International Cooperation Workshop

Montreal, Canada

26 & 27 April 2017

Welcome address

- Anne-Marie Thompson, NSERC

Tour de Table

Recalling names and faces

NAME	SURNAME	INSTITUTION
Juliette	ARABI	Water JPI Secretariat / ANR, France
Khaled	AWAD	CONICYT, Chile
Per	BACKE-HANSEN	Water JPI partner / RCN, Norway
David	COATES	Convention on Biological Diversity
Dominique	DARMENDRAIL	Water JPI Coordinator / ANR, France
Nicole	GENEREUX	IDRC, Canada
Sally	GUTIERREZ	US-EPA, USA
Carl	HENSMAN	Bill & Melinda Gates Foundation
Jacqueline	JORGE	Global Affairs Canada
Lucas	LUCHILO	MINCYT, Argentina
Matthew	MCCANDLESS	IISD-ELA, Canada
Anne-Hélène	PRIEUR-RICHARD	Future Earth
Nicholas	REID	Ryerson Urban Water, Canada
Catalina	SANTAMARIA	Convention on Biological Diversity
Vladimir	SMAKHTIN	UNU - Institute for Water, Environment and Health
Alyson	SURVEYER	Future Earth Global Hub - Montréal
Mao	TAKEUCHI	Belmont Forum
Anne-Marie	THOMPSON	Water JPI partner / NSERC, Canada
Luis	TUPAS	USDA-NIFA, USA
Zaïra	TURCHI	CONFAP, Brazil
David	VELASCO	Water JPI partner / CDTI, Spain
Howard	WHEATER	Global Institute for Water Security, Canada
Nadia	ZAMAN	Water JPI partner / NSERC, Canada

Water JPI

Aims of the workshop and Agenda

Dominique Darmendrail
Water JPI Coordinator

Aims of the Workshop

- Continuing the discussions with the countries already contacted under **the previous activities of the Water JPI** in order to developing long term partnerships
- Developing cooperation with existing international initiatives (e.g. geographical ERA-NETs);
- Identifying possible cooperation models with funding agencies / programme owners:
  - For Jointly tackling global challenges through common innovative solutions;
  - And developing enabling technologies by accessing new sources of knowledge

Agenda (1/3)

8:30-8:45	**Participant Registration and Welcome coffee**	
8:45-9:00	Welcome address	Anne-Marie Thompson, NSERC
9:00-9:10	Welcome address & Aims of the Workshop	Dominique Darmendrail Water JPI coordinator
9:10-9:45	The Water related RDI landscape in Canada, the NSERC experience in Water JPI activities	Anne-Marie Thompson, NSERC
9:45-10:45	Short introduction from other American countries presented at the workshop: the RDI landscape, interests in multi-lateral cooperation	All American attendees
10:45-11:15	Coffee break	
11:15-12:20	Water JPI activities and modalities of cooperation	Dominique Darmendrail Water JPI coordinator
12:20-13:00	Other RDI cooperation agreements, with Europe	International initiatives (Belmont Forum, CDB, Future Earth, B&M Gates foundation, UNU)

Agenda (2/3)

13:45-14:00	Presentation of the interactive sessions	Dominique Darmendrail Water JPI coordinator
14:00-16:00	**Interactive Session 1 – Challenges for Multilateral cooperation?** • Moving from a bi-lateral to a multilateral cooperation? • Challenges linked to the current cooperation instruments • Working with institutions with different profiles • How to define common water priorities between America and EU? • Specific issues for the region: data collection / validation and harmonization, Open data, any other suggestions	All participants
16:00-16:30	Coffee Break	
16:30-17:00	Wrap-up of the first interactive session and conclusion of the day	Table chairs and Dominique Darmendrail

Agenda (3/3)

9:00-9:30	**Welcome coffee**	
9:30-10:30	**Interactive Session 2 – How to cooperate together?** • What are the cooperation challenges with Europe? • Which activities of common interest? • Which tools for this cooperation? Is the ERA-NET Cofund a good model for American countries? • How to simplify the current complexity?	All participants
10:30-11:00	Coffee break	
11:00-11:30	Wrap-up of the 2nd interactive session	Table chairs and Dominique Darmendrail
11:30-12:30	Follow-up Actions / Roadmap for future cooperation • Identification of potential interests • Special needs / documents / actions for developing the cooperation with the Water JPI	All participants
12:30-13:00	Closure of the workshop and outlook to next Water JPI activities	Dominique Darmendrail Water JPI coordinator
13:00-14:00	Lunch	

Any suggestion?

The Water-related RDI Landscape in Canada: the NSERC Experience in Water JPI activities

Anne-Marie Thompson
Director, Research Partnerships, NSERC
April 26th 2017

Natural Sciences and Engineering Research Council of Canada
Conseil de recherches en sciences naturelles et en génie du Canada
Canada

NSERC
CRSNG

- $1.1 billion dollars
- 30,500 post-secondary students and post-doctoral fellows
- 11,300 professors
- >3,500 Canadian companies

“Making Canada a country of discoverers and innovators for the benefit of all Canadians”

NSERC BUDGET (2015-2016): $1.1 BILLION

DISCOVERY 69 %	INNOVATION 31%
PEOPLE	

NSERC's vision is for Canada "to be a global leader in strengthening the discovery-innovation continuum for the societal and economic benefit of Canada."

NSERC – one part of a federal research funding ecosystem

Science, Technology and Innovation Council (STIC)

Genome Canada

Canada Foundation for Innovation (CFI)

Canadian Tourism Commission (CTC)

NRC IRAP

Canadian Space Agency (CSA)

Copyright Board Canada (CB)

NRC Institutes

Standards Council of Canada (SCC)

CIFAR

Social Sciences and Humanities Research Council of Canada (SSHRC)

Council of Canadian Academies

CANARIE

Registry of the Competition Tribunal (RCT)

Federal Economic Development Agency for Southern Ontario (FedDev)

NSERC **CRSNG**

Environment Canada

NR-CAN

Fisheries and Oceans Canada

Defence Research and Development Canada

Health Canada

BDC

Canadian Food Inspection Agency

Public Health Agency of Canada

Statistics Canada (SC)

SDTC

Natural Resources Canada

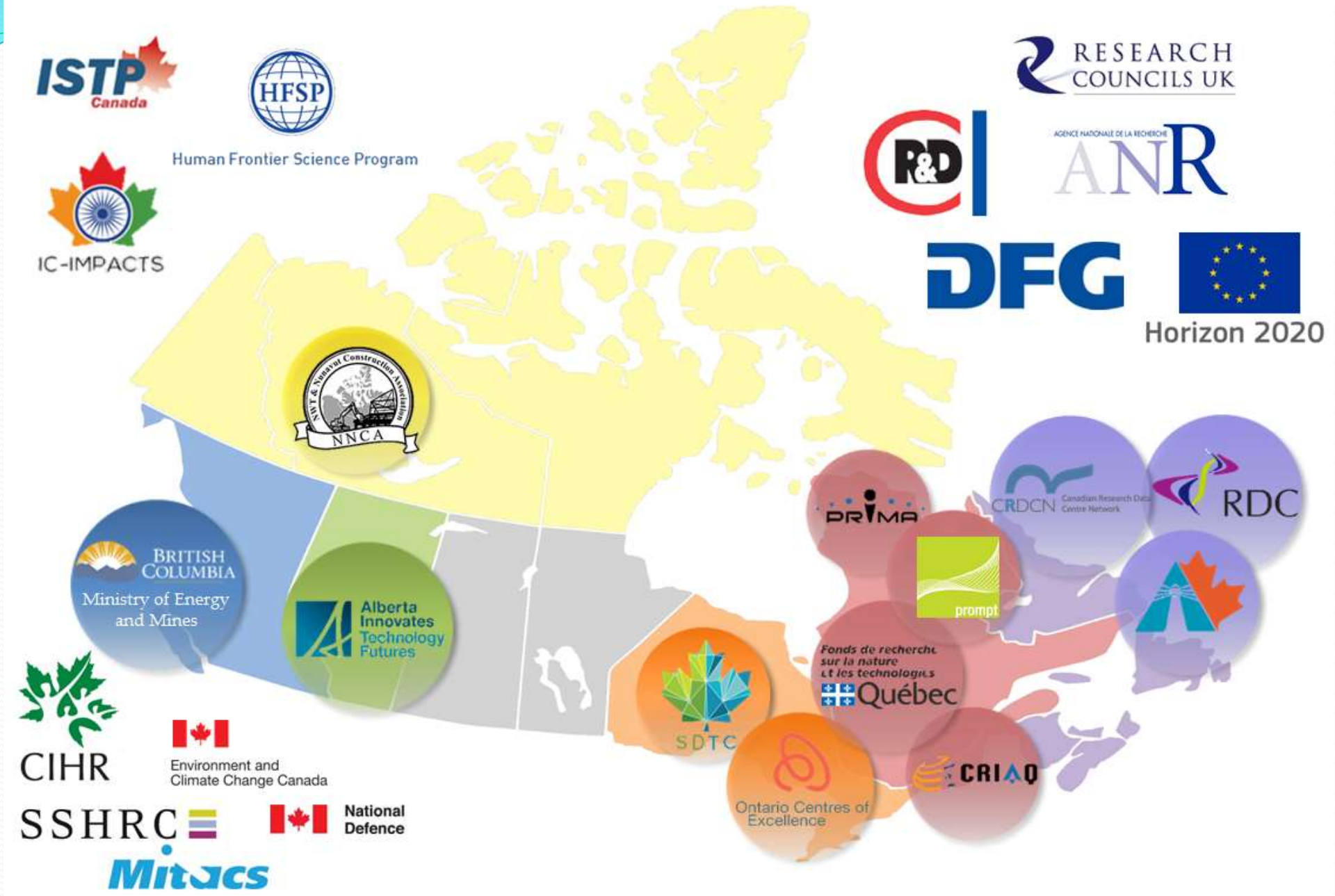
ACOA

Agriculture and Agri-Food Canada

Canadian Institutes of Health Research (CIHR)

Brain Canada

NSERC Strategic Collaborations



RES'EAU WATERNET

An NSERC Small Water System Strategic Network

RES'EAU WATERNET
An NSERC Small Water System Strategic Network

Provides small, rural and First Nations communities with water systems

- Treatment technologies that are effective in remote environments
- User-ready rapid and reliable chemical and microbial monitoring/ detection tools to assess water quality
- Working with two other Networks

CAISN CANADIAN AQUATIC INVASIVE SPECIES NETWORK

The Network focused on developing innovative, early detection technology and rapid response capabilities to help preserve marine and freshwater habitats.

International Institute for Sustainable Development - Experimental Lakes Area

- Founded in 1968. Natural laboratory comprised of 58 small lakes and their watersheds.
- Scientists are able to examine how all aspects of the ecosystem respond.
- Independent, evidence-based approach to the development of policy recommendations and tools.
- Has one of the longest continuous freshwater datasets in the world.

NSERC Industrial Research Chairs in Water Quality and Treatment

- Dr. Graham Gagnon, Dalhousie University
- Dr. Michèle Prévost and Dr. Benoît Barbeau, École Polytechnique de Montréal
- Dr. Manuel Rodriguez, Laval University
- Dr. Ron Hofmann, University of Toronto
- Dr. Robert Andrews, University of Toronto


GO
GLOBAL

Canada Excellence Research Chairs

- **Dr. Howard Wheater, University of Saskatchewan**
  - CERC in ***Water Security***
  - Director, ***Global Institute for Water Security***, world leading cluster of water-related expertise

- **Dr. Philippe Van Cappellen, University of Waterloo**
  - CERC in ***Ecohydrology***

International Activities

- **International Opportunities Fund – G8 Research Councils and Belmont Forum**
  - In 2012, NSERC participated in a call for proposals in ***Freshwater Security***. 6 projects funded, 4 with Canadian researchers ($1.9M)
- **Canada-India Research Centre of Excellence Initiative**
  - Developing community-based solutions to address poor water quality, unsafe and unsustainable infrastructure, and prevention/treatment of water-borne diseases ($9M).

Troubled Waters: Water, water everywhere, but is it safe to drink?

International Development Research Centre

- IDRC is a Canadian Crown corporation that invests in knowledge and innovation for large-scale positive change in the global South.
  - Latin America and the Caribbean, Asia, Middle East and North Africa and Sub-Saharan Africa
- Supports researchers in developing countries on issues related to agriculture and environment, technology and innovation, inclusive economies.
  - Water – within IDRC's Climate Change program
- In developing countries, adaptation to climate change remains a pressing issue. Poor people are the hardest hit.
- Water resilience research entry point: finding developing country adaptation solutions to climate effects such as high and low precipitation, sea level rise, storm surge and glacial melt.
- IDRC Climate research partnerships: (1) United Kingdom's Department for International Development on Collaborative Adaptation Research Initiative in Africa and Asia; (2) Ministry of the Environment, Panama on Water Resilience in the Panamanian Dry Arch.

Sustainable management of water resources in agriculture, forestry and freshwater aquaculture sectors

- 22 countries involved, funded under Horizon 2020.
  - NSERC representing Canada and coordinating efforts with Mitacs and the International Development Research Council
- Canadian participation viewed very positively and scientific/engineering excellence is recognized through peer review process.

59 invited to full proposal
7 with Canadians, Canada lead on 3

Water 2015 Works

NSERC Funding: $1.84M over 3 years

Researcher	Project Title	Participating Countries
Canadian-led		
Dr. Mark Johnson University of British Columbia	Agricultural Water Innovations in the Tropics (AgWit)*	Canada, Germany, Brazil, Sweden, Denmark, Taiwan, Costa Rica
Dr. Philippe Van Cappellen University of Waterloo	Legacies of Agricultural Pollutants (LEAP): Integrated Assessment of Biophysical and Socioeconomic Controls on Water Quality in Agroecosystems	Canada, Denmark, Sweden, Portugal
Dr. John Richardson University of British Columbia	SOurce STream (headwater) PROtection from forest practices: what are the costs and benefits, and how best to do it?(SOSTPRO)	Canada, Finland, Sweden
Participant		
Dr. Peter Dillon Trent University	Impacts of MicroPlastics in AgroSystems and Stream Environments (IMPASSE)	Canada, Norway, Sweden, Netherlands, Spain
Dr. Yongfeng Hu University of Saskatchewan	Eutrophication hotspots resulting from biogeochemical transformations and bioavailability of phosphorus in the fluvial suspended sediment of geologically contrasting agricultural catchments (Eutro-SED)	Canada, Ireland, Sweden
Dr. Ibrahim Dincer University of Ontario Institute of Technology	Development And Testing Of A Novel Photocatalytic System For Efficient Cogeneration Of Clean Water And Hydrogen For Ecosafe Agriculture (ECOSAFEFARMING)	Canada, Turkey, Germany, Spain

Advantages from the Experience

- Create opportunities for Canadian researchers to partner on a global scale
- Leverage investments and expertise in areas of international importance
- Maximize research excellence on a global scale through peer review process
- Enhance national collaboration (with International Development Research Centre)
- Giving Canada a voice

A learning curve…

- Navigating new language and governance structure
- Seeking clarity as newcomer
- Understanding what success looks like from the start to effectively participate in the process
  - Need to balance financial commitment with the strength of national research community
- Providing guidance to Canadian researchers throughout the process

Thank you!

Discussion / inputs / suggestions

Short introductions

Main research and innovation priorities for the water domain

Argentina

Ministerio de
Ciencia, Tecnología
e Innovación Productiva
Presidencia de la Nación

Ministry of Science, Technology and Innovation Argentina

Water JPI

Lucas Luchilo

Water Priorities / Challenges in RDI programme

- Hydrogeology
- Safe water supply
- Water and agriculture
- Floods
- Droughts and water shortages
- Arsenic in water
- Science, technology and innovation for water resource management

Funding programme model and existing International cooperation agreements

Projects Horizobn 2020	Argentinian Institution
MARTERA: ERA-NET Cofund on Marine Technologies	2017-2021
iMETland: A new generation of Microbial Electrochemical Wetland for effective decentralized wastewater treatment	INTEMA
Enhancing water quality by developing novel materials for organic pollutant removal in tertiary water treatments	University of La Plata
Advanced multifunctional nanostructured materials applied to remove arsenic in argentinian groundwater	University of Mar del Plata
(EN SUGI)The Global Initiative for Sustainable Urbanization (SUGI) / The Food-Water-Energy Nexus	Joint Call MINCYT

Funding programme model and existing International cooperation agreements

CYTED PROGRAMME	Foreign institution	Argentinian institution
TREATMENT AND RECYCLING OF INDUSTRIAL WATERS THROUGH SUSTAINABLE SOLUTIONS BASED ON BIOLOGICAL PROCESSES (TRITON)	Universitat Autònoma de Barcelona (UAB)	Universidad Nacional de La Plata
IBEROAMERICAN NETWORK FOR THE FORMULATION AND APPLICATION OF PROTOCOLS OF EVALUATION OF THE ECOLOGICAL STATE, MANAGEMENT AND RESTORATION OF RIVERS (IBEPECOR)	Ecología (Agencia Estatal Consejo Superior de Investigaciones Científicas) (IPE-CSIC)	Universidad Nacional de Lujan
IBERO-AMERICAN NETWORK OF INNOVATION AND TRANSFER OF TECHNOLOGY FOR THE SUSTAINABLE MANAGEMENT OF THE URBAN WATER CYCLE	Universidad Politécnica de Valencia (UPV)	Universidad Autonóma de Entre Ríos
VULNERABILITY, IMPACTS AND ADAPTATION TO CLIMATE CHANGE ON WATER RESOURCES IN IBEROAMERICA	Universidad Politécnica de Madrid	Universidad Nacional de Litoral

Barriers for international cooperation

- Strong relations between Argentinian Ministry of STI and the EU
- Many research institutions from Argentina are involved in "Research and Innovation actions" Coordination and support actions" "Era NETS Co funds" "Marie Curie Projects"
- Challenge: to integrate the international dimension in the national research agendas and the national research priorities in the international cooperation strategy

Discussion / inputs / suggestions

Brazil

Brazilian National Council for State Funding Agencies, Brazil

CONFAP
Conselho Nacional das Fundações Estaduais de Amparo à Pesquisa

Water JPI

Maria Zaira Turchi
President

National Coverage & Capillarity

- **CONFAP is a non-profit organization that represents all Brazilian State Funding Agencies (FAPs) – set up in 2006**

- 26 FAPs ;1 FAP to be set up
- Capilarity, wide spectrum actions and acknowledgement of regional diferences
- Sits on the Board of important RD&I organizations
- Political actions at Brazilian executive and legislative branches
- National partnerships with Federal Funding Agencies: Programmes in partnership with CAPES, CNPq and FINEP
- Member of the National Council of ST&I

Water Priorities / Challenges in RDI programmes

- Water governance
- Water management
- Urban centres: sanitation issues, water reuse
- Water in agriculture
- Water and forests
- Desalinisation
- Natural disasters and floods
- Water and Climate change

Funding programme model and existing International cooperation agreements

- Cooperation with the European Commission: "Guidelines for the preparation of research proposals in collaboration with proposals submitted to EU Horizon 2020"
  - The Guidelines operate as a sort of open parallel call at Brazilian State level for co-financing Brazilian participation within H2020
    - Partners which take part in projects and/or consortia presented under Horizon 2020 calls
    - Such support covers all the calls within Horizon 2020
    - FAPs/States who have launched the Guidelines so far: São Paulo, Minas Gerais, Santa Catarina, Goiás, Federal District, Espirito Santo, Paraná, Mato Grosso do Sul
- ERC - European Research Council Implementing Arrangement signed with the EU
  - Agreement to encourage Brazilian scientists to join ERC-grantees' research teams, conducting frontier research across Europe
  - Currently 303 ERC Grantees expressed interest in receiving Brazilian
  - Call launched by CONFAP – now open
- Agreements and joint funding initiatives with EU Member States and associated countries:
  - UK, France, Ireland, USA, BRICS, Switzerland, Italy; under negotiation with Finland, Canada, Belgium, among others

Water JPI

Barriers for international cooperation

- Increasing dissemination of Brazilian co-financing together with FAPs could increase the involvement of Brazilian partners in collaborative projects within H2020
- Targeted calls together with Brazil can support a more focused involvement
- Increasing possibilities of mutual priority setting can strengthen commitment and cooperation
- Networking, matchmaking and capacity building activities and events are crucial to increase cooperation:
  - Spreading opportunities and increasing capacities of programme managers and of proponents

Discussion / inputs / suggestions

Chile

Workshop on "RDI International Cooperation development for tackling global water challenges"

26 & 27th of April

CHILE

Khaled Awad

Water Priorities / Challenges in RDI programme

National policy priorities

- By 2030, for Chile to have the knowledge, the development of technologies and management that will allow it to have security and availability of water resources for human consumption, productive development and ecosystems, and contributing to the world from a position of leadership in R & D & I in water resources.

  1. Generate information and basic knowledge for the sustainability of water resources
  2. Develop and make available technologies to increase supply and availability of water resources
  3. Generate R & D & I for integrated water resources management

- Tackling water-related challenges in Chile requires the collaboration between national researchers and their foreign peers
- Research results on water resources has a rather reduced impact when carried out by one university, one country and one discipline only
- CONICYT Council has identified the research on water resources as one of its six priority areas

Funding programme model and existing International cooperation agreements

- Alliances with international centers
- Chile responds well to established international standards
- Transnational research and innovation projects funded for a period of up to 36 months
- Flexibility to ensure a wide variety of funding institutions the possibility to join the specific Calls
- Corporation where each participating funding institution applies its individual national funding regulations
- A letter of commitment is the only thing required to join the call (instead of an international cooperation agreement)

Barriers for international cooperation

- Call timeline should consider the fiscal year of the participating funding agencies
- Call timeline should consider the academic year in the participating countries
- CONICYT has actively participated in the following multilateral calls (i.a.):
- ERANET-LAC
- EU-LAC Health
- ERAMIN2

Discussion / inputs / suggestions

USA

USA – USDA-NIFA

- Louie Tupas

Discussion / inputs / suggestions

Cincinnati, Ohio USA

Sally C. Gutierrez
Water Professional

Water Priorities / Challenges in RDI programme

- Lead and copper control in drinking water distribution systems/modeling
- Nutrient pollution control/watershed management
- Management of combined sewer overflows/green infrastructure/water reuse
- Small drinking water systems

Funding programme model and existing International cooperation agreements

- U.S. – EU Science and Technology Agreement
  - Provides framework for technical cooperation
- The US State Department manages the agreement
- According to USEPA public website,
  - EU – USEPA signed an implementing agreement under the EU Science and Technology Agreement in 2007
  - Cooperation areas did not include water

Barriers for international cooperation

- Differences in alignment of research priorities and goals
- Unable to be co-applicants
- Bandwidth issues
- Not a goal or priority

Discussion / inputs / suggestions

Canada

Global Affairs Canada

Jacqueline Jorge

Senior STI Officer, Science, Technology and Innovation Division, and National Coordinator for Canada's NCP Network

Recent developments in Canada's research and innovation landscape

- Raising the importance of science in government:
  - ✓ Establishment of a Chief Science Advisor to provide scientific advice
- Canada's Innovation and Skills Plan:
  - ✓ Goal: "*make Canada a world-leading centre for innovation, to help create more good, well-paying jobs, and help strengthen and grow the middle class.*"
  - ✓ Six key areas targeted – advanced manufacturing, agri-food, clean technology, digital industries, health/bio-sciences and clean resources.
- Canada's fundamental science research (the « *Naylor Report* »)
- Development of a new federal science infrastructure strategy

CANADA-EU S&T Agreement

- A signed treaty which was renewed in 1996
- Annual meetings through the Canada-EU Joint S&T Committee
- Last meeting in June 2016 in Brussels; next meeting in Canada.
- A high level dialogue that:
  - ✓ Reviews progress of overall relationship
  - ✓ Determines priorities of focus for future cooperation
- Priority Sectors for cooperation
  - ✓ Health
  - ✓ Agriculture and Agri-Food
  - ✓ Aeronautics
  - ✓ Research infrastructure
  - ✓ Security research – NEW
  - ✓ Marine and Ocean research
  - ✓ Arctic research
  - ✓ ICT
  - ✓ Researcher mobility

Canada-EU Cooperatives Activities

- Trans-Atlantic Platform Social Science and Humanities (T-AP)
- Galway Statement on Atlantic Ocean Cooperation
- Enterprise Canada Network (ECN) – Enterprise Europe Network (EEN)
- Coordinated Call for projects in aeronautics
- International Bioeconomy Forum (IBE)
- ERC Implementing Arrangement with Canada
- EUREKA/EUROSTARS
- Canada's NCP/RCP Network

International Cooperation under H2020

- Signature of the Canada-EU Administrative Arrangement
- Strengthening International Cooperation:
  - ✓ New international cooperation flagship initiatives in areas of mutual interest (e.g. Clean energy cooperation under "Mission Innovation“)
  - ✓ More targeted topics
  - ✓ Improve framework conditions (e.g. co-funding mechanisms)
- Simplification measures for “third country” participants:
  - ✓ Any legal entity established in a third country (not receiving EU funding)
  - ✓ New form of involvement/category: “***International Partner***”
  - ✓ Testing lump-sum project funding: to reduce the administrative burden and minimize financial errors
  - ✓ Greater focus on performance and scientific-technical content of the projects

Water JPI

IISD Experimental Lakes Area

Matt McCandless

Water Priorities / Challenges in RDI programme

Mission: To conduct ecosystem-based research that improves our understanding of human impacts on the environment and provides science-based solutions for clean water and healthy ecosystems

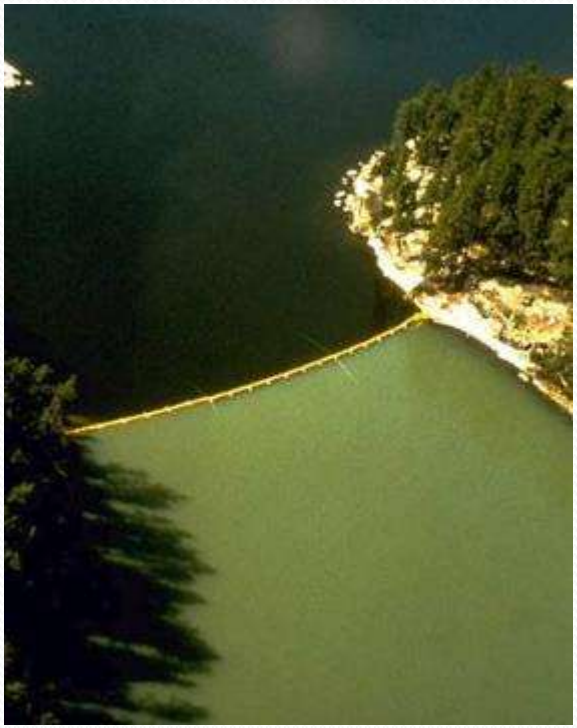
- Conduct and facilitate collaborative ecosystem research
- Operate a robust Long-Term Ecological Research (LTER) program
- Support strong linkages between scientific research and policy formation
- Provide a platform for science education and innovation
- Communicate with the public, governments and the scientific community

Funding programme model and existing International cooperation agreements

- Operation of the Experimental Lakes Area is funded trough government grants
- Research at our facility is funded through NSERC, other government research funds, private funding, philanthropy
- Over 98% of our funding comes from Canada
- We are part of international networks and have research agreements in place

Barriers for international cooperation

- Making initial connections/marketing
- Effort required in developing projects
- Opportunity cost
- Ability to move funds across borders
  - Role of NGOs on RDI is not the same across countries



Ryerson Urban Water
Toronto
Canada

Ryerson University

Nicholas Reid

Executive Director

Water Priorities / Challenges in RDI programme

- Water Policy and Ethics, Society and Communications
  - Green city policy, inter-jurisdictional policy, water use and CSR, socio-ecological systems, science communication
- Watersheds, Water Quality, Data Analytics
  - Urban impacts on Great Lakes, organisms as sentinels of climate change, treatment wetlands, microbial genomics
- Green Infrastructure, Resilient Cities
  - Water management, water and wastewater treatment, green roofs, urban forest, low impact development
- Public Health and Contaminants

Funding programme model and existing International cooperation agreements

- Ryerson Urban Water (RUW) is exploring international cooperation.
  - RUW international cooperation agreements so far relate mostly to student exchange with other institutions
- Some researchers are working internationally

Barriers for international cooperation

- Current Liberal Government is improving the outlook for international cooperation, however the erosion of support for research and science under the previous Conservative government still lingers.
- Canada is lacking a national vision for water.
  - RUW and like minded institutions want to change this.

UNIVERSITY OF SASKATCHEWAN

Global Institute for Water Security

www.usask.ca/water

Global Institute for Water Security

Howard Wheater, *Canada Excellence Research Chair in Water Security, Director GIWS, & Programme Director, CFREF Global Water Futures*

April 26-27, 2017

Water Priorities/ Challenges

- Grand Challenge: How can we best prepare for and manage water futures in the face of dramatically increasing risks?

- New transdisciplinary science
- New modelling tools & monitoring systems
- More effective translation of scientific knowledge into societal action

Delivering:

- Improved disaster warning
- Improved prediction of water futures
- Informing adaptation to change and risk management

With a focus on Canada and the world's other rapidly changing cold regions

Funding Model & International

2010

Canada Excellence Research Chair in Water Security ($30 million)

2011

Global Institute for Water Security ($188 million): 71 Faculty, 7 CRCs, 4 IRCs and government scientists; SaskRB 410,000 km²

2013

CCRN Changing Cold Regions Network

Changing Cold Regions Network ($5 million): 8 Universities, 4 Federal Agencies, 15 International Institutions; SaskRB and MRB 1.8 million km²

2016

University of Saskatchewan Global Water Futures GWF GWF.USASK.CA

Global Water Futures ($143 million): 18 Universities, 8 Federal Agencies, 24 Provincial Agencies, 39 Industry Partners, 45 International Institutions, 15 NGOs, and 7 Indigenous Communities

Leading 3 Global Programmes:

CCRN – Regional Hydroclimate Project, **World Climate Research Programme (WCRP)**

INARCH – International Network for Alpine Research Catchment Hydrology, **WCRP & UNESCO**

Sustainable Water Futures, **Future Earth**: Canadian Node

Barriers for International Cooperation

- Need theme-based joint funding programmes for research
- Need joint funding for short-term exchange programmes for students, PDF and faculty (3-6 months); similar to ELAP & CARICOM
- Need NSERC scholarships/ fellowships for international scholars (besides Banting PDF Fellowships; likely at NSERC PDF or PhD Alexander Graham Bell Canada Graduate Scholarship level)
- Need funding for joint theme-based workshops linked to Sustainable Water Future, Future Earth and UN Sustainable Development Goals
- Need Knowledge Synthesis Initiatives (Knowledge Hub): Harness intellectual potential through problem-based learning
- **Visa and Immigration Constraints –Hiring International Scholars**

Water means the WORLD to Us...

UNIVERSITY OF SASKATCHEWAN

Global Institute for Water Security

www.usask.ca/water

Water JPI activies and modalities of cooperation

Dominique Darmendrail
Water JPI Coordinator

Joint Programming

- Is a new way to address RDI problems with (at least) European dimension
  - An initiative of European Member States and the European Commission
  - For tackling major, common, European & International societal challenges in a structured way, through:
    - coordinating national / regional, public, research, development and innovation programmes in Europe
    - Developing Joint multilateral activities
    - **Aligning** national research programmes in an effective manner,
    - making better use of Europe's limited public RDI funding
    - and extending links to various international initiatives.
  - A process based on variable geometry

Water JPI

10 JPIs since 2008

Water Challenges for a Changing World

Healthy and Productive Seas and Oceans

More Years, Better Lives - The Potential and Challenges of Demographic Change

Antimicrobial Resistance- The Microbial Challenge - An Emerging Threat to Human Health

Connecting Climate Knowledge for Europe

Global Urban Challenges, Joint European Solutions

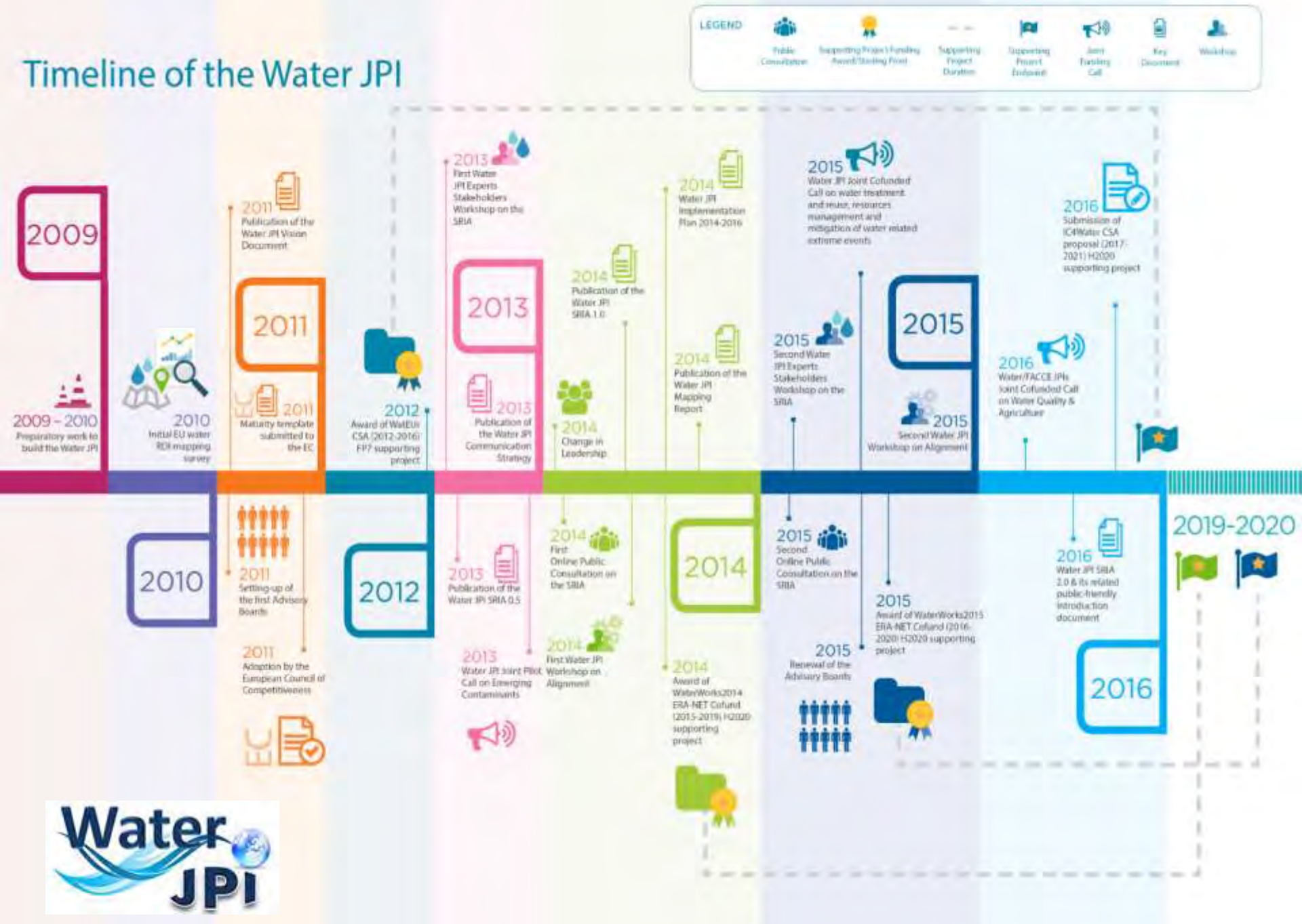
Agriculture, Food Security and Climate Change

Cultural Heritage and Global Change: A New Challenge for Europe

A Healthy Diet for a Healthy Life

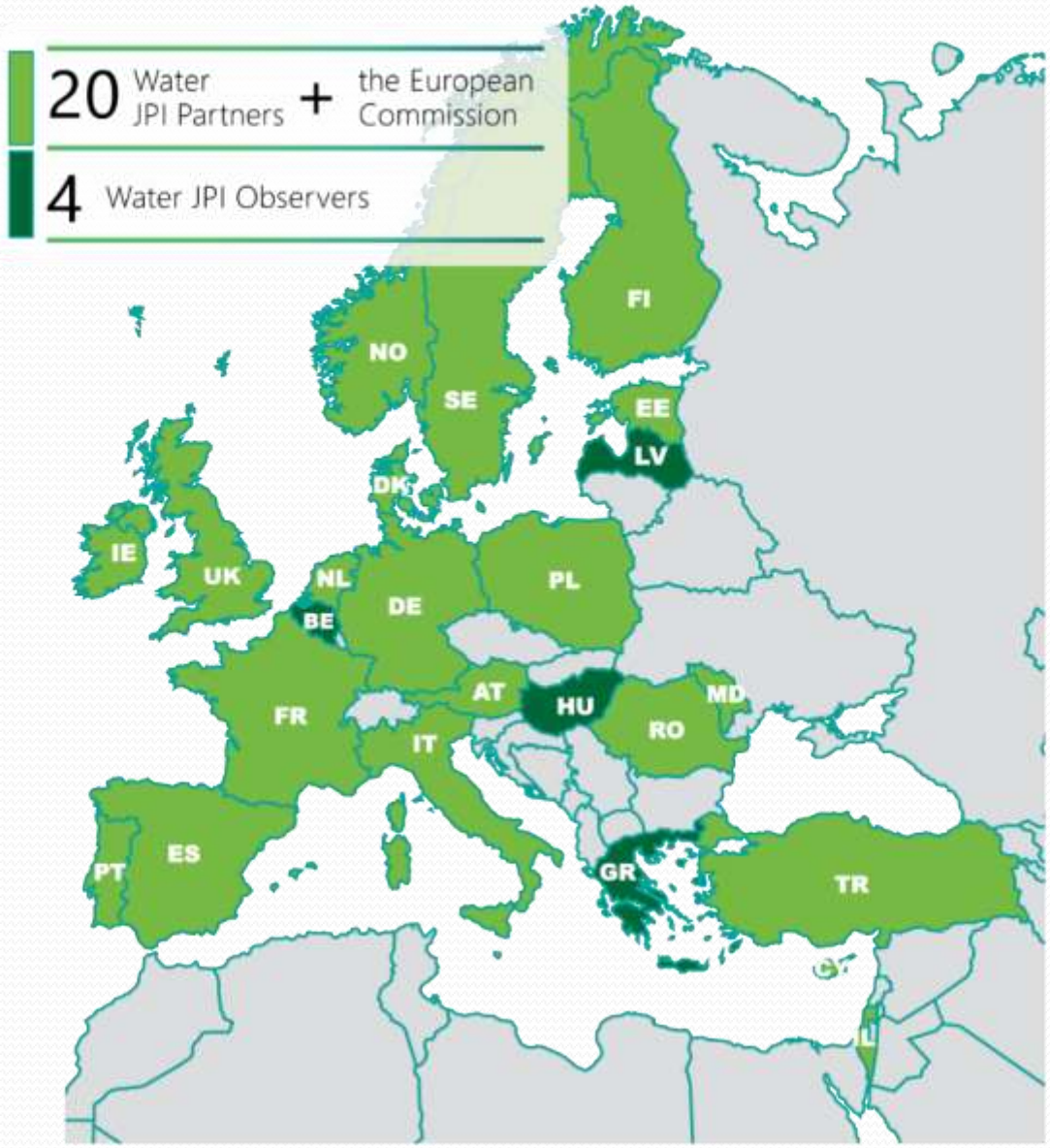
Alzheimer and other Neurodegenerative Diseases

Timeline of the Water JPI

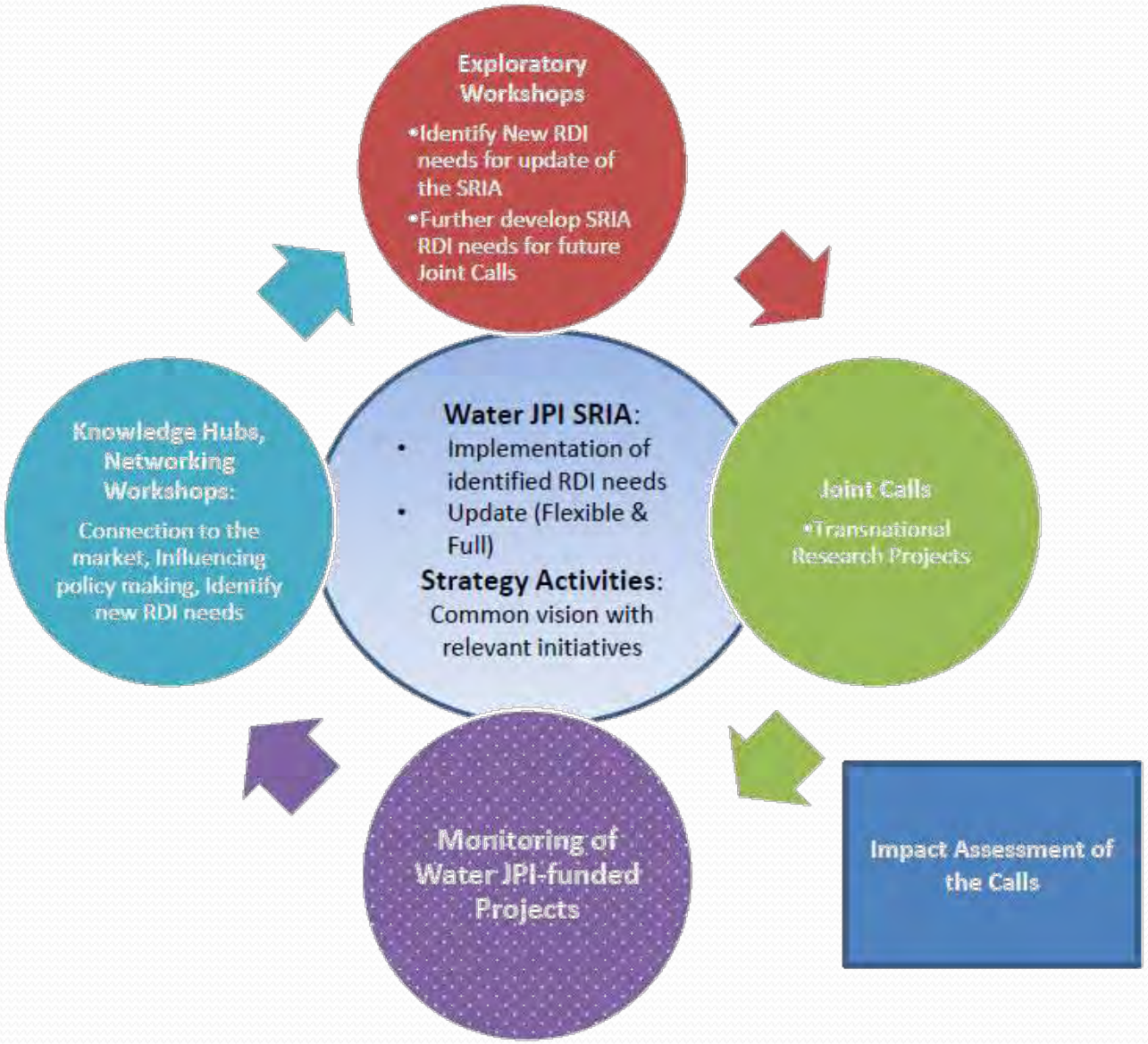


Water JPI Partner Countries

Water JPI partners currently represent 88% of the European National Public RDI investment on water



Thematic Activities



Water JPI Horizontal Activities

- Strategy Activities (Foresight, Consultative workshop, Consultation)
- Mobility and Infrastructures
- Horizontal Activities Workshops

- Towards a common vision
- Updating the SRIA
- Enlarging the Water JPI membership
- Engaging stakeholders
- International cooperation
- Updating the mapping
- Outreach & dissemination

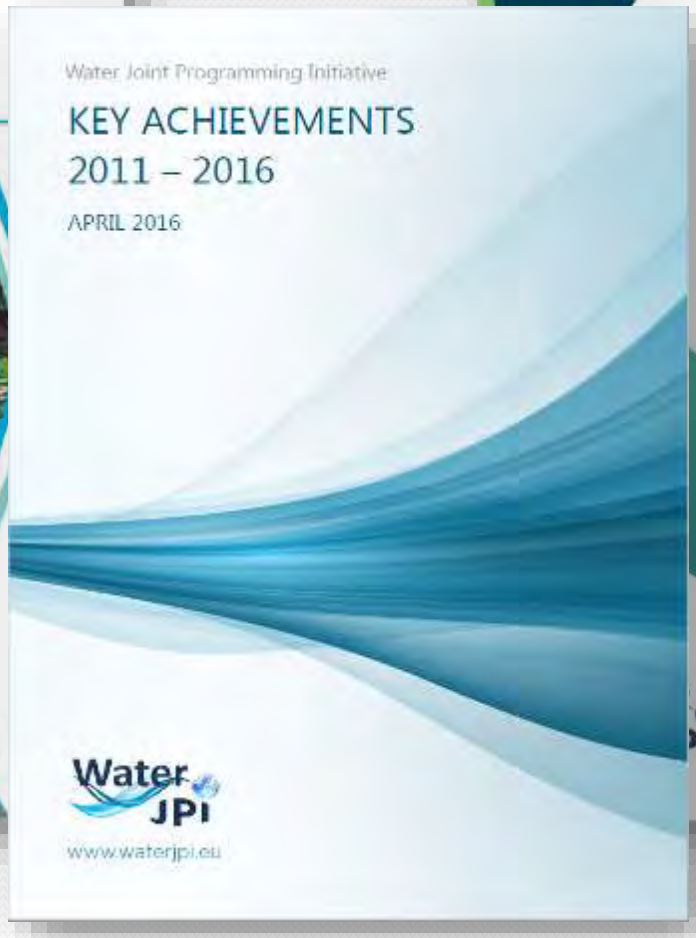
Implementation principles

- Variable geometry
  Water JPI partners only participate in activities of their specific interest
- Flexibility
  This supports the development of activities responding to partners' needs and opportunities
- Responsiveness
  The Water JPI provides an enabling environment: the water challenge is tackled through specific and tailored activities
- Everything in Common, except Funding (each JPI partner funds its activities, its communities participation)

The Key Achievements since its creation

2011 - 2016


Water JPI
Strategic Research & Innovation Agenda 2.0


Water Joint Programming Initiative
KEY ACHIEVEMENTS 2011 – 2016
APRIL 2016
Water JPI
www.waterjpi.eu


Water Joint Programming Initiative
AN INTRODUCTION TO THE STRATEGIC RESEARCH & INNOVATION AGENDA 2.0
APRIL 2016
www.waterjpi.eu

Water JPI

SRIA structure

Vision Document
(5 themes)

Theme 1
Improving Ecosystem Sustainability and Human Well-being

Theme 2
Developing Safe Water Systems for Citizens

Theme 3
Promoting Competitiveness in the Water Industry

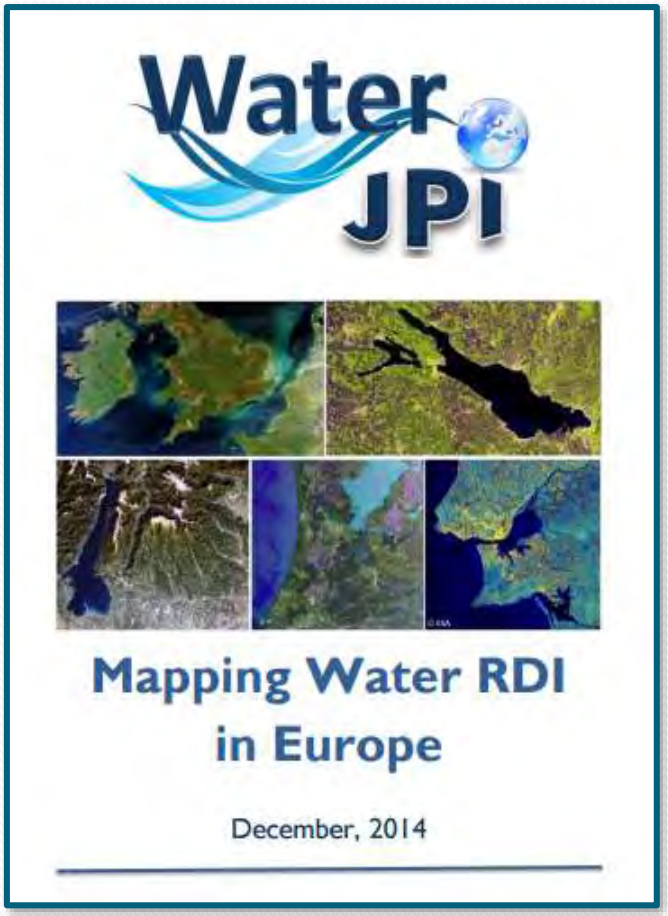
Theme 4
Implementing a Water-wise Bio-based Economy

Theme 5
Closing the Water Cycle Gap
Improving Sustainable Water Resources Management

SRIA 2.0
(5 themes and 11 sub-themes)

Why a mapping exercise?

- ✓ Better understanding of the European water-related RDI activities
- ✓ Inventory of national & regional research strategies, policies and programs
- ✓ Funding of research projects, infrastructures & mobility schemes in Water RDI
- ✓ Multi-national coordination activities taking place in Europe
- ✓ Preliminary strategic analysis of the current water research strengths, weaknesses, gaps and barriers to cooperation



Mapping Beyond Europe

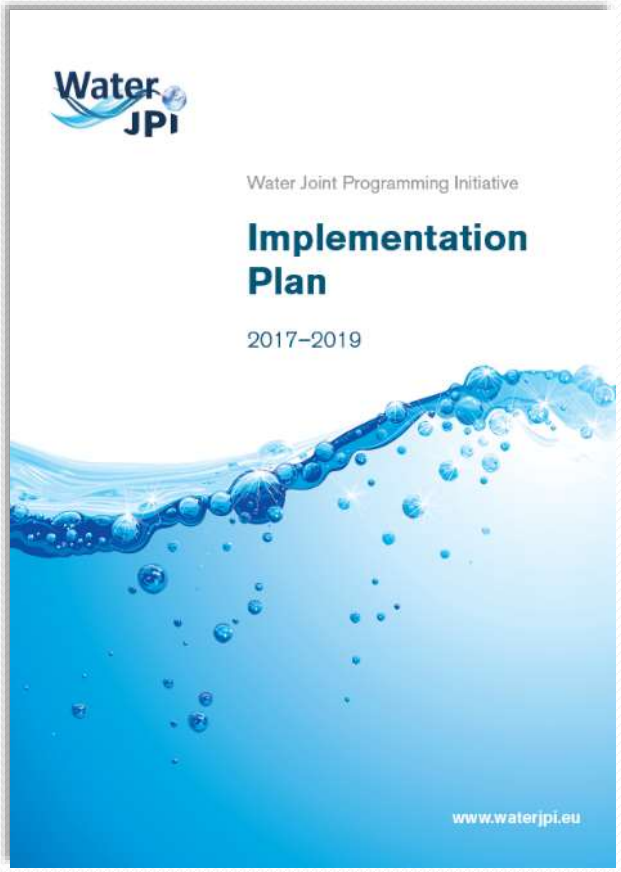
- Mapping of RDI activities in 7 targeted countries and first contacts with research funding organisations to invite them to participate in the ERA-NET

  - ✓ Brazil
  - ✓ Canada
  - ✓ China
  - ✓ India
  - ✓ South Africa
  - ✓ USA
  - ✓ Vietnam

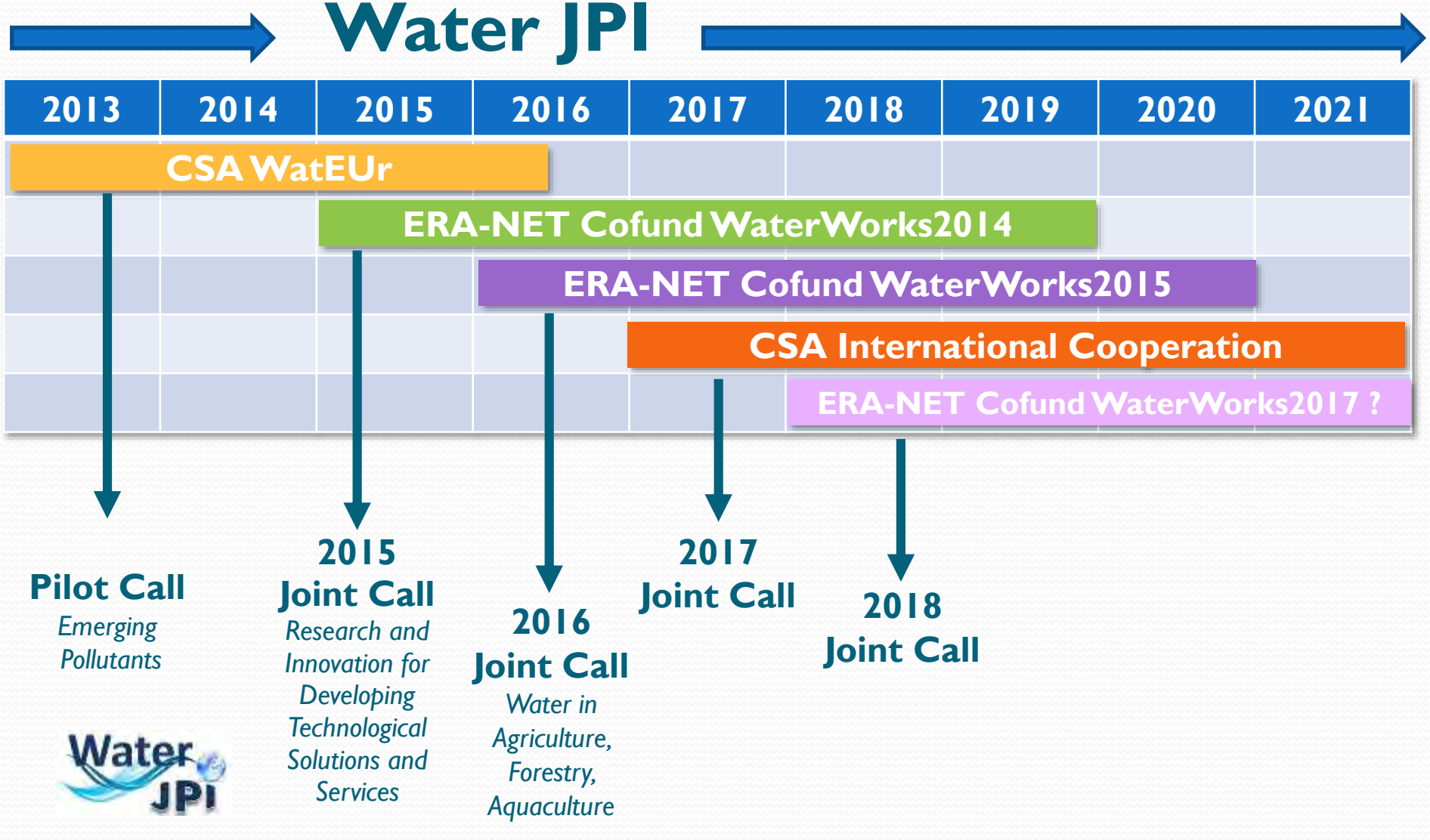
Criteria: Scientific excellence, development and market

Implementation Plan 2017-2019

- **Water JPI Thematic Activities**
  - Exploratory workshops
  - Transational joint calls
  - Monitoring of Water JPI-funded projects
  - Networking Workshops
  - Knowledge Hubs
  - Thematic Annual Programming
  - Strategy Activities



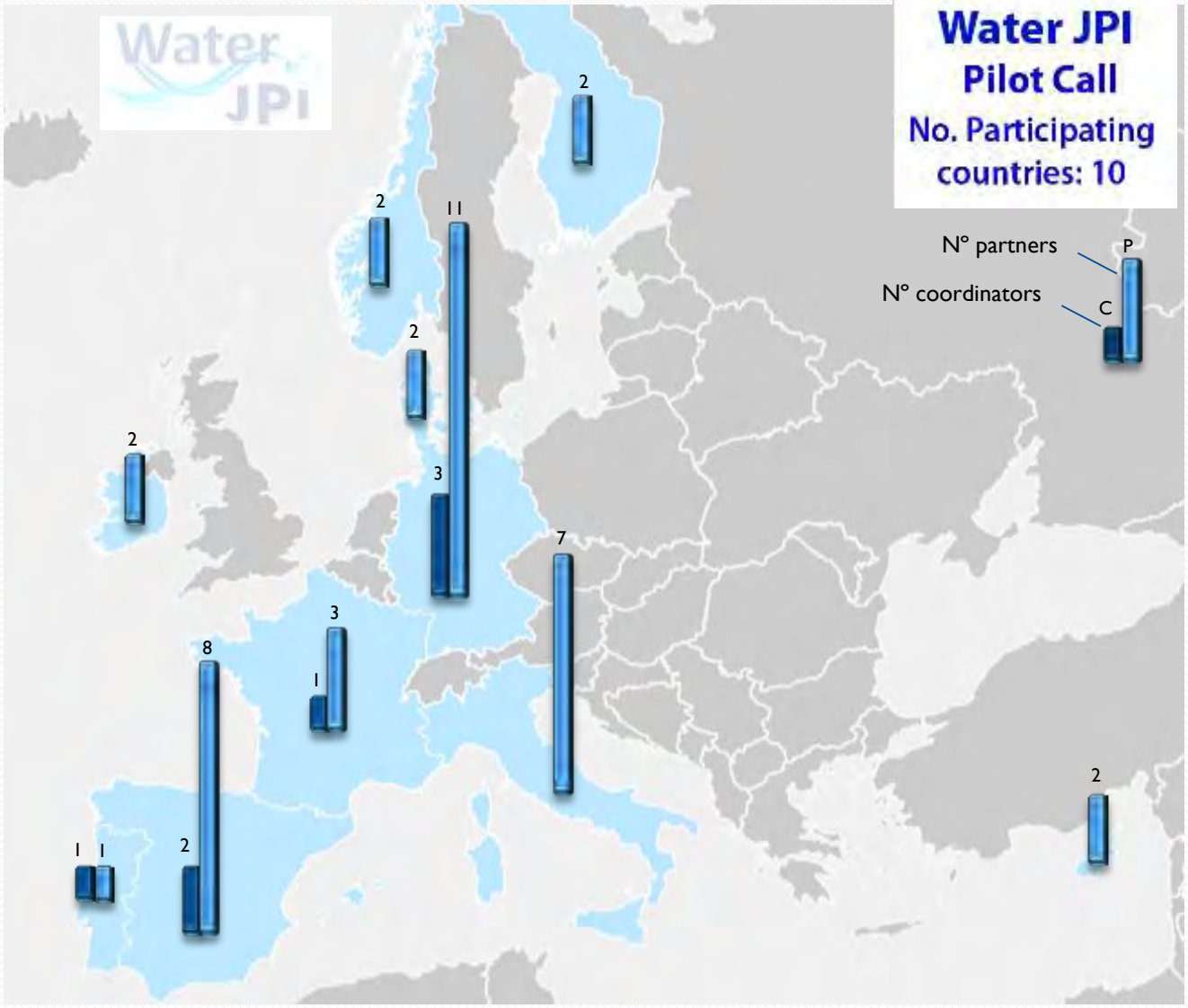
Timeline of the Water JPI Joint Calls



2013 Pilot Call - Emerging contaminants

Country	C	P
CY	0	2
DK	0	2
DE	3	11
ES	2	8
FI	0	2
FR	1	3
IE	0	2
IT	0	7
NO	0	2
PT	1	1

7 funded projects
Total funding invested: 9 M€

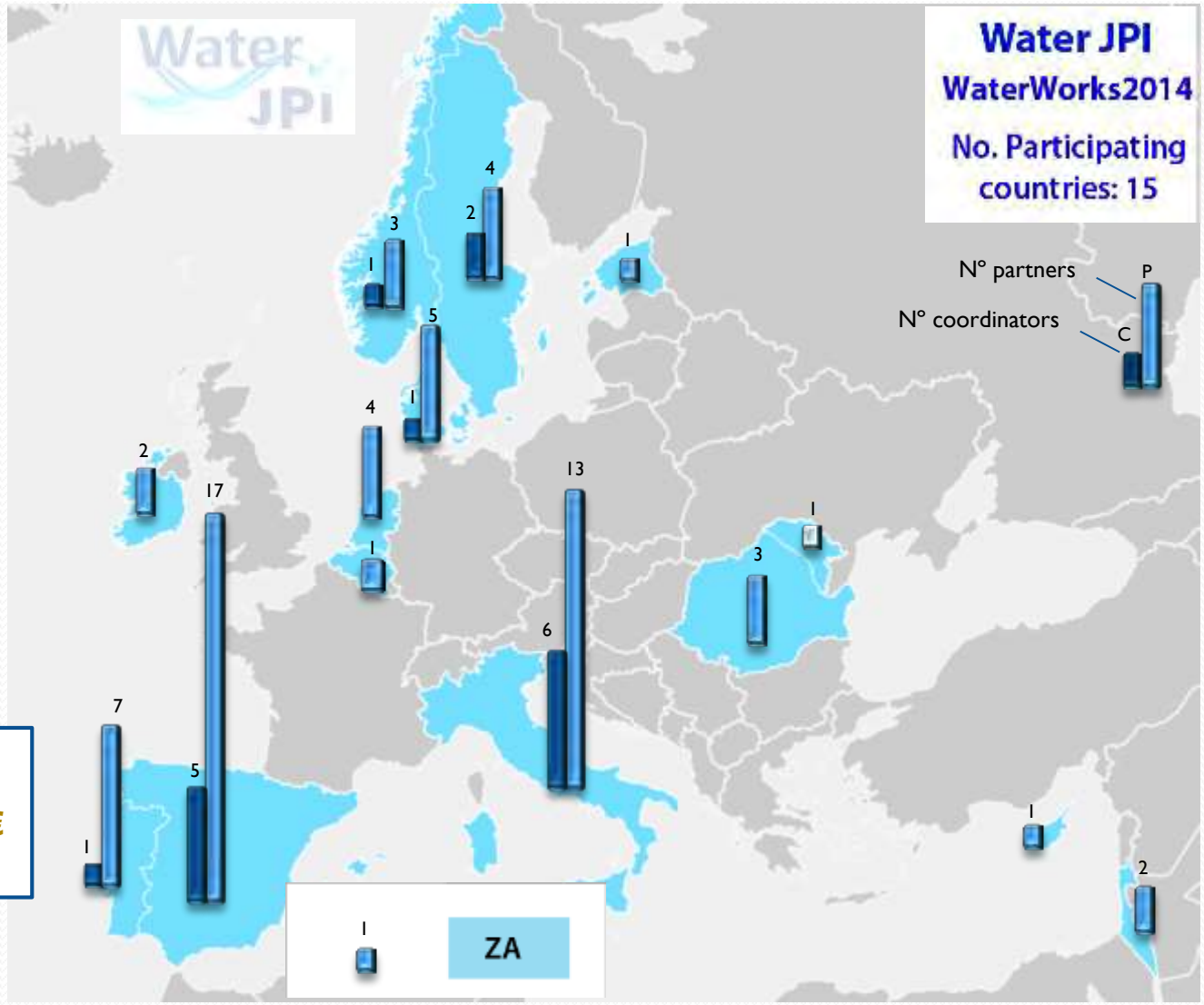


2015 Joint Call - Wastewater treatment

Country	C	P
BE	1	8
CY	3	17
DK	3	25
EE	1	8
ES	37	94
IE	1	15
IL	2	15
IT	30	80
MD	1	5
NL	1	14
NO	6	32
PT	17	64
RO	6	34
SE	8	29
ZA	1	10

16 funded projects

Total funding invested: 14 M€
incl. EC contribution - ca. 4.6 M€

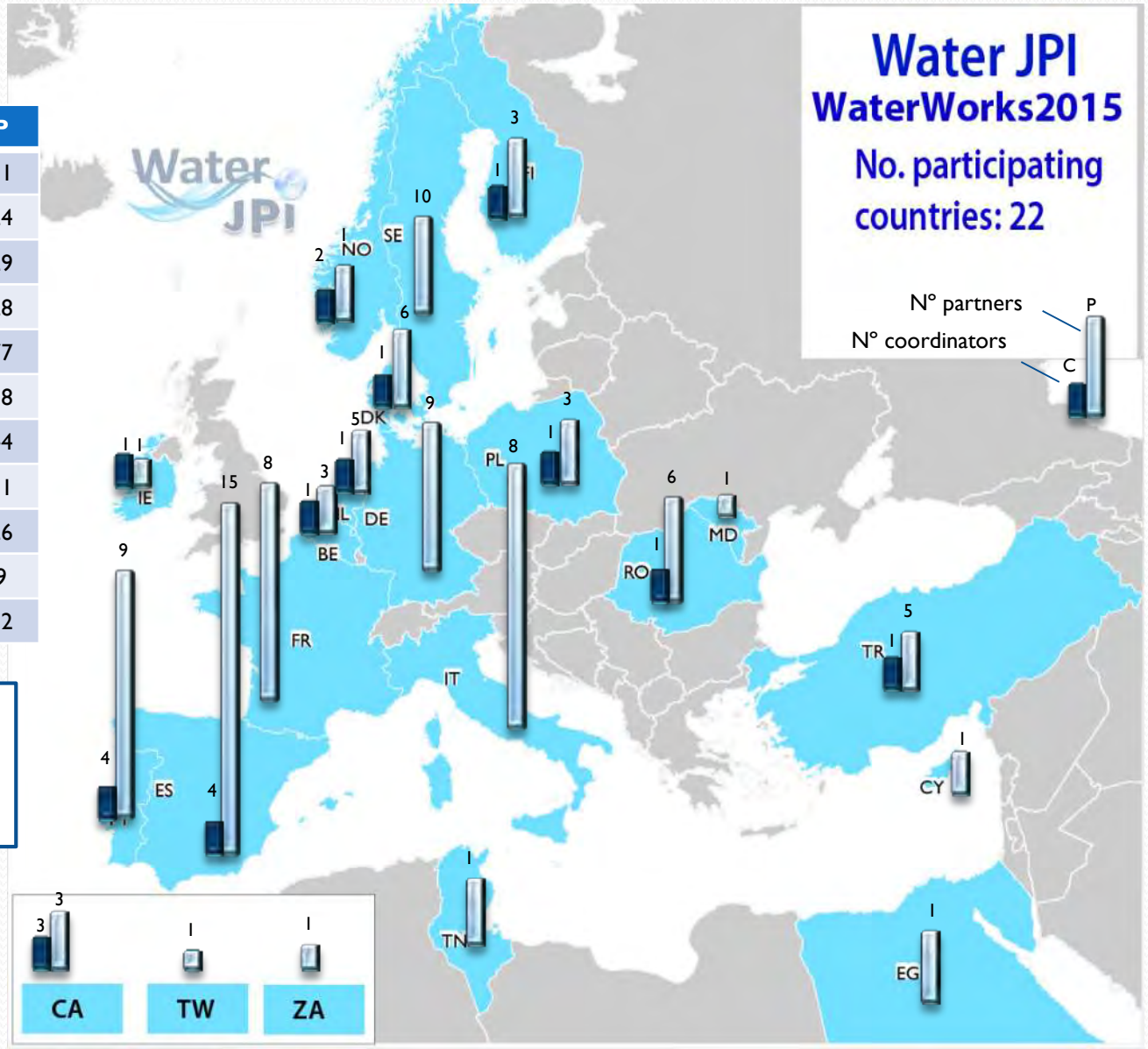


2016 Joint Call - Water & Agriculture challenges

Country	C	P	Country	C	P
BE	3	11	MD	0	11
CA	7	23	NO	5	24
CY	3	19	NL	3	29
DE	10	66	PL	4	28
DK	4	36	PT	27	77
EG	8	23	RO	14	38
ES	43	137	SE	5	44
FI	9	31	TN	4	31
FR	13	100	TR	4	26
IE	2	10	TW	1	9
IT	25	111	ZA	0	12

21 funded projects

Total funding invested: 18 M€
incl. EC contribution - ca. 4.6 M€



Joint Calls 2013-2016

Pilot Call

Identification and prevention of emerging freshwater contaminants

Control, mitigation and methods for treatment and removal

Impact on ecosystems services and human health

€ 9 million

WaterWorks2014

Water Treatment, Reuse, Recycling and Desalination

Water Resources Management

Mitigate Impacts of Extreme Events (Floods and Droughts) at Catchment Scale

€ 14 million

WaterWorks2015

Increasing the efficiency and resilience of water uses

Monitoring and reducing soil and water pollution

Integrating social and economic dimensions into the sustainable management and governance of water resources.

€ 18 million

Water JPI

Joint Calls 2013-2016

Pilot Call

Identification and prevention of emerging freshwater contaminants

Control, mitigation and methods for treatment a removal

Impact on ecosystems services and human health

€ 9 million

WaterWorks2014

Water Treatment, Reuse, Recycling and Desalination

Extreme Events (Floods and Droughts) at Catchment Scale

€ 14 million

WaterWorks2015

Increasing the efficiency and resilience of water uses

Monitoring and reducing and water pollution

tegrating social and economic dimensions into the sustainable management and governance of water resources.

€ 18 million

€40 million
(national funds + EC cofund)

Water JPI

Water JPI Joint Calls in the future

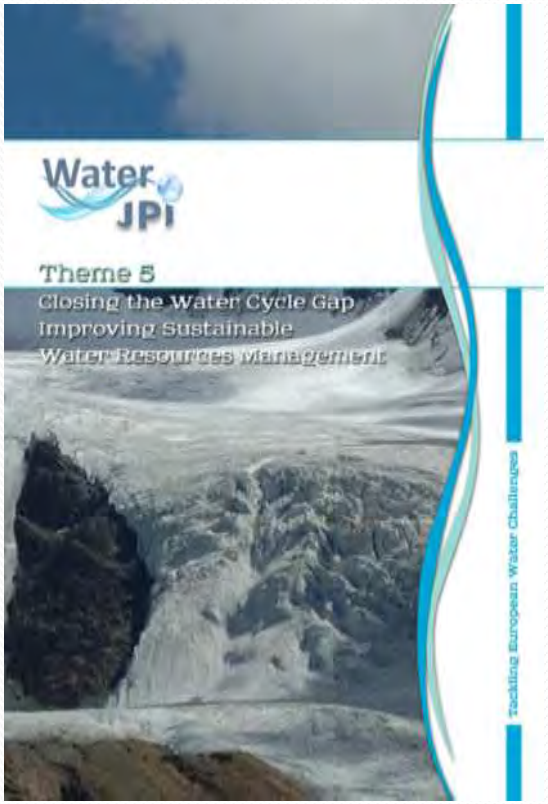
- 2017 Joint Call – UN SDGs
  IC4WATER
  Proposed / multiple risks?

- 2018 Joint Call
  ERA-NET Cofund WaterWorks2017
  Closing the water cycle gap - sustainable management of Water resources

Water JPI

2018 Joint Transnational Call

- 5.1 Enabling sustainable management of water resources
- 5.2 Strengthening socio-economic approaches to water management



Expected Impacts on

Social	Public awareness of water-reuse opportunities
Economic	Allocation of water resources between competing user demands, mitigation measures and short-term solutions to overcome water scarcity
Technological	Development of practical and low-cost technologies treating wastewater
Environmental	Balance between water availability & demand
Policy	Relevant to EU Regulations & Policies (7th Environment Action Programme, Water Scarcity & Drought Strategy…) and to UN Sustainable Development Goals (6, 11 and 13)

Water JPI

In the Future

Water-related project database

- National projects identified by Water JPI members
- Water JPI funded projects
- Panorama of EU Water-related projects funded under H2020 WP2014 – WP2015

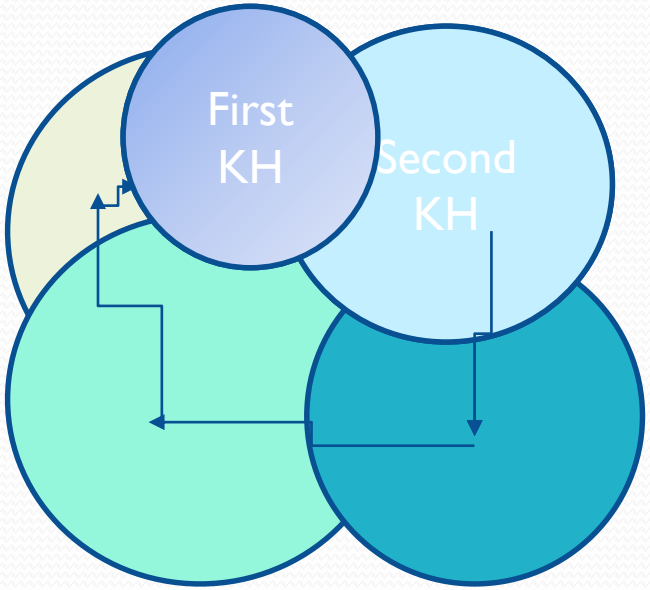
➢ Linking Water JPI projects database with other relevant databases, such as DG R&I, EIP on Water, WssTP, WISE-RTD, …

The Water JPI Knowledge Hubs

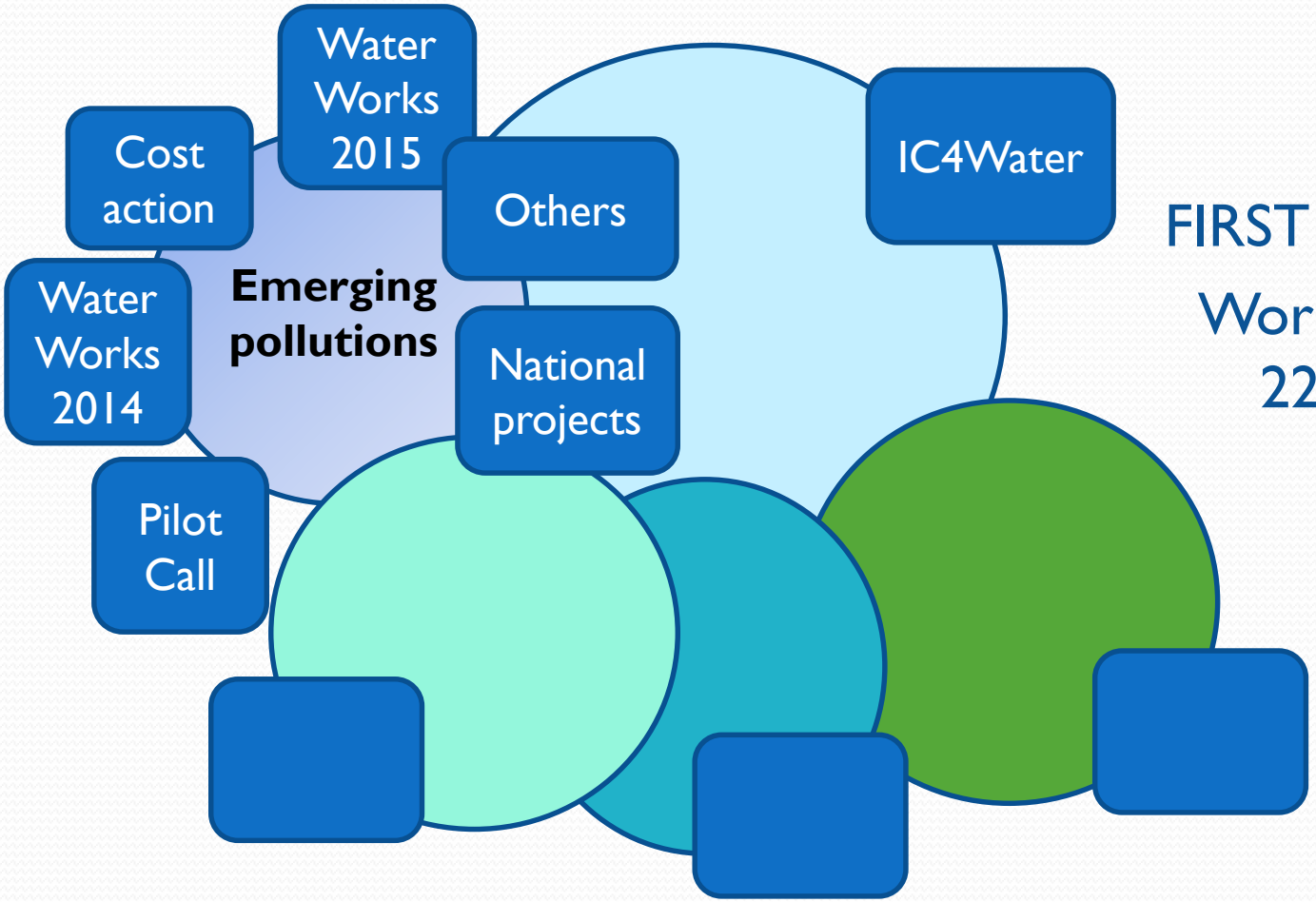
A network built for **selected research groups and targeted to stakeholders**

Within a specific research area, it will:

- Establish a critical mass of research and technological excellence
- Facilitate integration and sharing of knowledge, infrastructures, data and modelling tools
- Facilitate training and capacity building,
- Provide improved communication and networking with stakeholders and the scientific community



Water JPI Knowledge Hubs



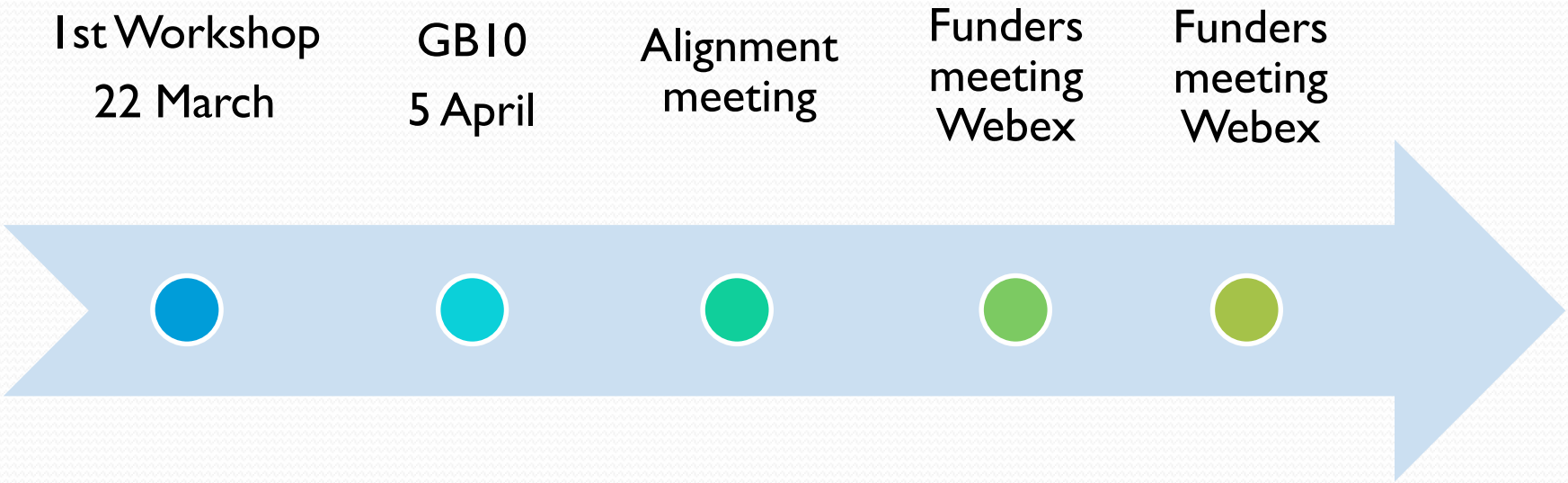
FIRST Knowledge Hub

Work launched the 22 March 2017

Summary

- Organization of the Water JPI KH – **research driven KH create flexible KH**
- Funding for participants **travelling and networking costs** are crucial for the performance of the KH
- **Aim for the KH** – It is important to have strategy for the KH and develop the aim for it
- **Emerging pollutants** in one of the key research topics in SRIA.
- **Stakeholder engagement** and efficient use of research results are important aims of Water JPI

Activities and timetable 2017



Alignment

Examples of actions progressing alignment using the ERALearn Typology	
Research Planning & Strategy	Status - Water JPI
Conduct of joint foresight	Completed
Conduct of joint mapping	Completed
Adoption of common strategic research priorities	Completed - At JPI level
Adoption of a common strategic Implementation / Action Plan	Completed - At JPI level
Conduct of joint stakeholder consultations	Completed
Cooperation between JPIs	Ongoing with FACCE
Research Funding	
Organisation of a joint transnational call for research proposals	Completed (3 calls)
Research Implementation	
Set-up of a network of researchers for a narrow thematic area of research (relevant to a JPI strategic research agenda)	Planned by 2020, with the knowledge hub development
Training of Researchers	
Joint training of researchers	Planned by 2020 (Mobility Platform)
Research Infrastructure and Data	
Shared use of existing national research infrastructures	Planned by 2020 (Infrastructure Platform)

Recommendations for the Horizon 2020 Work Programme 2018-2020

- Priorities for the Water JPI for 2019 & 2020
  - Ecosystems services with a particular focus on degraded water bodies and aquatic ecosystems (SRIA theme 1) with Biodiversa
  - Exposure to polluants and microorganisms present in water resources (SRIA Theme 2- 2.1) in collaboration with the JPI AMR (Anti Microbial Resistance)

Water JPI International partners

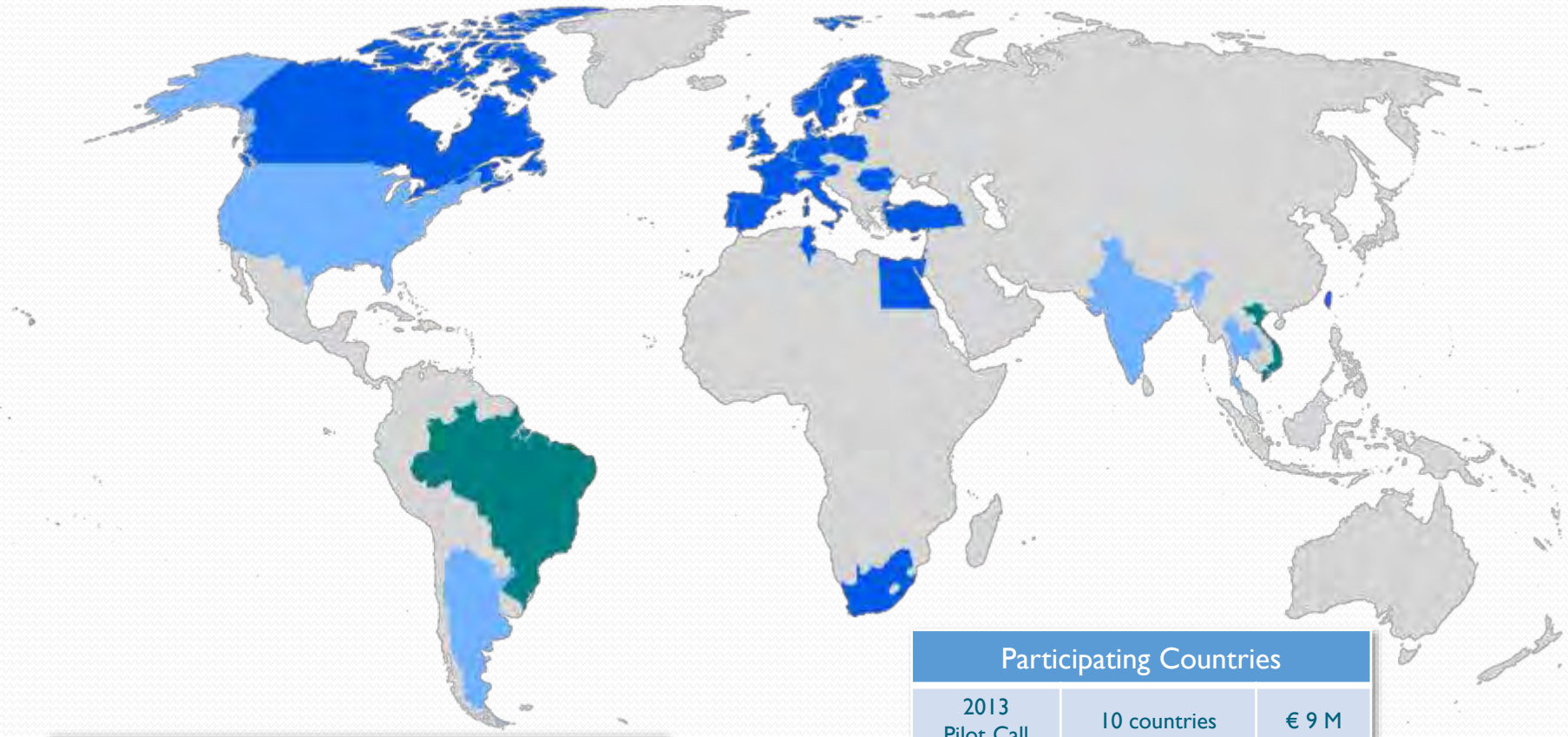
Water JPI already has

- Members in several EFTA countries, enlargement countries and countries covered by the European Neighbourhood Policy




- Contacts beyond these countries
  - Other EFTA / Neighbourhood Policy countries
  - Industrialised countries and emerging economies
  - Developing countries

International Linkages



Water JPI Partners
Water JPI Contacts
Water JPI future associated Partners

Participating Countries		
2013 Pilot Call	10 countries	€ 9 M
2015 Joint Call	15 + European Commission	€ 14 M
2016 Joint Call	22 + European Commission	€ 16,8 M

International Cooperation challenges

STRENGTHS

- Common Water challenges: policy-making & RDI
- Well-established cooperation with some countries (bilateral or multilateral, networks of researcher communities)
- Access to existing knowledge, expertise and research infrastructure

WEAKNESSES

- Complexity of cooperation (different existing funding models, different evaluation criteria, different funding rates, different S&T competences…)
- Greater role of end user (e.g. enterprise, community or state) in joint research and implementation

International Cooperation Challenges

OPPORTUNITIES

- Solving societal challenges by reaching RDI critical mass and better RDI structuration
- Market opportunities for innovative technologies and methodologies
- New types of joint actions (Calls, knowledge hubs, observatories and infrastructures, mobility schemes, ...)

THREATS

- Still quite fragmented water Research and Innovation with unsufficient information
- More bilateral cooperation vs. proving added value of multilateral cooperation
- Timing for preparation and decision on joining international multilateral activities

Water JPI

A new Coordination Supporting Action International Cooperation on Water - IC4WATER

Strategy Activities

Strategy for enlarging Water JPI network and the dialogue platform

Building the Public – Private Partnership for developing & implementing research and innovation programme

Implementation Activities

Knowledge Hub development

Joint activities on a shared topic for the achievement of UN sustainable development goals related to water (UN SDGs) – including Joint call without top-up

Water International Cooperation

IC4WATER partnership

- 18 Water JPI partners from 17 countries + WssTP (BE)
  - CY, DE, DK, EE, ES, IE, IL, IT, FI, FR, MD, NL, NO, PT, RO, SE, UK
- Support from

Countries already involved in Water JPI activities	New countries	International initiatives	Associated European Partners	Regional initiatives
ASRT, Egypt	CONFAP, Brazil	Belmont Forum	JPI Climate	BONUS
DST, South Africa	MOST, Thailand	GWRC	JPI FACCE	PRIMA
MOST, Taiwan	MOST, Vietnam	Division of Water Sciences, UNESCO	JPI Urban Europe	
IRESA, Tunisia			EURAQUA	
			JRC	

Water JPI

Discussion with China? India? USA?

Mediterranean countries (PRIMA)

Israel
Moldova
Norway
Turkey

South Africa

Canada
Taiwan
Egypt
Tunisia

Brazil
Thailand
Vietnam

2014

Non EU Water JPI Members

H2020 Associated Countries

Third countries

2017

Engaging with the Water JPI

The gateway

- A unique contact point for engaging with research & innovation funding agencies in Water
- Connecting to collaborative actions on global challenges

Participating in joint activities

- Mutual interest
- Commitment of the external party
- Available national / regional funding (cash and/or in kind) to participate

Becoming an Observer

- Commitment to the Water JPI Vision
- A beginning of successful cooperation with the JPI activities
- Interest and means of getting involved in more than one joint action

Becoming a voting member

- Strong commitment to the Water JPI Vision and Missions (Alignment, European Networking, International Cooperation, …)
- History of successful cooperation
- Interest and means of getting involved in more than one joint action and to contribute to the JPI strategy
- Formal request to join the Governing Board - VOTE

Possible Joint Actions

- STRATEGIC LEVEL
  - Shared strategic research & Innovation agenda
  - Mapping exercises
  - Alignment Workshops
- IMPLEMENTING
  - Good Practices Workshops (RFO Governance/Research funding management)
  - Joint Transnational calls (in Interaction with Horizon 2020)
  - Thematic Annual Programming (national projects-level)
  - Demonstration programmes or launch of demonstration platforms
  - Access to key infrastructures, observatories
- NETWORKING
  - Knowledge hub (Including development of policy briefs, innovation factsheets)
  - Connections with leading research networks (e.g. COST Actions)
- TRAINING AND CAPACITY BUILDING
- COMMUNICATION / OUTREACH
  - Open data / Open Access
  - Joint events / conferences / workshops / webinars
  - Brokerage events / roadshows
  - Communication materials

Being up-to-date on the Water JPI

- www.waterjpi.eu
- E-newsletter
- Social Media
- LinkedIn group / Water JPI researcher forum group

- Water JPI Secretariat in France (ANR)

  waterjpisecretariat@agencerecherche.fr

  Phone: +33 1 78098120 or +33 1 78098037

Discussion / inputs / suggestions

Other RDI cooperation agreements, with Europe

Initiative representatives

BELMONT FORUM

Delivering knowledge to support human action and adaptation to global environmental change

Forskningsrådet Formas

Formas främjar framstående forskning för hållbar utveckling

BELMONT FORUM

NSF

CSIRO

IAI

JST

CONACYT

TÜBİTAK

NERC SCIENCE OF THE ENVIRONMENT

AllEnvi

NSFC

Bundesministerium für Bildung und Forschung

Ministry of Earth Sciences
Government of India

Ministerio de Ciencia, Tecnología e Innovación Productiva
Presidencia de la Nación

European Commission

FAPESP

NRF National Research Foundation

ANR

NWO

The Research Council of Norway

科技部
Ministry of Science and Technology

DFG

Qatar National Research Fund

bmwfw
Federal Ministry of Science, Research and Economy

MEXT


Arts & Humanities Research Council
SUOMEN AKATEMIA
ANR
Javna agencija za raziskovalno dejavnost Republike Slovenije
BBSRC
bioscience for the future
Bundesministerium für Bildung und Forschung
bmwfw
Federal Ministry of Science, Research and Economy
BOEM
Bureau of Ocean Energy Management
Dipartimento Scienze del Sistema Terra e Tecnologie per l'Ambiente
cnrs
CSIRO
DFG
DLR
EPSRC
Engineering and Physical Sciences Research Council
E·S·R·C
ECONOMIC & SOCIAL RESEARCH COUNCIL
FAPESP
FCT Fundação para a Ciência e a Tecnologia
FFG
Luxembourg National Research Fund
Forskningsrådet Formas
fnrs
fwo
Innovationsfonden
Innovate UK
innoviris.brussels
empowering research
IRISH RESEARCH COUNCIL
An Chomhairle um Thaighde in Eirinn
ISSC
Japan Society for the Promotion of Science
日本学術振興会
JST
MEXT
Ministerio de Ciencia, Tecnología e Innovación Productiva
Presidencia de la Nación
Ministry of Agriculture & Rural Development
Ministry of Earth Sciences
科技部
Ministry of Science and Technology
NARODOWE CENTRUM NAUKI
NERC
SCIENCE OF THE ENVIRONMENT
NordForsk
NRF
National Research Foundation
NSERC
CRSNG
NSF
NSFC
National Natural Science Foundation of China
NWO
RANNÍS
Lietuvos mokslo taryba
The Research Council of Norway
РФФИ
Τόμεας Προώθησης Έρευνας
FNSNF
Swiss National Science Foundation
Energimyndigheten
cagasc
Tekes
TÜBİTAK
ue fiscdi
VINNOVA
Canada
WAGENINGEN
UNIVERSITY & RESEARCH


ICSU
International Council for Science


Sida
SWEDISH INTERNATIONAL DEVELOPMENT
COOPERATION AGENCY


ISSC
international social science council


iap
the global network of science academies


GEO
GROUP ON
EARTH OBSERVATIONS


ORGANIZATION FOR WOMEN IN SCIENCE FOR THE DEVELOPING WORLD
ORGANIZATION
FOR WOMEN IN
SCIENCE FOR THE
DEVELOPING WORLD


IIASA
International Institute for
Applied Systems Analysis


START
Enhancing scientific capacity to inspire informed
action on global environmental change


twas
THE WORLD ACADEMY OF SCIENCES
for the advancement of science in developing countries


United States
Global Change
Research Program


futurearth
research for global sustainability

Science & Technology Alliance for Global Sustainability

The Belmont Challenge

This guiding principle of all Belmont Forum Collaborative Research Actions is called the **Belmont Challenge:**

To deliver knowledge needed for action to mitigate and adapt to detrimental environmental change including extreme hazardous events.

The Challenge requires:

- Assessments of risks, impacts and vulnerabilities, through regional and decadal-scale analysis and prediction;
- Information on the state of the environment, through advanced observing systems;
- Interaction of natural and social sciences;
- Enhanced environmental information service providers to users;
- Effective international coordination mechanisms.

Collaborative Research Actions (CRAs)

Developed by the Belmont Forum in order to make progress on the Belmont Challenge and help deliver international collaboration

Yearly international opportunity fund for 2 - 3 themes (20+M€)

Main goals:

1. **Address the Belmont Challenge priorities** - Deliver knowledge needed for action

2. **Support** innovative research

3. **Leverage Belmont Forum members' existing investments** through international added value

4. **Promote inter- and trans- disciplinary, co-design and co-production:** Bring together new partnerships of natural scientists, social scientists, stakeholders, and users

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Challenges for International Cooperation

- Keep a shared vision during the entire process
- Coordination: Different procedures
- Distribution of tasks

Collaborative Research Actions (CRAs)

A flexible tool

- **A la carte** for a given CRA
- Suitable for **various funding instruments**: networking, clustering, foresight, capacity building…
- **Open to all funders** (Belmont Forum members or not) that sign the CRA Memorandum of Understanding (MoU)
- **Everything is common** (co-scoping, call, review, selection, follow-up) **except the funding**
- Possibility of **joint activities** with other international initiatives (i.e. European Joint Programme Initiatives)

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Over 57M € in awards to research, capacity building, synthesis, and coordination in:

Arctic Observing and Science for Sustainability

Biodiversity and Ecosystem Services

Climate Predictability and Inter-Regional Linkages

Coastal Vulnerability

E-Infrastructure Exemplars

Food Security and Land Use Change

Food-Water-Energy Nexus

Freshwater Security

Mountains as Sentinels of Change

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Transformations to Sustainability

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SUSTAINABLE DEVELOPMENT

CRA Research Themes 2012

Freshwater Security and **Coastal Vulnerability**

130 pre-proposals, involving more than **1000 partners** from ~ **50 countries**

13 funded projects, **20 M€** total including:

- Drought Impacts: Vulnerability thresholds in monitoring and Early-warning Research (DrIVER)
- Enhancing Adaptation and Resilience to Drought in Dry Tropical Social-Ecological Systems: The Guanacaste, Costa Rica Example (FuturAgua)
- Integrated Analysis of Freshwater Resources Sustainability in Jordan (JWP)
- Integrating land use planning and water governance in Amazonia: towards improved freshwater security in the agricultural frontier of Mato Grosso (XINGU)
- Maintaining productivity and incomes in the Tonle Sap fishery in the face of climate change (TLSCC)
- Southern Africa‘s hydro-economy and water security (SAHEWS)

CRA Research Themes 2013

E-infrastructure and Data Management

International knowledge hub & foresight

10 countries participated

Food Security and Land Use Change

Community building projects (12-18 months;150-300k€), 3 selected

Integrated projects (3-5 years; 2-3M€), 4 selected

Joint with JPI FACCE

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CRA Research Themes 2015

Climate Predictability and Inter-Regional Linkages

8 funded projects, 14M€

Joint with JPI Climate

Mountains as Sentinels of Change

6 funded projects, 6M€

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CRA Research Themes 2016

Sustainable Urban Global Initiative (SUGI) Food-Water-Energy Nexus

Joint with JPI Urban Europe

Transformation to Sustainability (T2S)

Joint with EU NORFACE

Developing decision support at critical scales of need

Disaster Risk, Reduction and Resilience (DR3)

Linking UN, ICSU and national frameworks to address risk, planning and integrated response in regions vulnerable to environment disaster

The world in 2050

Joint scoping with IIASA.

Address the breadth of SDGs

Climate and Health

Joint initiative with HIRO (Heads of International Biomedical Research Organization) on Environment, Climate and Health

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www.belmontforum.org

@Belmont_Forum

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Discussion / inputs / suggestions

Water and the Convention on Biological Diversity

Dr. David Coates

Secretariat of the Convention on Biological Diversity

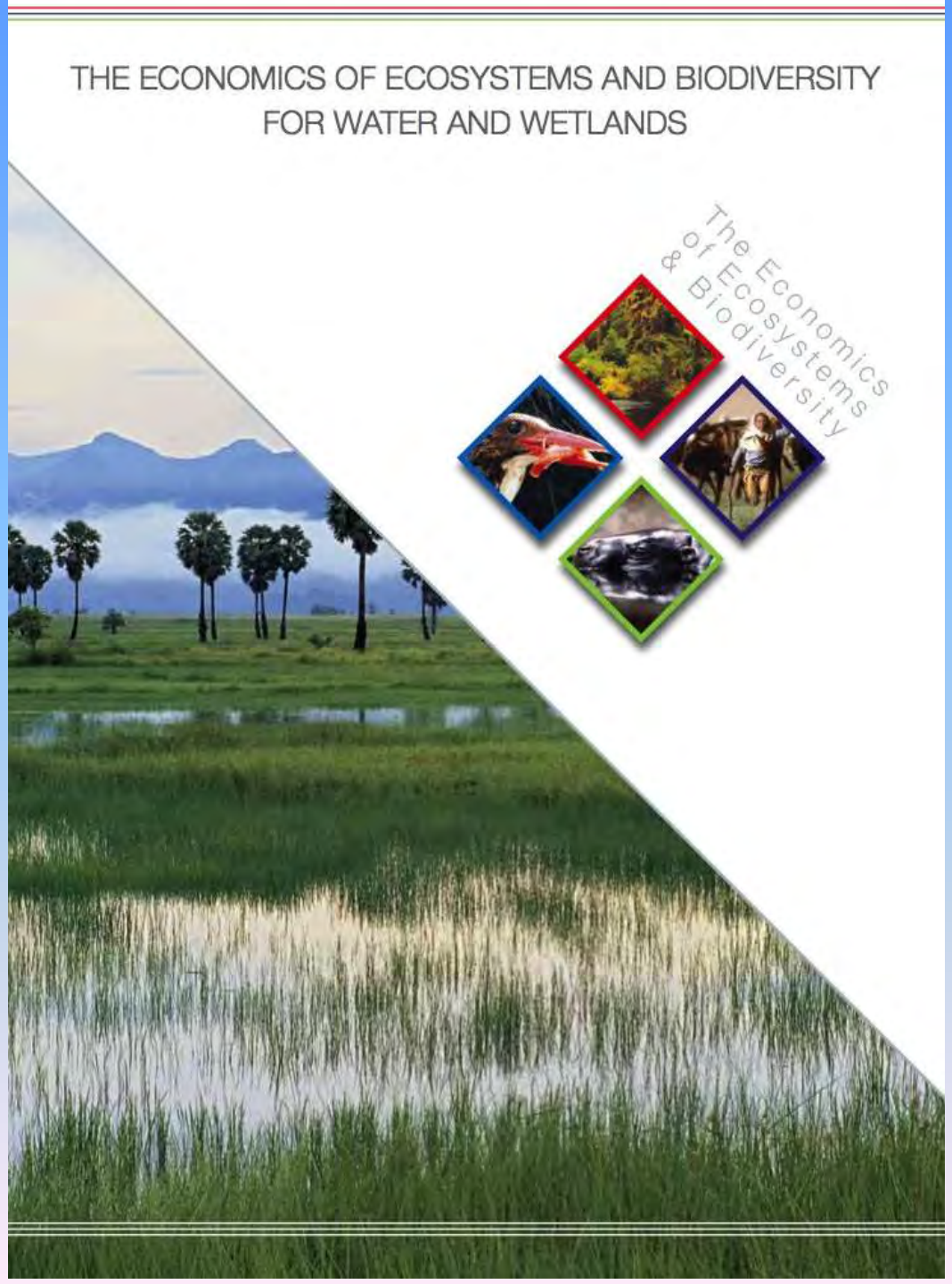
Montreal, Canada

Convention on Biological Diversity

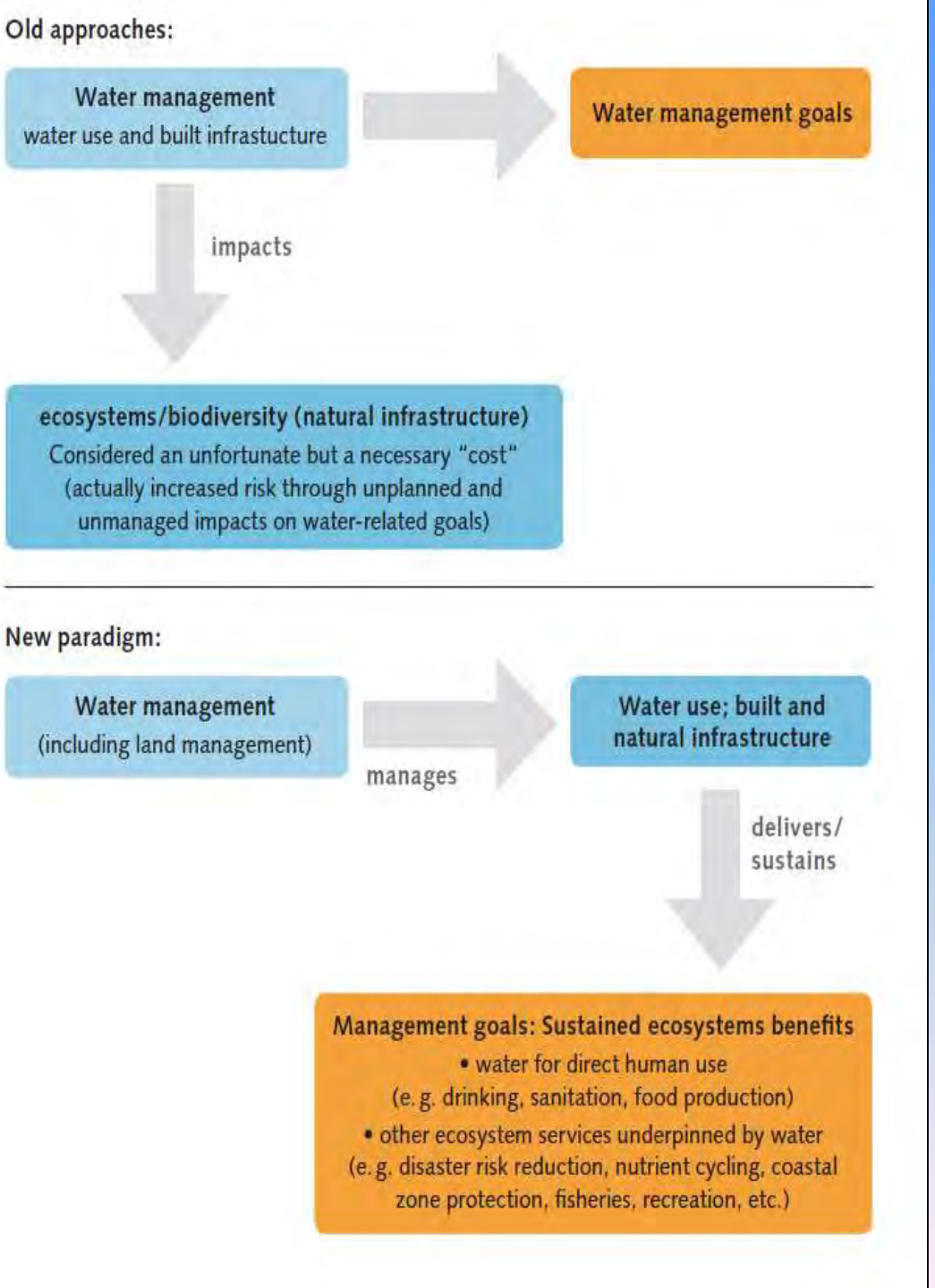
Research activities:

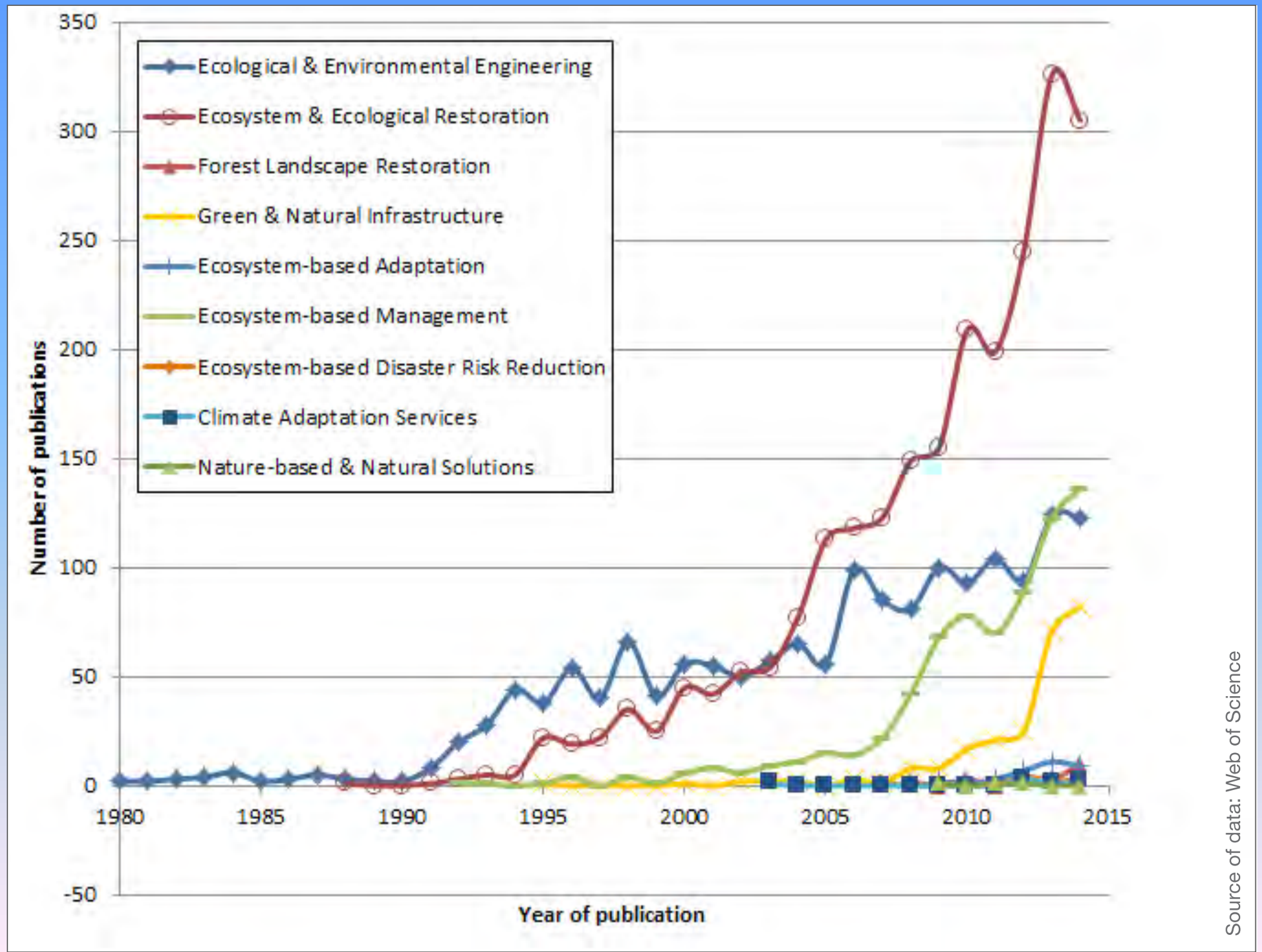
- Very limited empirical research
- Main work is on the science-policy interface
  - reviewing science and linking to policy

Russi D., ten Brink P., Farmer A., Badura T., Coates D., Förster J., Kumar R. and Davidson N. (2013) The Economics of Ecosystems and Biodiversity for Water and Wetlands. IEEP, London and Brussels; Ramsar Secretariat, Gland.



History of development of approaches to biodiversity/ ecosystems and water in policy forums





Source of data: Web of Science

Global environment/sustainable development policy forums

- **2010 Strategic Plan for Biodiversity 2011-2020**
  - **Aichi Biodiversity Target 14:**
    - ***"By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded…"***
- **Rio + 20 (2012):**
    - **Paragraph 122 "*We recognize the key role that ecosystems play in maintaining water quantity and quality and support actions within respective national boundaries to protect and sustainably manage these ecosystems*"**
- **SDG 6 (2015): Ensure availability and sustainable management of water and sanitation for all**
    - **Target 6.6 "By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes"**

Future directions:

- 2018 World Water Development Report and World Water Day:
  - "Nature-based solutions"

- Further work will focus on creating the right enabling environment for uptake of ecosystem based approaches for water resources management

- Partnerships, cooperation and information sharing
  - on water:
    - UN-Water; NGOs; Ramsar Convention;

Thanks

Secretariat of the Convention on Biological Diversity

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Montreal

Quebec

Canada H2Y 1N9

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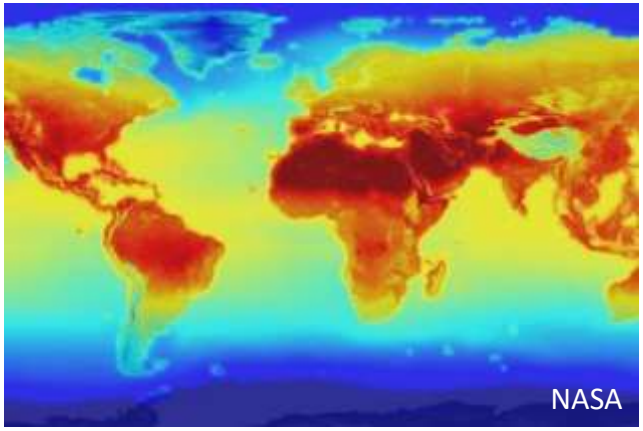
Convention on
Biological Diversity

Discussion / inputs / suggestions


futureearth
Science in the Anthropocene
Anne-Hélène Prieur-Richard
NSERC-Water JPI workshop
26-27 April 2017, Montreal, Canada
Photo J Cracraft

What is Future Earth?



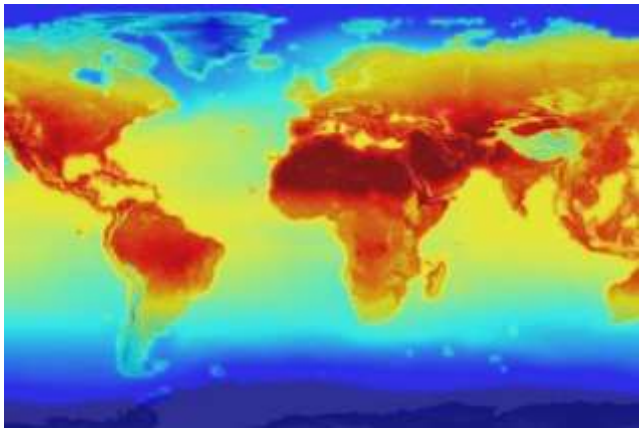
What is Future Earth?

A global community committed to sustainability

What is Future Earth?

Built on 30 years of international research

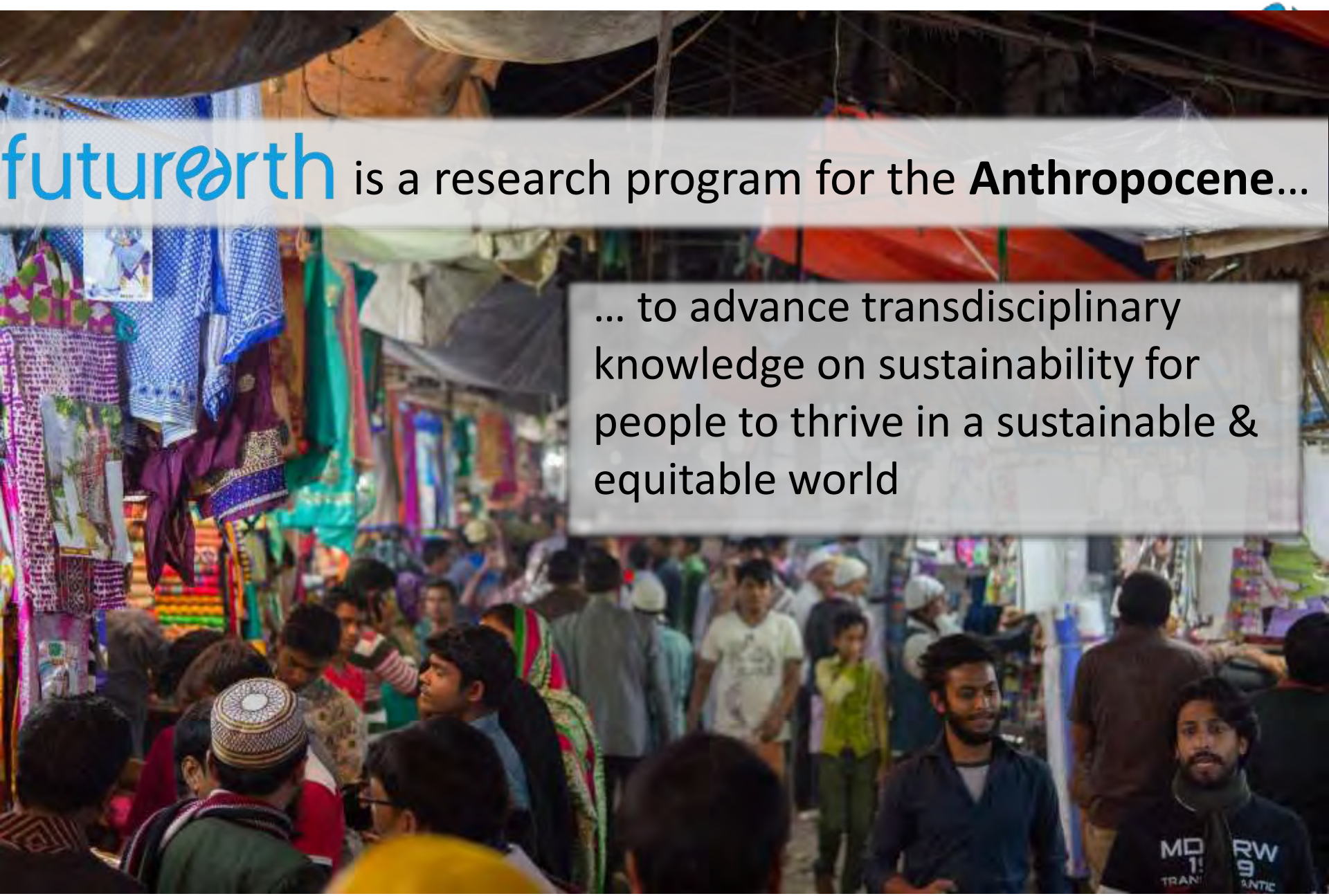
What is Future Earth?



Focused on informing solution to the planet's most pressing challenges

What is Future Earth?

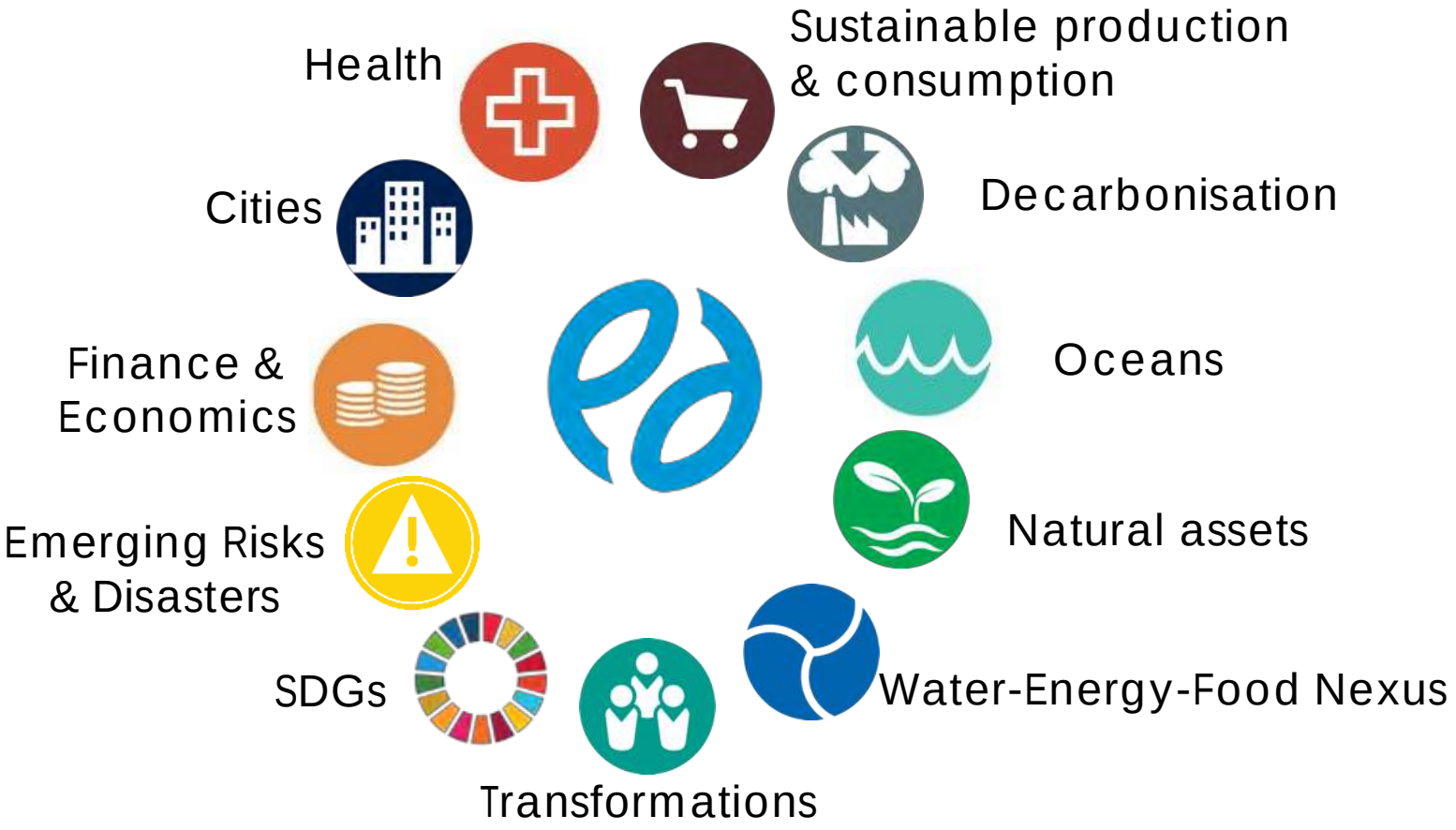
Working together with partners in policy, business, civil society & more



futureearth is a research program for the **Anthropocene**…

… to advance transdisciplinary knowledge on sustainability for people to thrive in a sustainable & equitable world

Knowledge-Action Networks



Water-Energy-Food

- Challenge: To explore the interactions between water, energy and food and how these relationships are shaped by environmental and social changes
- Synthesis work: the diversity of meanings and appearances of Nexus issues in relation to the physical and socio-economic context
- Research using case studies to identify solutions for “navigating trade-offs” and realizing synergies
- Knowledge and tools gaps (for different stakeholders)

Supported by Global Research Projects

- Sustainable Water Future Programme
  - Environmental flows characterisation & management
    - Key environmental needs
    - Tools' development
    - Implementation (Ocoña pilot river basin in Peru)
  - Towards a water assessment (UNESCO)
  - Risk management: Global Water Futures: Solutions to Water Threats in an Era of Global Change (Canada First Research Excellence Fund)
- bioDISCOVERY
  - Linking freshwater fishery management to global food security & biodiversity conservation (global dataset), McIntyre et al. PNAS

waterfuture

University of Saskatchewan

Canada First Research Excellence Fund | Apogée Canada

bioDISCOVERY
a core project of DIVERSITAS

Supported by Global Research Projects

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waterfuture

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Canada First Research Excellence Fund | Apogée Canada

bioDISCOVERY
a core project of DIVERSITAS

Supported by Global Research Projects

- Sustainable W… amme
  - Environmer…
    - Key envir…
    - Tools' dev…
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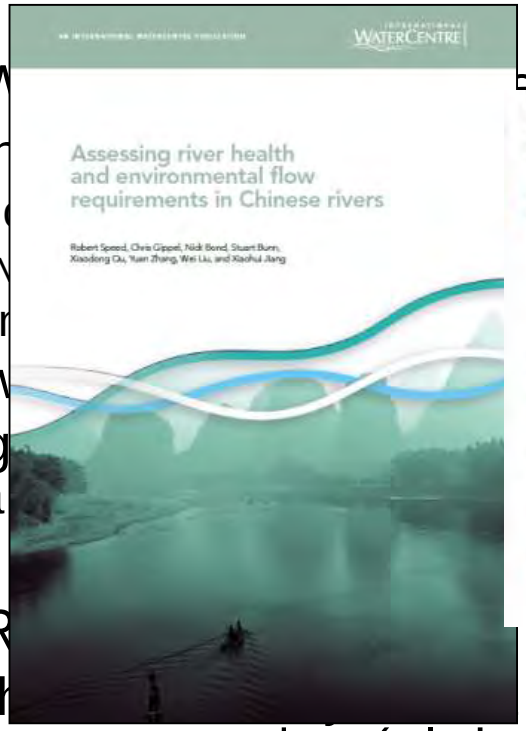
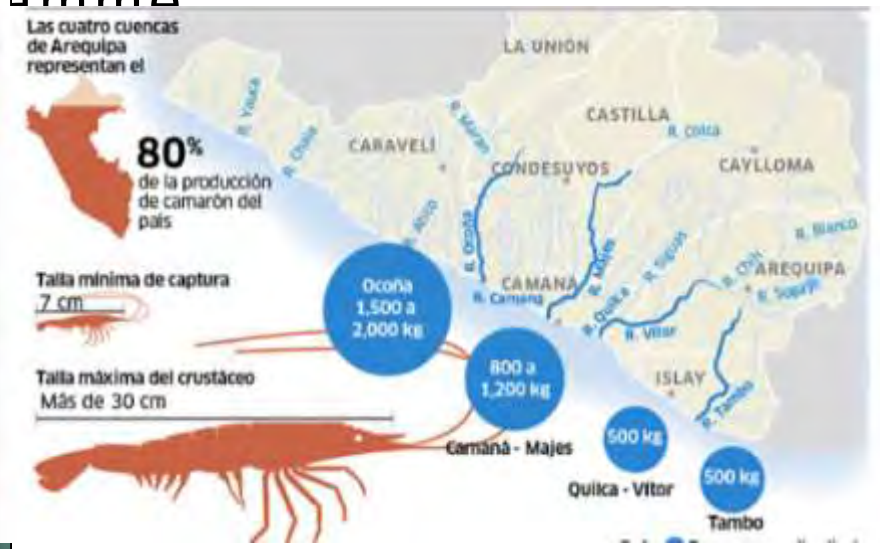
- bioDISCOVER…
  - Linking fresh… gement to global food security & biodiversity conservation (global dataset), McIntyre et al. PNAS





waterfuture

UNIVERSITY OF SASKATCHEWAN

CANADA FIRST RESEARCH EXCELLENCE FUND | APOGÉE CANADA

bioDISCOVERY
a core project of DIVERSITAS

PEGASuS - Programme for Early Stage Grants Advancing Sustainability Science

GORDON AND BETTY MOORE FOUNDATION

NOMIS FOUNDATION

- Seed Grants programme on
  - Natural Assets / Biodiversity (2017)
  - Ocean Sustainability
  - Food, Energy, Water Nexus
- Aligned with

BELMONT FORUM Collaborative Research Actions

Knowledge Action Networks
Global Research Projects


futureearth
OPEN
NETWORK
Collaborate on research & engagement
Connect to professionals around the globe
Build transformations to a sustainable world
Sign up now
network.futureearth.org

@futureearth

www.futureearth.org

Open Network: network.futureearth.org

Thank you for your attention & questions !

Future Earth was created by the Science and Technology Alliance for Global Sustainability

Our 8 research priorities

Knowledge-Action Network

- Connecting researchers, leaders in civil society, the public & private sector, communicators, and funders
- Building science-to-action communities & projects
- Identify transdisciplinary research priorities for the urban sustainability community
- Mobilize & build transdisciplinary teams that can respond to funding opportunities (e.g. Belmont Forum

futureearth

Science in the Anthropocene

Anne-Hélène Prieur-Richard

NSERC-Water JPI workshop

26-27 April 2017, Montreal, Canada

Photo Katrina Leigh

Discussion / inputs / suggestions

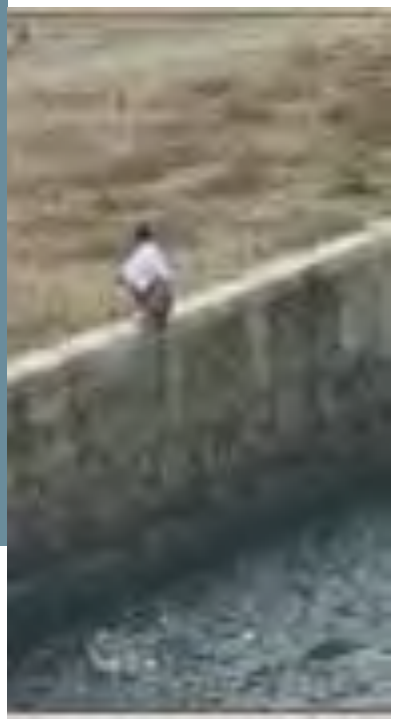
WATER, SANITATION & HYGIENE

BILL & MELINDA GATES FOUNDATION

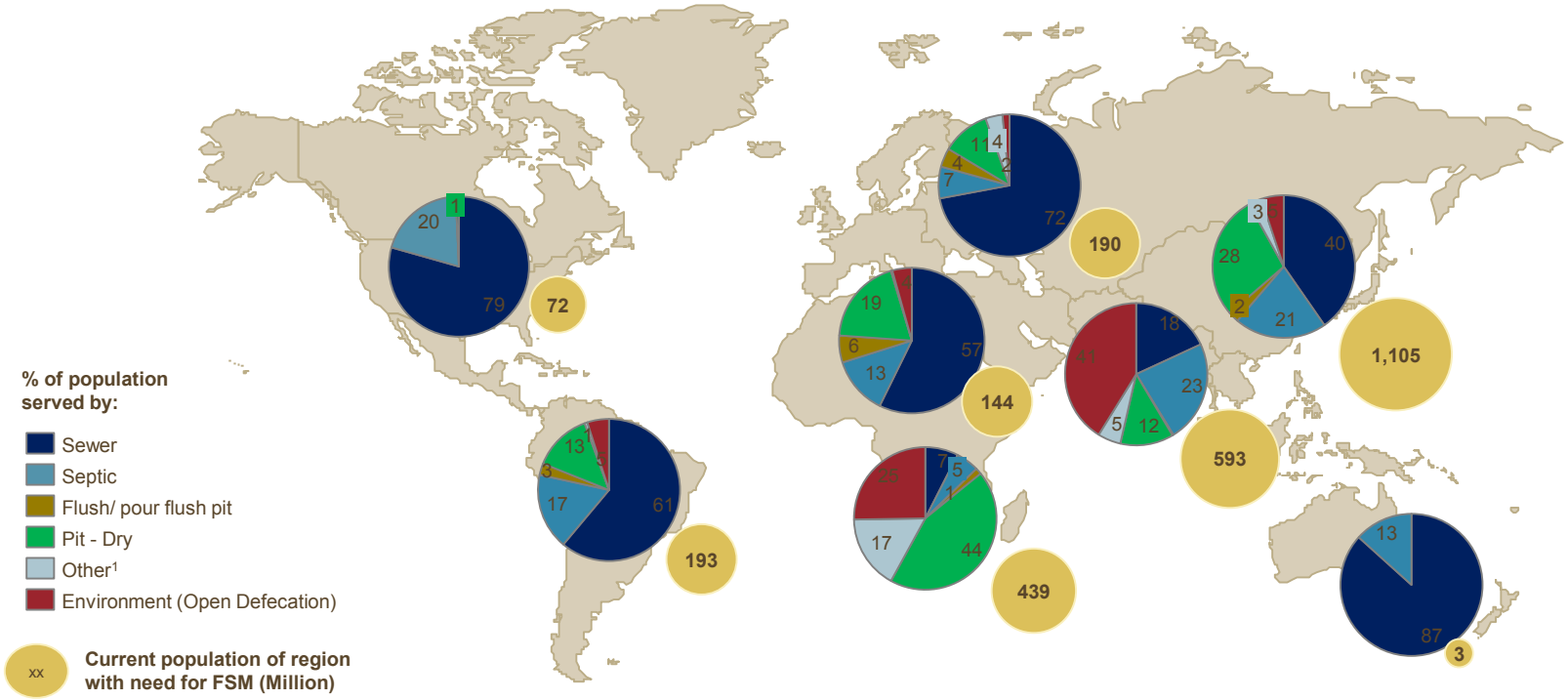
Carl E. Hensman, Ph.D.
Senior Program Officer, Water, Sanitation & Hygiene
Bill & Melinda Gates Foundation

WHY FOCUS ON SANITATION?

- Scale of the problem
- Health impacts
- Economic impacts
- Dignity



~2.5 BILLION PEOPLE WORLDWIDE TODAY NEED FECAL SLUDGE MANAGEMENT (FSM)

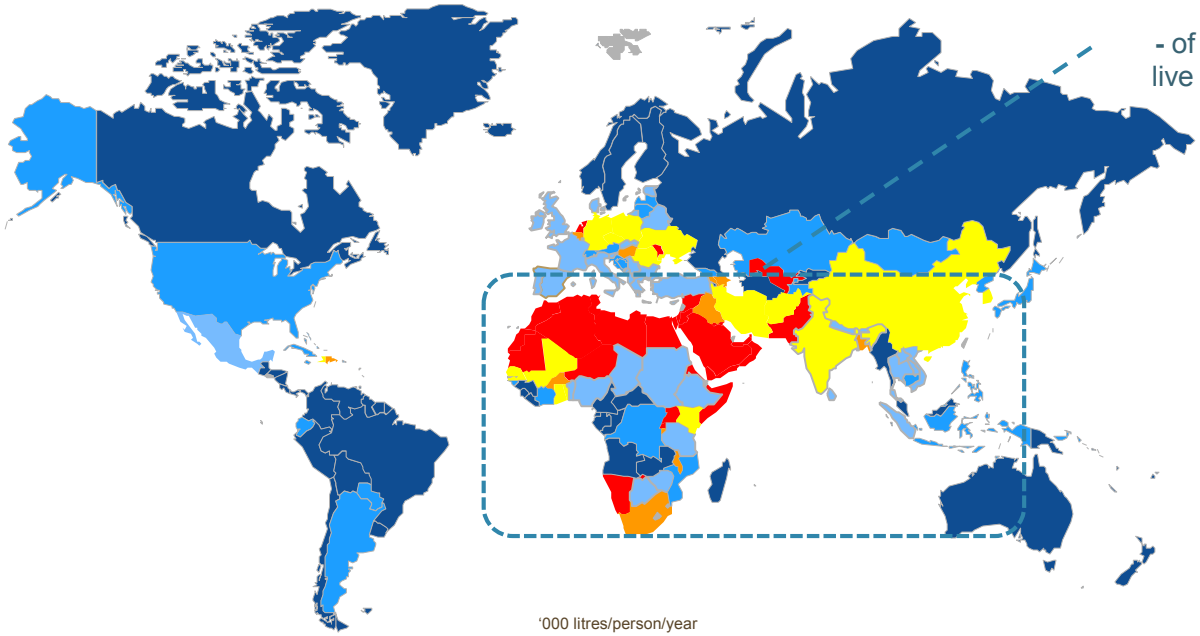


1. Open pits, pits without slabs and composting toilets included in "Other" as these do not need FSM (open pits/ pits without slabs covered up when full)
Source: UN JMP sanitation data, BCG analysis

 |

WATER SCARCITY WILL MAKE FECAL SLUDGE MANAGEMENT (FSM) INCREASINGLY IMPORTANT

Projections 2030



74%

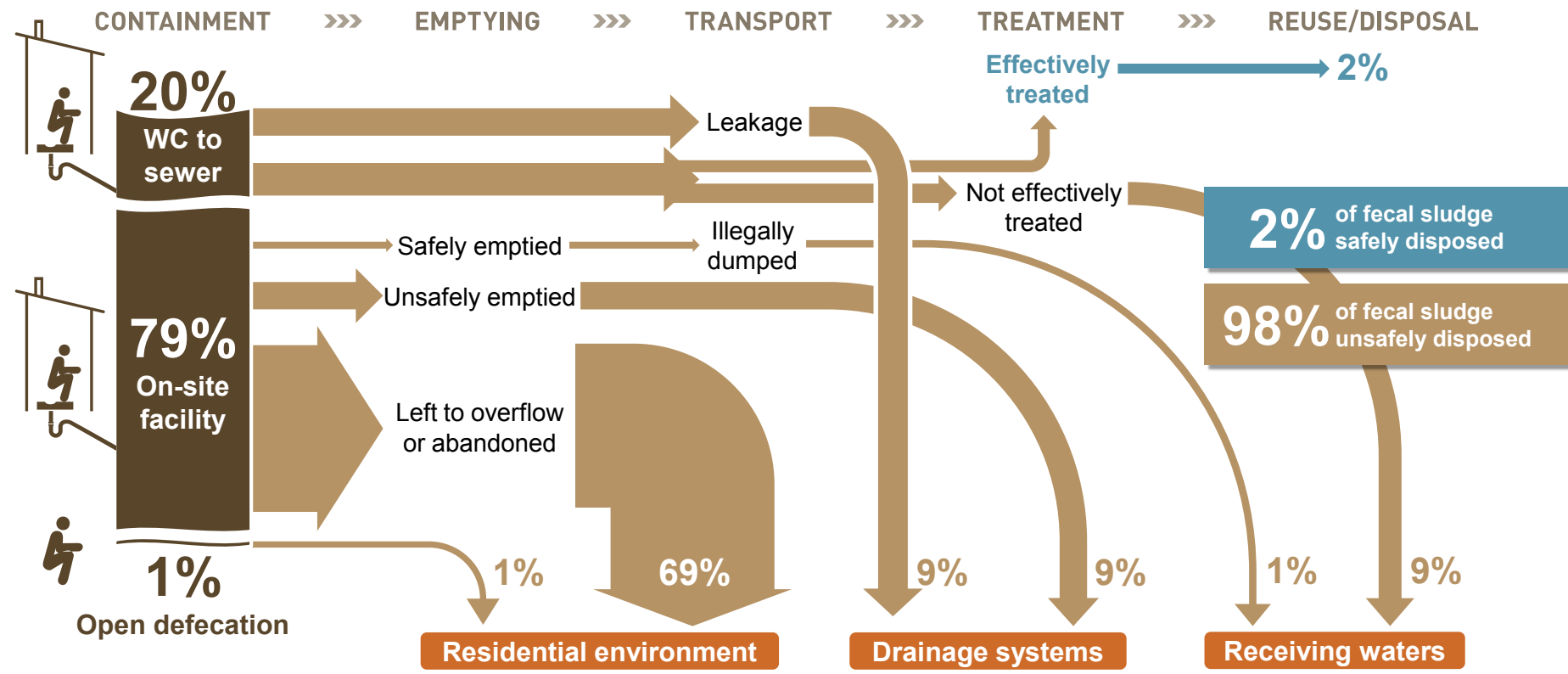
- of world's population will live in Sub-Saharan Africa & Asia.

1. United Nations environment programme
Source: 'Global Water Initiative' (June 2005), GEF International Waters Conference, The Coca-Cola Company, Grail Research, BCG Analysis

 |

POOR FSM IS AKIN TO INSTITUTIONAL OPEN DEFECATION

Sludge direct to the environment when no service chain



Source: WSP analysis, using BMGF funded research

CURRENT SOLUTIONS ALL HAVE SIGNIFICANT LIMITATIONS

Current solutions, both centralized and decentralized, have significant limitations that jeopardize health and safety and, in many cases, perpetuate open defecation practices.

HANGING TOILETS

Foul odors
Poor user experience
Safety hazards
Environmental contamination

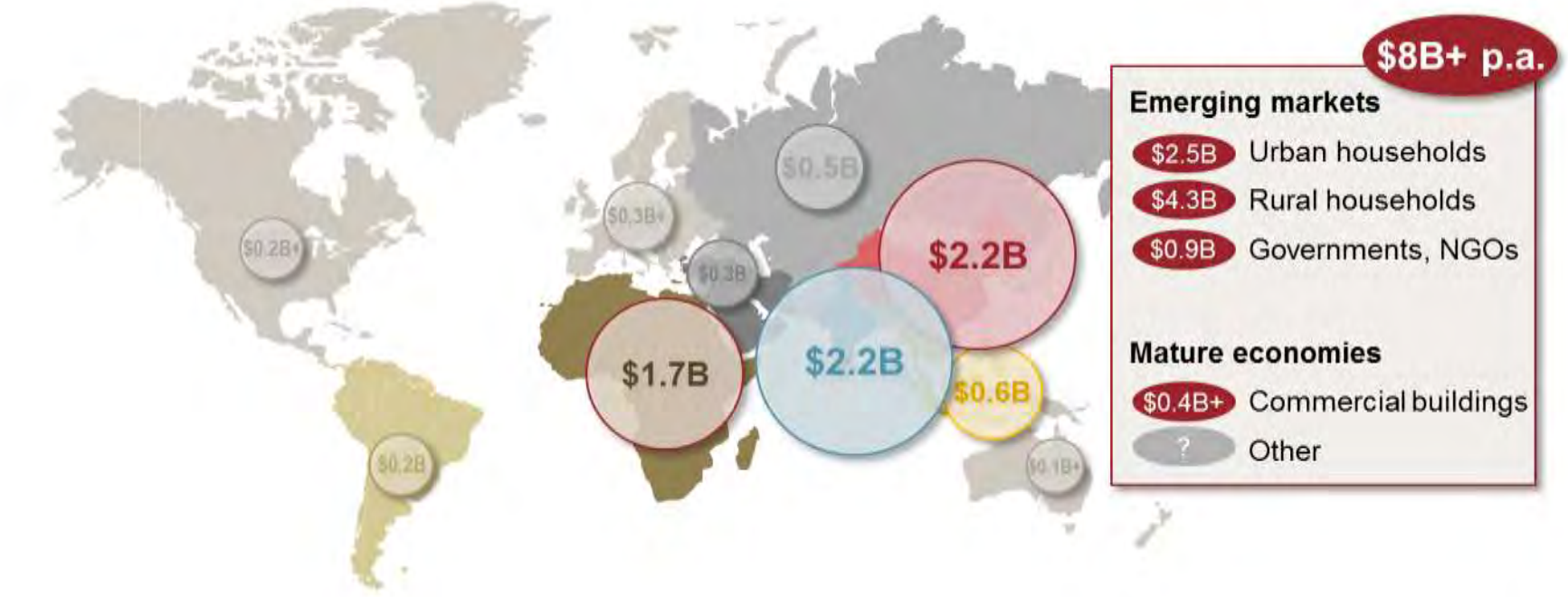
PIT LATRINES

SEPTIC TANKS

Expensive to install, maintain
Require infrastructure
Require considerable water
Treatment not assured

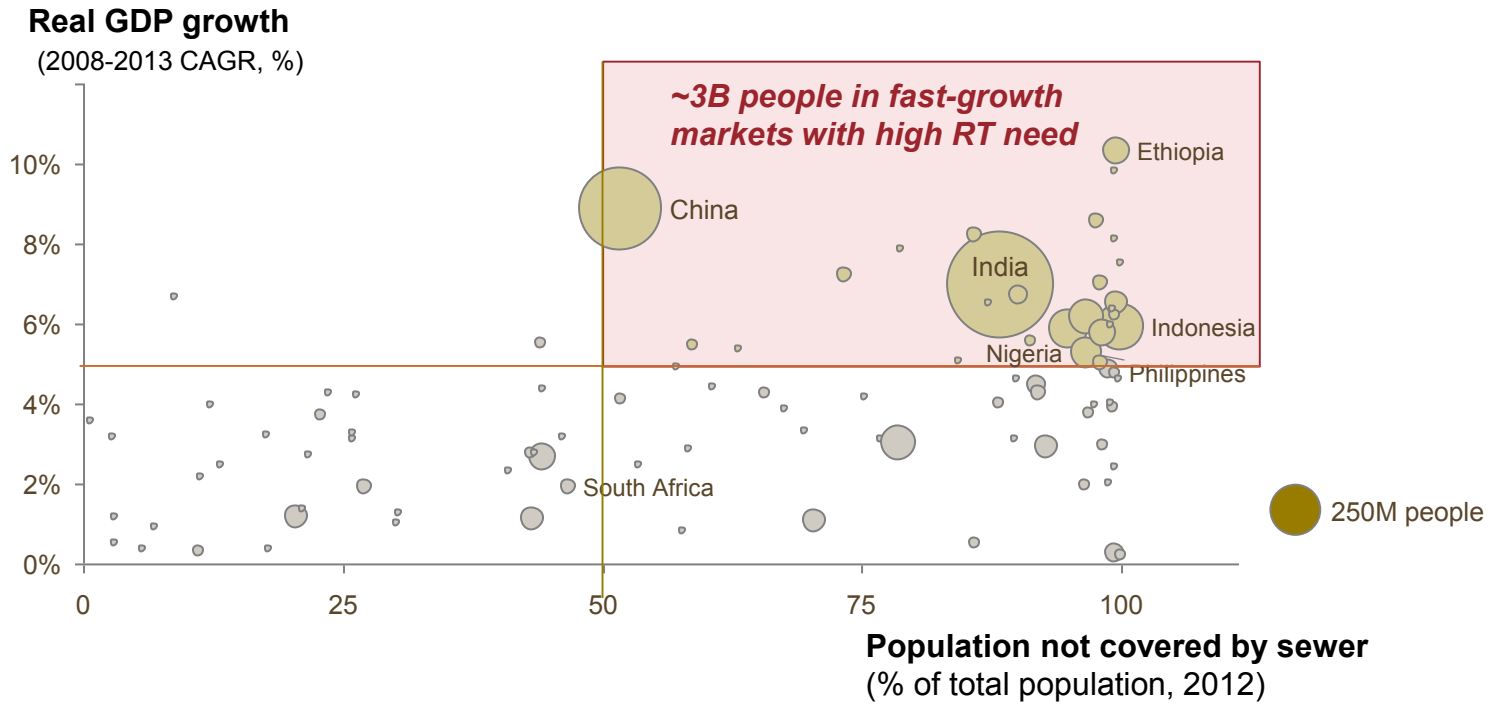
SEWERAGE

THE REINVENTED TOILET OPPORTUNITY REPRESENTS A POTENTIAL $8B+ GLOBAL ANNUAL OPPORTUNITY



Source: BCG Analysis for the Bill & Melinda Gates Foundation

INTRODUCTION OF AN REINVENTED TOILET WILL PROVIDE A UNIQUE PLATFORM TO GROW IN DYNAMIC EMERGING MARKETS



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REINVENTED TOILET PROGRAM: DESIGNED TO ADDRESS EACH OF TODAY'S LIMITATIONS

ELIMINATE PATHOGENS

- Eliminate safety concerns via handling
- Reduce disease burden
- Improve environmental safety

OPERATE OFF GRID

- Eliminate need for external inputs such as water and energy
- Make portable and easy to install

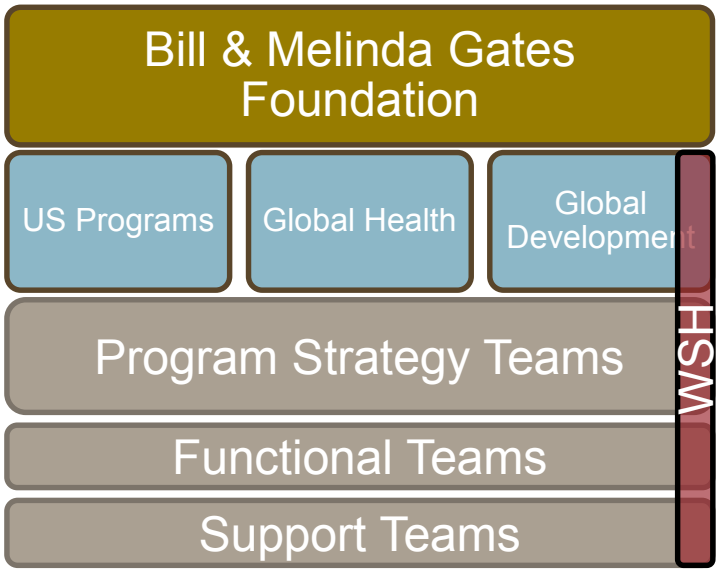
CONVEY LOW LIFE-CYCLE COSTS

- Reduce need for pit emptying
- Ensure a sustainable business model, including maintenance via service providers

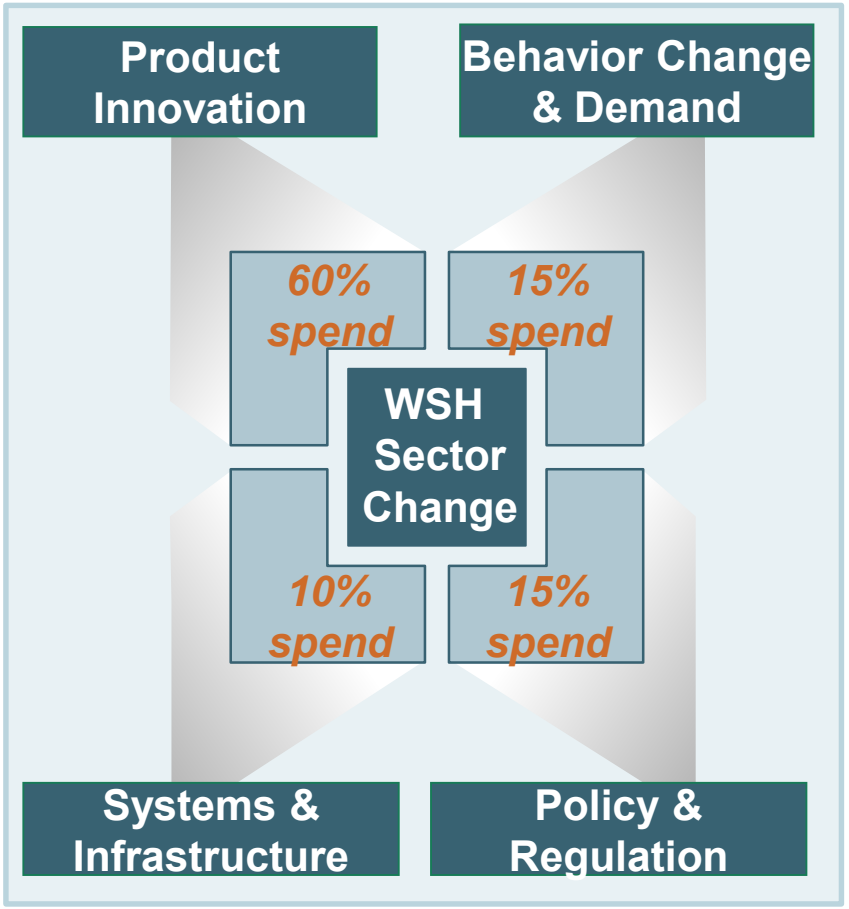
PRESENT MODULAR, ATTRACTIVE INTERFACE

- Reduce / eliminate construction costs
- Provide clean and dignified product
- Eliminate odors and waste

BMGF- WSH



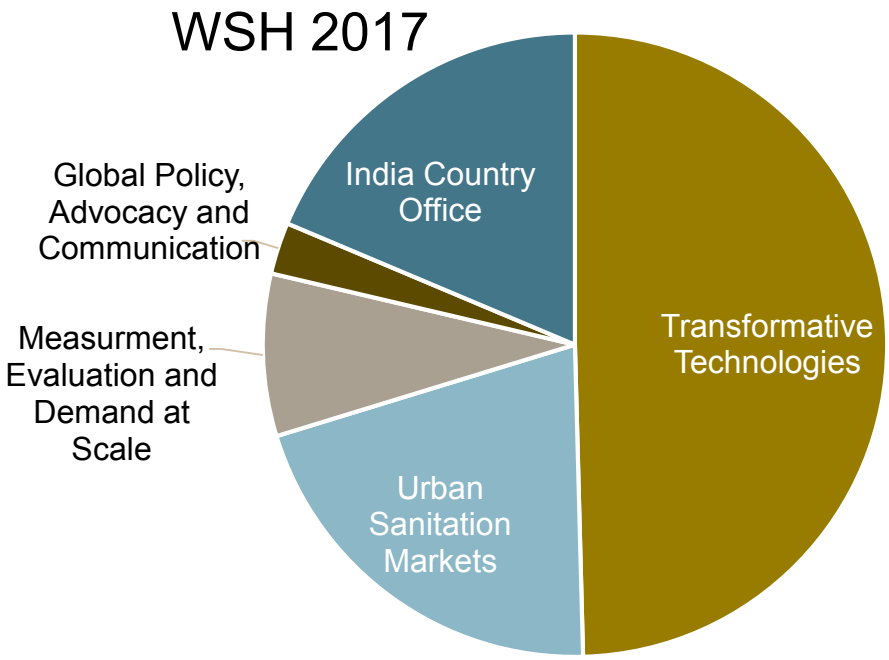
THEORY OF CHANGE



BMGF – WSH Vision:

Through partnerships, fundamentally transform the sanitation sector to reach universal use of sustainable sanitation, which contribute to health, economic, and gender equality outcomes for the world's underserved

BMGF – WSH TACTICAL APPROACH



Appropriate technological approaches exist

- Develop, integrate, repurpose existing technology and approaches

We need to think like a business

- Uncover optimum business models for both CapEx and OpEx for government and entrepreneurs

The true challenge

- Accelerate maturity of the technology, market and political will

TRANSFORMATIVE TECHNOLOGIES: 4 SUB-PORTFOLIOS

1. REINVENTED TOILET

Single-unit (SURT)

Multi-unit (MURT)

2. OMNI INGESTOR

3. OMNI PROCESSOR

Household scale — *Multi-unit scale* — *Pumping and processing*

4. GLOBAL ISO-STANDARDS – TECHNOLOGY AGNOSTIC, OPERATIONAL PERFORMANCE BASED

- *Draft ISO standard for the Reinvented Toilet published Sept 1st, 2016 – Open for public comment*

THROUGH OUR TECHNOLOGY PARTNERS, WE HAVE TACKLED SIGNIFICANT TECHNICAL CHALLENGES

- Solid/liquid separation
- Energy recovery
- Novel interfaces
- Water efficient flush
- Advanced reactor-based systems
- Scaling down of physical and mechanical processes
- 100% pathogen removal
- Repurposing of existing components
- Wide range of thermal processes
- Electrochemical disinfection
- New materials and coatings
- Controls and monitoring systems

… LEADING TO PROOF OF CONCEPT AND DE-RISKING PRODUCT DEVELOPMENT

EXAMPLES OF LEADING RT PROTOTYPES

TO BE DISCUSSED IN DETAIL LATER TODAY

LOUGHBOROUGH UNIV.

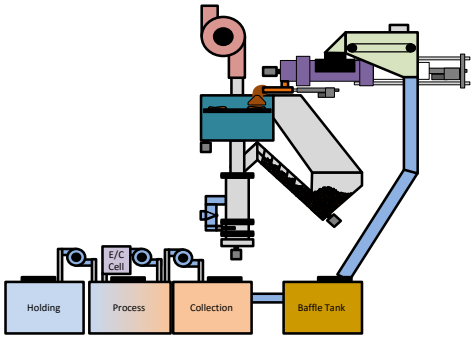
Hydrothermal carbonization

CALTECH

PV + electrochemical process

RTI INTERNATIONAL

Combustion + electrochemical process



Already in field trials – more designs will enter trials this year

BEYOND R&D: CONTINUE TO HELP EXPAND THE INDUSTRY

Enabling environment

Collaborate with local governments to enhance demand for sanitation

Support implementation of international product standards

Marketplace readiness

Foster a supportive regulatory environment

Leverage relationships with development banks to facilitate access to financing

GLOBAL MARKETPLACE IS MORE READY THAN EVER AND PUBLIC + PRIVATE SECTORS ARE SEEKING ALTERNATIVES

SANITATION HAS HIT WORLD STAGE

GOVERNMENTS ACTIVELY INVESTING

"Sanitation should not be seen as a political tool, but should only be connected to patriotism and commitment to public health."

--Narendra Modi, PM of India

"We'll team up with ministers of education to put sanitation facilities in every school."

--Jim Yong Kim, President of World Bank

India is subsidizing **~$200 per rural household** ($66 per urban) to enable "a toilet in every home by 2019" for a total commitment of ~$22B

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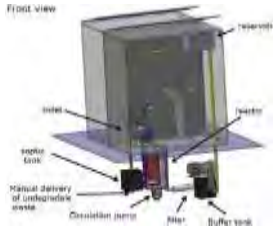
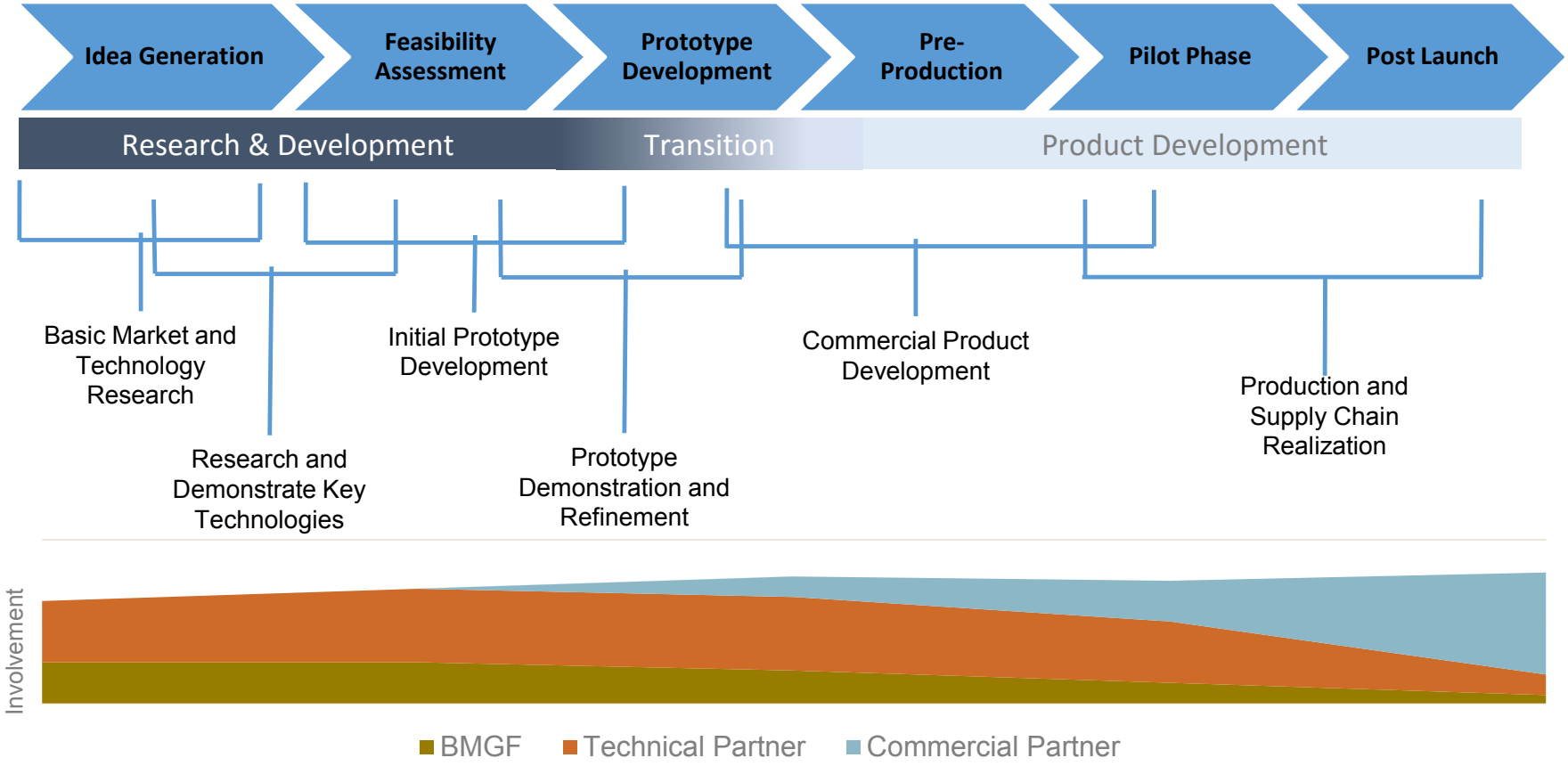
WE ARE SEEKING PARTNERS ALONG THE VALUE CHAIN TO PRODUCTIZE AND BRING TECHNOLOGIES TO MARKET

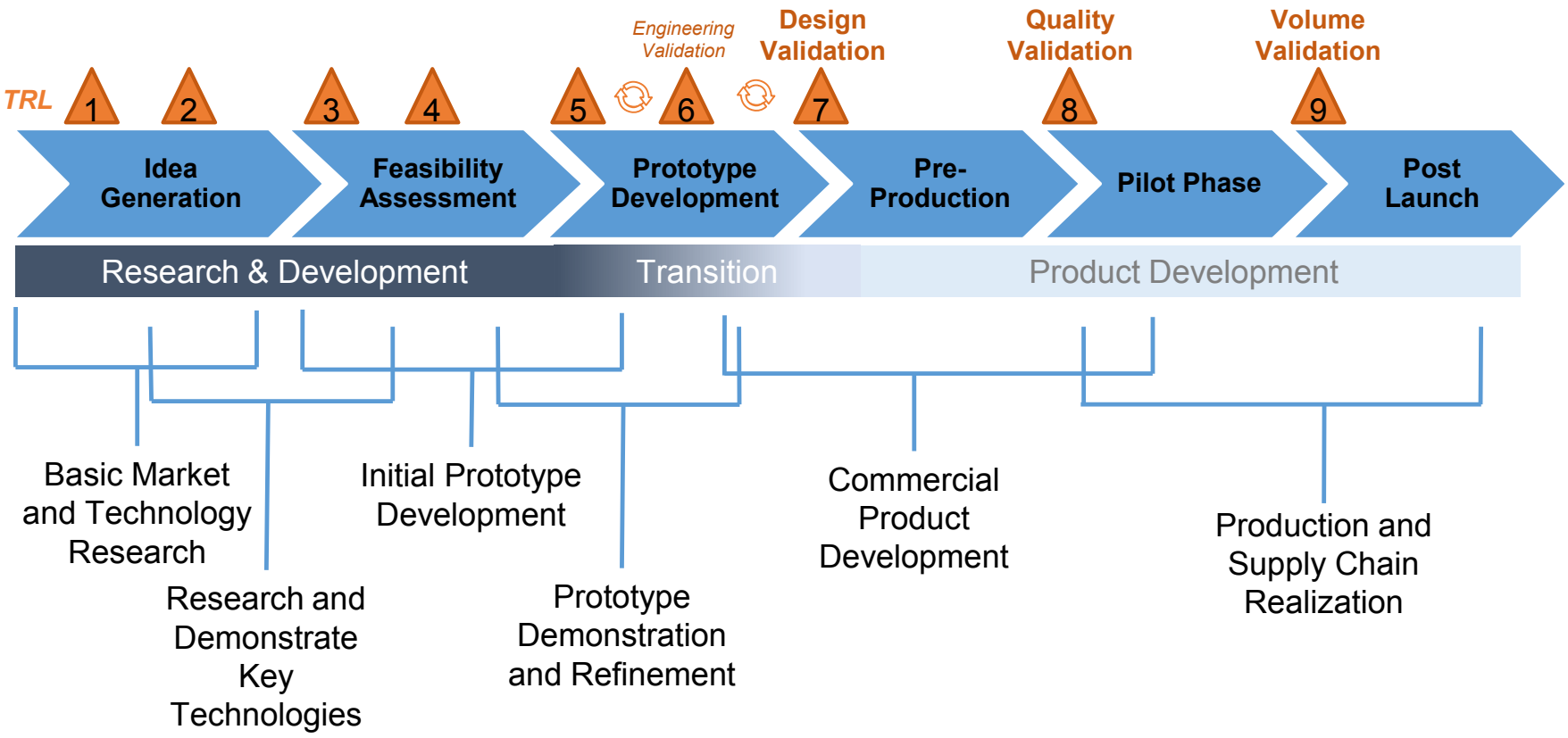
Sub-System Manufacturer	System Integrator	Distributor
		
Capabilities		
Research and Development	Research and Development	Product Distribution
Sub-system Design	System Design	Installation
Product Sourcing	Product Sourcing	Post-Sales Service and Support
Sub-system Integration	System Integration / Assembly	Operator Training
Sub-system Manufacturing	Manufacturing	Maintenance

WE AIM FOR COMMERCIAL PARTNERS TO LEAD

BMGF and technical partner support the transition to a product-focused process

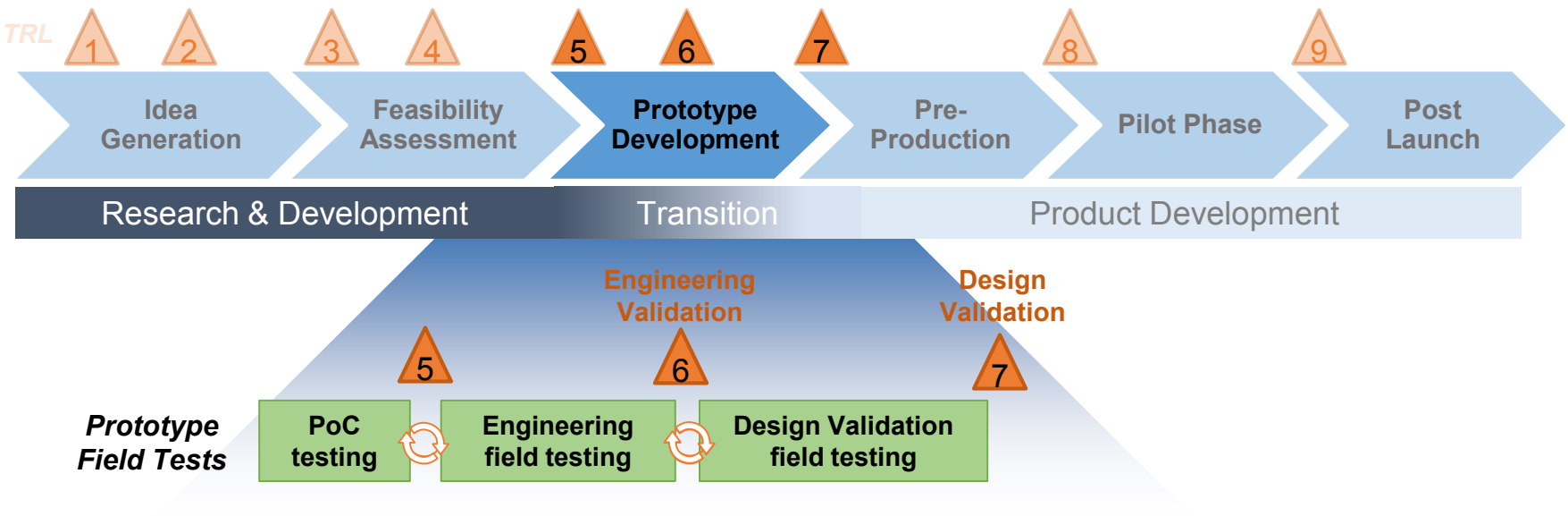


New Product Development



Note: TRL is a description of technology maturity only

Prototype Development: Iterative and effort-intensive

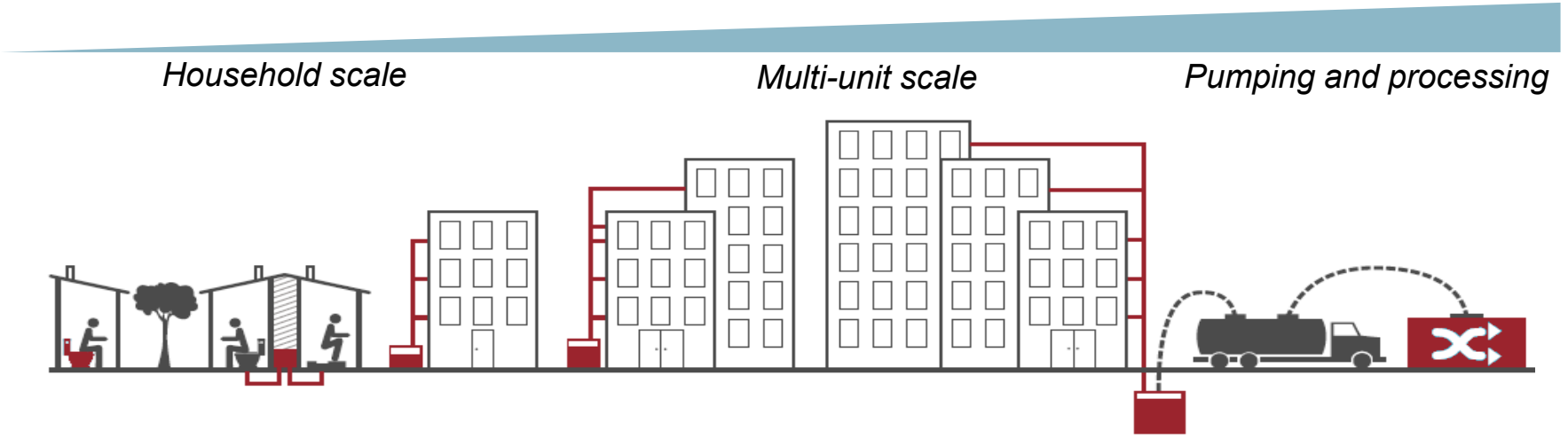


Note: Prototype development captures three stages: Proof of Concept, Engineering Validation, and Design Validation and multiple TRLs

THE TRANSFORMATIVE TECHNOLOGIES (TT) PORTFOLIO SUPPORTS A RANGE OF SYSTEMS AND CAPACITIES

From household systems that can be used inside the home, to external units that process waste from multiple dwellings or apartment units, the RT portfolio includes technologies for a range of use cases, with varying sizes and capacities.

RT SUPPORT A RANGE OF USE CASES, SIZES, CAPACITIES

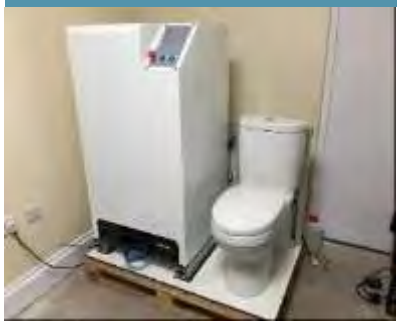


OUR CORE PROCESSING TECHNOLOGIES

ELECTROCHEMICAL

Caltech

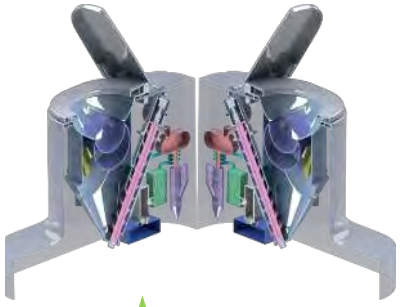
WET OXIDATION



Loughborough University

eawag aquatic research

DRY COMBUSTION



University of Toronto

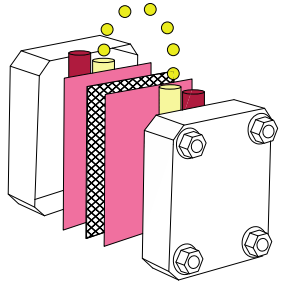
Cranfield University

Duke University

RTI International

Janicki Bioenergy

BIOLOGICAL



USF University of South Florida

UWE Bristol

★ Licensed technology to commercial entity
★ Under commercial license discussion
★ Prototype in the field in 2017

Discussion / inputs / suggestions

WATER RESEARCH, DEVELOPMENT AND INNOVATION PRIORITIES: VIEWS FROM A UN WATER THINK TANK

VLADIMIR SMAKHTIN

United Nations University,
Institute for Water, Environment and Health (UNU-INWEH), Hamilton, ON, Canada

Water JPI & NSERC International workshop:
"RDI international cooperation development for tackling global water challenges"
Montreal, Canada, 26-27 April 2017

UNITED NATIONS UNIVERSITY
UNU-INWEH
Institute for Water, Environment and Health

UNU-INWEH AT A GLANCE

- Part of the larger UNU – an academic arm of UN. UNU is a network of 13 policy research and training Institutes dealing with various aspects of global development
- Member of UN-Water: a network of over 30 UN agencies dealing with various water issues
- Established in 1996. Supported by the Government of Canada. Hosted by McMaster University
- Main Focus: Developing Countries; Global
- Priority Themes:
  - Information and Policy support of SDG process and other global agreements (Sendai, Paris), as related to water
  - Unconventional water sources – for alleviating global and regional water scarcity
  - Water security of countries, and “water and security” links
  - Water-related health risks
  - Water-related disaster management through ecosystem-based solutions

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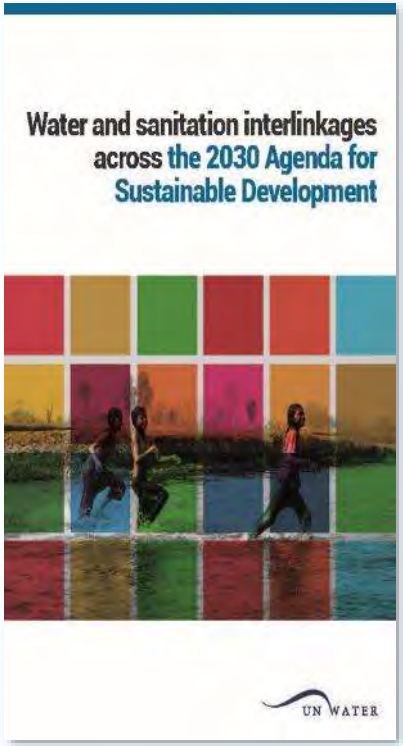
UNIVERSITY

UNU-INWEH
Institute for Water,
Environment and Health

WATER AND SUSTAINABLE DEVELOPMENT

17 goals, 169 targets, several indicators per target



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Institute for Water, Environment and Health

SDG POLICY SUPPORT FOR UN MEMBER STATES

- 'Ticking off" indicators (e.g. of SDG6) will not mean that development is sustainable:
  - E.g. Target 6.1 refers to equitable access that is affordable for all. But: The indicator for this target does not refer to equity or affordability

THERE ARE GENERIC WATER POLICY GAPS IN THE SDG PROCESS THAT ARE EQUALLY RELEVANT TO NORTH AND SOUTH – AN OPPORTUNITY FOR COLLABORATION.

- Applicable to any country. Currently being tested in Pakistan, Ghana, Tunisia, Costa Rica, Korea

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Institute for Water, Environment and Health

ECOSYSTEM-BASED SOLUTIONS FOR WATER-RELATED DISASTERS

- Deaths from floods and droughts – in tens of thousands annually
- People affected – in hundreds of millions
- Economic damage – over USD 150 bill and growing. This essentially consumes all development aid
- 25 targets related to disaster reduction in 10 of the 17 SDGs
- New solutions possible based on natural infrastructure and addressing both extremes

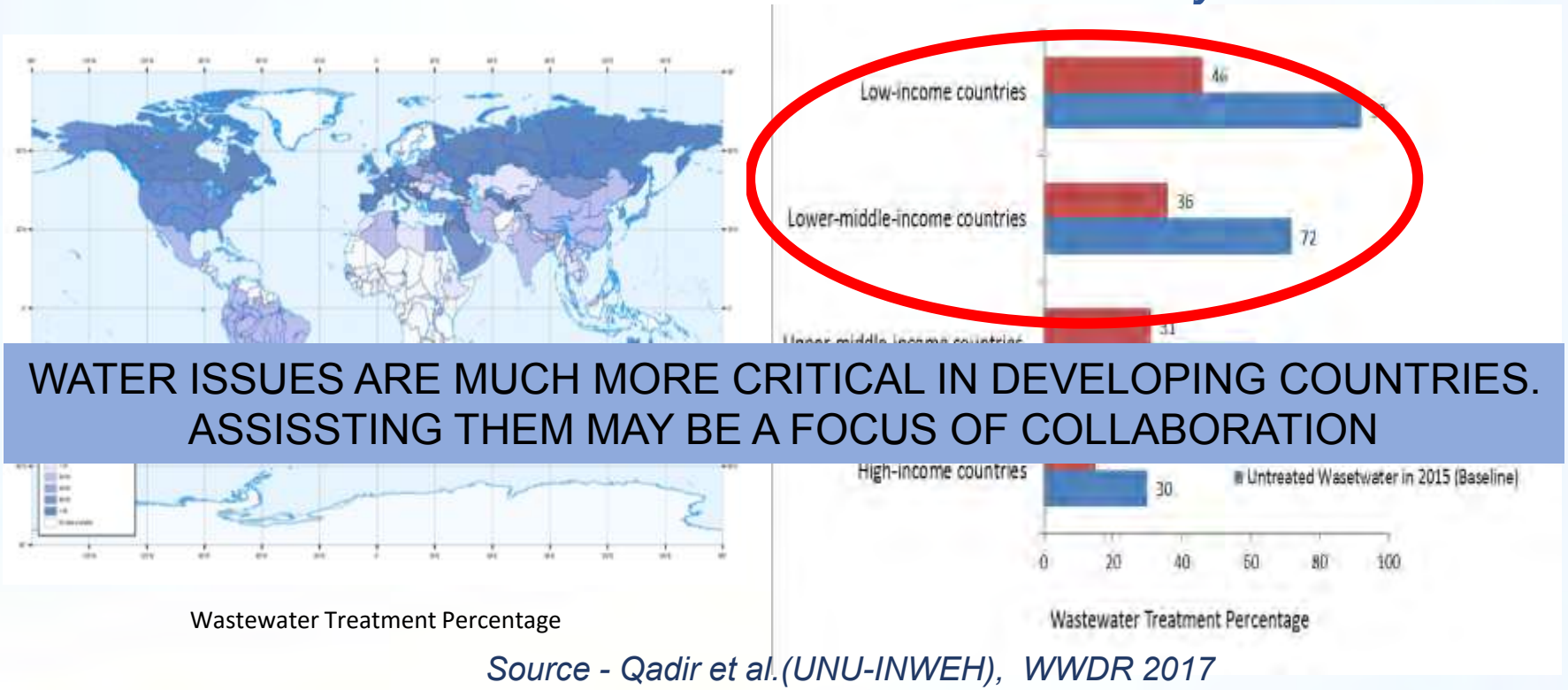
INNOVATIVE SOLUTIONS FOR OLD WATER PROBLEMS EXIST. THEY NEED COLLABORATION AND INVESTMENTS TO ROLL OUT

- Alleviates both floods and droughts with < 1% of basin area for flood harvesting
- Cost around USD 1 Bill for a Basin of 150,000 km2
- Payback time of 7-14 years

Source: Pavelic et al, 2012

WASTEWATER – A RESOURCE IN WATER SCARCE AREAS

TARGET 6.3: halve the untreated use by 2030



WATER ISSUES ARE MUCH MORE CRITICAL IN DEVELOPING COUNTRIES. ASSISSTING THEM MAY BE A FOCUS OF COLLABORATION

Source - Qadir et al.(UNU-INWEH), WWDR 2017

'Wastewater Catch 22': Benefits poor communities, but comes with unacceptable health risks. Need a shift from health and environment spending to preventative wastewater treatment

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UNU-INWEH

Institute for Water, Environment and Health

SPECIFIC RECENT OR EMERGING INTERNATIONAL WATER INITIATIVES

- Alleviating Water Scarcity in Agriculture (FAO)
- Groundwater Solutions Initiative for Policy and Practice – GRIPP (IWMI)
- Panta Rei - “everything flows” (IAHS).
- Water Decade 2018-2028 (UN)

CHALLENGES FOR COOPERATION IN WATER RDI

- Lack of common goals: too many water-related problems and varying national priorities
- Continuing lack of data on a range of water-related issues and processes

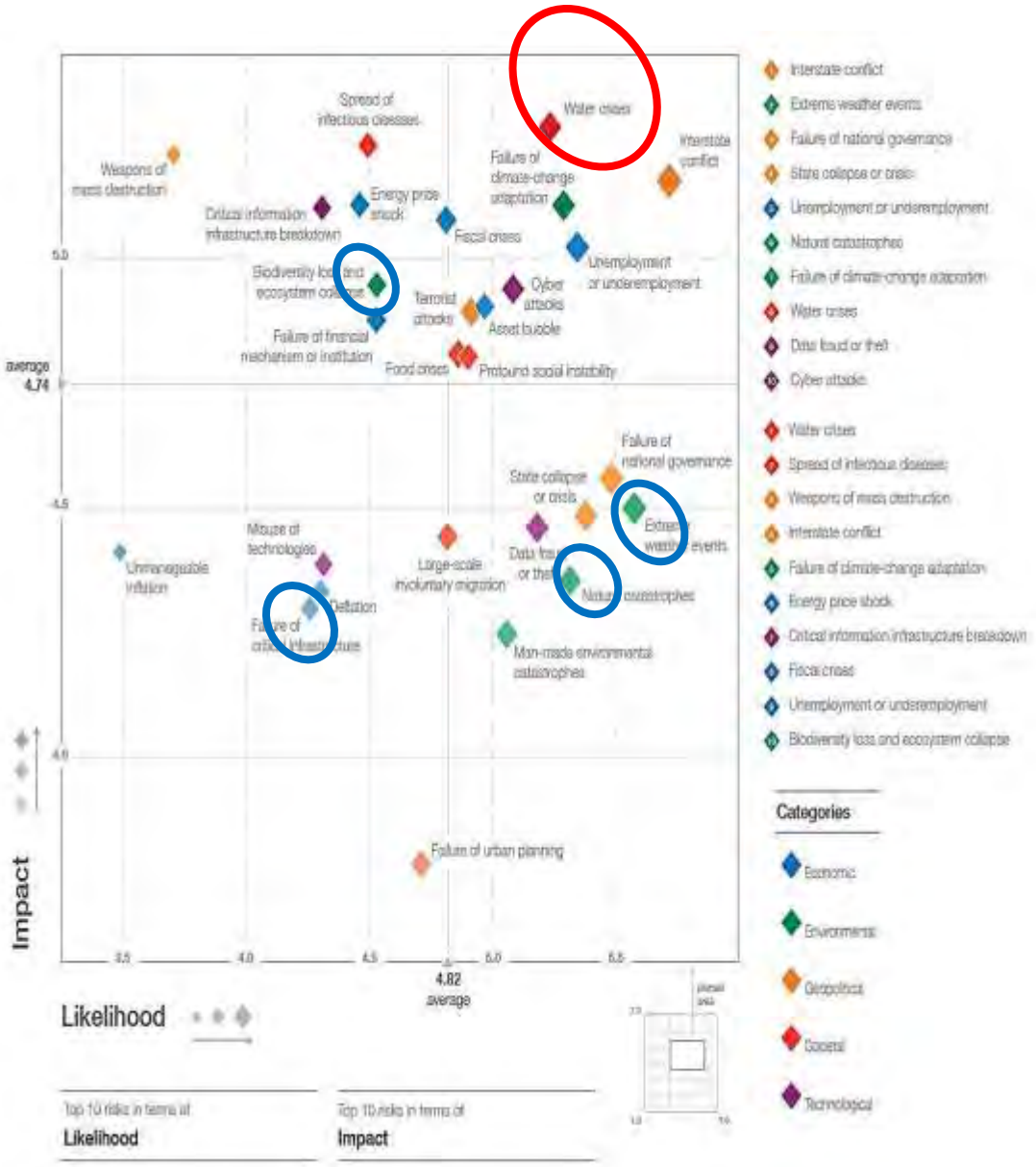
WITH GOOD WILL AND COMMON SENSE THESE ARE ALL MANAGABLE

- Too complex (and increasing complexity of) rules of engagement
- Continuing disconnect between research and policy

UNITED NATIONS UNIVERSITY
UNU-INWEH
Institute for Water, Environment and Health

THANK YOU

WATER AND GLOBAL RISKS



Source: World Economic Forum, 2015

Discussion / inputs / suggestions

Presentation of the interactive sessions

Dominique Darmendrail
Water JPI Coordinator

Interactive Session 1

Challenges for Multilateral cooperation?

- Moving from a bi-lateral to a multilateral cooperation?
- Challenges linked to the current cooperation instruments
- Working with institutions with different profiles
- How to define common water priorities between America and EU?
- Specific issues for the region:
  - data collection / validation and harmonization,
  - Open data,
  - Any other suggestions

Roundtables

NAME	SURNAME	INSTITUTION	ROUND TABLE
Per	BACKE-HANSEN	Water JPI partner / RCN, Norway	1
Sally	GUTIERREZ	US-EPA, USA	1
Matthew	MCCANDLESS	IISD-ELA, Canada	1
Anne-Hélène	PRIEUR-RICHARD	Future Earth	1
Vladimir	SMAKHTIN	UNU - Institute for Water, Environment and Health	1
Nadia	ZAMAN	Water JPI partner / NSERC, Canada	1
Zaïra	TURCHI	CONFAP, Brazil	1
Dominique	DARMENDRAIL	Water JPI Coordinator / ANR, France	2
Carl	HENSMAN	Bill & Melinda Gates Foundation	2
Lucas	LUCHILO	MINCYT, Argentina	2
Nicholas	REID	Ryerson Urban Water, Canada	2
Catalina	SANTAMARIA	Convention on Biological Diversity	2
Alyson	SURVEYER	Future Earth Global Hub - Montréal	2
Luis	TUPAS	USDA-NIFA, USA	2
Howard	WHEATER	Global Institute for Water Security, Canada	2
Juliette	ARABI	Water JPI Secretariat / ANR, France	3
Khaled	AWAD	CONICYT, Chile	3
David	COATES	Convention on Biological Diversity	3
Jacqueline	JORGE	Global Affairs Canada	3
Mao	TAKEUCHI	Belmont Forum	3
Nicole	GENEREUX	IDRC, Canada	3
Anne-Marie	THOMPSON	Water JPI partner / NSERC, Canada	3
David	VELASCO	Water JPI partner / CDTI, Spain	3

Wrap-up of the first interactive session and conclusion of the day I

Table chairs and

Dominique Darmendrail

Discussion / inputs / suggestions

Agenda – Day 2

9:00-9:30	**Welcome coffee**	
9:30-10:30	**Interactive Session 2 – How to cooperate together?** • What are the cooperation challenges with Europe? • Which activities of common interest? • Which tools for this cooperation? Is the ERA-NET Cofund a good model for American countries? • How to simplify the current complexity?	All participants
10:30-11:00	Coffee break	
11:00-11:30	Wrap-up of the 2nd interactive session	Table chairs and Dominique Darmendrail
11:30-12:30	Follow-up Actions / Roadmap for future cooperation • Identification of potential interests • Special needs / documents / actions for developing the cooperation with the Water JPI	All participants
12:30-13:00	Closure of the workshop and outlook to next Water JPI activities	Dominique Darmendrail Water JPI coordinator
13:00-14:00	Lunch	

IDRC perspectives

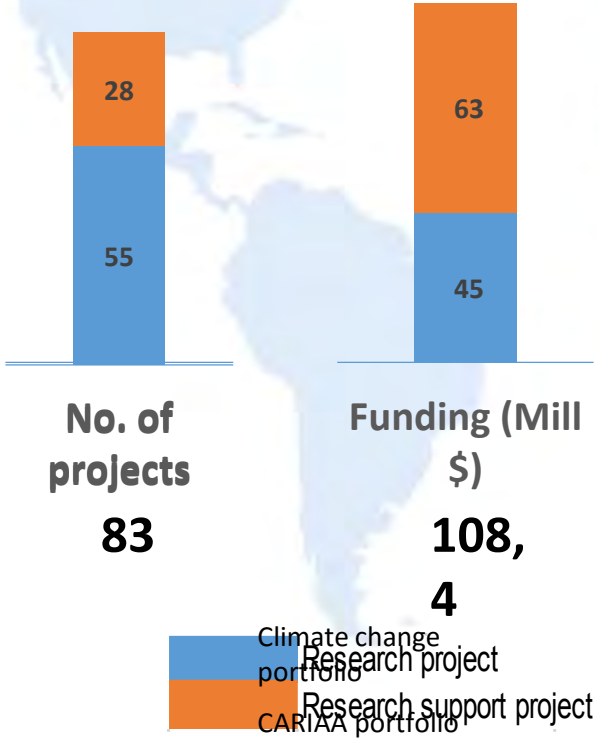
Nicole Genereux

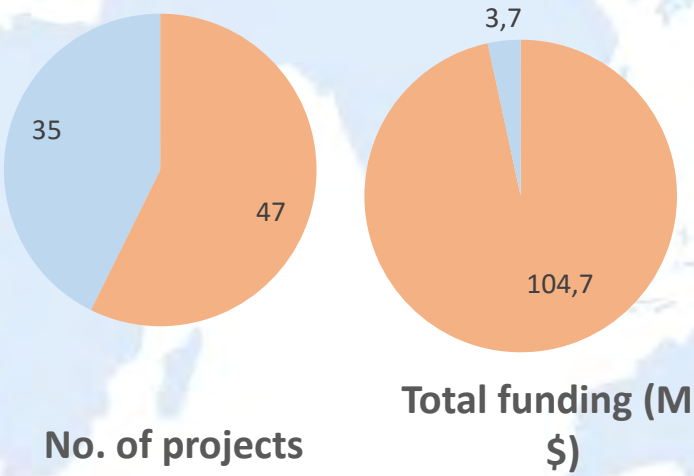
IDRC investments in climate change research

WaterJPI workshop

Montreal, April 2017

An overview of the Climate Change program



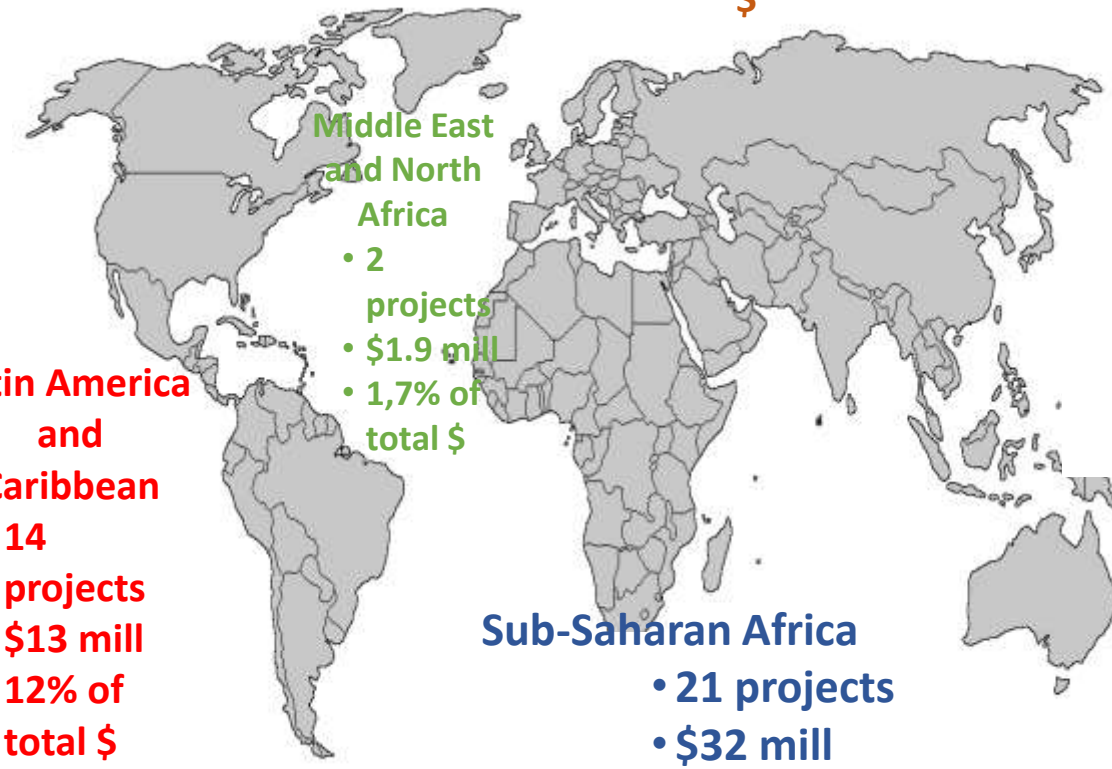


Canada

The Climate Change program in regions

- 83 projects (RP+RSPs+Awards)
- 108,4 Mill

Global
- 15 projects
- $ 3.9 mill
- 3.5 % of total $



Middle East and North Africa
- 2 projects
- $1.9 mill
- 1,7% of total $

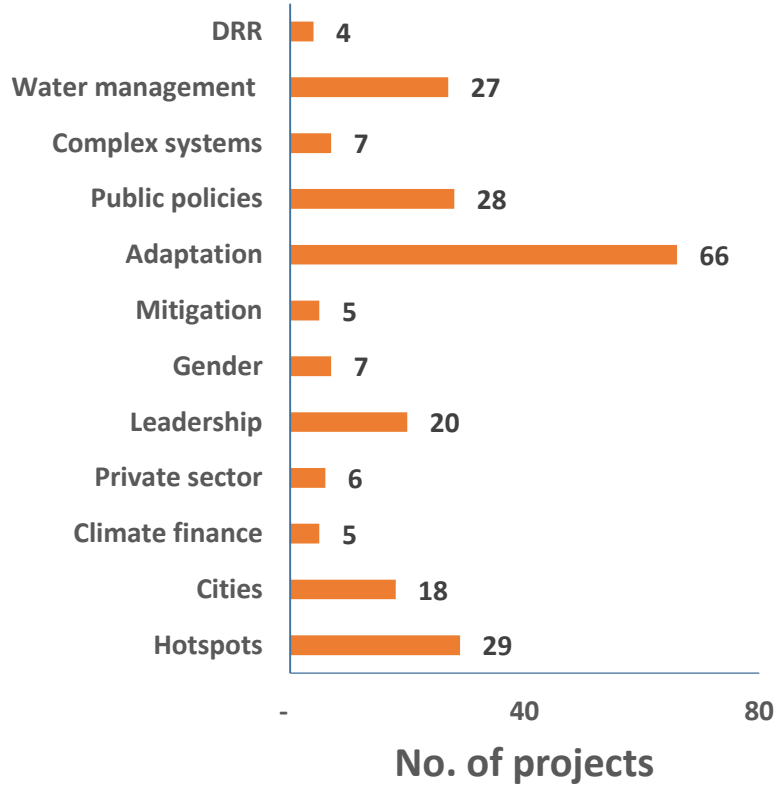
Asia
- 31 projects
- $57.7 mill
- 53% of total $

Latin America and Caribbean
- 14 projects
- $13 mill
- 12% of total $

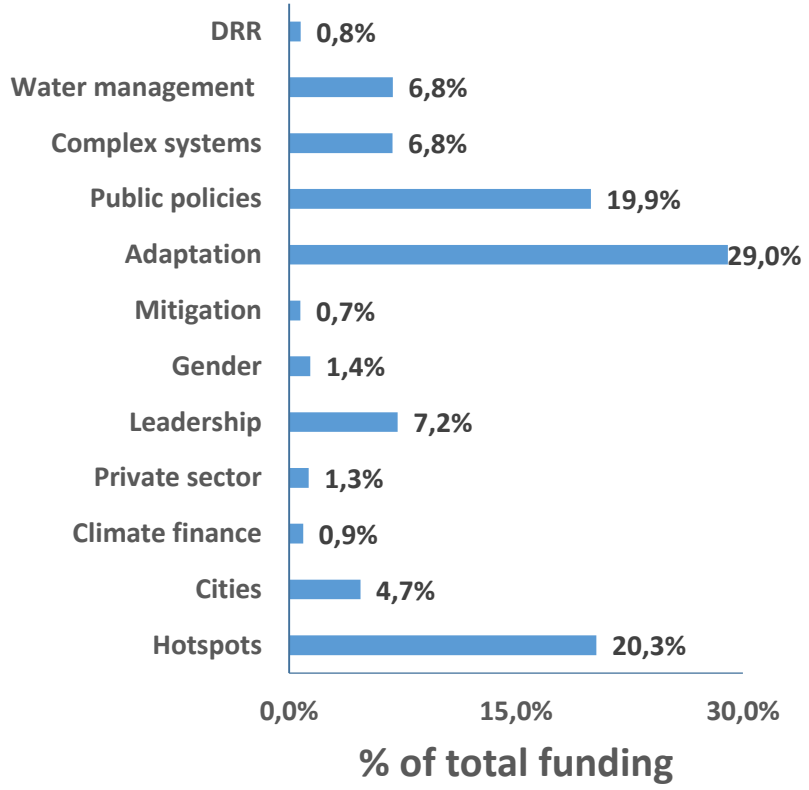
Sub-Saharan Africa
- 21 projects
- $32 mill
- 29.5% of total $

Overview of program investments by themes

Total number of active projects: 83

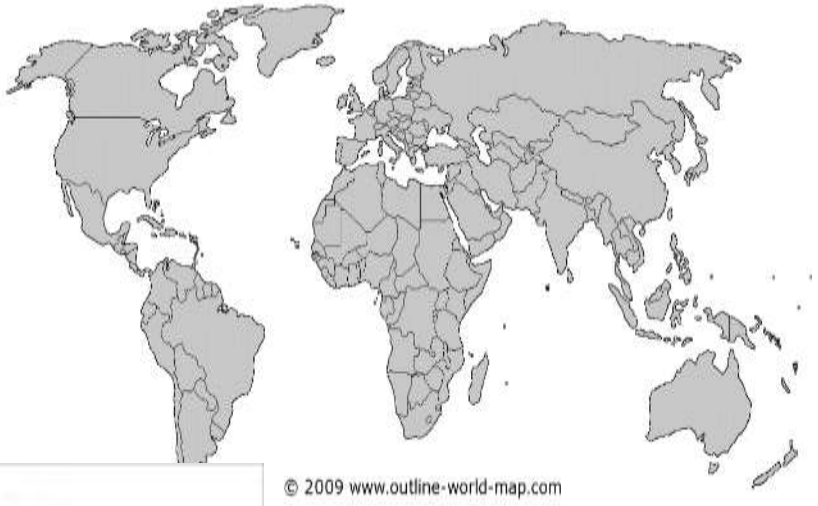


Total funding: $108,386,148

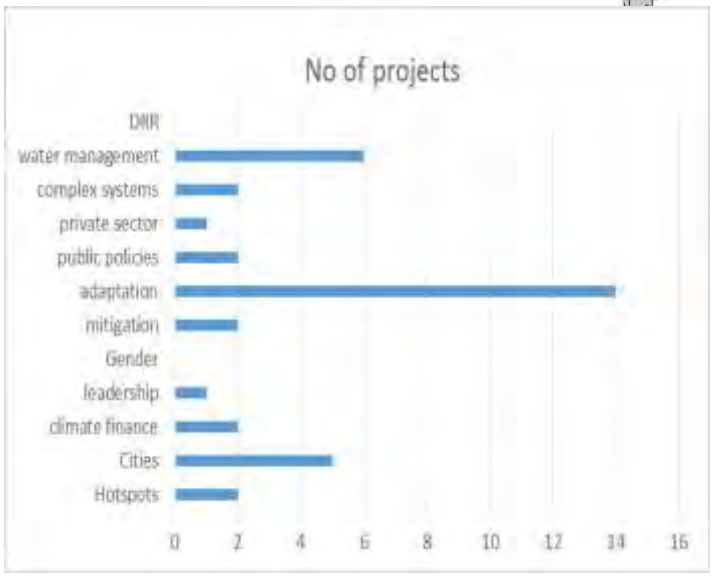


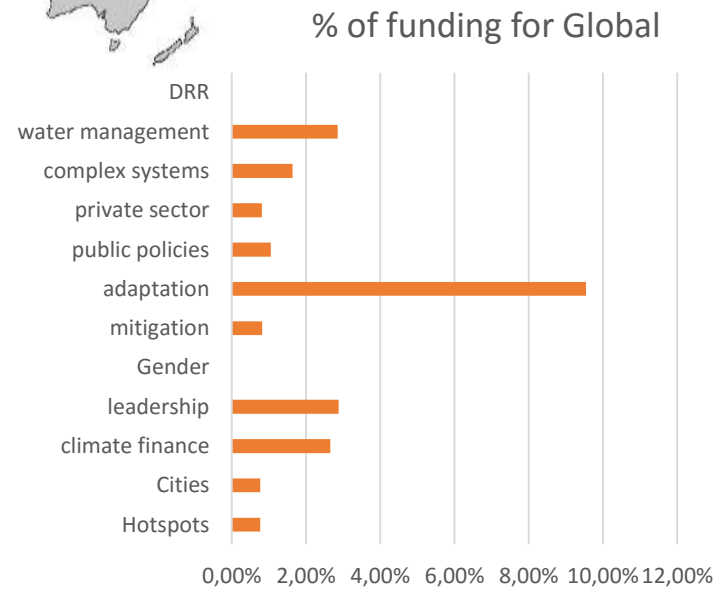
***Assumption**: focused themes within a project were shared equally the funding*

Thematic Investments for global



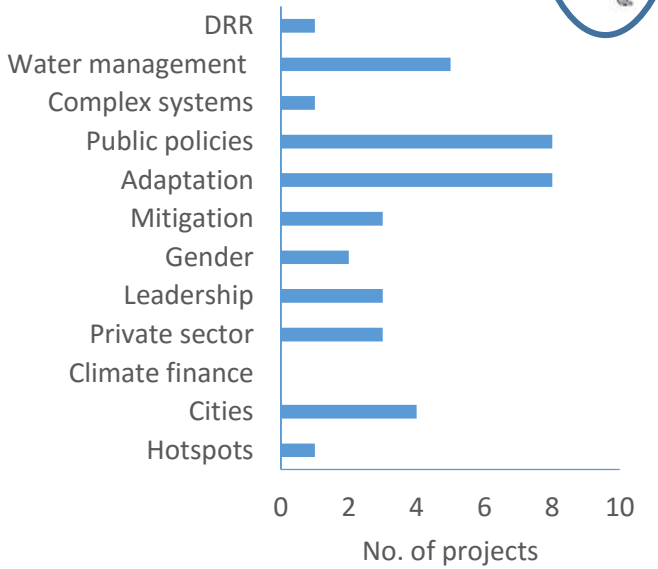
Global: $ 3,951,297.

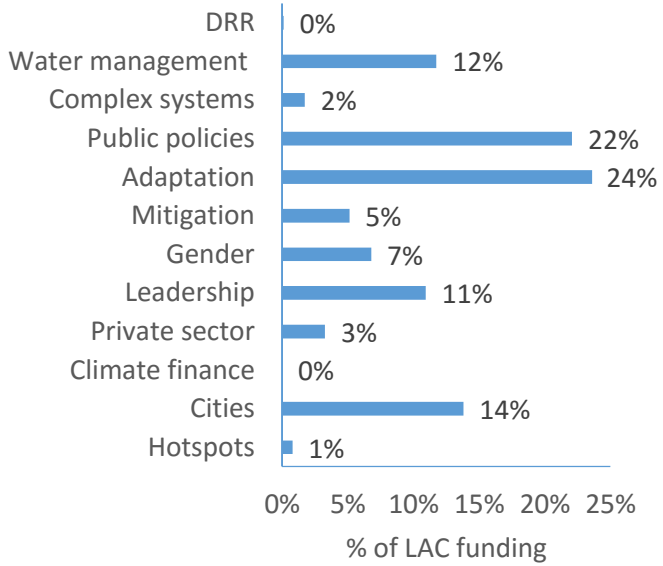




Thematic Investments for Latin America and Caribbean (LAC)

SSA: $12,943,500





IDRC and Water JPI

- Agricultural Innovations in the Tropics
- Cofund Waterworks 2015
  - Canada Lead – UBC
  - Others researchers from Brazil, Costa Rica, Germany, Denmark, Sweden, Taiwan.
  - Total budget 1.3M
  - IDRC grants Brazil and Costa Rica directly , 142 K each.

  Challenges
  - new partnership through NSERC, (agreement with NSERC) (no involvement in the review process)
  - transaction costs versus the research grants,
  - equity amonst the teams members

Interactive Session 2

How to cooperate together?

- What are the cooperation challenges with Europe?
- Which activities of common interest?
  - Shared RDI agenda, mapping, joint calls, knowledge hubs, mobility, alignment of national programmes, ...
- Which tools for this cooperation?
  - Is the ERA-NET Cofund a good model for American countries?
- How to simplify the current complexity?
  - Different funding models, different evaluation criteria, different funding rate and different S&T competencies

Presentation of the interactive sessions

Dominique Darmendrail
Water JPI Coordinator

Roundtables

NAME	SURNAME	INSTITUTION	ROUND TABLE
Per	BACKE-HANSEN	Water JPI partner / RCN, Norway	1
Sally	GUTIERREZ	US-EPA, USA	1
Matthew	MCCANDLESS	IISD-ELA, Canada	1
Anne-Hélène	PRIEUR-RICHARD	Future Earth	1
Vladimir	SMAKHTIN	UNU - Institute for Water, Environment and Health	1
Nadia	ZAMAN	Water JPI partner / NSERC, Canada	1
Zaïra	TURCHI	CONFAP, Brazil	1
Dominique	DARMENDRAIL	Water JPI Coordinator / ANR, France	2
Carl	HENSMAN	Bill & Melinda Gates Foundation	2
Lucas	LUCHILO	MINCYT, Argentina	2
Nicholas	REID	Ryerson Urban Water, Canada	2
Catalina	SANTAMARIA	Convention on Biological Diversity	2
Alyson	SURVEYER	Future Earth Global Hub - Montréal	2
Luis	TUPAS	USDA-NIFA, USA	2
Howard	WHEATER	Global Institute for Water Security, Canada	2
Juliette	ARABI	Water JPI Secretariat / ANR, France	3
Khaled	AWAD	CONICYT, Chile	3
David	COATES	Convention on Biological Diversity	3
Jacqueline	JORGE	Global Affairs Canada	3
Mao	TAKEUCHI	Belmont Forum	3
Nicole	GENEREUX	IDRC, Canada	3
Anne-Marie	THOMPSON	Water JPI partner / NSERC, Canada	3
David	VELASCO	Water JPI partner / CDTI, Spain	3

Wrap-up of the second interactive session

Table chairs and

Dominique Darmendrail

Discussion / inputs / suggestions

Wrap-up of the African IC Workshop

Tangier (Morocco)

30 April 2017

Outcomes of Tangier workshop (1/4)

- Challenges for Multi-Lateral Cooperation:
  - Lack of knowledge about what is a JPI
  - Different initiatives: visibility and complementarity
  - more formal exchanges with interested organisations (on a long term)
  - More information and agreement on procedures / processes:
    - Every thing in common! Except funding

Outcomes of Tangier workshop (2/4)

- Challenges for Multi-Lateral Cooperation on water:
  - no complete agreement on priorities between transcontinental and regional needs? How to inmplement?
  - stay open and change priorities depending on the new comers
  - Support national programme setting: when drafting a national strategy, need to look at the ones provided by the others and by the different JPIs

Outcomes of Tangier workshop (3/4)

- Needs for cooperation:
  - Funding instruments:
    - ERA-NET Cofund = heavy tool, but cofund welcome (can avoid blocking the ranking list through the use of extrafunds)
    - New tools? ERANET Like
  - Alternative need: Access to the infrastructures with a wider distribution
  - Provide a platform with data about the projects implemented
  - Help the researchers to know each other and establish relevant Consortia
  - Develop capacity building to researchers for proposal drafting

Outcomes of Tangier workshop (4/4)

- Interests shown:
  - Some countries interested to become observer of the Water JPI
    - Proposed status under discussion
  - Strong interest for the Knowledge Hub but need to enlarge the topic (from emerging contaminants to contaminants) to be relevant for the African context
- Build interactions with PRIMA
- Develop Water JPI communication document for new comers

Follow-up Actions/ Roadmap towards Joint Actions

Dominique Darmendrail
Water JPI Coordinator

Follow-up of Actions
Roadmap towards joint actions

- Selling the « JPI »:
  - Position in the RDI chain (ERC vs. Strategic programmes)
  - Individual agencies should not loss identity / visibility in the multilateral network communication
  - Connecting / integrating national and international agendas
    - Solving domestic challenges when developing international cooperation
  - Benefit from coordination in an international context, optimise dissemination of outputs
  - Conditions for engaging with the JPI
  - Show how this complement the other cooperations:
    - Show added-value compared to different funding application opportunities?
    - Bi-lateral for building strong relations between countries, start scientific diplomacy

Follow-up of Actions
Roadmap towards joint actions

- Cooperation Models:
  - Between public institutions
    - Both models have merits
    - Use the right model / tool for adressing the right challenge
    - Work with different « profiles » (different experiences, mandates) is possible if common objectives …. Specific (& complementary) roles
  - With industry / economic sector:
    - To be further detailed, vs. Their needs, their willingness to contribute
    - Investments in commercialisation?
  - With foundation(s): explore further meanss of cooperation (topics, countries of interest, types of joint activities, bridging activities)
  - In cooperation with all existing institutions / networks (Belmont Forum, Future Earth, GWRC, UNESCO, UN Water, …)

Follow-up of Actions
Roadmap towards joint actions

- Be flexible and open:
  - Continuous, dynamic, adaptive tool box for enhancing the availability of funds for the different actions
  - Explore Brokering model for next developments:
    - Partners offering opportunities to JPI, for co-implementing various activities
    - Data sharing? Technologies transfer? …
  - Funding options for all proposed activities (calls, access to infrastructures, mobilities schemes, data collection on the long-term, project databases, …)
- Explore ways of supporting financially the participation of developing countries

Follow-up of Actions
Roadmap towards joint actions

- The Strategic Research and Innovation Agenda:
  - Adapt it to global dimensions, mention regional challenges?
  - From a common (broad) goal to more focused local conditions (regional perspectives)?
  - Support its use for setting national strategy?
- Connection with the previous completed science (« our treasure »)
- Priorities setting:
  - More focus in proposed activites for involving developing countries
  - Work with an international advisory board with stakeholders, from the different world regions?
    - Have an « International Panel on Water Challenges » (as the GIEC)?

Follow-up of Actions
Roadmap towards joint actions

- Highlight some topics? Different visions on some topics?
  - Eutrophication
  - Ecosystems – « right enabling environment for uptake of ecosystems based approaches for wate resources management »

- Additional Topics:
  - Adaptation of behavior to global challenges
  - Managing changes
  - Emerging challenges vs. Emerging pollutants
    - Invasive species
  - Water policy and Ethics
  - Science communication / translation into societal actions

Follow-up of Actions
Roadmap towards joint actions

- Support for Alignment (research priorities and goals, procedures, planning, timelines, ….)
  - Mapping the differences
  - Necessary shift in practices, priorities settings for adressing the global challenge
- Simplify the procedures, the administrative burden
- Facilitate the national participation in the multilateral activities:
  - From annual budget to multiannual planning

Follow-up of Actions
Roadmap towards joint actions

- For researcher communities:
  - JPI, the easier programme to fund multidisciplinary research?
  - Reduce the administrative requirements due to the different jurisdictions involved
  - IPR issues: to be clarified (see MBGF « Global Access Strategy »

Follow-up of Actions
Roadmap towards joint actions

- Data Collection:
  - A « structural problem »
  - Going beyond the current data repositories (mapping? Access conditions, background information, expertise in the field of application)
  - More data? Better use of the existing data? Big data challenge
  - Facilitate collaboration and sharing data,
  - Interoperable databases
  - under QA/QC permanent process
  - A topic for a global « research Infrastructure » (from Earth observation to local monitoring)?

Follow-up of Actions
Roadmap towards joint actions

- Open Data / Open Access:
  - Promote / fulfil Data Management Plan (to be applied during the awarded project and after the end)
  - Detail the expectations, the rules for IPR, considering national policies (e.g. 18 month Embargo)
  - See how concretely this can be put into pratice

Follow-up of Actions
Roadmap towards joint actions

- Uptake of research results:
  - A critical priority
  - For different end-users:
    - Market (through IP – patent commercialisation)
    - Policy-making – Connect research and policy

Follow-up of Actions
Roadmap towards joint actions

- Documents for "formulizing participation"
  - Engaging with the Water JPI:
    - 1 for funding organisations – Membership conditions
    - 1 for researchers / research communities
  - Detail the objectives (i.e. accelerating technologies development and uptake, enforcing policies, ….)
  - Show the added-value of such cooperation
  - Supporting common understanding

2nd Round table

Follow-up of Actions
Roadmap towards joint actions - Post

- Challenges for cooperating with Europe
  - Multiple demands from different initiatives – complementarity? Added-value?
  - Not all research bodies have funds for international cooperation
  - Complex EU system: How to simplify the current complexity?
  - Status of cooperating member:
    - interest on contributing on specific matters,
    - need for special capacity building
    - Assist them at no charge for accessing to this cooperation
    - Adapt the governance process for considering them
    - Not possible for them to pay fees – act on operational level
      - Be sponsored by another country?
    - Explore the concept of Mentorship? For funding agencies? For researchers?

Follow-up of Actions
Roadmap towards joint actions - Post

- Expected role for the JPI
  - Connecting and integrating national, European and International agendas, while associating stakeholders
  - Connecting to all initiatives / Supporting to connection
    - ERANET-LAC, EU LAC-Health, Future Earth, GWRC, UNESCO, UN Water
  - Keeping a shared visions during the entire process
  - Connect research and policy, putting research into practice
  - Raising funds?

Follow-up of Actions
Roadmap towards joint actions - Post

- Which activities of common interest?
  - All proposed are of interest
  - Particular interest: Knowledge Hubs (access to outputs)
    - set a way to access, rules of use, third party validation?
    - Standardise KH (ISO standard for storing and sharing)
    - a solution to develop KH should precede investments in new research
  - Missing
    - Technical guidances and national / international standards for the different water challenges

Follow-up of Actions
Roadmap towards joint actions - Post

- Which tools for this cooperation?
  - ERA-NET Cofund not the best tool for IC
    - Access to Common Pot is not directly correlated to what is put in
    - Training countries / agencies (Webinar) for supporting their participation
  - Belmont Forum MoU considered as a better model with
    - A global strategy to be published
    - Activities to be extended to more than 1 year
  - TAP instrument could also fit them
    - Do a pilot case
    - Who should follow the work done in different countries ? Who should pay for the coordination work?
  - Brokering Model: Partners offering opportunities to JPI, opportunities ready to implement at various levels

Follow-up of Actions
Roadmap towards joint actions - Post

- Global Challenges
  - Connect with Future Earth / Knowledge hub development – Online platform
- Regional Challenges
  - Need of regional mapping (priorities, overlaps, interactions, motivations of the different partners)
  - Connect with the Inter-American Institute for Global Change research
  - Connect with World Bank, European Investment Bank

- Follow OECD recommendations in some areas?

Follow-up of Actions
Roadmap towards joint actions - Post

- Bill and Melinda Gates Foundation
  - Interested by some activities on sanitation and on countries of interest
    - Developing activities with defined outputs
    - Joint exploratory workshop
    - Commitment for solutions
  - Uptake of results for multiplying effects
    - Licensing results
    - Decentratlisation of results in countries
    - Supporting experts for influencing policy-making

Discussion / inputs / suggestions

Closure of the workshop

Dominique Darmendrail
Water JPI Coordinator

For more information

- Joint Calls
- E-newsletters
- Water JPI events
- Projects database
- …

www.waterjpi.eu

Thank you!

Contact

waterjpisecretariat@agencerecherche.fr

Dominique.darmendrail@anr.fr

See you…