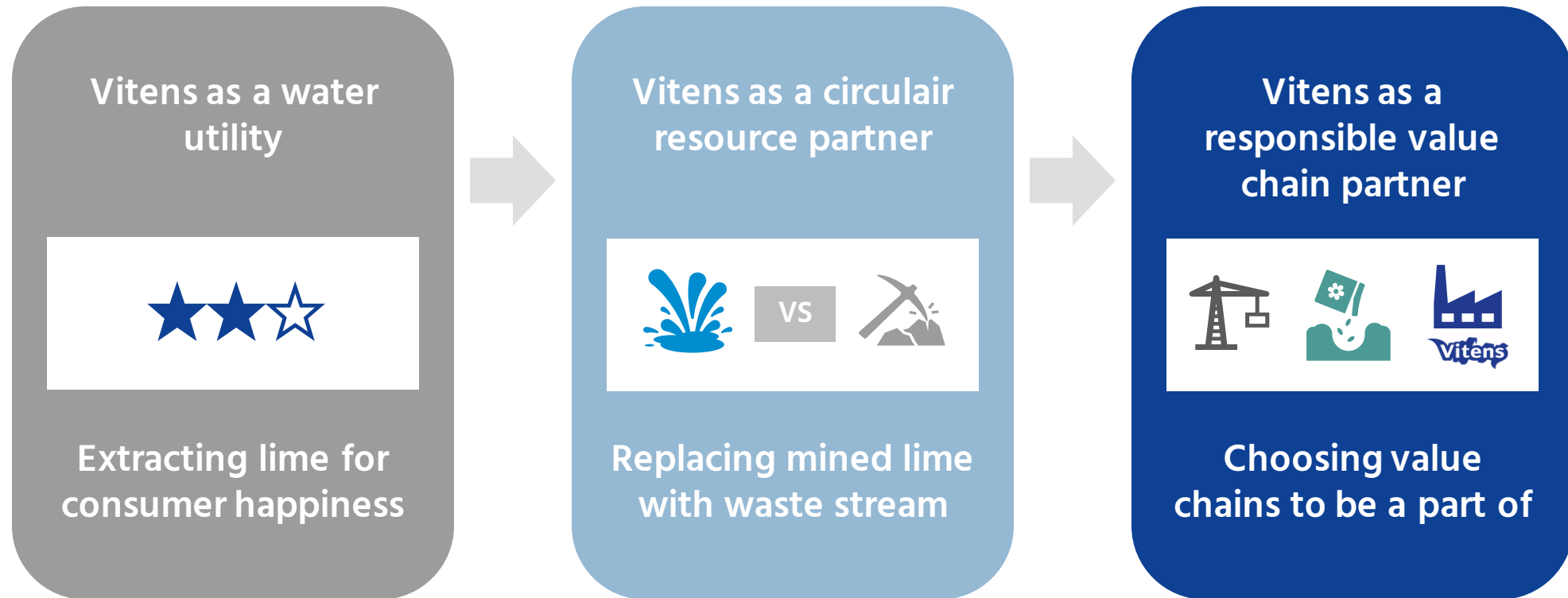
- Dutch water utility
- 5,6 million clients (business and households)
- Distribution network of 49.000 kilometres
- 96 production locations



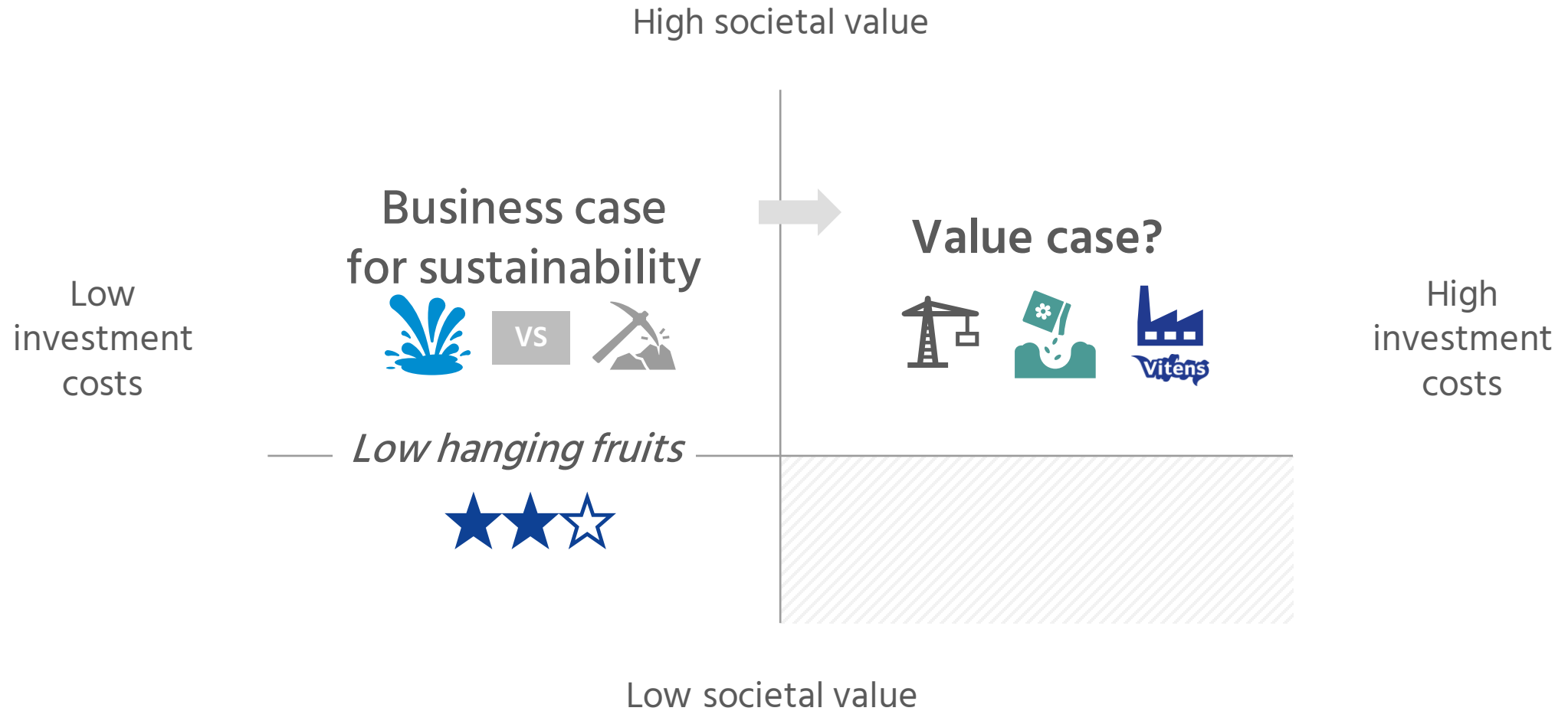
# TOWARDS A VALUE CASE FOR IMPACT



# LIME PELLETS AT VITENS



# TOWARDS A VALUE CASE FOR IMPACT



# THE IMPACT OF REPLACING MINED LIME

Vitens as a circular  
resource partner



Replacing mined lime  
with waste stream

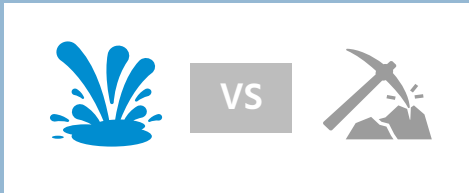
IMPACT



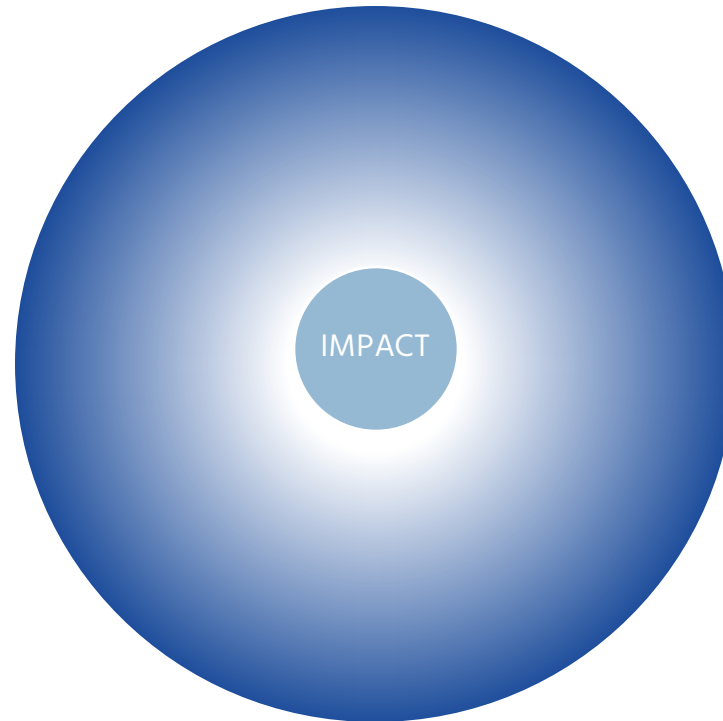


# THE VALUE CHAIN IMPACT OF THE APPLICATION OF IT

Vitens as a circular resource partner



Replacing mined lime with waste stream



Vitens as a responsible value chain partner



Choosing value chains to be a part of

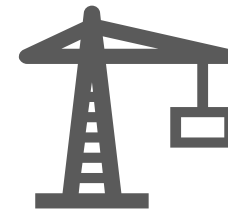


# WHERE SHOULD THE LIME PELLETS GO?

Vitens as a responsible value chain partner



Choosing value chains to be a part of



- **Recommendations:**

- **For lime pellets:** Consider a combination of these and new solution with higher capacity
- **Broader:** Start having these conversation on the downstream of water use



# Q&A



**Sven Renon**

Manager

[sven@impactinstitute.com](mailto:sven@impactinstitute.com)



**Floor van den Elzen**

Manager

[floor@impactinstitute.com](mailto:floor@impactinstitute.com)





Address: Haarlemmerplein 2, 1013 HS, Amsterdam  
Site: [www.impactinstitute.com](http://www.impactinstitute.com)  
Facebook: /impactinstitute.com  
Twitter: impact\_inst

Tel.: +31 202 403 440  
Mail: [info@impactinstitute.com](mailto:info@impactinstitute.com)

**CONFIDENTIALITY REQUEST AND DISCLAIMER**

Information, data, and drawings embodied in this document are confidential and are supplied with the kind request that they will be held confidentially and not disclosed to third parties without the prior written consent of Impact Institute.



PGGM Investments

**Alex van der Laan**

Senior Investment Manager

**Daphne Roovers**

Associate Investment Analyst

# Investing in water in public equities

PGGM Investments

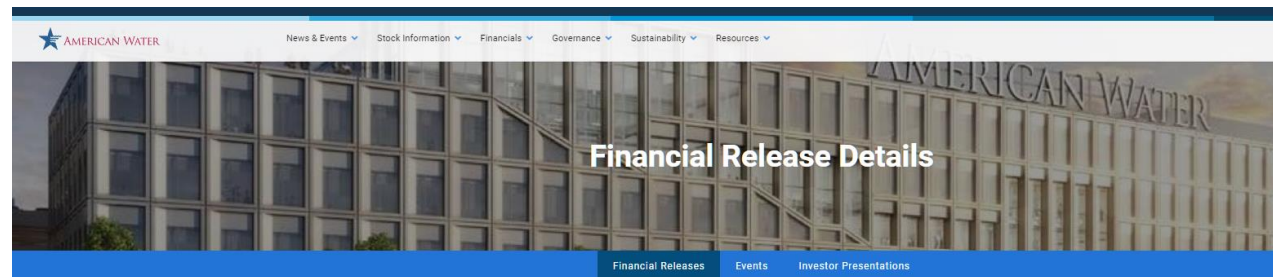
Alex van der Laan – Senior Investment Manager

Daphne Roovers – Associate Investment Manager Sustainability



# The need for water investment

A critical part of this course correction must include mobilization of financial resources to ensure universal access to water and sanitation. The [predicted amount we need](#) for universal access to water, sanitation and hygiene by 2030 is about USD 114 billion per year, and this only covers capital expenses for basic services. We need more and we need better.



[VIEW ALL NEWS →](#)

## American Water Announces Common Stock Offering

02/28/2023

CAMDEN, N.J.-(BUSINESS WIRE)- American Water Works Company, Inc. (NYSE: AWK) announced today that it has commenced a registered underwritten offering of 9,500,000 shares of its common stock. American Water intends to grant the underwriters of the offering a 30-day option to purchase from American Water up to an additional 1,425,000 shares of common stock. The proposed offering is subject to market and other conditions, and there can be no assurance as to whether or when the offering may be completed, or as to the actual size or terms of the offering.



## FAQ

### 7<sup>th</sup> Drinking Water Infrastructure Needs Survey and Assessment April 2023

Our water infrastructure is aging and in need of repair to withstand the challenges of the 21<sup>st</sup> century. We must maintain and modernize water infrastructure to deliver clean drinking water and safely transport and treat wastewater. EPA's Drinking Water Infrastructure Needs Survey and Assessment (DWINSAs) is used to determine the financial needs of the nation's drinking water infrastructure over the next twenty years. It also guides EPA's distribution of annual funding to states through the Drinking Water State Revolving Fund (DWSRF).

#### What is the projected water infrastructure need for the United States?

The 20-year national infrastructure need for states estimated by the 7<sup>th</sup> DWINSAs is \$625 billion. This is a 32% increase over the 6<sup>th</sup> DWINSAs (\$472.6 billion).



The economic case for investments in water security is robust and with climate change and other drivers exacerbating pressure on water systems, the value of investments in resilience is further heightened. Economic losses related to water insecurity are estimated to include USD 260 billion per year from inadequate water supply and sanitation, USD 120 billion per year from urban property flood damages, and USD 94 billion per year of water insecurity to irrigators. At the same time, the global costs of achieving SDG 6 on water and sanitation exceed USD 1 trillion per year, or 1.21% of global GDP. Yet, financing flows have long remained well below identified levels of need. The world is not on track to meet the SDG 6 and lack of financing is well-recognized as a major impediment.

# About PGGM and its biggest client PFZW



Pensioenfond

Zorg & Welzijn



€218bn

Assets under management



4.4m

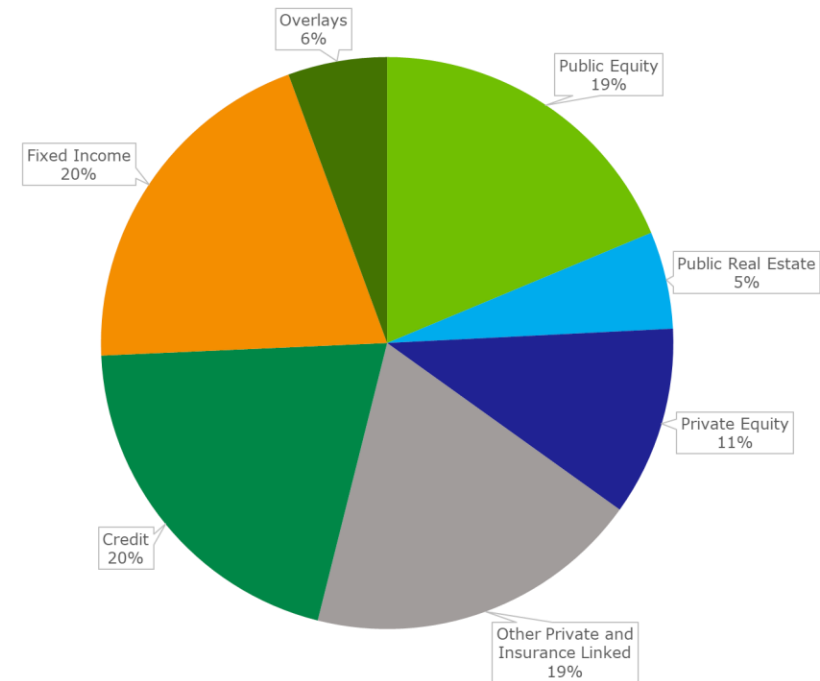
Participants



1500

Employees

Asset mix PFZW as of end 2022





# PGGM and PFZW policies

## Strategy



### Sustainable world

- 20% of AuM in SDGs by 2025
- Doubling the measured impact of investments
- CO2
  - Reduce CO2 emissions by 50% in 2030
  - 100% of portfolio is Paris-Aligned in 2030

### Responsible base

- Exclusion list
- OECD screening (incl. UN Global Compact)
- ESG integration
- Climate risks
- Do no significant harm (SFDR, Taxonomy)

## Reporting

SDG	Totaal belegd	Resultaat	Impact
 7 HERNIEUWEN ENERGIE	€ 33,1 miljard	9,6 miljoen MWH geproduceerde duurzame energie	Gemiddeld elektriciteitsverbruik van ruim 2,8 miljoen huishoudens per jaar
 11 DUURZAME STADEN EN GEMEENSCHAPPEN		10,5 miljoen ton vermeden CO2	Vermeden CO2 staat gelijk aan gemiddelde CO2-uitstoot van 456.522 huishoudens
 13 KLIMAATACIE			
 6 SCHIJN WATER EN SANITATIE	€ 1,4 miljard	1,1 miljoen m3 water bespaard	Jaarlijks watergebruik van 11 duizend huishoudens bespaart.
		177 miljoen m3 water behandeld	1,8 miljoen huishoudens voorzien van behandeld water.
 2 EEN VIERER	€ 0,9 miljard	48.000 ton rendements- verbetering	2000 vrachtwagens gevuld met extra geproduceerd voedsel
 3 GOED GEZONDHEID EN WEL- BIJEN	€ 7,2 miljard		16,2 miljoen mensen behandeld en bereikte patiënten 11,7 miljoen minder ziekte-dagen

# Focusing on positive impact has been endorsed by our client PFZW since 2015

The "Investing in Solutions" mandate (run by LTES) was founded, focusing on 4 focus themes endorsed by our client: climate, health, water and food security

PFZW has recently updated its investments beliefs to include the positive impact an investment has. This "3D" view on investments should be implemented throughout the entire portfolio

These themes were later translated into seven focus SDGs



# Introduction – Long Term Equity Strategy

## PGGM Long Term Equity Strategy (LTES)

- PGGM's LTES takes a thematic approach and invests in public companies that contribute to 7 focus SDGs.
- The team uses a fundamental approach, focusing on in-depth financial and strategic analysis of companies.
- LTES invests globally in companies of various sizes.
- Concentrated portfolio of approximately 40-60 investments with a total market value of €2 billion.

## Long-term and engaged shareholder

- LTES seeks constructive long-term relationships with investee companies.
- The team aims to be an engaged shareholder and will work with investee companies. Topics for discussion include financial and strategic issues and further implementation of best practices regarding various environmental, social and governance factors, as well as (reporting on) social impact.

# PGGM is one of the co-founders of the SDI AOP

"As asset owners, we are creating a community of investors who are jointly advancing the SDI AOP standard for investing into the SDGs"

**BCi**

AustralianSuper

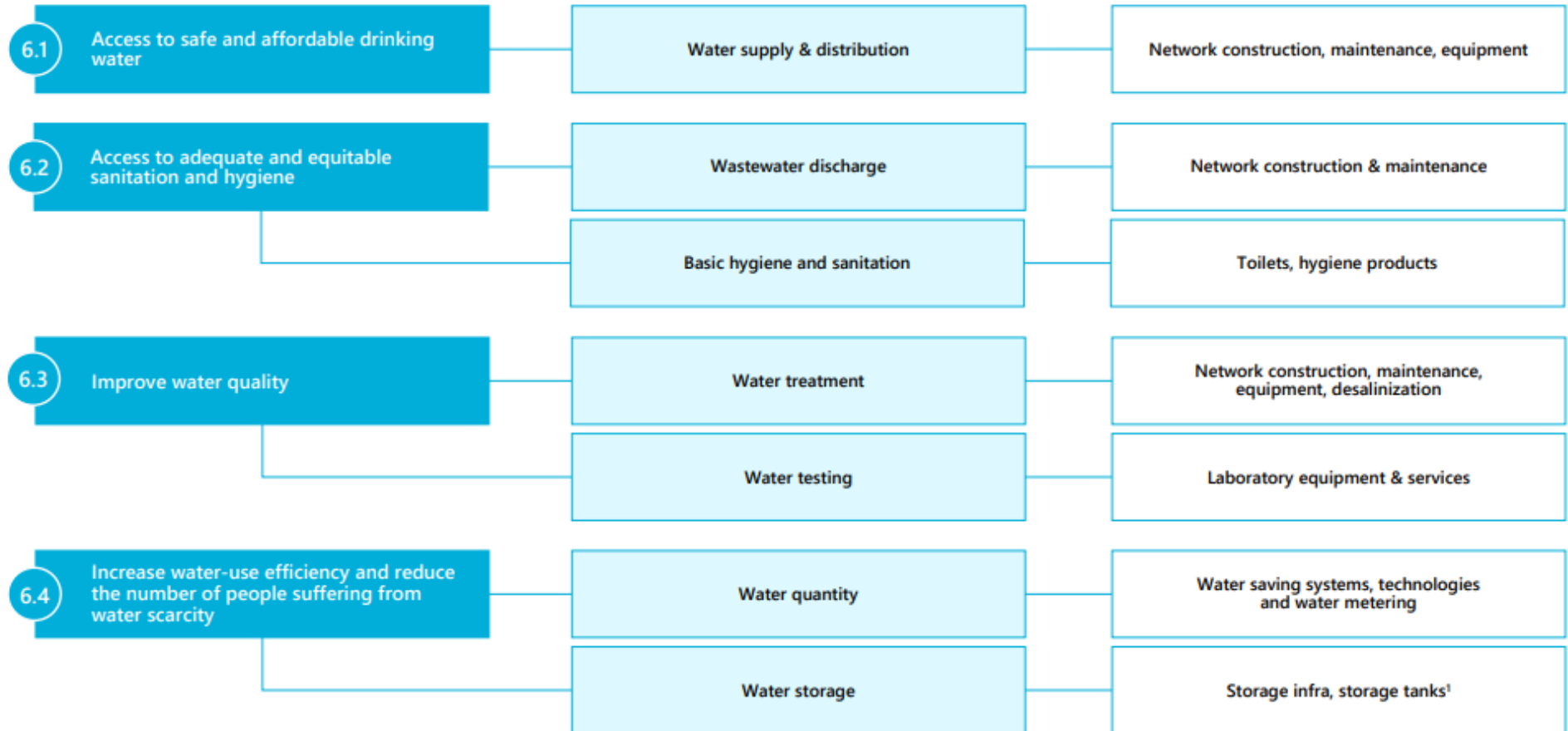
**apg**

**PGGM**

**Entis**  
TECHNOLOGY PARTNER

**QONTIGO**  
AXIOMA | DAX | STOXX  
GLOBAL DISTRIBUTOR

# The SDI AOP taxonomy for investing in SDG 6



# Investment themes in water

Investment Themes			Business Life Cycle		
Theme	Description	Invest-ability	Disruptive Growth	High Growth	Mature
Increasing demand for water/sewage	<ul style="list-style-type: none"> <li>Population growth</li> <li>Wealth effect in emerging markets</li> </ul>				
Ageing infrastructure	<ul style="list-style-type: none"> <li>Replacement cycle of century old infrastructure</li> <li>Most notably in United States</li> </ul>				
Resilience	<ul style="list-style-type: none"> <li>Climate change leading to problems with stormwater and floods</li> </ul>				
Digitalization	<ul style="list-style-type: none"> <li>Water networks increasingly being monitored digitally for leakage and contamination</li> </ul>				
Regulation	<ul style="list-style-type: none"> <li>Regulators are becoming stricter on water quality</li> <li>Present-day contaminants in water demand new solutions (PFAS, medicines, etc.)</li> <li>Speeds up the acquisition of smaller utilities</li> </ul>				
Alternative technologies	<ul style="list-style-type: none"> <li>Desalination</li> <li>Anaerobic digestion</li> </ul>				

# Investment process

## Financial analysis

- DCF analysis
- Industry study
- Risks
- SWOT

## Impact analysis

- How can we measure the positive impact? For water, the metrics are:
  - Water savings
  - Water access
  - Water treatment
  - Water supplied
- What is the negative impact?


## ESG analysis

- MSCI, Sustainalytics, own toolbox
- PAIs (SFDR)

**Advanced Drainage Systems**


---

**COMPANY PAPER**



**Founded in 1966**

Water management products and drainage solutions



Headquartered in the USA

**Water management products and drainage solutions**

Advanced Drainage Systems, Inc. engages in the manufacture of thermoplastic corrugated pipe, which provides a suite of water management products and drainage solutions for use in the construction and infrastructure marketplace. It operates through the following segments: Pipe, Infiltrator, International, and Allied Products & Other. The Pipe segment manufactures and markets thermoplastic corrugated pipe throughout the United States. The Infiltrator segment provides plastic leach field chambers and systems, septic tanks and accessories, primarily for use in residential applications. The International segment manufactures and markets pipe and allied products in regions outside of the United States. The Allied Products & Other segment manufactures and markets products throughout the United States. Products include StormTech, Nyloplast, ARaCC Septic Chambers, Inserta Tee, water quality filters and structures, Fittings, and FlexStorm. The company was founded in 1966 and is headquartered in Hilliard, OH.

**Superior product characteristics and long-term growth perspective**

- Superior product characteristics drive material conversion
- The only true national player in the US
- Being the largest plastic recorder in the US makes for a strong ESG as well as margin case
- Longer term growth from priority states and international business

---

**IMPACT SDG(s)**

**13 Climate Action**

**6 Clean Water and Sanitation**

**11 Sustainable Cities and Communities**

**Is positive?**

✓

**IMPACT 2021**

46% of pipe revenue from recycled products

28% of all recycled HDPE bottles purchased by ADS

Target to use 1 billion tons of recycled materials in 2032

---

**ESG SCORE**

4.1

**MSCI**

N/A

**SUSTAINALYTICS**

2.8 (medium risk)

**SDG %**

100%

**High non-renewable energy use in operation**

- Non-renewable energy use is 100%
- Supplier Code of Conduct is currently being implemented
- Missing PAI (due on emissions to water, hazardous waste, biodiversity and gender pay gap)


**Trade-offs:**

The positive impact, including both climate change adaptation and the recycling of HDPE, outweighs the potential ESG risks. Everyone voted in favor of this IC.

**Engagement strategy**

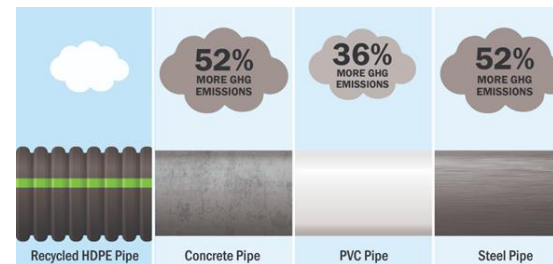
- Requesting missing PAI data
- Engaging on lowering their dependence on non-renewable energy
- Engaging on their impact target of 1 billion tons of recycled materials: what is the % of recycled materials used out of the total amount of materials?
- Engaging on their impact measurement: can they report on how much emissions to water they prevent, how much water they capture, how much liters of dirty stormwater they avoid?

---



# Often impact is not constrained to just SDG6

- ADS' products help mitigate stormwater hazards
- It is the largest plastics recycler in the US
- Material conversion leads to lower emissions



## Creating a Circular Economy for Plastics

ADS products are designed to last for decades, **significantly extending the life of single use plastics**.

Not only does ADS create a solution for plastic waste, **using recycled plastic reduces our carbon impact by over 70%**.



ADS partners with local waste management companies to source recycled post-consumer plastics.

**THE RECYCLING PARTNERSHIP**

As a well-known industry partner, ADS also purchases recycled post-industrial plastics, and **ADS is a sought-out partner for end-of-life collaboration**.

We process 67% of the recycled plastics we consume in house, and source the remainder through other recycling partners. **ADS is the 2<sup>nd</sup> largest recycling company in North America.**






# Engagement

- Key pillar of investment strategy
- Objectives:
  - Increase positive impact and measured impact
  - Decrease negative impact
  - Decrease ESG risk
- Combine engagement on financial matters and impact matters
- 5 milestones for tracking of engagement

## MUELLER


### What is Mueller doing right?


- Following GRI and SASB reporting standards
- Doing a materiality assessment
- Reporting on relevant data
- Selecting relevant Sustainable Development Goals (SDGs)
- Setting goals on ESG and impact
  - Save 7.7 billion gallons of water loss in total from EchoShore® leak detection technology by 2027

 **Over 1,800 miles** of condition assessments completed

 **250,000+ pipes** repaired yearly

 **Over 1M hydrants** supplied in the last decade

 **Over 3,200 miles** of pipe monitored globally

 **3M+ smart meters** shipped

 **1,800 gate valves** produced per day






 **Over 400 issued patents** and **200 pending** worldwide

 **\$273M of capital investments** from 2018-2021



### What could Mueller improve compared to Xylem?

- Reporting the progress on impact targets on a yearly basis
- What could be other metrics through which we can demonstrate the positive impact that you make through your products? (for example, for your valves business)
- Linking goals and activities more directly to SDGs
- How to get picked up by MSCI and Sustainalytics (currently only core or not available)
  - Is this something that is actively pursued?
  - These scores are often used by investors, also in constructing their passive portfolio's

Goal	2021 Progress	Total Progress to 2025
Reduce over 3.5 billion cubic meters of non-revenue water	0.44B cubic meters	 41% 1.43B cubic meters
Treat over 13 billion cubic meters of water for reuse	1.08B cubic meters	 55% 7.17B cubic meters*
Prevent over 7 billion cubic meters of polluted water from flooding communities or entering local waterways	1.93B cubic meters	 65% 4.55B cubic meters
Reduce water's CO <sub>2</sub> e footprint by over 2.8 million metric tons	0.73M metric tons	 42.4% 1.75M metric tons
Provide access to clean water and sanitation solutions for at least 20 million people living at the base of the global economic pyramid	Provided access to 1.8 million people in 2021	 32.5% 6.5/20

# Challenges

## Data availability and quality

- An increasing, but still limited number of companies report on their positive impact
- Comparability of data is often difficult
- How to deal with the impact measurement of "less direct" companies?
- How to avoid double counting?

## Modelling of impact data

- Trials with US universities
- Assumptions often too generic

## Weighing positive and negative impact

- Do we have all data?
- How do we weigh the value of each element?

## Aggregation of data

- Can we add water connections in Africa to those in the US?

## Example challenges



### The challenge

Water scarcity caused by the effects of climate change affected water supply in São Paulo making it necessary to create a new production system

↓ READ MORE

**+ 2 million people**

supplied with drinking water

### The solution

From Conceptual Design to Operation: implementation of a new Water Production system to guarantee supply with no dependence on nature or rainfall

↓ READ MORE

**4,7 thousand**

liters of water treated per second

### The impact

Constant and stable water supply, improving the quality of life of more than 2 million people

↓ READ MORE

**6 months**

ahead of schedule project delivery

# Thank you

PGGM Investments





Climate Fund Managers

**Jim Brands**

Executive, Capital Raising & Business Development



Click to add text

**CLIMATE**  
**FUND MANAGERS**

Climate Investor **Two**

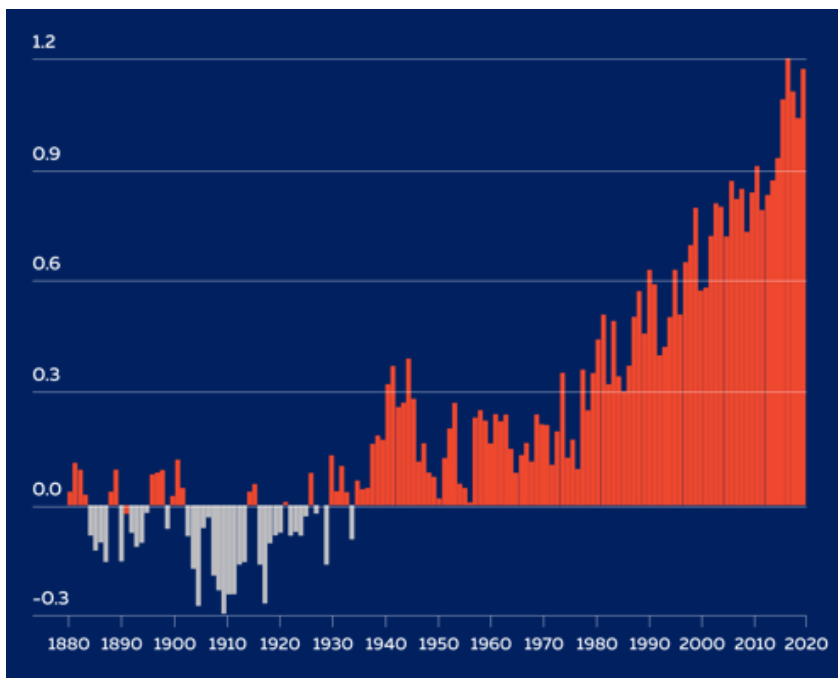
Introduction Presentation



*This is a marketing communication. Please refer to the prospectus of the CI2 Construction Equity Fund before making any final investment decisions.*

## ROLE 1: HELP KEEP TEMPERATURE RISE BELOW 1.5°C

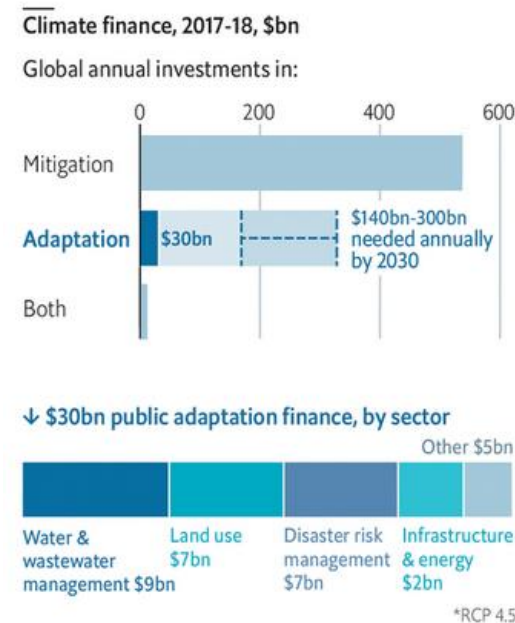
“The effects of global warming are already being felt today, with the 7 hottest years in recorded history all occurring in the period 2015-2021”



Temperature Relative to Pre-Industrial Average (1850-1900, °C)

## ROLE 2: MOBILIZE ADAPTATION FINANCE FOR EMERGING MARKETS

“The effects of climate change are already being felt today, adaptation finance faces a severe funding gap, there is an urgent financing need for infrastructure which helps countries adapt to the changing climate”



Source: the Economist, May 2020



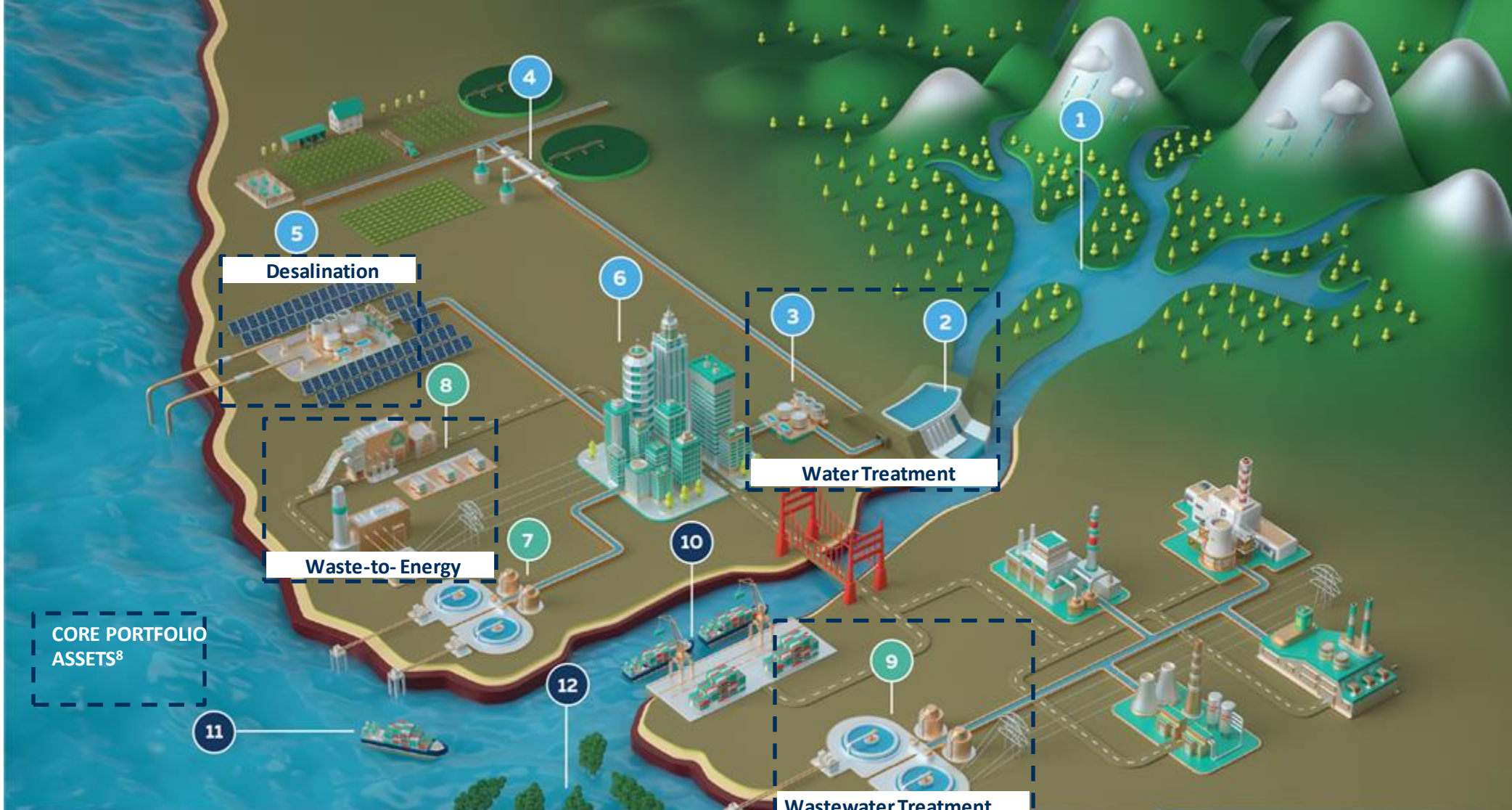
Private investment in emerging market water infrastructure has grown by 223% in 2013-20 compared to 2005-13



The rise of waste as energy: Asia Pacific waste-to-energy market to be worth USD 13.5bn by 2023



The oceans are the world's 7<sup>th</sup> largest economy, generating USD 2.5tn of annual profit



## Water

- 1 Watershed management and protection
- 2 Bulk water supply and storage
- 3 Water treatment plants
- 4 Water transportation and pumping
- 5 Desalination
- 6 Water and sewerage utilities

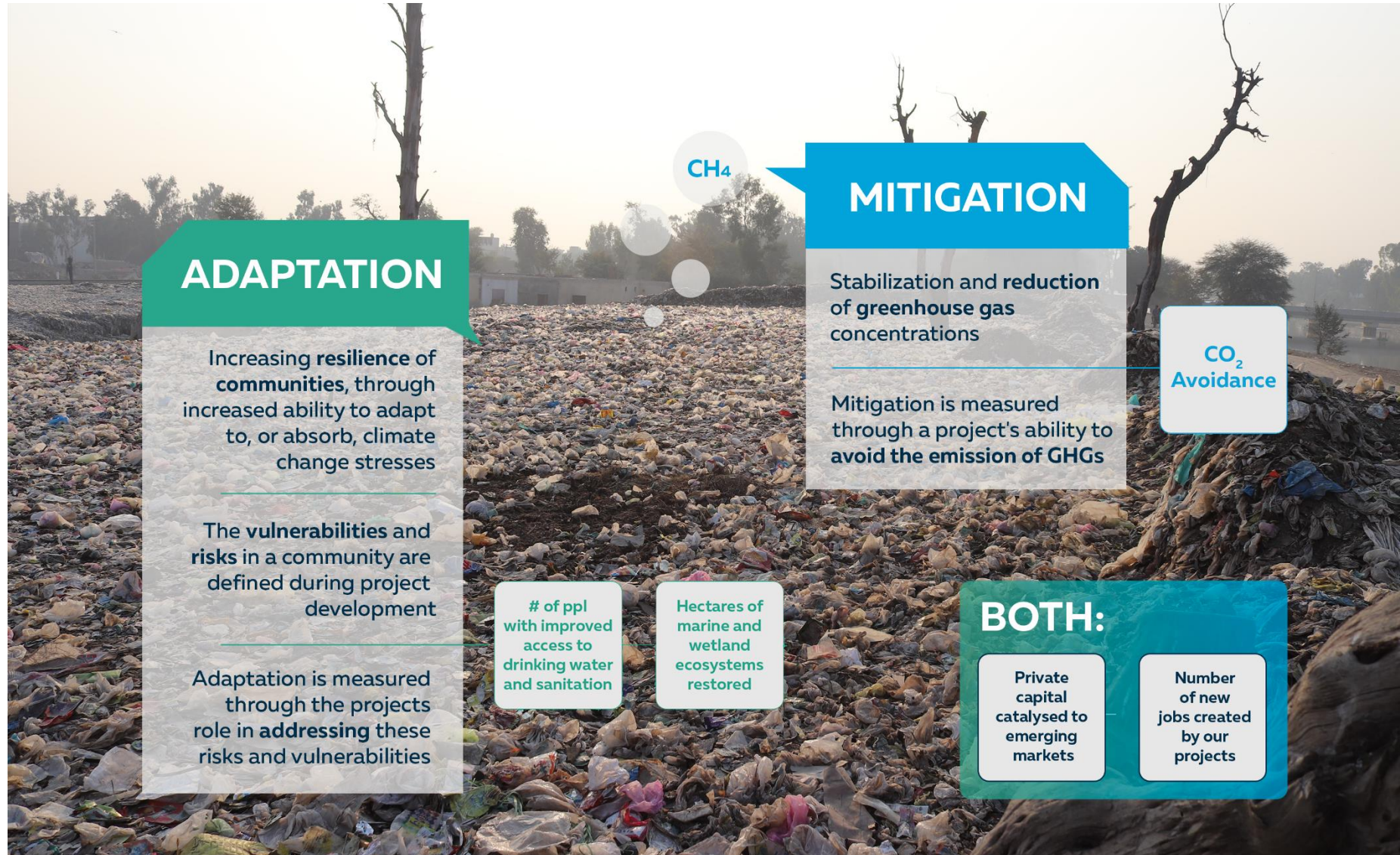
## Sanitation

- 7 Wastewater treatment and re-use plant
- 8 Waste to value and energy plant
- 9 Industrial wastewater treatment and re-use plant

## Oceans

- 10 Green ports
- 11 Green shipping
- 12 Coastal and marine ecosystem management and protection





# WATER, SANITATION & OCEANS: USD 1bn IMPACT

CI2's primary objective is the adaptation to climate change through provision of climate resilient water and sanitation infrastructure in developing countries.

## Impact



## Outputs

**~2.5 BILLION LITERS**  
of water and waste water treated per day

**~14 MILLION PEOPLE**  
supplied with safe drinking water

**~2.5 MILLION PEOPLE**  
provided with sanitation

**~2.8 MILLION TONS OF CO2**  
emissions avoided per annum

**2.2 MILLION HECTARES**  
of wetland and coastal ecosystems restored

**USD\$ ~2.5+ BILLION**  
private sector funds catalyzed at construction phase

## Investments



Bulk water supply

Water treatment plants

Desalination

Water and sewerage utilities

Watershed management and protection

Wastewater treatment and water re-use

Waste and wastewater to energy

Waste to value

Coastal and marine ecosystems management and protection

Green ports

Green shipping

## Themes

WATER

SANITATION

OCEANS

**CLIMATE  
INVESTOR** **2**<sup>®</sup>

CLIMATE INVESTOR **TWO**  
INVESTMENT STRUCTURE



USD 855 MILLION

(USD 1,100 million Target Size)

DONOR

DFI

INSTITUTIONAL



Nordic Development Fund



Entrepreneurial Development Bank



IMAS Foundation





Tier 1 concessional capital USD 200m - First Loss

Tier 2 commercial investors USD 400m - Ordinary Equity

Tier 3 commercial investors USD 400m - Senior Equity

Institutional investors  
DFIs  
Impact Investors



Fully financed and well-structured water, sanitation and ocean infrastructure projects

### CI2 Structural Advantages

- The Climate Investor Model offers an **integrated funding solution**, comprising of a Development Fund and Construction Equity Fund.
- Investors are able to participate in a specific project stage through **tailored investment instruments** to meet preferred risk/return requirements
- Developers have continuous access to capital at different stages of the project to **fully monetise the potential of the project**

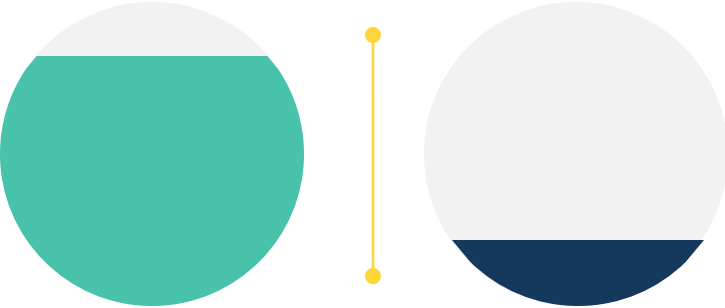


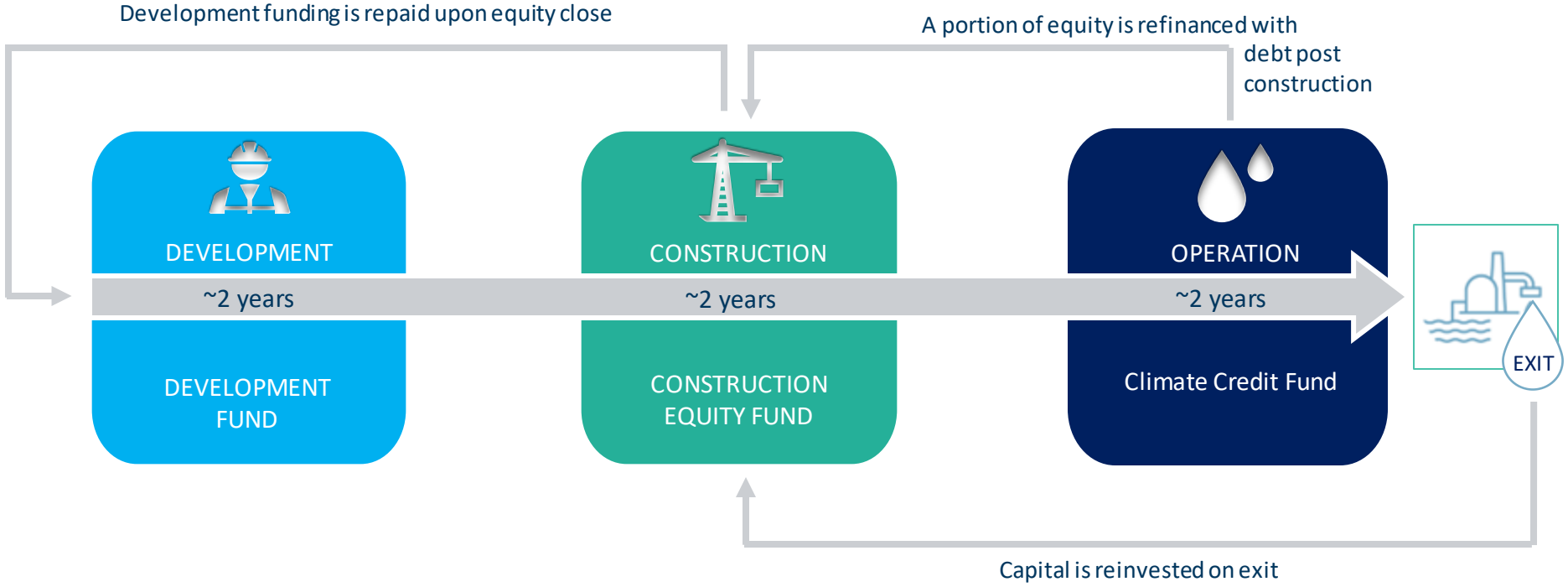
Similarities

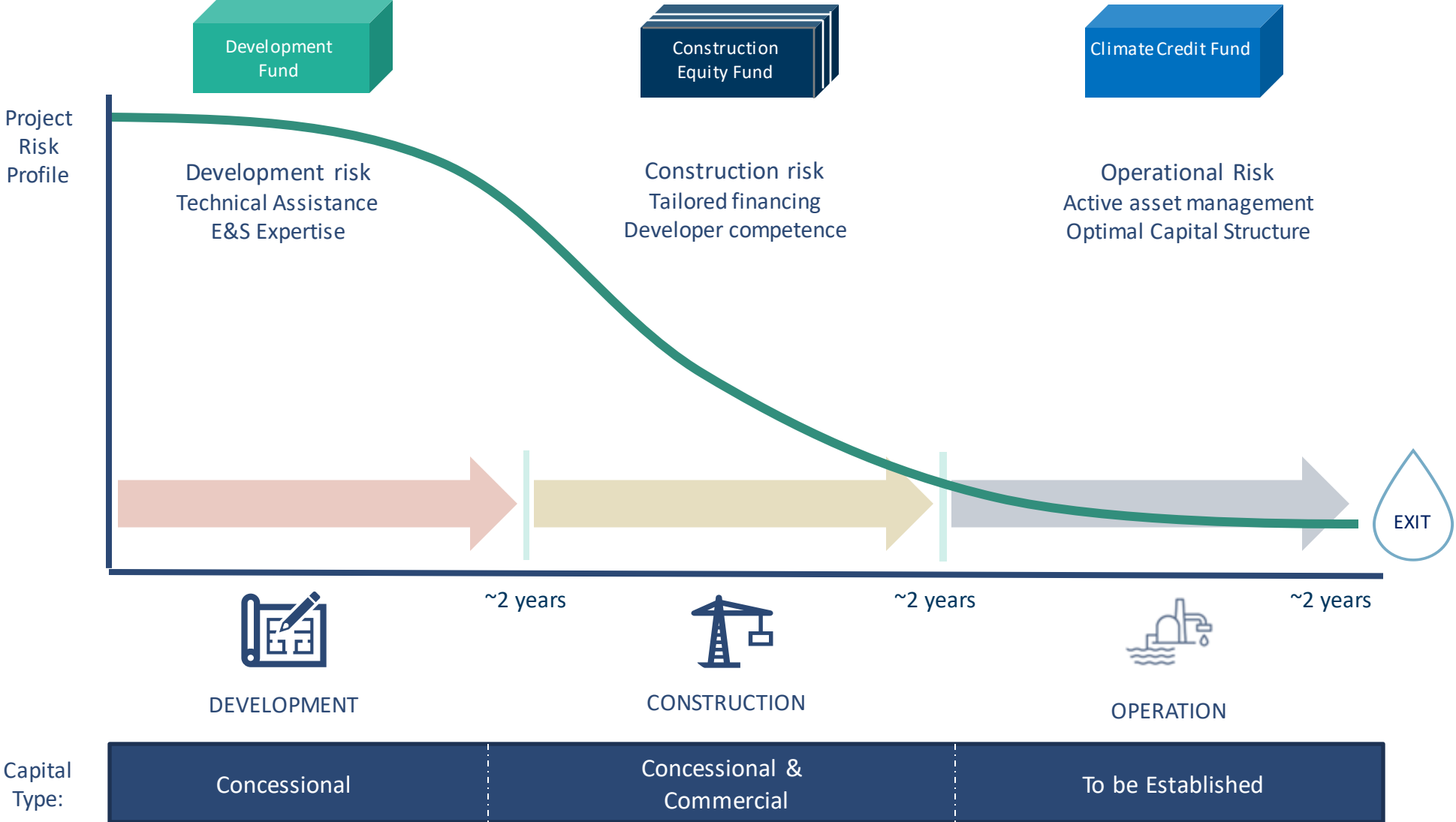
Differences

- Contracted cashflow profile
- (Quasi-)monopoly position
- Asset level inflation protection
- Proven technology

- Broader sector scope
- Diversified revenue streams
- Higher exposure to local currency revenues



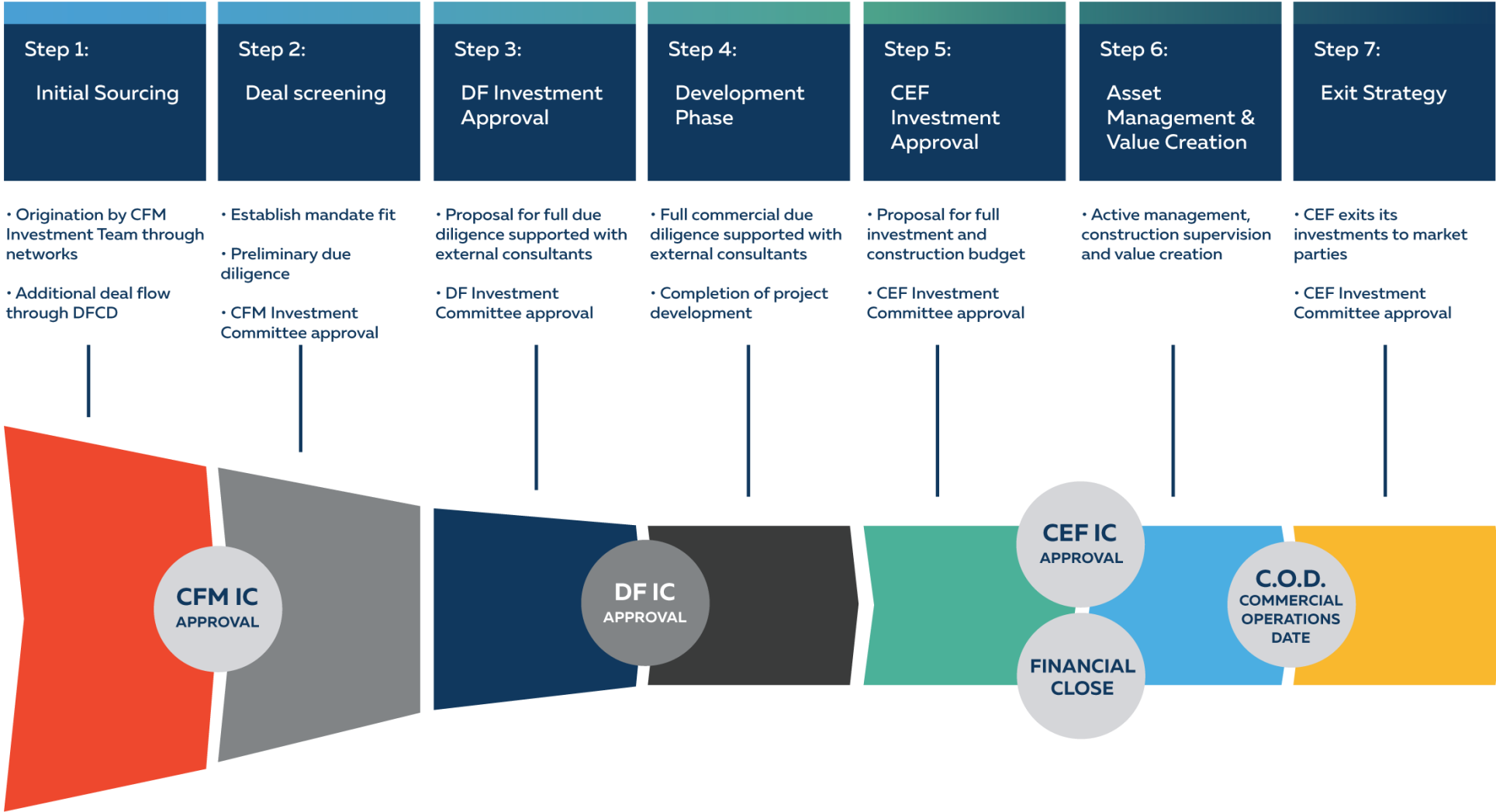






MARKET BARRIERS		SOLUTION OFFERED BY CLIMATE INVESTOR FUNDS	
Lack of development capital for project developers			DF removes the need for ongoing capital raising during development stage
Complex and time-consuming project financing timelines			CEF's Equity-Only approach during construction and long-term debt post construction
DD & structuring requirements by project finance lenders			Project finance lenders invited during operational stage
Knowledge & skills constraints			Offering resources to overcome capacity gaps (ESG, AM, legal, financial etc)
Undeveloped local financial markets			Optimal risk management associated with emerging markets

# CI2 VALUE CREATION





### Single-Asset Builds

#### Characteristics

- A project company typically owns one facility at one location
- Larger capital spend per site as the capacity of the facility is considerable.
- Typically, one offtake agreement with one counterparty such as a utility or public offtaker.

#### Pipeline Examples

# AZUR

### Asset Platforms

#### Characteristics

- A project company typically owns multiple facilities at different locations
- Each site’s capex may be lower in an absolute dollar amount, but scale is reached on deployment.
- Platforms typically have multiple facilities contracted under one offtake agreement but can also have multiple offtake agreements.

#### Pipeline Examples



# CLIMATE

## FUND MANAGERS

Jim Brands  
[j.brands@climatefundmanagers.com](mailto:j.brands@climatefundmanagers.com)  
Tel: +31 6 217 00 888

This document is being provided to targeted recipients as a source of preliminary information about Climate Investor Two. It is addressed to professional investors only. It is confidential to the person to whom it is provided and should not be copied or distributed in whole or in part or disclosed without our prior written consent. This document does not constitute an offer to sell or a solicitation of an offer to buy any securities. This document does not contain all the information necessary to fully evaluate any transaction or investment, and it should not be relied upon. Any investment decision should be made based solely upon appropriate due diligence and upon receipt and careful review of relevant offering documents. Recipients of this document should neither treat nor rely on the contents of this document as advice relating to legal, taxation or investment matters and are advised to consult their own professional advisers. This document includes forward-looking statements that represent our opinions, expectations, beliefs, intentions, estimates or strategies regarding the future, which may not be realized. Actual and future results and trends could differ materially from those described by such statements due to various factors, including those beyond our ability to control or predict. CFM does not undertake any obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise. Past performance is not a guarantee of future results or returns. Any discussion of past or proposed investment opportunities should not be relied upon as an indication of future deal flow. Targeted returns are not guaranteed. This document includes information obtained from publicly available information and from third party sources considered to be reliable. Whilst this information is provided in good faith, it is not, and does not purport to be comprehensive and has not been independently verified. The Development Fund, the Construction Equity Fund and the Refinancing Fund of Climate Investor Two as described herein are therefore not registered or approved for marketing in any jurisdiction (if required) and are therefore not under public supervision. This presentation is directed to professional and sophisticated investors only and is solely intended to provide you with an overview of features and modalities of the envisaged structure. Securities in the funds described herein may not be offered or sold in the United States absent registration under the US Securities Act of 1933, as amended (the "Securities Act"), or an exemption therefrom. CFM has not registered and does not intend to register any securities under the Securities Act and does not intend to make a public offering of any securities in the United States. Securities in the funds described herein may not be transferred or resold (i) except as permitted under the constituent documents of the applicable fund and (ii) unless they are registered under the Securities Act and under any other applicable securities laws or an exception from such registration is available. Interests in the funds described herein have not been approved or disapproved by the US Securities and Exchange Commission (the "SEC") or by the securities regulatory authority of any state, nor has any other authority or commission passed upon the accuracy or adequacy of this material. Any representation to the contrary is a criminal offense. No fund described herein will be registered as an investment company under the US Investment Company Act of 1940, as amended, in reliance on one or more exemptions or exclusions thereunder. Each fund described herein will obtain appropriate representations and undertakings from prospective investors to ensure that applicable conditions are met. CFM is not registered as an investment adviser with the SEC pursuant to the US Investment Advisers Act of 1940, as amended, and the protections of such registration will not be afforded to the funds described herein or any investor in such funds.



Invest International

**Femke Bos**

Director Business Development, Strategy & Impact

**Nanda Aung**

ESG Officer

# Addressing Water Challenges in your portfolio

We invest in **Dutch solutions**  
for **global challenges**

June 2023

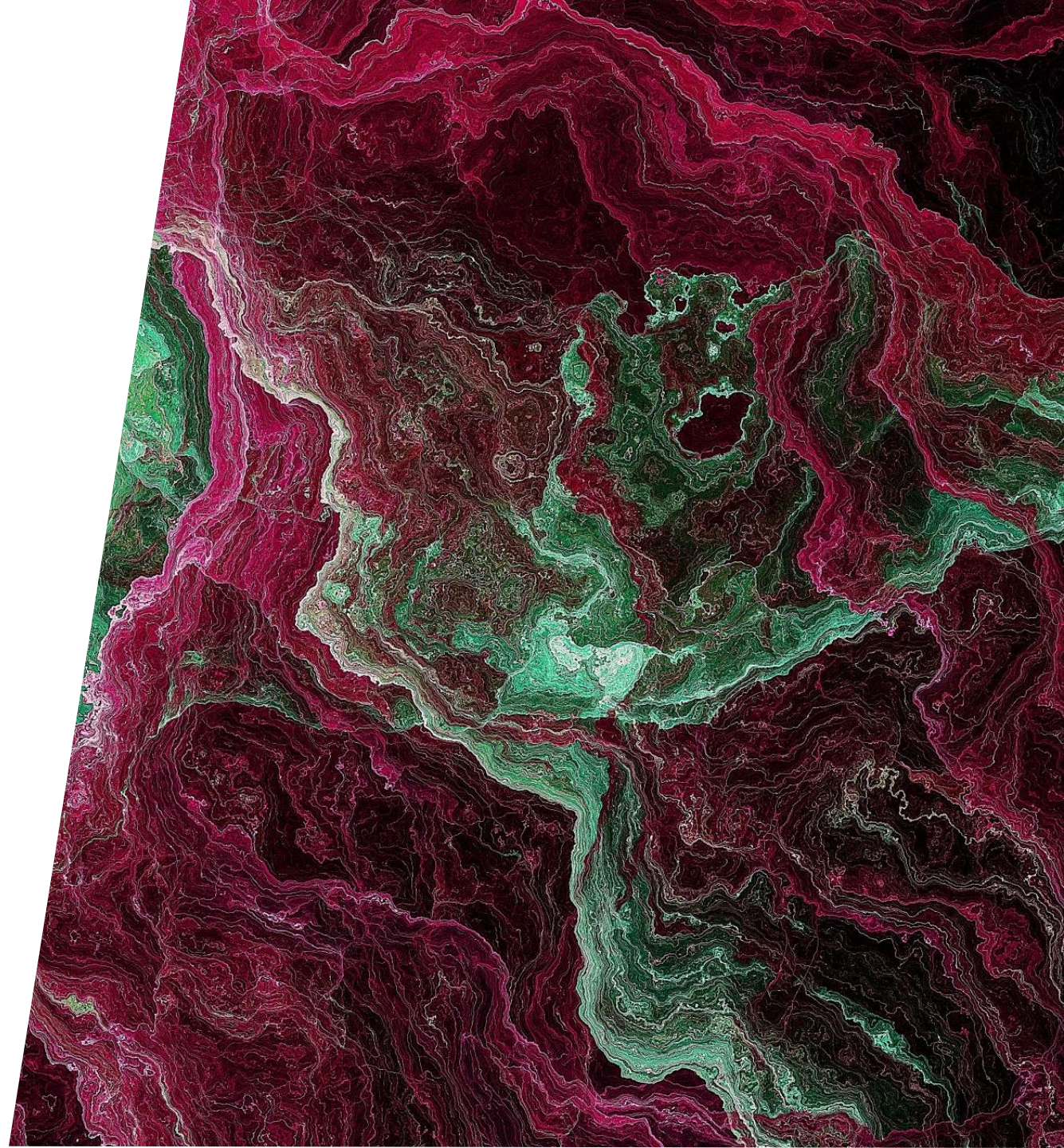
**Invest  
International**

Water & infrastructure



# Contents

1. The Urgency of Global Water Challenges
2. Develop Your Water Resilience Strategy
3. Moving Towards Actions





# Who are we?



**Contribute to Dutch economy & (future) earning capacity**

**Provide solutions to Global challenges & create impact on SDGs**

## Shareholders

A private company funded with public means. Shareholders are the Dutch Ministry of Finance (51%) and FMO (49%).

## Organization

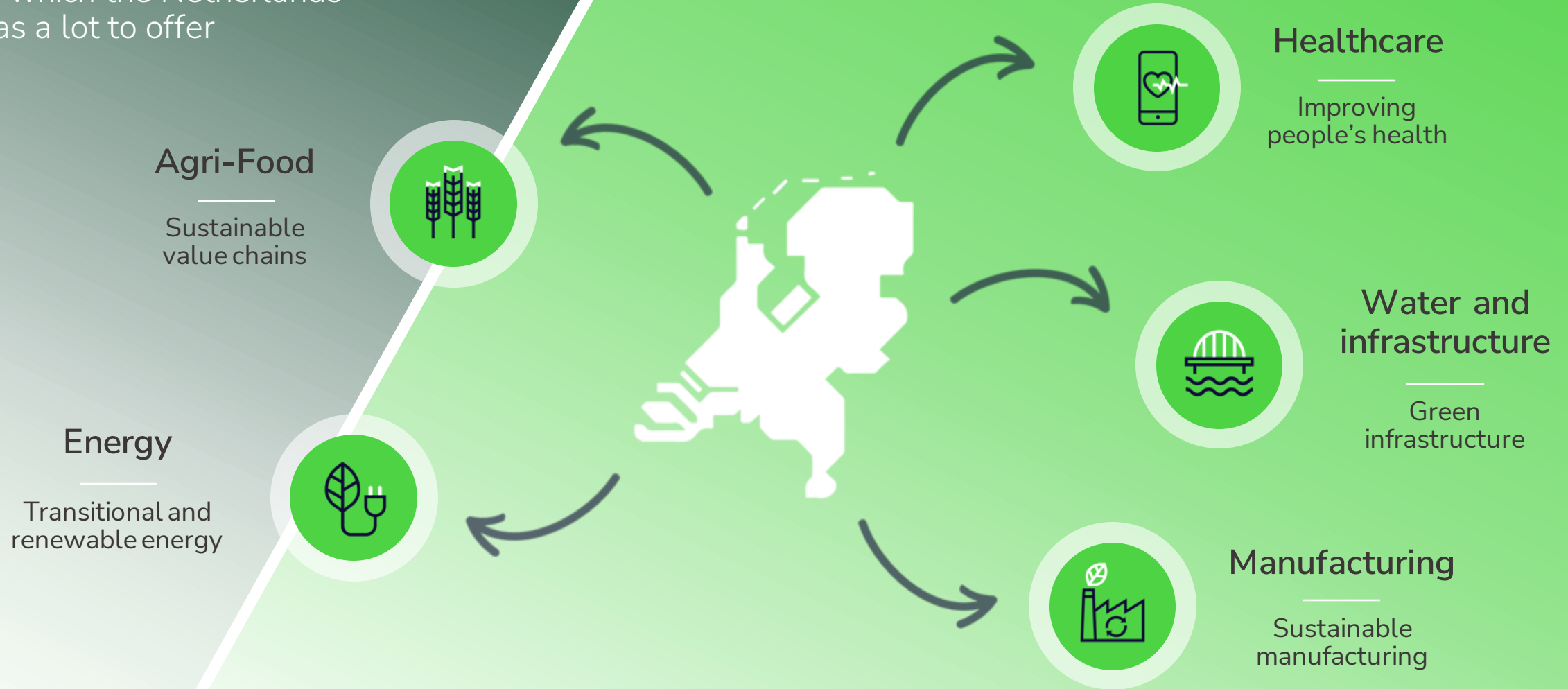
We are organized as an impact focussed financial institution with a global mandate

## Financial assets

- € 833 m for capital investment/loans
- € 9 m annual budget for project development
- € 165 m annual budget for public infrastructure development
- € 308 m budget for internationalization of Dutch Starters/SMEs/Mid corps

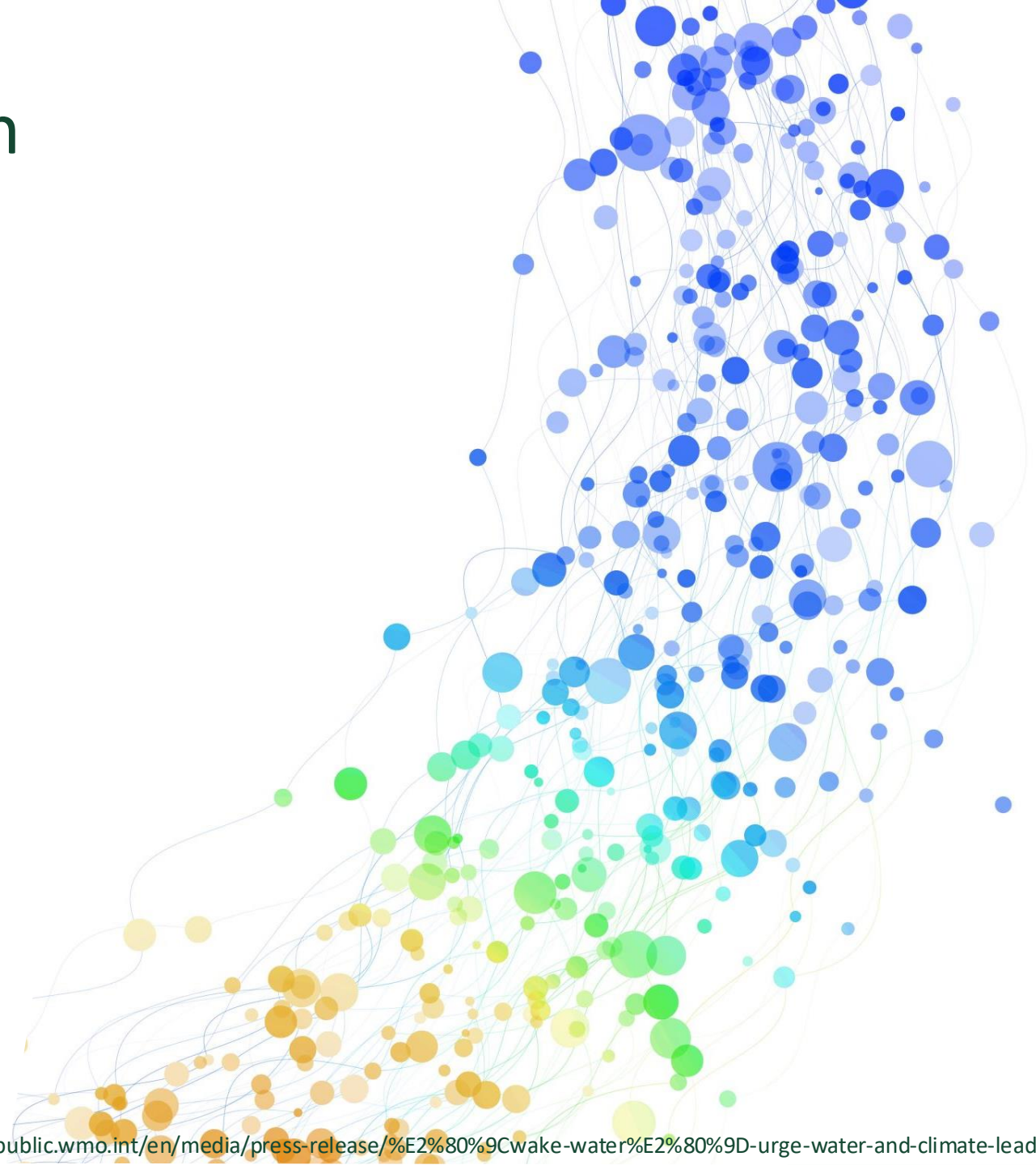
# Our impact themes in the five sectors

in which the Netherlands has a lot to offer

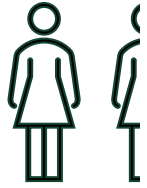


# Water Has Been The Main Messenger of Climate Change Impacts

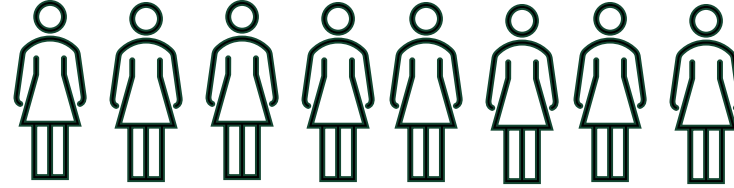
Almost **75 percent of all disasters** were water related in the past 20 years, with **3 billion people** affected by floods and droughts and economic damage of almost **US\$700 billion**.



## How does climate change impact on water?



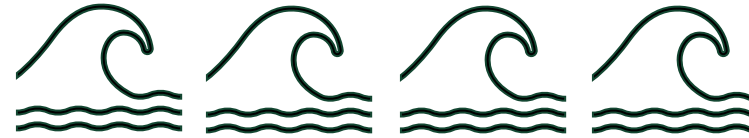
At **2°C** 800 million people will face **water scarcity**



At **4°C** 4 billion people will face **water scarcity**



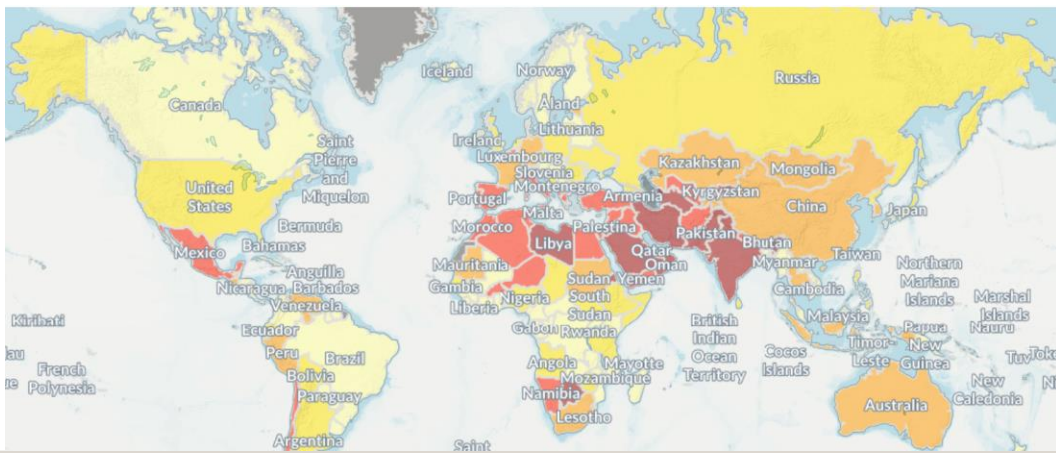
At **2°C** 120% more people will face **floods**



At **4°C** 400% more people will face **floods**

# Every 1°C

will lead to 7% increase in **diarrhea** cases and 3-11% associated **deaths**



# Water Stress

jordan  
israel qatar

lebanon

iran



# Drought

bangladesh

moldova

ukraine

serbia

india



# Floods

cambodia

bangladesh

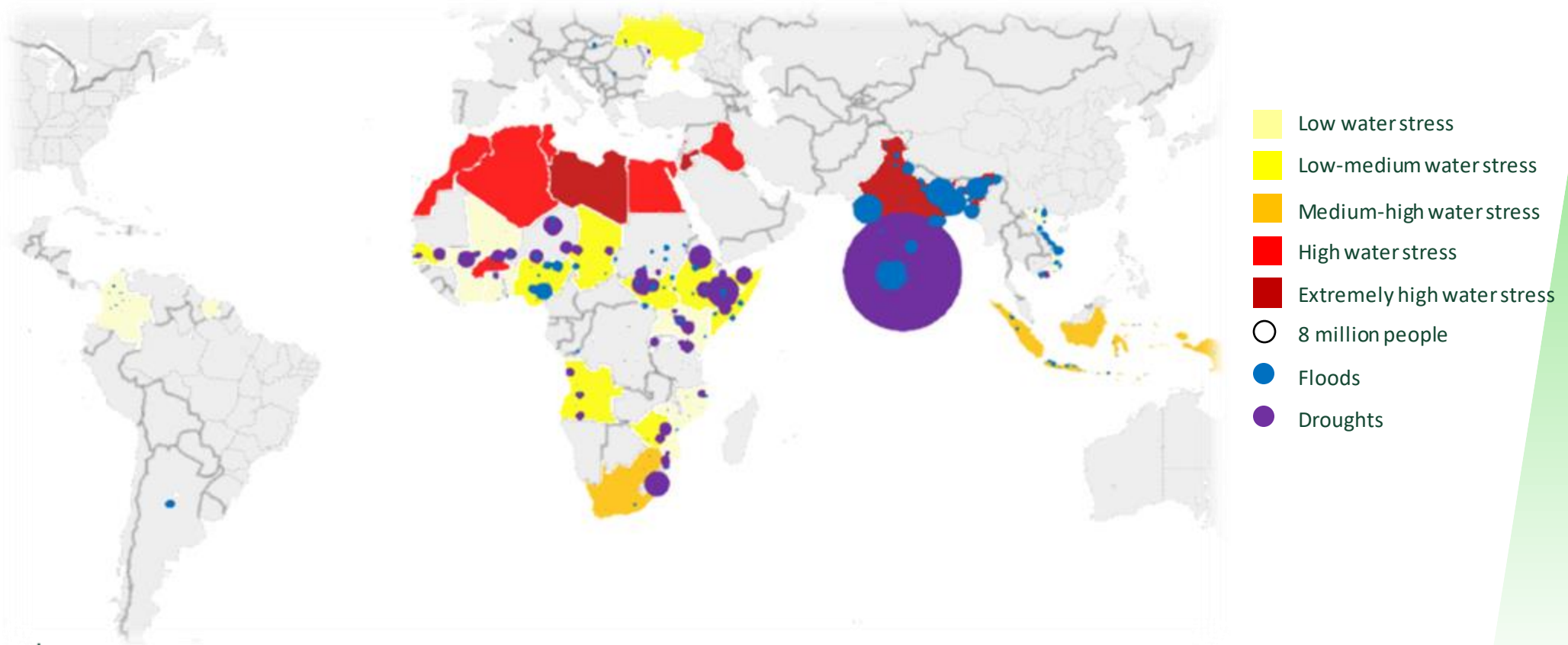
mauritania

somalia

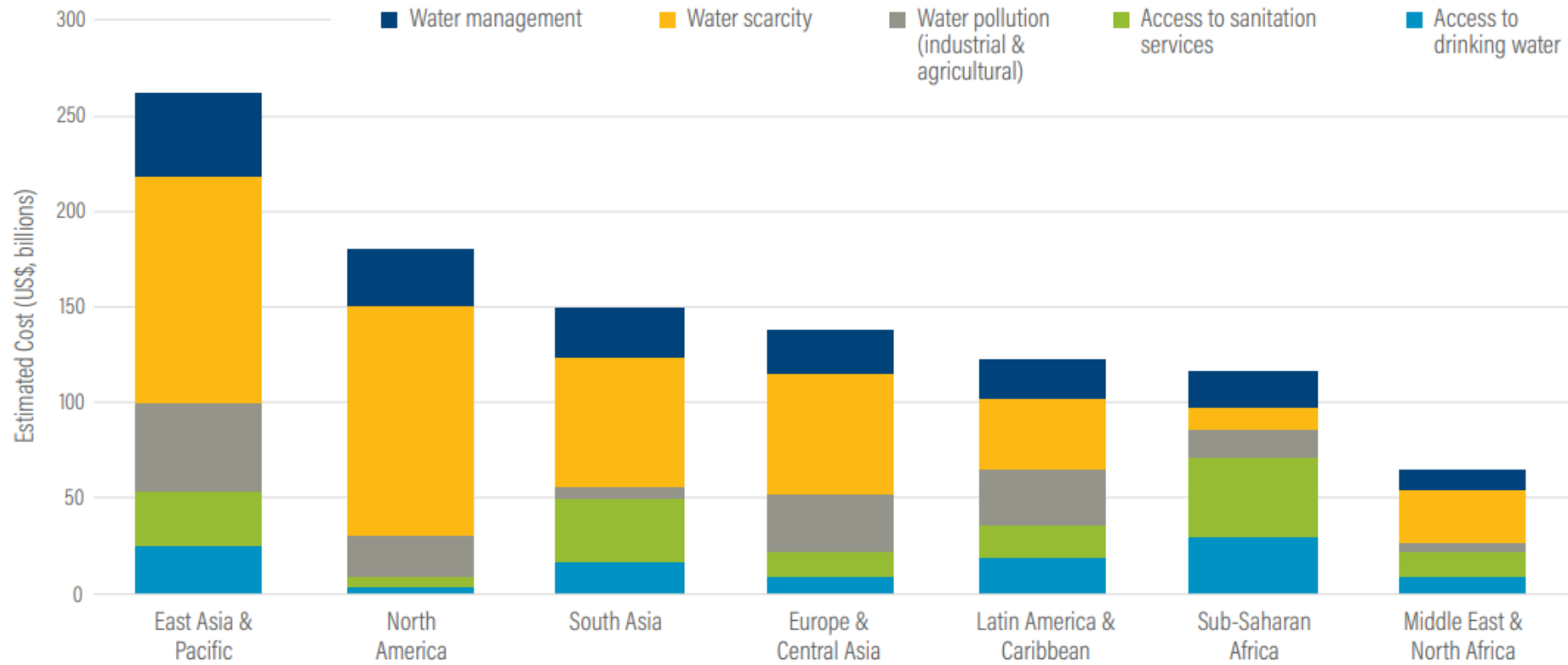
liberia

# What are the water risks in the 40 target countries in our portfolio?

- 11 countries facing high baseline water stress (high competition for the use of the available water)
- Exported 23 billion worth of goods and services to the Netherlands
- 1.6 billion people affected by water related disasters since 2000

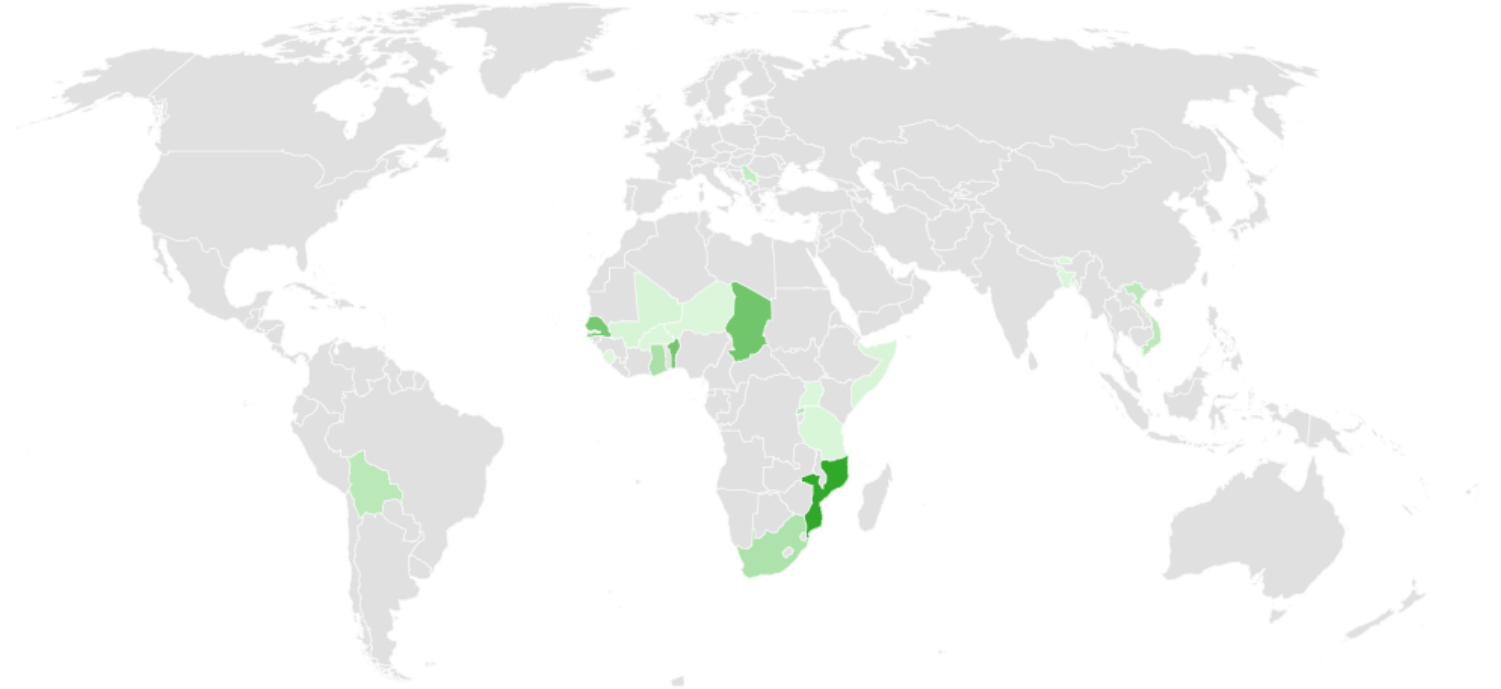
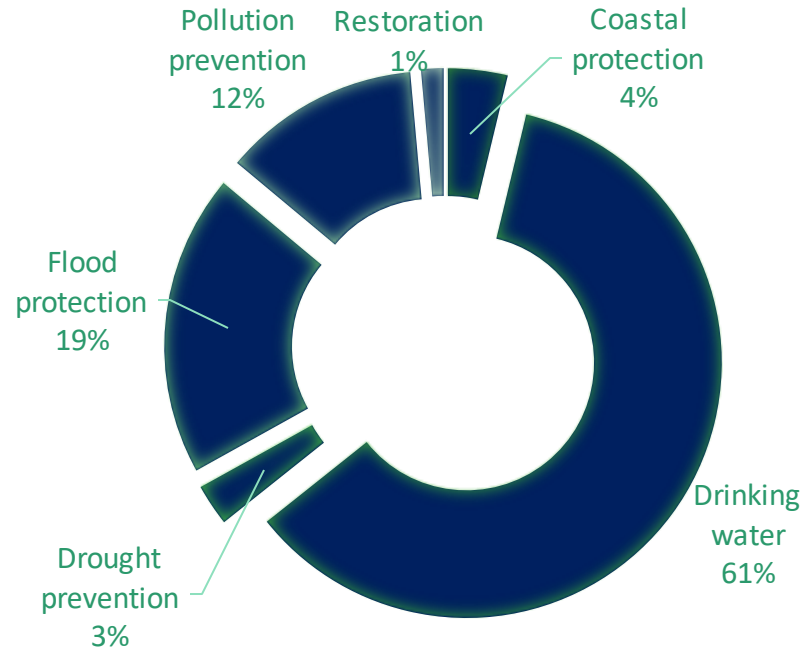


# 200 Billion Euros investments needed In the Water Sector in the 40 Countries



Source: <https://files.wri.org/d8/s3fs-public/achieving-abundance.pdf>

# Water Related Projects in Our Portfolio





# You Should Start Addressing Your Portfolio's Water Risks Because...

1. The risks are increasing and materializing
2. The process takes time and learning
3. The rewards outweigh the risks



Cost of response:  
USD 55 billion

Cost of inaction:  
USD 301 billion

# What Should Be Your Water Resilience Strategy?

## Persistence Strategy

Predicated situation: limited known changes

Desired situation: able to return to pre-shock situation

## Adaptation Strategy

Predicated situation: known changes

Desired situation: able to adapt to the new normal

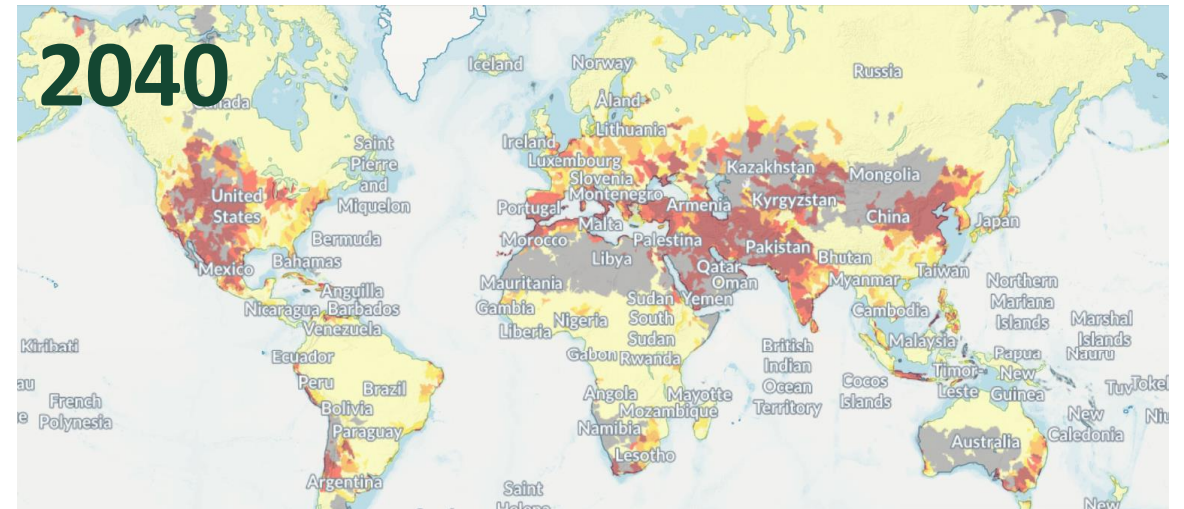
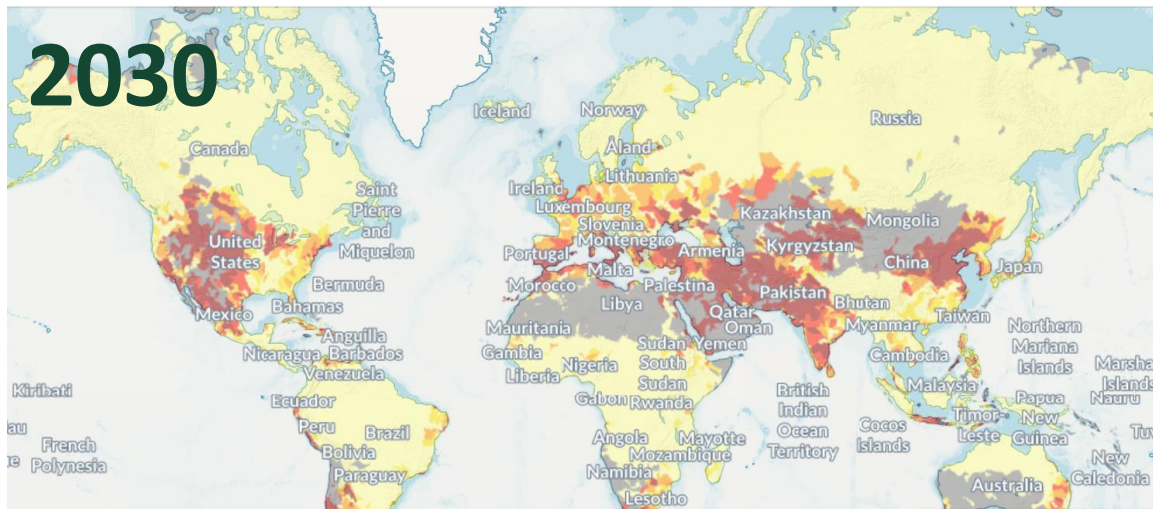
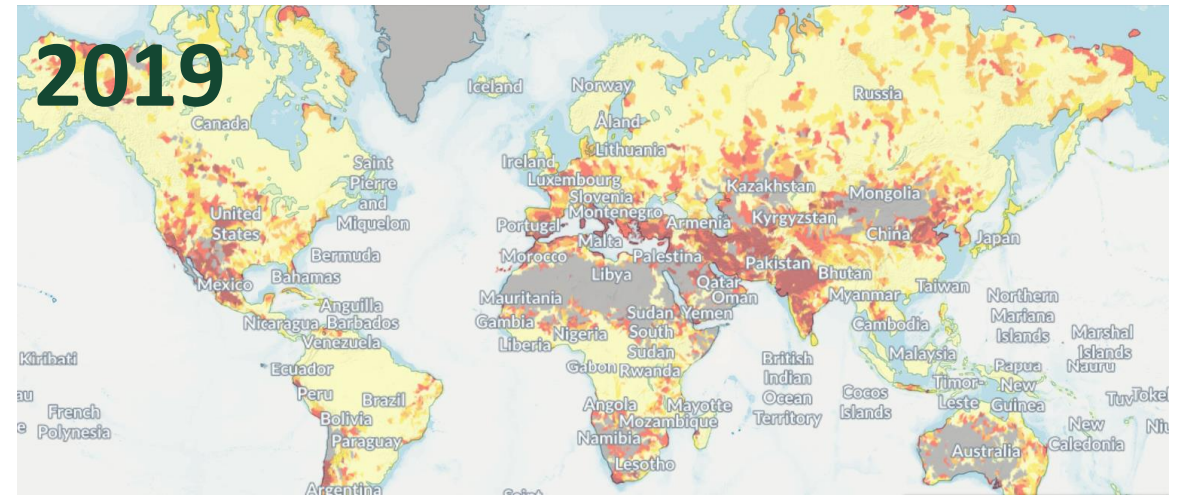
## Transformational Strategy

Predicated situation: unknown large changes

Desired situation: transform business practices to thrive



2019 → 2030 → 2040 → ???



## Persistence Strategy, how to do it?

- Lac Guiers in Senegal suffered from algae suffocating the lake
- Nutrients discharged from the upstream sugarcane farms contributed to the problem
- However, immediate actions can still be taken to save Lac Guiers from the algae even though the window is closing
- **Success under a persistence strategy looks like returning to the pre-shock conditions as quickly as possible**



Image © 2011 DigitalGlobe

© 2011 Cnes/Spot Image  
Map Data © 2011 AND

- Ultrasonic wave blocks algae's access to sunlight & nutrients.
- Algae sink to the bottom and die off without releasing toxins.



Before



After

**Contextual Water Challenge**

**Solution**

Large volume of untreated wastewater discharge promotes algal blooms

The ultrasound barrier created by the technology sinks the algal cells and inhibit future algal blooms by creating a barrier from sunlight

A large percentage of the local population do not have access to clean water and sanitation

The dead algal cells remain intact so toxins are not released into the host water body

# Adaptation Strategy

## How to deal with the effects of cyclones?

- Cyclone Idai raged across Mozambique in 2019, affecting 90 percent of the port city Beira.
- Climate change, population growth, coastal erosion and urban expansion have made the city increasingly vulnerable to future natural disasters. The expected rise in sea level will only make matters worse.
- That led to the Beira project, consisting of a coastal protection plan for the city located in the heart of the River Delta on the Indian Ocean.
- **successful adaptation means tracking change over time, especially gradual change, and taking the necessary action to address current and anticipated changes.**



# Coastal Protection in Beira, Mozambique

- Nature-based solutions
- Flood and erosion protection plan
- Stimulating socio-economic development and decent work



## Contextual Water Challenge

Increased frequency of natural disasters cause floods and erosion that damage infrastructure

Development in the port city leads to degradation of natural habitats and reducing climate resilience

## Solution

The project is designed to lead to more resilient infrastructure

Nature-based solutions lead to a more climate resilient city

# Transformational Strategy

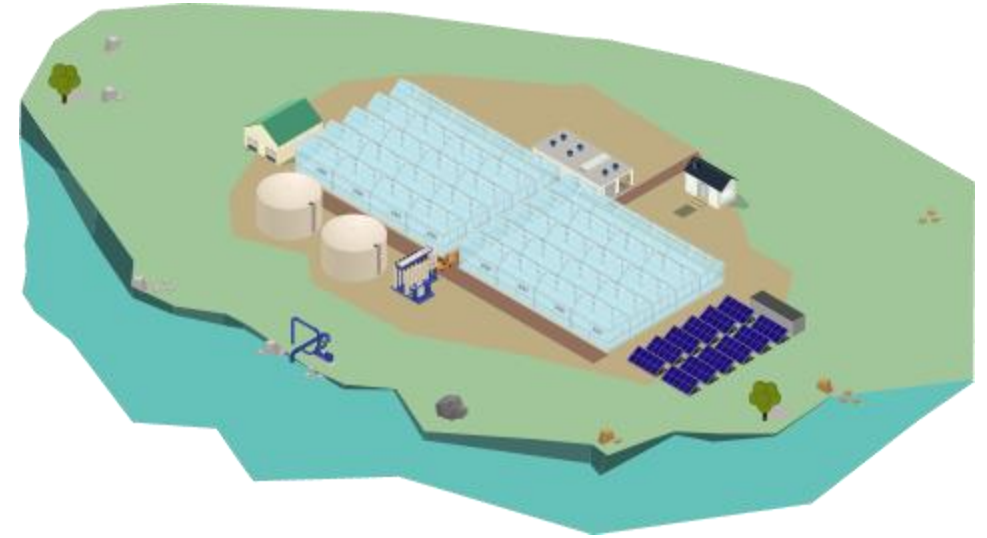
## How to transform the situation?

- Western Cape, South Africa is in an extremely water stressed area
- Agriculture and livestock production by conventional methods adds to the problems
- New investments in agriculture need to transform to accommodate for the water resources running dry
- **By transforming to new agricultural practices, businesses may operate in an area expecting big hard-to-predict shifts**





- Modern Greenhouse
- Hydroponic Fertigation
- Marginal Land
- Water Treatment
- Renewable Energy
- On-site packaging



### Contextual Water Challenge

### Solution

Over 40% of the total renewable freshwater supply is used in the area by other sectors

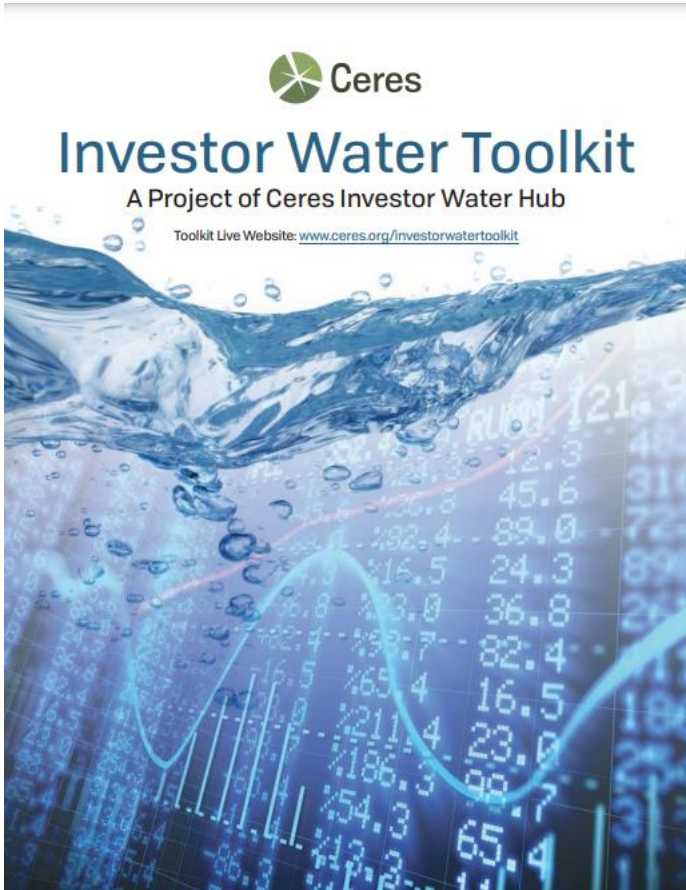
Transforming to greenhouse agriculture will help the farm in reducing water use by 95% compared to conventional methods

The area has high coastal eutrophication potential caused by excess nitrogen and phosphorous loading

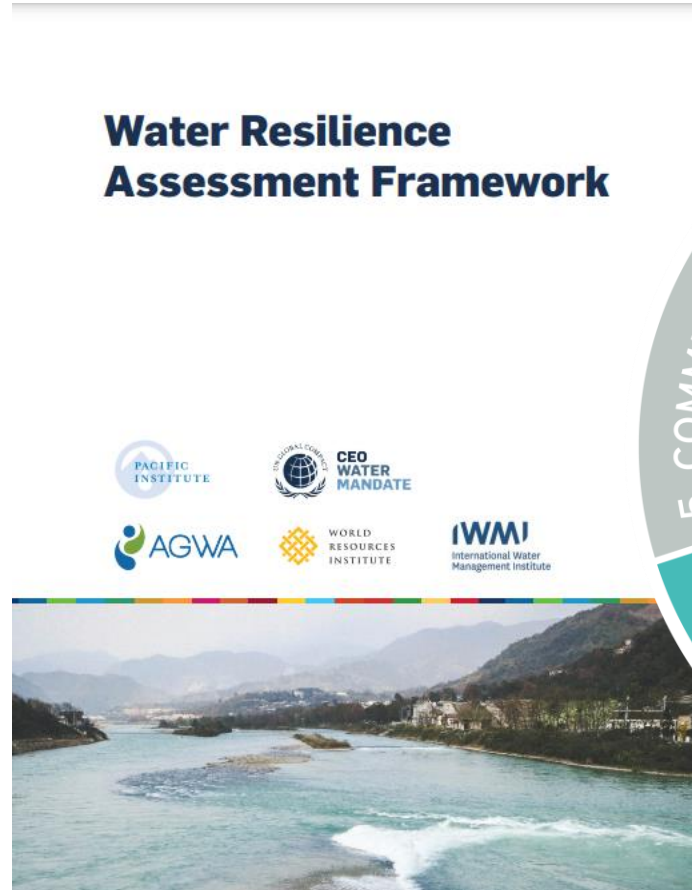
Transforming to hydroponic growing systems enable maximum control of nutrients, and minimize wastage

Large scale agriculture degrade nature and the associated ecosystem services

Transforming to hydroponic system allows reclamation of degraded marginal lands for agriculture



How investors can address the water challenges in their portfolio



How businesses can plan for the future changes in water challenges



Certification scheme for businesses to be more water steward

-  GOOD WATER GOVERNANCE
-  SUSTAINABLE WATER BALANCE
-  GOOD WATER QUALITY STATUS
-  IMPORTANT WATER-RELATED AREAS
-  SAFE WATER, SANITATION AND HYGIENE FOR ALL (WASH)

# Conclusions

- 1 trillion euros needed in investments by 2030
- Cost of inaction is 5 times cost of response
- 3 billion people affected by water related natural disasters in the past 20 years
- Billions more will be affected in the future worsened by climate change
- Collective actions needed by investors to address water risks associated with investments and invest in the water sector





Q&A



Thank you for attending this event!

Please fill out the Evaluation Form below.



Next Breakfast Inspiration Session:  
**Private Equity**

On 14 September, at 8 a.m.