

# Water to mitigate climate change: beyond the obvious



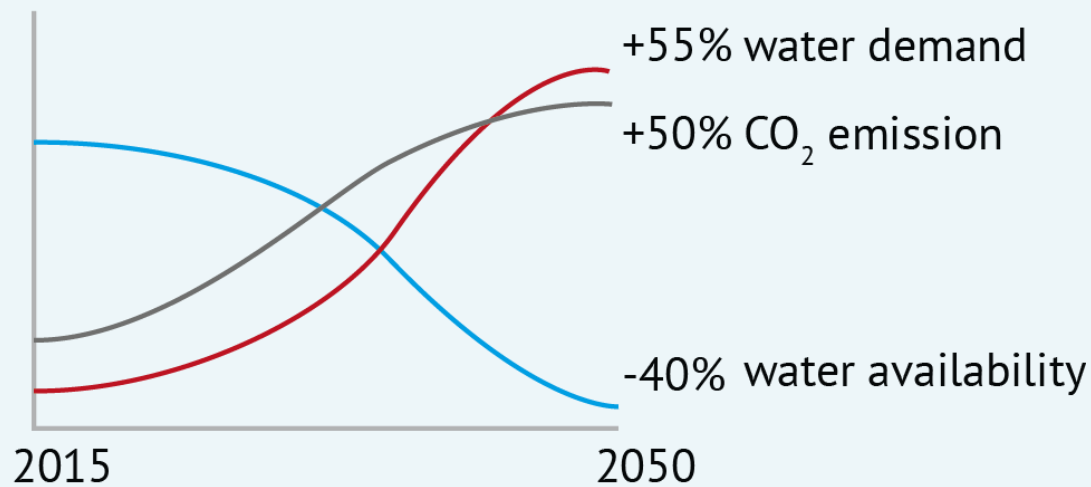
**Climate action in urban water services to decrease greenhouse gas emissions and increase energy savings**

**In the past 50 years carbon dioxide concentration levels have doubled.**

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# Water demand will rise while water availability will drop

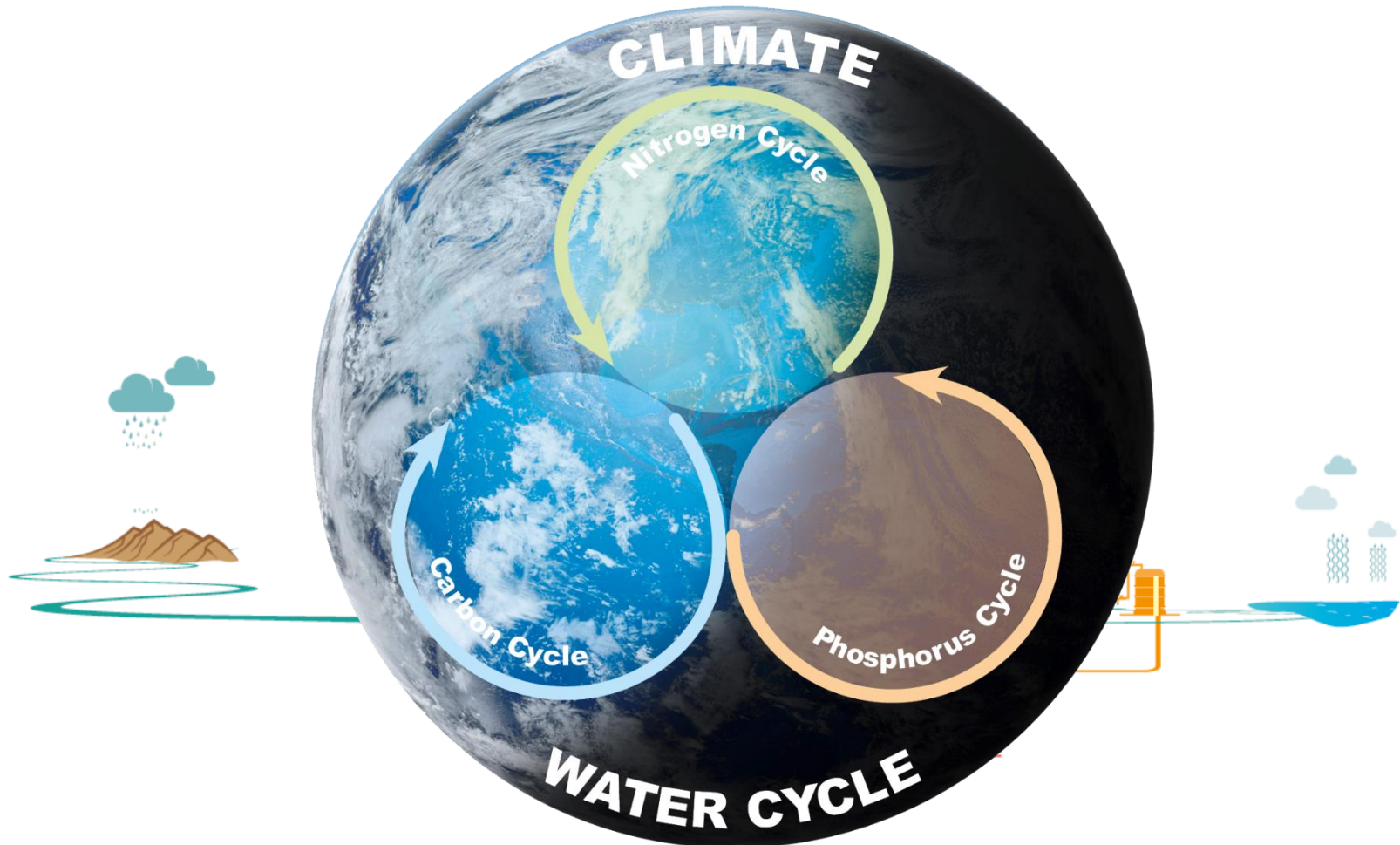


ca. 5Gt CO<sub>2</sub>



ca. 8Gt CO<sub>2</sub>

# A paradigm shift is needed from linear to circular...



## WaCCliM - Water and Wastewater Companies for Climate Mitigation

### Objective

**Reduce Utilities' Carbon Footprint and Accelerate  
Action to Decarbonize the Water Sector**

### Major Measures

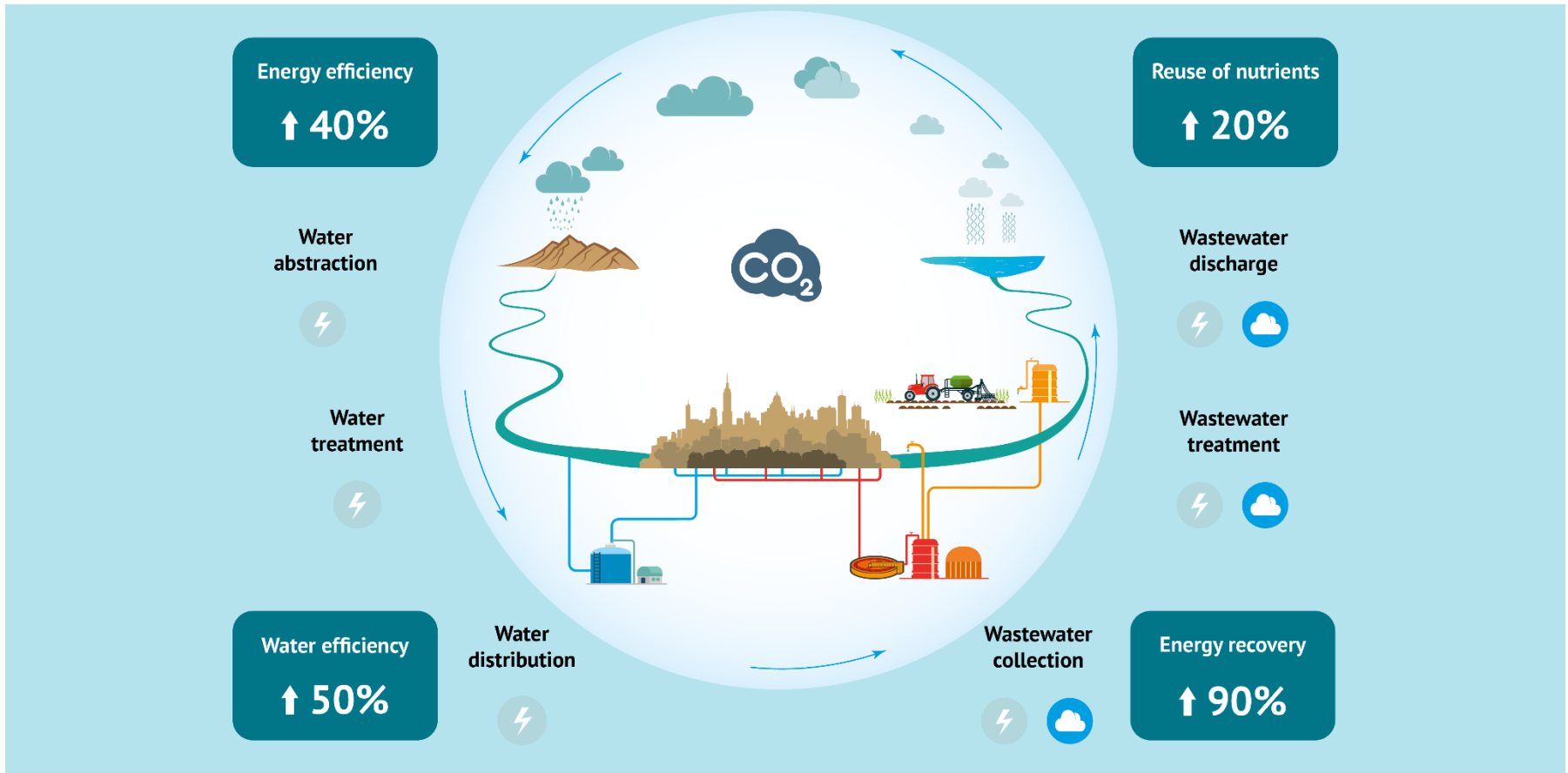
Implement GHG  
Reduction Measures

Strengthen Enabling  
Environment

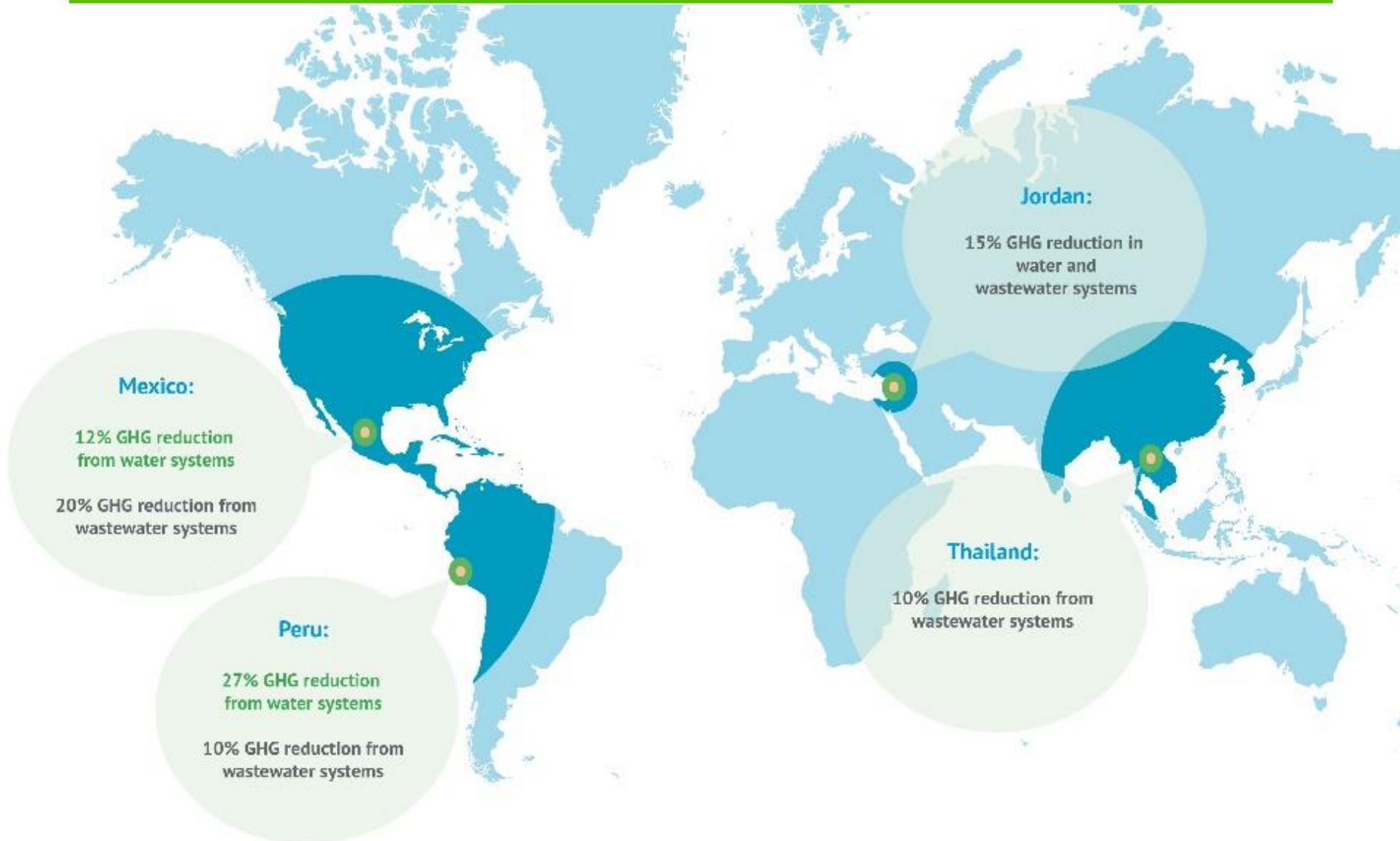
Build and Disseminate  
Knowledge

**Climate neutral water utilities**

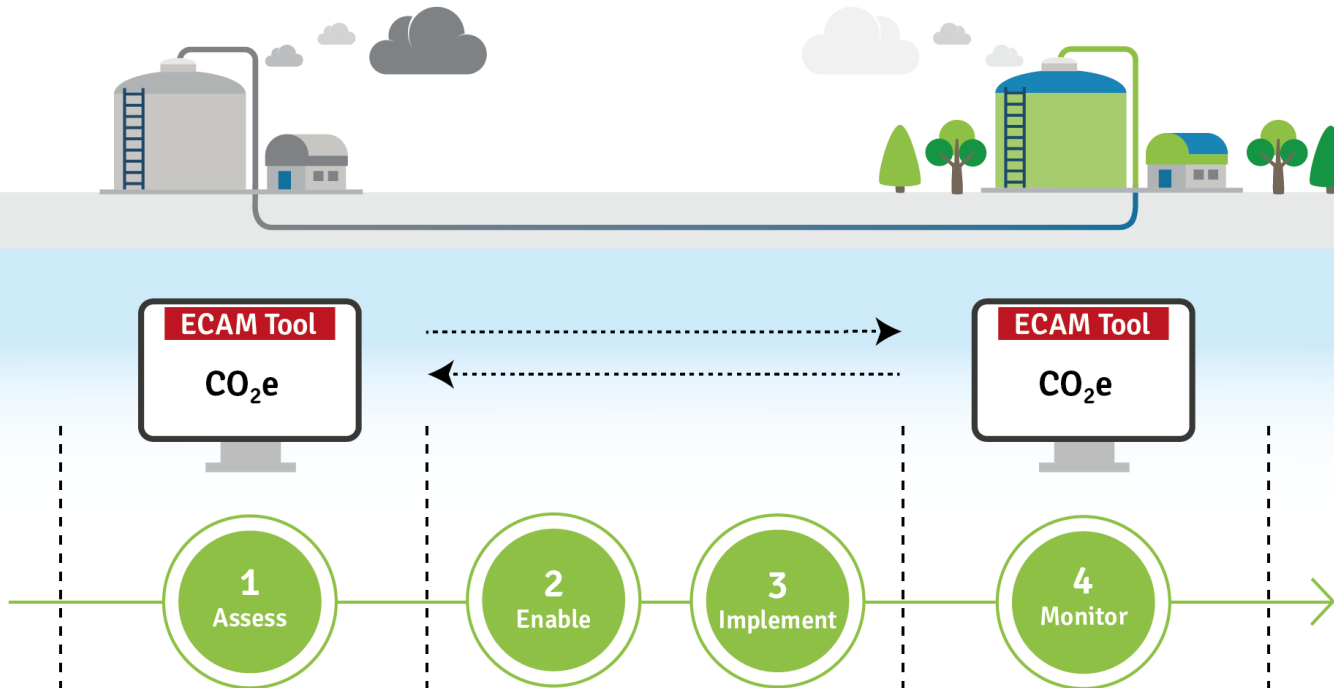
# What are the mitigation opportunities in the urban water cycle?



# WaCCliM: Where are we working?



# Roadmap for CO<sub>2</sub> Reduction





# Cusco, Peru: Wastewater a wealth of energy

Climate change and increased demand for water intensify pressure on water infrastructure

Energy efficient pumps

Sludge management

Integration of water investment into long-term planning

5,300 t/a 

650,000 

6,400 MWh/a 

415,000 

# San Francisco del Rincón (Mexico), expansion of wastewater treatment capacity

High water consumption, energy costs and overabstraction

Increased wastewater coverage  
40 % → 80%

Energy tariffs optimisation to reduce costs

Optimised wastewater treatment

Use of cogeneration system

Energy efficient pumps

Balancing financial risks & water tariffs at sustainable cost-recovery levels

2,800 t/a 

350,000 

3,400 MWh/a 

115,000 

# Madaba, Jordan: Water reuse for irrigation of crops

Energy efficient pumps in reservoir

Optimised wastewater treatment

Photovoltaics in wastewater handling

Identifying and preparing optimal project design & accessing climate funds

12,000 t/a 

1.5 Mio. \$ 

11 GWh/a 

200,000 

# Madaba, Jordan: Mitigation Actions

## Energy efficient pumps in reservoir

Saved kWh / year	Saving USD / year	kg CO <sub>2</sub> / year
1,380,000	187,250	1,710,000

## Optimised wastewater treatment

Saved kWh / year	Saving USD / year	kg CO <sub>2</sub> / year
750,000	84,750	5,700,000

## Photovoltaics in wastewater handling

Saved kWh / year	Saving USD / year	kg CO <sub>2</sub> / year
3,000,000	400,000	2,000,000

Identifying and preparing optimal project design & accessing climate funds

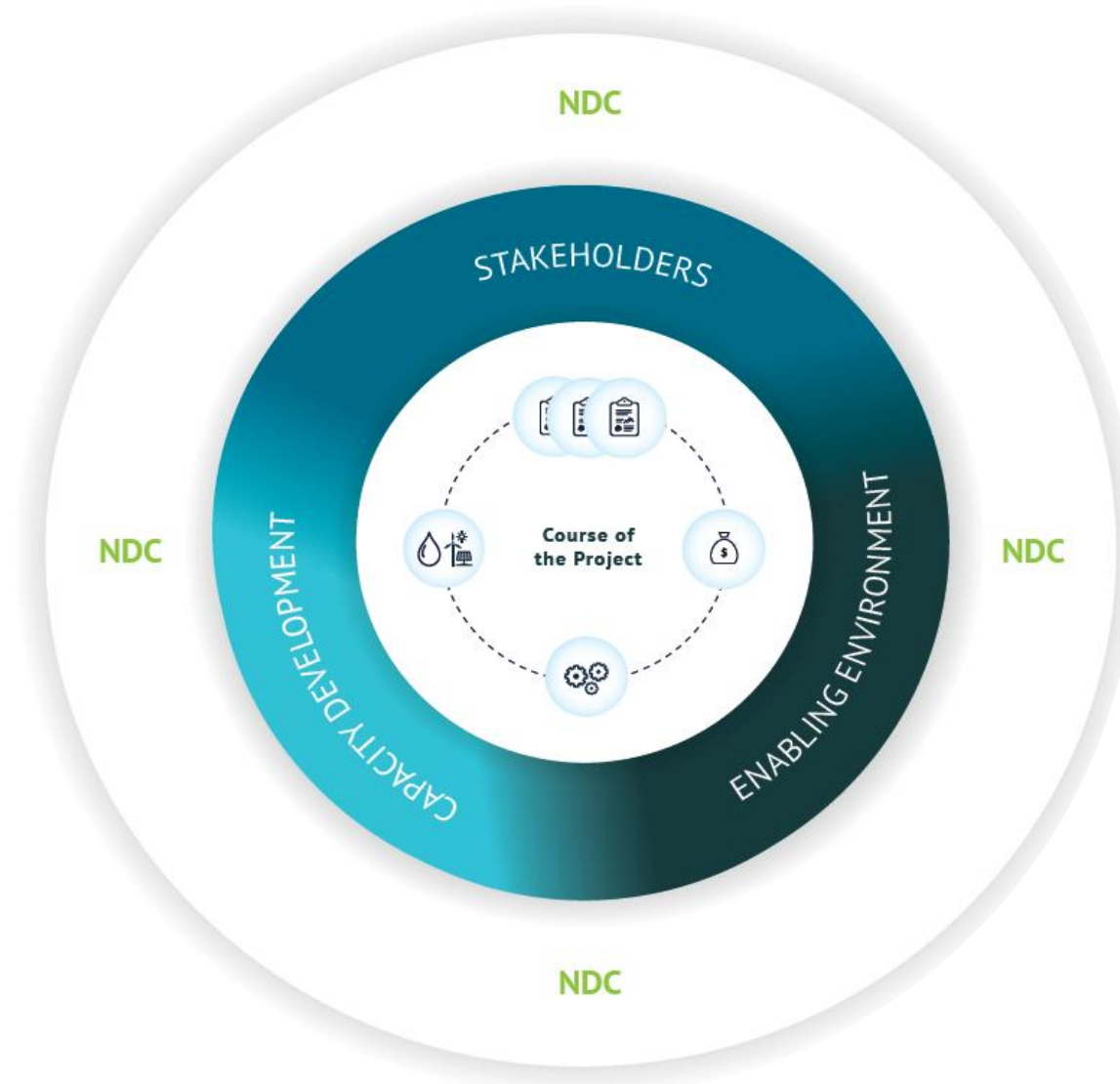
9,600 t/a 

1.5 Mio. \$ 

11,000 MWh/a 

200,000 

# Next steps: Implementing NDCs and rethinking water



## Our Partners

On behalf of:



Federal Ministry for the  
Environment, Nature Conservation,  
Building and Nuclear Safety

of the Federal Republic of Germany



PERÚ

Ministerio  
de Vivienda, Construcción  
y Saneamiento



Hashemite Kingdom of Jordan



Water Authority of Jordan



Implemented by:



**Thank you for your attention**

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