

Rotterdam: Water & Climate Resilient City

- ❑ THE APPROACH
- ❑ THE LESSONS

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Water
Adaptation
Community



GLOBAL
CENTER ON
ADAPTATION



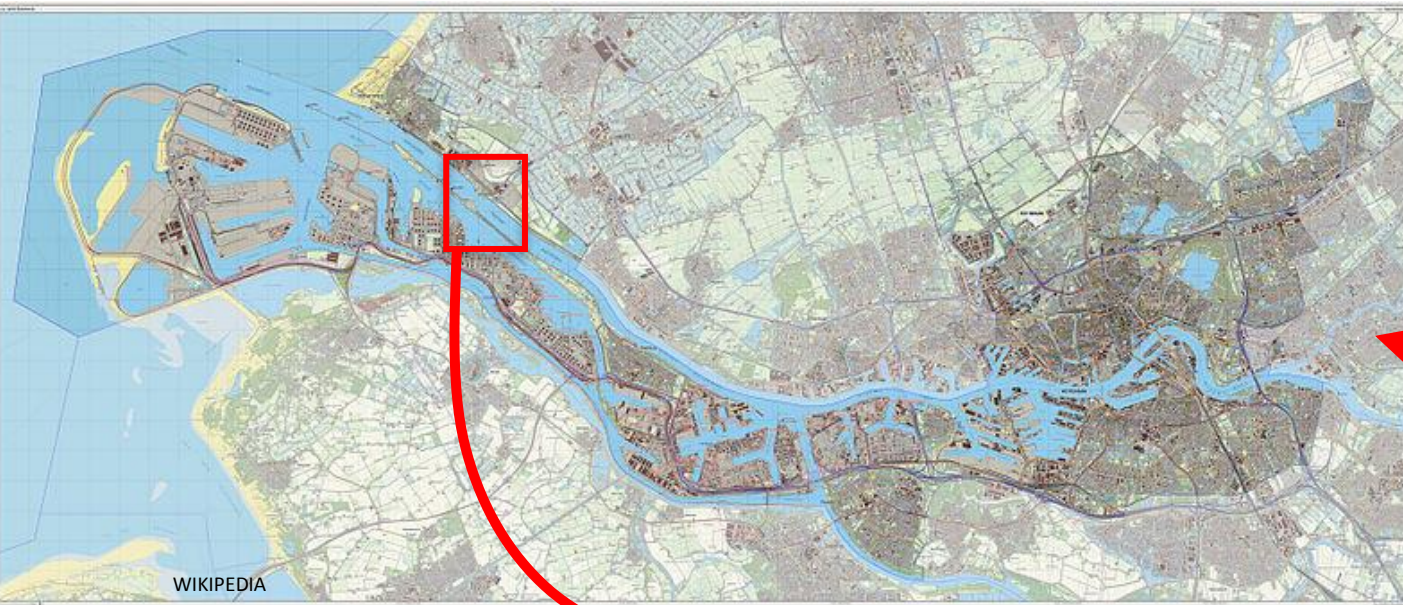
Rotterdam Delta and Port City

City

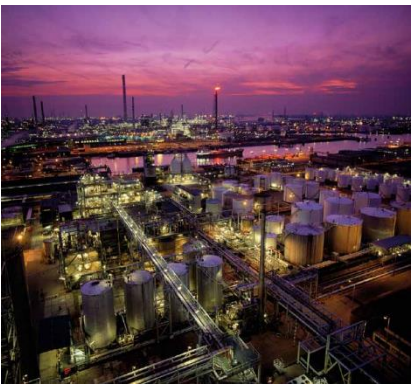
Area : 320 km²
Inhabitants: 650.000
Nationalities: 175
Municipal Budget: 4 billion Euro's

Port

Area: 105 km² (50 km² commercial sites)
Length of port area: 45 km.
Direct employment: over 70,000 jobs



WIKIPEDIA



Topo map: above
(brown) and below
(blue) sea level



+ 50.000 HOUSES



f/otografie

Effects related to Climate Change



Flooding Noordereiland



Water quality



Excessive rain fall



Levee breakthrough (drought)

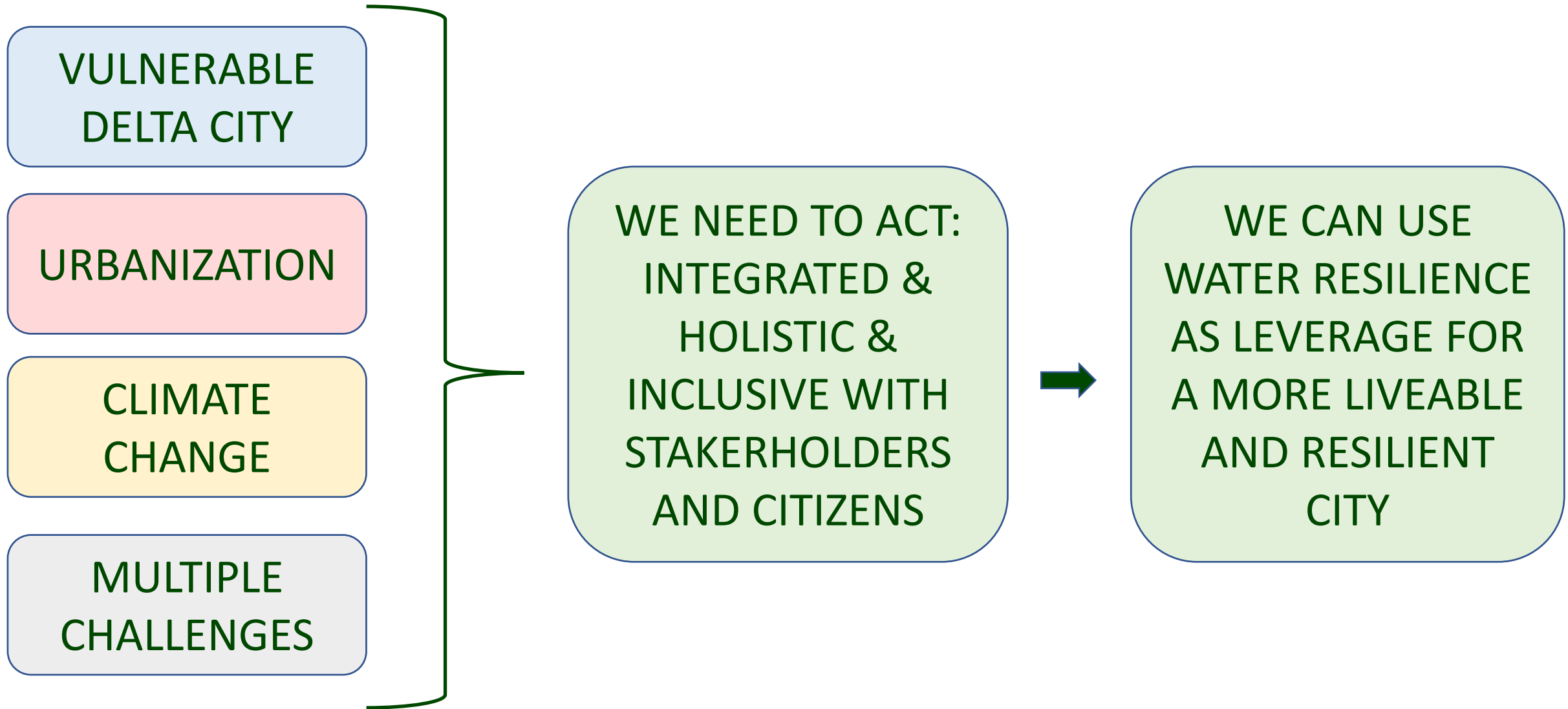


Inundated cellars



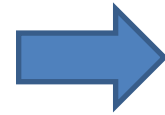
Heat waves

Integrated and Holistic approach is needed

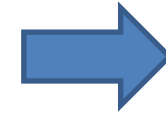


ROTTERDAM APPROACH: STAKEHOLDERS

2007



GOVERNMENTAL
ROTTERDAM
WATER
PLATFORM



Alliantie
Waterkracht
Regio Rotterdam - Capelle aan den IJssel

Werken aan
waterbeheer
van morgen

2023



TIMELINE ROTTERDAMS' TRANSITION-PROCESS TOWARDS A (CLIMATE) RESILIENT DELTA CITY



- Water: -----
- + Spatial Planning: -----
- + Climate Change: -----
- + Resilience (wide spectrum): -----

Rotterdam climate change adaptation strategy

Holistic, multi-level and multi-stakeholder strategy



Robust and resilient



Sewerage + watersquare



Protection and moving in tune



Dikes + adaptive building en design



Delta works, small scale projects



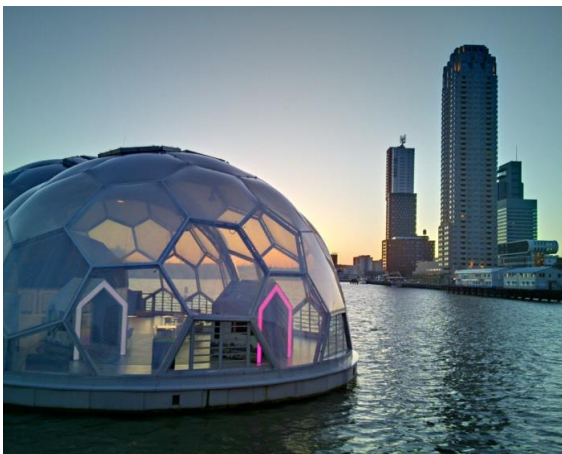
Storm surge barriers + 'Remove tile, plant greening'



Technology and nature based



Pumping + green river banks



ACCELERATION SEA LEVEL RISE



**CLIMATE AND
CYBER RESILIENT
INFRASTRUCTURE IS
NEEDED**

**LONG TERM SCENARIO'S 3 METER SEA LEVEL RISE
WATER RESILIENCE < > ECONOMICAL RESILIENCE**





CITIES EXCHANGE!! WATER ADAPTATION COMMUNITY (GCA-WAC)

Accra, Ghana
Addis Ababa, Ethiopia
Cape Town, South Africa
Dakar, Senegal
Durban, South Africa
Kigali, Rwanda
Lagos, Nigeria
Luxor, Egypt
Nairobi, Kenya
Paynesville, Liberia

EUROPE AND THE MIDDLE EAST

Amman, Jordan
Athens, Greece
Barcelona, Spain
Belfast, U.K.
Belgrade, Serbia
Bristol, U.K.
Byblos, Lebanon
Glasgow, U.K.
Greater Manchester, U.K.
Lisbon, Portugal
London, U.K.
Milan, Italy
Paris, France
Ramallah, Palestine
Rome, Italy
Rotterdam, The Netherlands
Tbilisi, Georgia
Tel Aviv-Yafo, Israel
The Hague, The Netherlands
Thessaloniki, Greece
Vejle, Denmark

ASIA PACIFIC

Bangkok, Thailand
Can Tho, Vietnam
Chennai, India
Christchurch, New Zealand
Da Nang, Vietnam
Deyang, China
Huangshi, China
Jakarta, Indonesia
Kyoto, Japan
Mandalay, Myanmar
Melaka, Malaysia
Melbourne, Australia
Pune, India
Semarang, Indonesia
Seoul, South Korea
Singapore
Surat, India
Sydney, Australia
Toyama, Japan
Wellington, New Zealand

LATIN AMERICA AND THE CARIBBEAN

Buenos Aires, Argentina
Cali, Colombia
Colima, Mexico
Guadalajara, Mexico
Ciudad Juarez, Mexico
Medellin, Colombia
Mexico City, Mexico
Monterrey, Mexico
Montevideo, Uruguay
Panama City, Panama
Porto Alegre, Brazil
Quito, Ecuador
Rio de Janeiro, Brazil
Salvador, Brazil
San Juan, Puerto Rico
Santa Fe, Argentina
Santiago Metropolitan Area, Chile
Santiago de los Caballeros, Dominican Republic

NORTH AMERICA

Atlanta, U.S.
Berkeley, U.S.
Boston, U.S.
Boulder, U.S.
Calgary, Canada
Chicago, U.S.
Dallas, U.S.
El Paso, U.S.
Greater Miami & the Beaches, U.S.
Honolulu, U.S.
Houston, U.S.
Los Angeles, U.S.
Louisville, U.S.
Minneapolis, U.S.
Montreal, Canada
Nashville, U.S.
New Orleans, U.S.
New York, U.S.
Norfolk, U.S.
Oakland, U.S.
Pittsburgh, U.S.
San Francisco, U.S.
Seattle, U.S.
St. Louis, U.S.
Toronto, Canada
Tulsa, U.S.
Vancouver, Canada
Washington, D.C., U.S.



**Resilient Cities
Network**

A new global initiative

INTEGRATED/HOLISTIC APPROACH NEEDED!

ON ALL LEVELS WE HAVE TO BRAKE DOWN SILO'S

CREATE OWNERSHIP AMONGST KEY STAKEHOLDERS

BASED ON ACTIVE PARTICIPATION OF RESIDENTS

MULTI BENEFIT SOLUTIONS ARE NEEDED

COLLABORATE EN EXCHANGE WITH OTHER DELTA CITIES



www.resilientrotterdam.nl

[Resilient Rotterdam Strategy 2022-2027](#)