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Mr. Fayez Al Shawabkeh
Secretary General
Arab Inter-Parliamentary Union
Union interparlementaire arabe
Assemblée nationale
Place de l'Etoile
Beyrouth
Liban

Geneva, 6 June 2017

Office of the Secretary General

Dear Secretary General,

During its recent session in Dhaka, Bangladesh, the IPU Committee on Middle East Questions reaffirmed its commitment to forge ahead with the projects of peace as the only Middle East peace process initiative currently making headway, and therefore to reconvene the second Roundtable on water as soon as possible.

Following consultations it was decided that Geneva would be the most appropriate venue for the Roundtable for the moment and the proposed dates are 5 – 6 July 2017.

The Second Roundtable wishes to build on the success and positive outcomes of the first by once again inviting Arab parliaments to participate in the Roundtable along with the members of the Committee, scientific and technical experts. The Roundtable on Water represents an important platform for parliamentarians and experts to cooperate and build the future of the whole region. I would therefore encourage all delegations to bring along parliamentarians from their relevant committees dealing with water issues, advisors and experts who can share their national expertise in this field.

You will find attached the concept note and the registration form. The detailed programme of the Roundtable will be circulated later. These and other documents related to the meeting will also be available on the IPU website.

I look forward to welcoming you soon in Geneva.

Yours sincerely,

Martin Chungong
Secretary General

cc : info@arabipu.org
arab.ipu@gmail.com
Fayez.alshawabkeh@arabipu.org

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Committee on Middle East Questions

Second Roundtable on Water:
From words to actions

6 - 7 July 2017
IPU Headquarters
Geneva, Switzerland

Annotated Programme

Thursday, 6 July

10:00 – 10:30 **Welcome and introduction**

- Opening addresses by:
  - *Ms. Denise Pascal Allende, President of the Committee*
  - *Mr. Martin Chungong, IPU Secretary General*

10:30 – 11:00 **Session 1: Science for Peace**

Presentation by Dr. Herwig Schopper: Science as a tool for bringing nations together

Discussion on regional scientific initiatives aimed at promoting peace and co-existence

11:00 – 12:00 **Session 2: Water and peace**

The former President of Slovenia and Chair of the Global High-level Panel on Water and Peace, *Mr. Danilo Türk*

The nexus between water and peace processes presented by: Director of the Geneva-based WaterHub, *Mr. François Münger*

Q&A

12:00 – 13:00 **Session 3: The role of parliaments and parliamentarians in the implementation of SDG 6**

Follow-up of the proposed programme of action presented in October 2016

- *Ms. Amanda Loeffen, Director General at WaterLex*

13:00 – 14:45 ***Lunch hosted by the IPU Secretary General at IPU Headquarters***

14:45 – 15:00 ***Group photo***

15:00 – 17:00 **Session 4: New and renewable water**

- "Making the water pie bigger":
  Presentation on addressing water scarcity by Ms. Natasha Carmi
- Existing technologies:
  WaterLex will provide examples of realistic and affordable technologies available to renew and re-use water and practices of good governance, making these technologies sustainable
- New technologies:
  Experts will provide examples of national desalination techniques and the role of science and technology in water management

Friday, 7 July	
10:00 – 11:00	**Session 5: Science models to promote the dialogue and Science for Peace School** - Presentation on the models offered by the world of science to foster intercultural dialogue and on the "Science for Peace School" programme by Dr. Maurizio Bona, Senior Advisor in charge of Relations with Parliaments and Science for Policy at CERN
11:00 – 12:00	**Session 6: Pilot country mapping** - Presentation of case studies by WaterLex Programme Director, Africa Region, *Ms. Rose Osinde Alabaster* - Discussion on possible pilot countries
12:00 – 13:00	**Session 7: National experiences** - Participants will be invited to share their national experiences in the field of water initiatives
13:00 – 15:00	***Lunch break***
15:00 – 16:00	**Session 8: Parliamentary Network on Water (PNoW): objectives and working modalities and next steps for the roundtable** - Presentation on PNoW - Development of programme implementation and action points
16:00 - 17:00	**Session 9: Next steps** - Finalization of draft recommendations for the next Roundtable

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Draft agenda

1. **Welcome and introduction**
   by the IPU Secretary General and Committee President

2. **Science for Peace**
   CERN is a pioneer in the area of placing science at the service of peace

3. **Water and Peace**
   Senior political figures will connect the dots between water and peace

4. **The role of parliaments and parliamentarians in the implementation of SDG 6**
   WaterLex will outline the role of MPs in achieving the SDG on water

5. **New and renewable water**
   Scientific experts will provide an overview of cutting-edge water technologies

6. **Science models to promote the dialogue and Science for Peace School**
   CERN will present models of science to promote intercultural dialogue

7. **Pilot country mapping**
   Case studies and identification of future pilot countries

8. **National experiences**
   Exchange of country experiences

9. **Parliamentary Network on Water (PNoW)**
   Establishment and proposed modalities

10. **Next steps**
    Recommendations for the way forward

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Committee on Middle East Questions

Second Roundtable on Water

Geneva, 29 May 2017

Concept Note

At its session held in Lusaka in March 2016, the Committee on Middle East Questions adopted the Terms of Reference for a regional Roundtable approach for changing elements of conflict (such as water, food, power and technology) to reasons for regional coexistence. Members of the Committee are imminently aware that it is not up to parliaments to negotiate peace, let alone sign peace agreements. The regional roundtable approach is not intended to be part of the final stages of political negotiations between Israel and Palestine, or indeed between any other countries. The roundtable approach emphasizes the use of science and technology and the exchange of national expertise and experiences to address regional challenges. The Committee decided to hold its first session on new and renewable water.

The First Roundtable on Water, held in Geneva from 31 May to 2 June 2016, convened parliamentarians from the region and experts from WaterLex, the European Organization for Nuclear Research - CERN - and the Synchrotron-Light for Experimental Science and Applications in the Middle East – (SESAME) to discuss how science can bring solutions to the regional challenges in order to create an enviroment conducive to peace in the Middle East. The Roundtable discussed the challenges of water management in the region and opportunities for water cooperation, underlining the notion of "making the water pie bigger" to increase available resources for both domestic consumption and irrigation purposes through scientific processes and legislation. (Further information about the Roundtable can be found on IPU's website: http://www.ipu.org/splz-e/water16.htm).

The recommendations of the First Roundtable included:

1) establishing a Transitional Legal Framework (TLF) as a basis for IPU guidelines on the implementation of Sustainable Development Goal on clean water and sanitation (SDG 6) in the Middle East, to be presented at the 135th IPU General Assembly in Geneva in October 2016;

2) establishing a specialized network for parliamentary committees from the Middle East to cooperate on the issue of water through the exchange of scientific and technological experiences;

3) implementing water projects on the ground, including that of scientific teacher training programmes on water and sanitation in schools in the Middle East;

4) supporting the implementation of already existing international projects on water in the Middle East.

The Committee, at its session held in Geneva in October 2016 on the occasion of the 135th Assembly, endorsed and goodwill. In order to obtain a concise picture of the mechanisms envisaged for the results of its First Roundtable on Water that had taken place in a spirit of dialogue implementing its recommendations, the Secretariat drew up an agenda for the Second Roundtable on Water that is presented below. The Committee had also reconfirmed its decision from the First Roundtable on Water to hold a second Roundtable to discuss its recommendations and the implementation plans.

Objectives and expected outcomes of the Second Roundtable

The Second Roundtable on Water aims to turn words into actions in order to develop a tailored regional cooperative project stemming from the recommendations of the First Roundtable. Discussions will focus on the implementation mechanisms and the fields of cooperation within a suitable format for the exchange of technological and legislative expertise between regional partners. The second part of the discussions aims to explore means of bringing science closer to the people by focusing on new and renewable water through the establishment of a regional parliamentary network on water (PNoW) which would serve as a platform for cooperation to address regional challenges.

The Roundtable seeks to advance the discussions on a regional programme of action on new and renewable water through the enhancement of the understanding of the Sustainable Development Goal 6 on water and sanitation, especially the role of parliaments in the implementation of this goal. It will also draw up a possible pilot project to be implemented on the ground. The Roundtable will establish the structure of the PNoW and its relation with the Committee and the IPU governing bodies to enhance the understanding of its work and draw up an agenda for its next steps.

The Roundtable report will be presented to the IPU Governing Council in St. Petersburg in October 2017, and will include a proposed programme of implementation.

Format: Chaired by the President of the Committee, the Roundtable will consist of interventions by relevant experts followed by presentations by MPs of their country's experiences in the area of new and renewable water. The Roundtable will be a platform for open discussions on the technological and the legislative aspect of the usage of water. The participants will be invited to develop a plan of action.

Venue and dates: Geneva, 5 – 6 July 2017

Participation: Members of the Middle East Committee, parliaments of the Middle East and North African region and experts from WaterLex and CERN.

Languages: The working languages will be English, French, Arabic and Spanish.

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Committee on Middle East Questions

Second Roundtable on Water:
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Working Paper I produced by the IPU and WaterLex:
The role of parliaments in implementation of SDG 6 on water

Introduction

Fresh water is a scarce resource, with increasing population growth, rapid urbanization, the negative effects of climate change and competing demands all exerting increasing pressure on it. Water crises have been highlighted as the most important concern for the coming decade. The Middle East region hosts 14 of the world's 33 most water-stressed countries. Studies show that since 1946 there have been 37 cases of reported violence between States over water, among which 30 have occurred within the Middle East. At the same time, it has been also identified that "any two countries engaged in active water cooperation do not go to war for any other reason". Active water cooperation between countries reduces the risk of war".[1]

UN Secretary-General, António Guterres, warned that by 2050, global demand for fresh water is projected to grow by more than 40 per cent and at least a quarter of the world's population will live in countries with "chronic or recurrent" lack of clean water. Currently, more than 800 million people lack access to safe drinking water and more than 2.5 billion do not have basic sanitation. Mr. Guterres stressed that water, peace and security are inextricably linked, and therefore the United Nations is ready to engage in preventive diplomacy to keep the competition for water from sparking conflicts.

Sustainable Development Goal 6

Sustainable Development Goal 6 (SDG 6) is the goal on water. It is critically important to achieve many other SDGs such as those covering food, health, a healthy environment, climate change and gender equality. For the Middle East region, which is prone to water scarcity, the adoption of the 2030 Agenda is an opportunity for governments to improve the quality of life for many of their citizens.

The SDGs present crucial momentum to take action in ensuring the availability and sustainable management of water and sanitation for all, that is to take concrete actions based on national targets and indicators to achieve universal and equitable access to safe and affordable drinking water for all (6.1); to ensure access to adequate and equitable sanitation and hygiene for all and end open defecation (6.2); to improve water quality (6.3); to substantially increase water-use efficiency and to ensure sustainable withdrawals and supply of freshwater to address water scarcity (6.4); to implement integrated water resources management at all levels, including through transboundary cooperation as appropriate (6.5); and to protect and restore water-related ecosystems (6.6).

It was agreed in the first Roundtable that a regional approach to dealing with the implementation of SDG 6 could enhance synergies which otherwise could not be developed if a single-country approach was adopted. <u>These synergies could include the following:</u>

- Establishment of a regional Parliamentarian Network on Water (PNOW) with regular exchanges of ideas and experiences;
- Identification and establishment of "pilot" countries to share information and good practices through baseline research for water governance:
  a. A structured approach to progressive realization of SDG 6;
  b. An opportunity to share ideas for establishing National Action Plans and customised, tailor-made sets of indicators to monitor progress.
  c. Establishment of an enabling governance framework for encouraging governments to

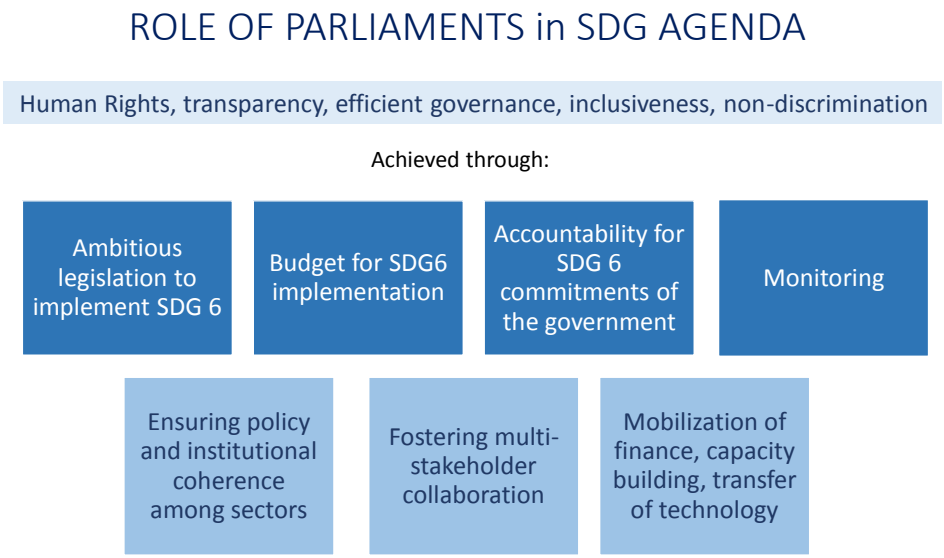
[1] SFG, Water Cooperation Quotient - 2015

utilize the private sector as part of the solution for achieving SDG 6, and;

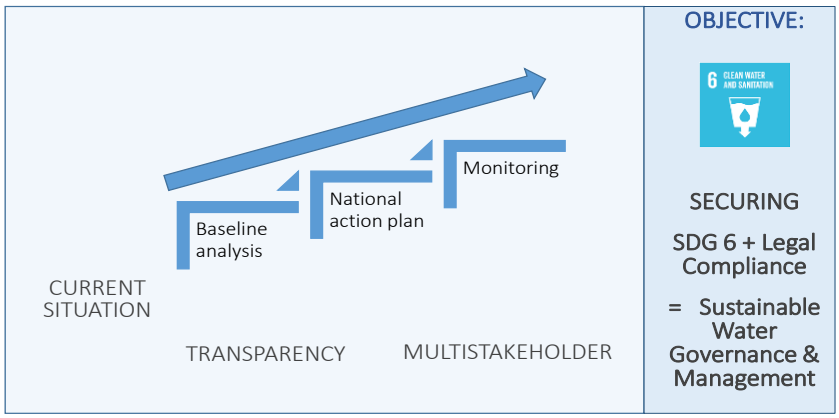
- The process of identifying these "gaps" in meeting SDG 6 targets would also create a need for sharing technological solutions (in collaboration with our partners, such as CERN and SESAME) for water safety, availability, accessibility, affordability, and acceptability.

The role of parliamentarians

National parliaments have a key role in ensuring the availability and the sustainable management of water governance through the enactment of ambitious legislation to implement SDGs; adoption of budgets; exercising oversight of government actions in honouring their Sustainable Development Agenda commitments; and promoting the data monitoring.



Parliamentarians are uniquely placed to ensure policy and institutional coherence among sectors; foster multi-stakeholder collaboration; and the mobilization of finance, capacity building, and transfer of technology.



The figure above highlights the steps that parliamentarians can support in the realization of SDG6. Starting with understanding the current situation, which involves a rigorous analysis of the governance architecture, covering the laws and policies related to water, and field studies to test the service provided across the whole population, including marginalized populations. The outputs from this baseline analysis provide an understanding of the gaps in the governance framework and allows for a series of recommendations that can help to structure a process of progressive realization over a number of years. This will include the identification of areas for improvement; an outline of the relevant indicators; guidelines for a targeted monitoring programme and engagement with stakeholders.

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Working Paper II : A Parliamentary Network on Water (PNoW)

Composition: Specialized parliamentary committees in the region responsible for water, as well as MPs active in water-related issues, will be invited to join the Network. A chair will be designated to preside over meetings based on the principle of rotation in alphabetical order.

Purpose: The regional network of parliamentarians on water (NPOW) is intended to provide a platform for sharing experiences and lessons learned with other countries in the region experiencing similar problems of water scarcity and climate change: this collective approach to implementation will enable results to be achieved faster in a more coherent manner rather than in a piecemeal fashion. This regional approach is designed to leverage the unique position that parliamentarians have to influence change in their respective governments.

The network would create a ***community of practice***. Through it, parliamentarians in the Middle East region will be able to enhance their understanding of the underpinnings of the SDG related to water (SDG 6); the nexus between SDG 6 and the human right to water and sanitation; to provide tools and methodologies for parliamentarians to take back home for implementation; to create an inclusive environment where experts are able to share ideas on water solutions with respect to SDG 6. The PNoW will also provide a forum for exchanging good practices in legislation related to water and water consumption and technical solutions for water projects in the region.

Working modalities: The PNoW shall report to the IPU Committee on Middle East Questions. The Committee will discuss the report and its recommendations, and the work of the PNoW will be incorporated in the report submitted to the IPU governing bodies. The resources required to support the activities of the Network will be discussed at the next Committee meeting in St. Petersburg.

Proposed first meeting of the PNoW (First quarter of 2018)

The kick-off meeting would provide an opportunity to discuss the work programme and tailored capacity-building programmes on water and sustainability issues. The PNoW will report back to the IPU Committee on Middle East Questions to brief it on the actions and progress to date. Reporting may also include the feedback from the pilot countries using legal and policy baselines and stakeholder engagement to identify a plan for implementation of SDG 6. It will identify indicators for each pilot country and the development of tools for parliaments.

Expected outcomes:

✓ Provide an opportunity to the regional parliaments to discuss a work programme to address a regional challenge, like water scarcity, in a cooperative context, by exchanging legislative and technical expertise in the area of new and renewable water and to receive tailored capacity-enhancement programmes on water and sustainability issues;
✓ PNoW will support, with the external expertise of WaterLex, progress on baseline research in pilot countries to develop concrete recommendations for the implementation of SDG 6;
✓ Report on progress; share national experiences on SDG 6 implementation.
✓ Ascertain the viability of maintaining and building on parliamentary networks in the future.
✓ Support the establishment of regional and national projects on water.

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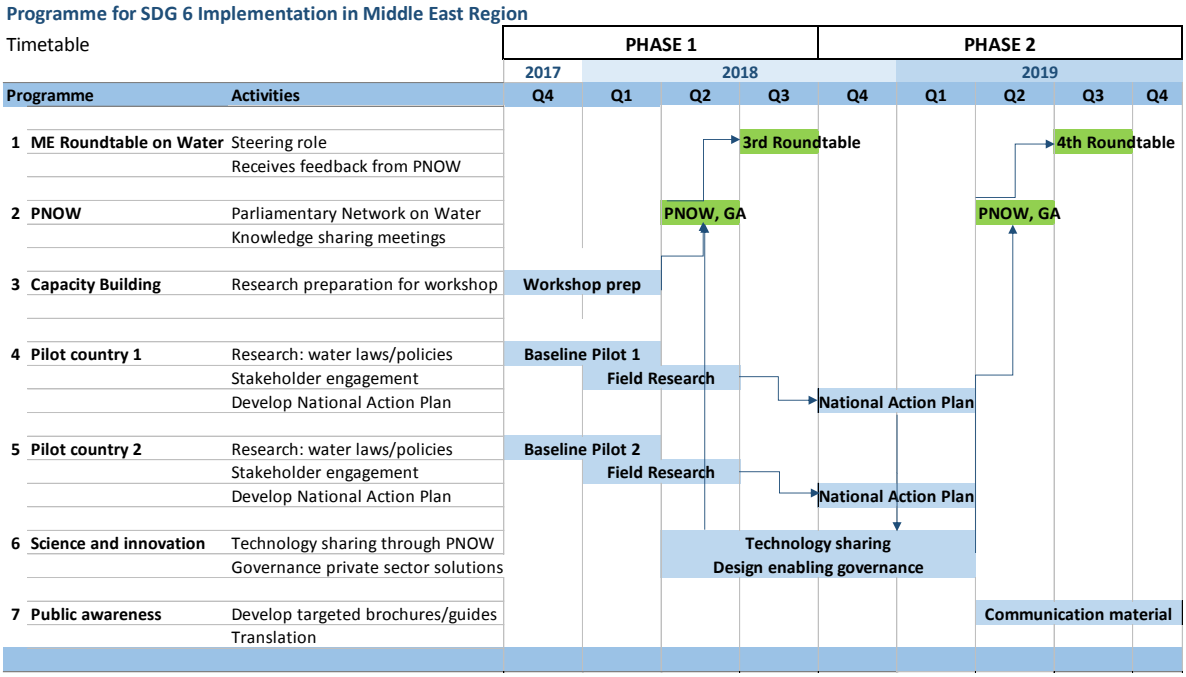
Working Paper III - Programme of Action

The following programme outlines the agenda that was agreed by the IPU Middle East Committee in more detail, showing the timetable and the work foreseen to enable implementation of SDG6 through this programme. It focuses on the role that parliamentarians have to play in the region, featuring how a parliamentary network on water (PNOW) could work together, speed up the process through a system of shared knowledge and ideas, and trigger action. The role of the parliamentarians therefore becomes more pivotal in the SDG6 Agenda, and their leadership serves as an example for other countries and regions that could adopt the same approach.

1. Middle East Roundtable on Water - Create an atmosphere conductive to peaceful solutions by establishing projects of peace to transform elements of conflict, such as water, food, and power, into factors of co-existence.
2. PNOW - Establish a community of practice among parliamentarians on water governance; exchange of experiences and good practices among parliamentarians on water governance.
3. Capacity Building - Enhance the capacity of parliamentarians of the Middle East to empower them to shape national legal frameworks and to take a key role in ensuring available and sustainable management of water for all.
4. Pilot Country Mapping - Establish baseline research on water governance legislation in two pilot countries, plus field engagement with governments, NGOs and civil society in order to understand compliance; develop recommendations to share with the national parliamentarians from those pilot countries, and shape into National Action Plans in phase 2.
5. Science and Innovation - Identify gaps in accessing water of the right price, quantity and quality to different areas or groups of people and establish the appropriate technology providers to present to PNOW meetings; provide support through resources for capacity-building programmes with science for peace schools.
6. Communication Products - Provide parliamentarians with knowledge materials to play a key role in enacting legislation and adopting budgets to facilitate the steps necessary to undertake sustainable water governance; and enhance public awareness of sustainable water management practices.

Programme for SDG 6 Implementation in Middle East Region



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Experts' bios

Dr. Danilo Türk – Chair, Global High-Level Panel on Water and Peace

Danilo Türk is the Chair of the Global High Level Panel on Water and Peace and the chairman of the board of the Global Fairness Initiative, a Washington-based NGO dedicated to economic and social development in developing nations. He is also the founder of the Danilo Türk Foundation, devoted mostly to the rehabilitation of child victims of armed conflict. In 2016 Mr. Türk was a candidate for the post of Secretary-General of the United Nations. He served as the President of Slovenia from 2007 to 2012.

Mr. Türk was the first Slovene ambassador to the United Nations, from 1992 to 2000, and was the UN Assistant Secretary General for Political Affairs from 2000 to 2005. In 1987 Dr. Türk initiated and participated in the establishment of the Human Rights Council in Slovenia. From 1984 to 1992 he was member of the United Nations Sub-Commission on Prevention of Discrimination and Protection of Minorities as an independent expert and acted in his personal capacity. Since 1975 he has been actively involved with Amnesty International and has acted as adviser in many cases involving human rights violations in the former Yugoslavia.

Prof. Dr. Herwig Schopper

Dr. Schopper is an experimental physicist. Currently Dr. Schopper works as an advisor and goodwill ambassador on science for peace. He is the founding father of SESAME, the laboratory for Synchrotron-Light for Experimental Science and Applications in the Middle East, which provides an extremely bright light source to investigate a broad range of domains from condensed matter to biology and archeology. In 1999-2008 he became President of the Preliminary International Council and later, after the formal foundation of SESAME, of the International Council.
At UNESCO, he served as Member of the Physics Action Council and Chairman of the Working Group on Large Facilities, President of the Scientific Council of the Regional Office for Science and Technology ROSTE of UNESCO in Venice (2001-2002) and in 2003-2009 he was the Chairman of the International Advisory Committee for the International Basic Science Programs.

Dr. Schopper was elected Director General of CERN and served from 1981 to 1988. His first task was to unite the two CERN laboratories existing at that time under two Director Generals. The Large Electron–Positron Collider (LEP) was also proposed and constructed under his leadership. From 1977 to 1979, he was Chairman of the Association of the German Large Research Centres (now Helmholtz Association) and member of various advisory bodies of the Federal Ministry of Research, the Deutsche Forschungs Gemeinschaft and the Max Planck Society. He also served as President of the European Physical Society.

François Münger – Director, Geneva Water Hub

Since 2015 Mr. Münger is the Director of the Geneva Water Hub that he has launched. The Geneva Water Hub is the Secretariat of the Global High Level Panel on Water and Peace, co-convened by fifteen countries, as well as the Secretariat of the Group of Friends on water and Peace with about forty UNOG missions. From 2008 to 2015 he was Head of the Water Initiatives division in the Global Cooperation domain at the Swiss Agency for Development and Cooperation that he has created and developed. He worked on the following fields: (i) global influence though strategic global networking as GWP, WSSCC, WSP & WWC (ii) partnership with research institutes, Swiss municipals utilities, NGOs and Private sector (iii) global projects (iv) Interdepartmental coordination of Swiss departments working in the water & development field. He was also the Special Envoy for Water of Switzerland. Mr. Münger has a scientific background in Geophysics, mineralogy, hydrogeology and environmental engineering.

Amanda Loeffen – Director General, WaterLex

Amanda Loeffen is a water governance expert, leading a qualified team of lawyers, policy makers, and technical experts with expertise in water law and policy at WaterLex. WaterLex supports governments and parliamentarians in development of strategies for implementation of SDG6, using the human rights to water and sanitation as a basis for the framework.

Prior to joining WaterLex, Amanda directed a water resource project management company in New Zealand, where she oversaw the design, environmental consent and multi-stakeholder engagement for a large community-owned hydro-irrigation scheme. She has also worked in business management in the private sector, predominantly in natural resources and plastic intermediates. She has a BSc in Chemistry, and an MBA in finance.

Dr. Maurizio Bona, CERN – Senior Advisor for relations with Parliaments and Science for policy, European Organization for Nuclear Research (CERN)

Maurizio Bona holds an engineering degree, and a Doctor degree on material science. Starting in the mid-eighties he participated in the design and development of the superconducting magnets for the LHC (the Large Hadron Collider accelerator), with key responsibilities in the first full-length dipole prototypes. He also acted as Invited Professor at University, teaching applied superconductivity and superconducting magnets. Between 1998 and 2005 he led various CERN Groups, and from 2006 to 2008 the CERN Safety department.

From 2009 to end 2015 he was the Advisor to the Director-General, charged with relations with international organizations. He was instrumental to develop the CERN network of relations with other international organizations and to obtain the status of Observer for CERN in the General Assembly of the United Nations in December 2012. From January to September 2016 he served as the Head of Relations with international organization. As from October 2016 he is Senior Advisor for relations with Parliaments and Science for policy, as well as Senior Advisor on knowledge transfer.

Natasha Carmi – Policy Advisor on Water, Environment, Agriculture and Energy to the Palestinian Negotiations Support Project (PNSP)

Ms. Carmi, an engineer by education, holds a Master's Degree in Hydrology for Environmental Management from Imperial College. She is currently Policy Advisor on Water, Environment, Agriculture and Energy to the Palestinian Negotiations Support Project (PNSP) and has been a "water team" member on the PNSP for the past six years. Ms. Carmi has worked with water resources and environmental challenges in the Middle East for the past 20 years.

She serves frequently as a faculty member for conferences and workshops dealing with transboundary water resources, presenting the perspective of a country in which all of its water resources are transboundary, where water is a core political issue and international water law is a necessary framework for resolving conflicts and identifying opportunities and solutions.

Ms. Rose Osinde Alabaster – Programme Director, Africa Region, WaterLex

Rose Alabaster is a water and sanitation governance and policy expert (with specialized knowledge of human rights and conflict resolution), with close to twenty years of global experience working at international, national and sub-national levels with key development partners including bilateral donors and regional banks such as the African Development Bank. Her experience goes beyond the traditional water sector partners, and includes the formulation and audit of projects and programmes that support sustainable planning, evaluation, research on social, economic issues related to sustainable development, as well as at advisory level to governments and programming.

Dr. Florian Thevenon – Senior Scientific Officer, Waterlex

Dr. Florian Thevenon has 15 years of international experience in linking natural scientific-based knowledge and water governance: climate change, human activities and pollution, international policy and human rights. He has collaborated on water capacity development with international organizations (e.g. UNDP, UNESCO, UNEP and UN Water), universities (e.g. Geneva and Kinshasa) and NGOs (e.g. IUCN). He has participated in international projects in Africa, America, Asia and Europe, resulting in the publication of 50 peer-reviewed research articles/reports read 15k and cited 1k times (c.f. ResearchGate Stats).

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Information note

Working modalities

In order for the discussions to be as fruitful and enriching as possible, the following procedural arrangements have been foreseen:

- A detailed programme of the session has been circulated in advance of the Roundtable;
- Once the expert presentations are made in the first half of each session, the floor will then be open to participants for questions, comments, debate or presentation of relevant examples, experiences and models from their respective countries;
- The Committee President will sum up the work of the Roundtable at its concluding session;
- The report of the Roundtable will be submitted to the IPU governing bodies at the 137th IPU Assembly in October 2017.

Languages

The working languages of the Roundtable will be English, French, Arabic and Spanish. Simultaneous interpretation will be provided into and from these languages.

Documents

The official documents for the Roundtable include the programme, concept note, list of participants and information note.

Lunch

All participants are invited to a sit-down lunch on Thursday, 6 July at 13:15 at the *House of Parliaments* (IPU Headquarters) directly after the morning's sitting.

Hotel accommodation

All participants are responsible for making their own accommodation arrangements and bearing the costs of their stay in Geneva.

Weather conditions

At the time of the Roundtable temperatures will range between 15°C and 26°C, with no rain expected.

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IPU Headquarters

Geneva, Switzerland

List of participants

Committee Members

Ms. Denise Pascal Allende, *President of the Committee / Member of the Chilean National Assembly*
Mr. Azzam Al-Ahmad, *Member of the Palestinian Legislative Council*
Ms. Salma Ataullahjan, *Member of the Canadian Senate*
Ms. Rania Elwani, *Member of the Egyptian Parliament*
Mr. Nachman Shai, *Member of the Knesset*

Parliamentary Delegations

Israel

Ms. Ksenia Svetlova, *Member of the Knesset*
Ms. Liat Margalit, *International Affairs Coordinator of the Knesset*

Jordan

Mr. Mohd Al-Najar, *Member of the Jordanian Senate*
Mr. Adnan Al-Mashakbeeh, *Head of International Relations of the Jordanian Senate*

Morocco

Mr. Ahmed Touizi, *Member of the Moroccan Chamber of Councillors*
Mr. Nabil Cheikhi, *Member of the Moroccan Chamber of Councillors*
Mr. Mohamed Salem Benmassaoud, *Member of the Moroccan Chamber of Councillors*
Ms. Hayat El Machfou, *Member of the Moroccan House of Representatives*
Mr. Rejdali Moh, *Member of the Moroccan House of Representatives*

Palestine

Mr. Bashar Al-Deek, *Advisor to the Secretary General of the Palestinian Legislative Council*

United Arab Emirates

Mr. Ali Jasem Ahmad, *Member of the UAE Federal National Council*
Mr. Sultan Othman Al Shehi, *Political Researcher at the UAE Federal National Council*

Arab Inter-Parliamentary Union

Mr. Fayez Al Shawabkeh, *Secretary General of the Arab Inter-Parliamentary Union*

Experts

Mr. Danilo Türk, *Chair of the Global High-level Panel on Water and Peace and Former President of Slovenia*
Prof. Herwig Schopper, *Former Director General of CERN*
Mr. François Münger, *Director of Water Hub*
Ms. Amanda Loeffen, *Director General of WaterLex*
Dr. Maurizio Bona, *Senior Advisor in charge of Relations with Parliaments and Science for Policy at CERN*
Ms. Natasha Carmi, *Policy Advisor on Water, Environment, Agriculture and Energy of the Palestinian Negotiations Support Project (PNSP)*
Ms. Rose Osinde Alabaster, *Programme Director for the Africa Region at WaterLex*
Dr. Florian Thevenon, *Senior Scientific Officer at Waterlex*

IPU

Mr. Martin Chungong, *Secretary General of the Inter-Parliamentary Union*
Amb. Mokhtar Omar, *IPU Secretariat*

Making the Water Pie Bigger
"New Water"
A win-win positive sum solution

Natasha Carmi
Geneva, 6-7 July 2017
IPU
Second roundtable on Water

‘Making the pie bigger’:
Generating and sharing regional benefits

TWO-Analysis, SIWI 2008

Objectives

- **of Second Roundtable on Water**: “ To Turn words into actions in order to develop a tailored regional cooperative projct stemming from the recommendations of the First Roundatble”
- **Of my presentation**: “ To build upon the New Water presentation I delivered in the First Roundtable in 2016, through our discussion and exchange on my proposed concrete steps towards the actual attainment of a bigger water pie ”

How did I approach this?

- Preliminary mapping of known existing regional “initiatives”
- Looking at various components of “New Water” in terms of national/regional efforts
- Quick mapping of the known expertise of each of the participating countries in the different components of “New Water”
- Exploring “opportunities “ that would assist in using Water as a vehicle of Peace and the use of “New Water” as one win-win tool for sharing transboundary water resources, and for management of endogenous water resources.

What is “New Water”

- “New Water”= alternative non-traditional sources of water
- The provision of “new water” refers to the development of water supplies, over and above, those provided b existing water resources, such as through desalination, water re-use, or possible importation from other basins.
- The provision of “new water” is a totally separate issue from specific allocation of the existing shared water resources of the parties
- Investing in “new Water” does not negate , detract, or prejudice Water Rights of a State
- Different forms of “new water” can be used to augment supply of each party
- The continued growth in population- if this persists- will eventually require production of very significant amounts of “new water”

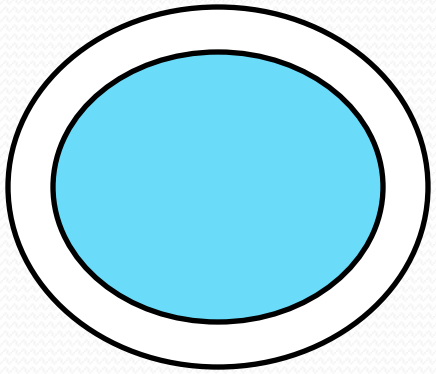
Recognition of the added value of “New Water”

- Under international law, “new water” which is developed unilaterally by one Party could be employed by the other Party to trigger a reallocation of the total combined water resource, after the original “equitable and reasonable “ allocation.
- All responsible and committed parties agree that there is a need to develop new water resources , through a number of activities. It is notable that such “new water” will alter the magnitude of the total water resource in a particular region.

Current Components of "New Water"

- Collaborative Measures = total water in Basin increased
  - ✓ This 'makes the pie bigger' and also allows reallocation to occur without any party losing water over time.
  - ✓ This requires New Water can be produced by:
  - ✓ - desalination;
  - ✓ - enhanced wastewater re-use;
  - ✓ - improved Green Water/Blue Water management;
  - ✓ - inter-basin transfers.
  - Transition is the key concept, here

Making ‘New Water’

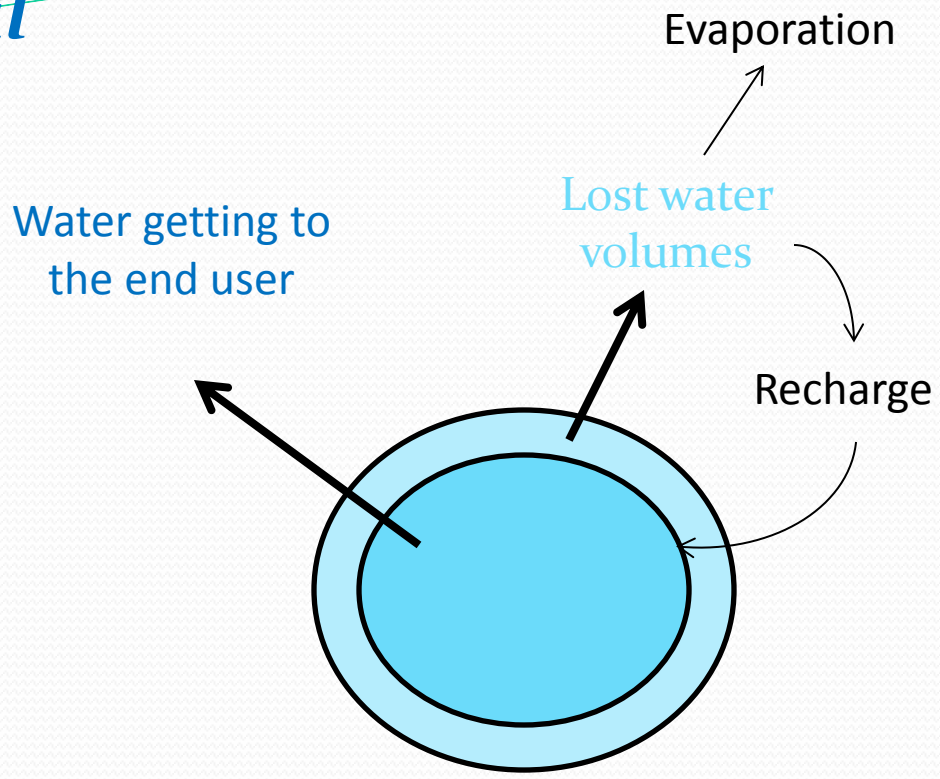


The *Status Quo*

“The engineers’ focus’” is on available water, or water that has been mobilised from the natural resource. However, this actually has two components.....

National and Regional

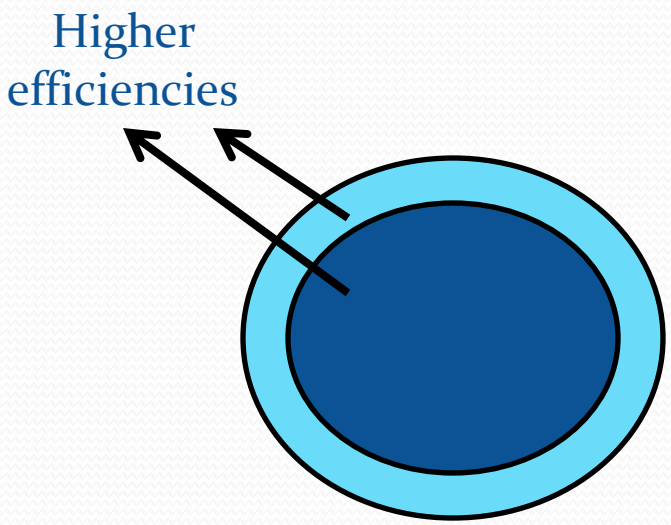
National



Step 1: Recognise reality, and reduce losses

"The engineers' focus'" is on available water as noted, but losses from the system are often ignored. Reducing losses (UfW, leakage, etc.) enhances the water volumes getting to the end user.

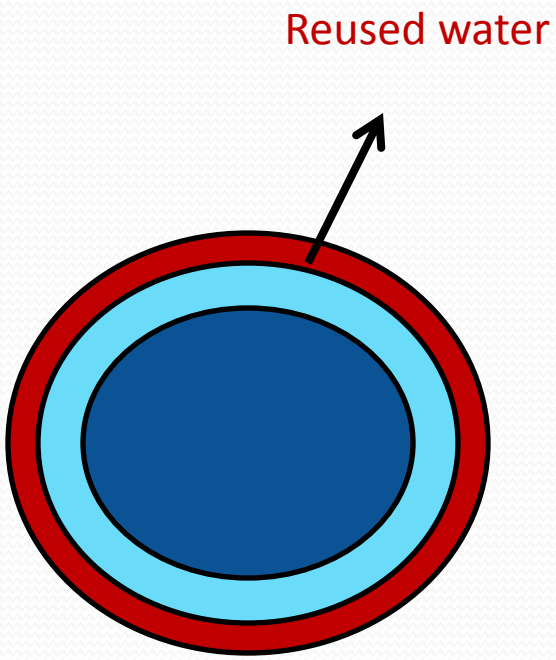
National: Irrigation Efficiency, flood management, drought management, etc..



Step 2: Water Demand Management

WDM is another focus of recent efforts, especially where water is scarce. This essentially addresses the efficiency of water use, seeking to improve efficiencies.

National and Regional



Step 3: Introduce reuse of the available supplies

The reuse of water is possible in many fashions, only some of these involving treatment between the different forms of use. Reuse effectively expands the water volume that is available to end users.

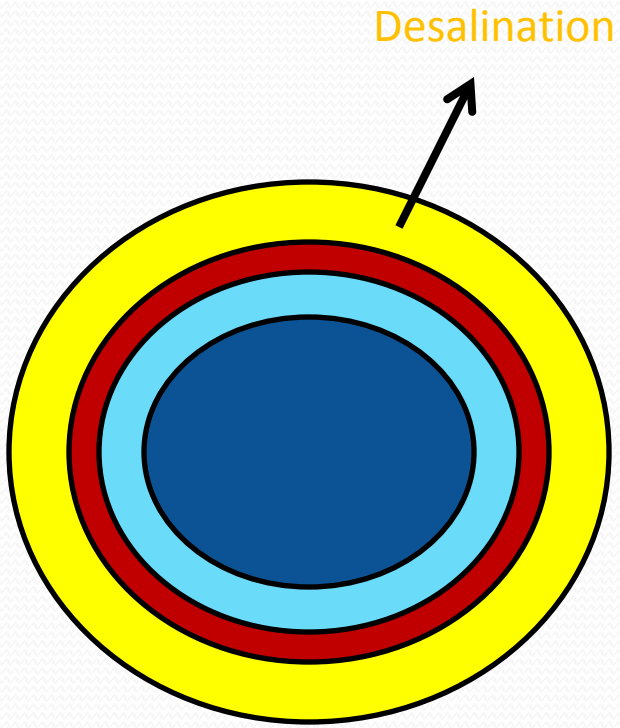
New Technologies:

- Ultrafiltration (UF) & membrane bioreactor technologies o remove particulates and macromolecules from WW
- Use of RO after filtration to achieve drinkakble water quality: Sulaibia WWTP/Kuwait

MENA Wastewater Status

- Total Volume of WW generated by domestic and industrial sectors in MENA estimated at 13 billion m3/year
- Only 6 billion m3 are treated (Water Scarcity in MENA, 2014)
- 57% of WW is only partially treated or not at all.
- Shafdan- Israel treats 95% of WW and re-uses it/ Has 230 reservoirs for treated WW storage

National and Regional



Step 4: Introduce desalination

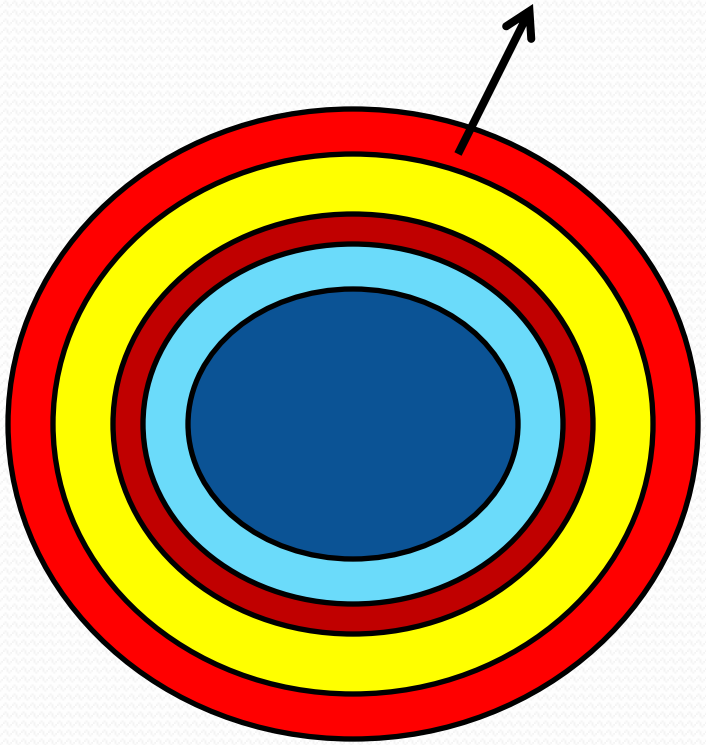
The costs of desalination have reduced significantly in the last two decades, implying that this is now affordable in many circumstances. This changes the preferred strategies for water supply in many scenarios.

New Technologies:

- Use of deploying concentrated solar power
- Use of Photovoltaic PV solar installation for brackish water treatment and powering water pumping stations
- Use of clean energy in rural off grid areas for soil fumigation and for drying animal feed

National and Regional

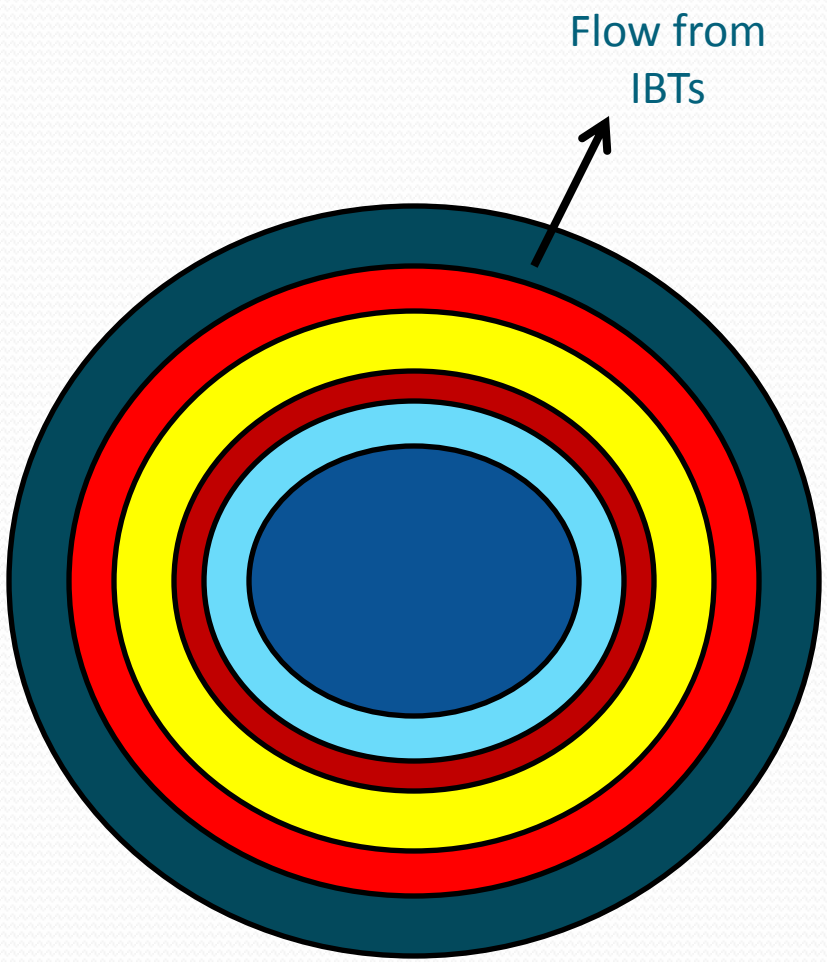
Reuse of desalinated flows after treatment



Step 5: Reuse the desalinated supply

Desalinated flows are generally used as domestic supply. Up to 70% of domestic wastewater flows can be reused after treatment, as little contamination by metals/trace organics eventuates.

Regional

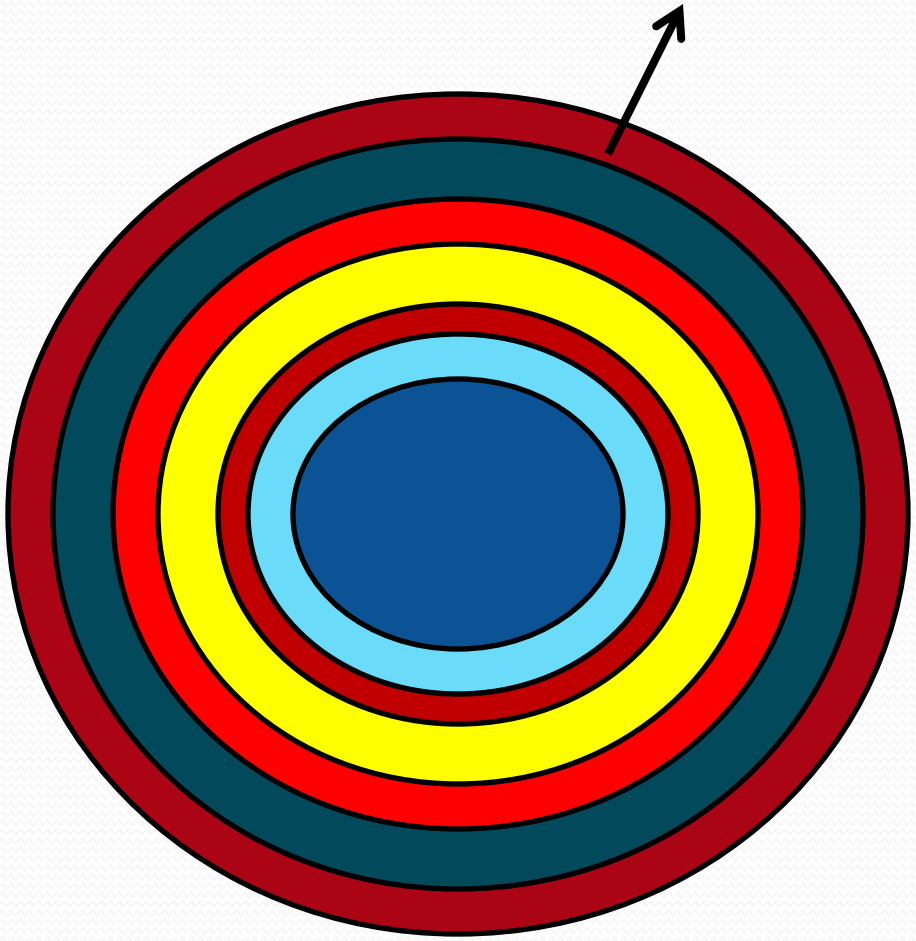


Step 6: Introduce inter-basin transfers

In basins where particular water scarcity exists, IBTs may be used to bring water from elsewhere. This is especially common in some regions, and has great potential in the Middle East.

Basin-wide agreement needed

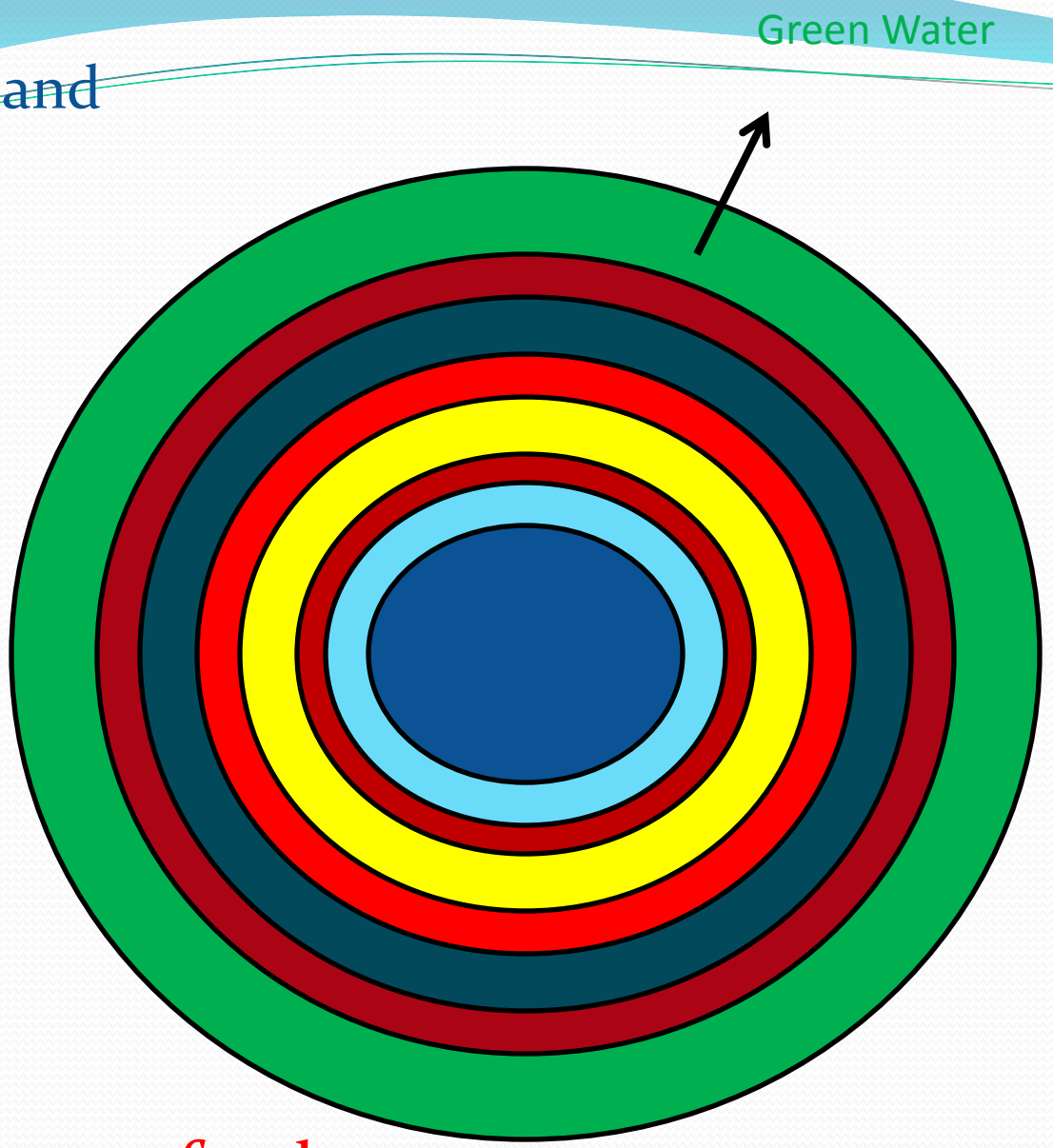
Reuse of the IBT flows



Step 7: Reuse the IBT flows

Flows that are transferred into water-scarce basins through IBTs can also be reused, enhancing the overall efficiency of water use.

National and Regional



Step 8: Use Green Water better

Green Water (soil water) volumes can be considerably greater than those of Blue Water. Greater attention to the Green Water/Blue Water interface can enhance agricultural outputs very considerably.

Water- energy- food- soil nexus

Nexus research at universities

- Ongoing tradeoff analysis using nexus platform including elements of water quality, water saving , productivity technology, cost, soil heath and human risk
- Tools have been developed
- Filed and laboratory measurements

Blue Green Solutions- Private Sector

- Nature Based Solutions (NBS) – green infrastructure installations such as green roofs, tree pits and swales – can yield multiple urban benefits. These include reduction of water and air pollution, mitigation of flood risk and heat islands, as well as provision of areas for recreation and urban agriculture.

- https://www.youtube.com/watch?v=7bgp3EogUAQ

Blue Green Solutions

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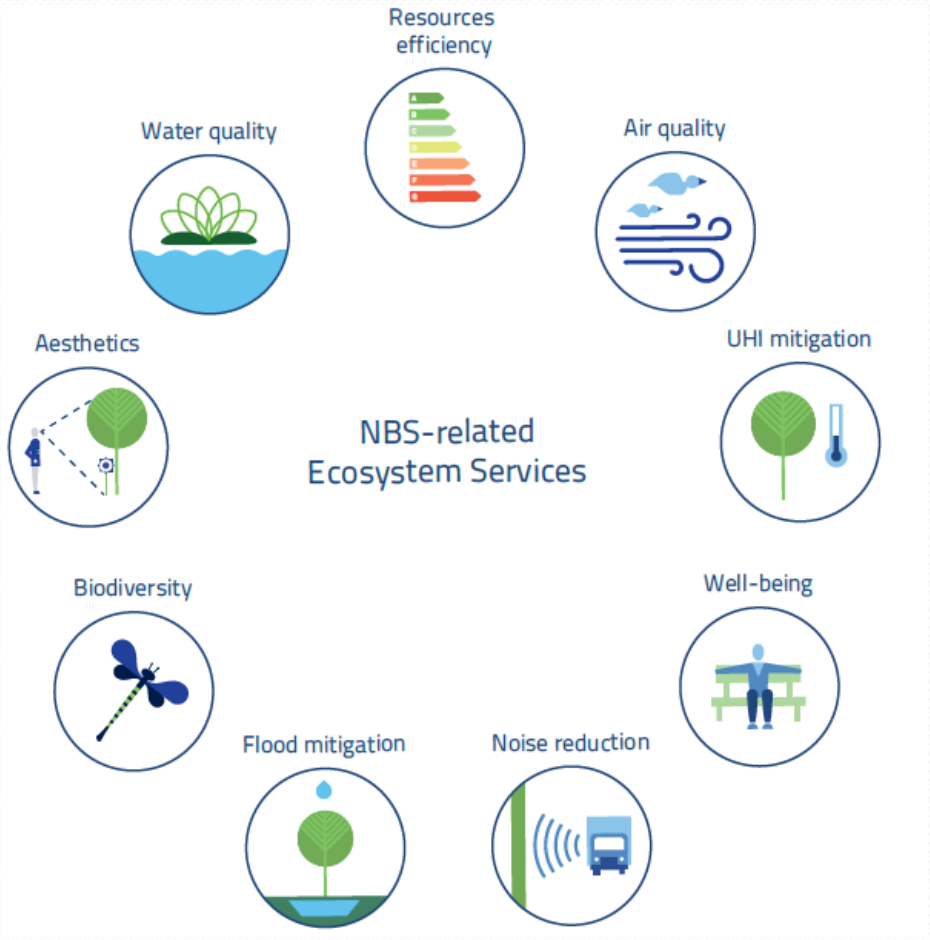
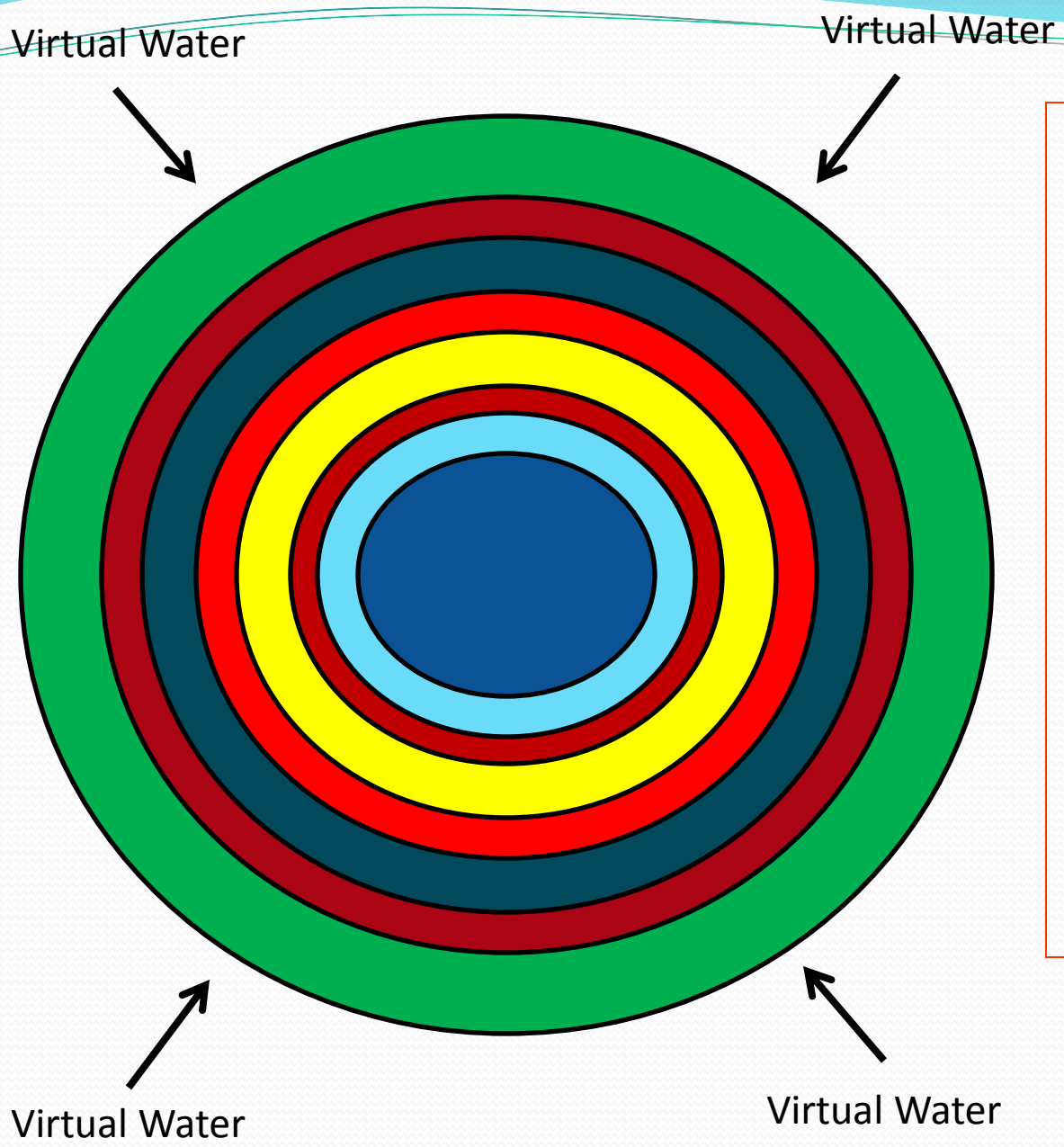
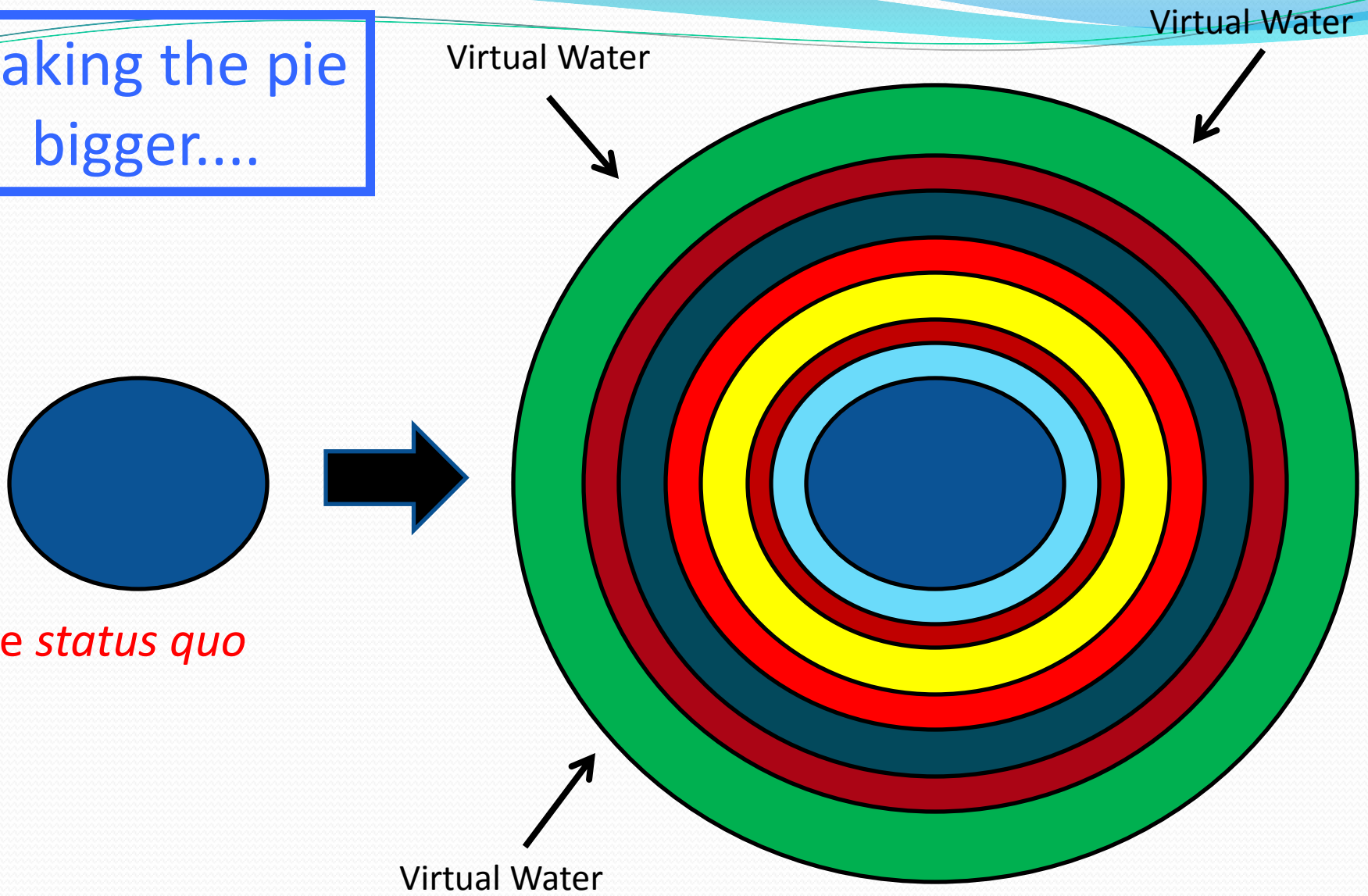




Step 9: Consider Virtual Water

Trade in agricultural and industrial products determines Virtual Water flows. Water-scarce countries can address their problems through this (e.g. Israel; Egypt). Many countries are ignorant of this possibility, however.

Making the pie bigger....



The *status quo*

The potential end point

Preliminary mapping of Country expertise

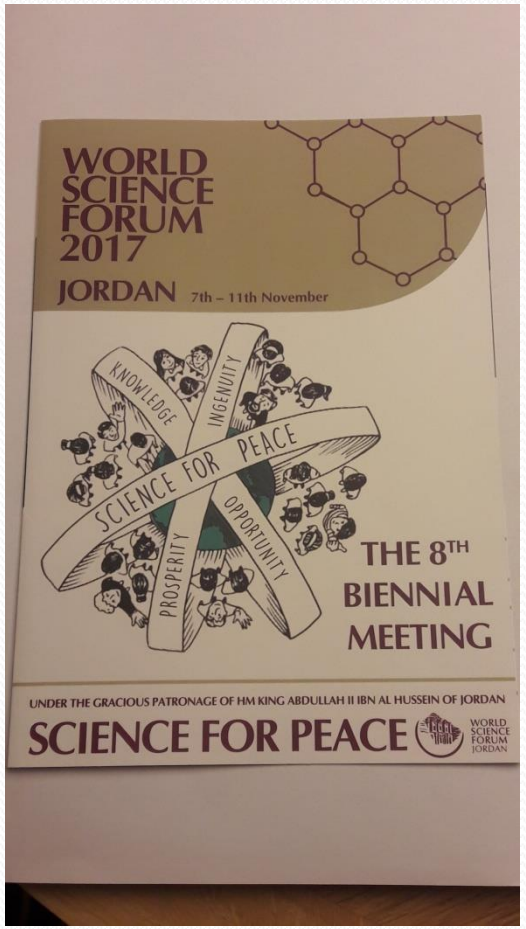
Country	Expertise vis-à-vis component of "New Water"
UAE	Brackish and seawater desalination
Jordan	Water saving technologies/re-use of WW
Israel	Seawater desalination and wastewater re-use
Palestine	Water demand management, desalination young expertise
Morocco	Privatization of urban water utilities, developing potential for use of solar energy in desalination
Egypt	Managing complex irrigation networks WDM
Chile	
Canada	
Indonesia	
Belgian	
Switzerland	

Opportunities

- National Strategy Plans on IWRM
- SDGs and Commitment of UN member states
- Young creative scientists thinking “out of the box”
- Successful and workable regional initiatives/organisations
- Technological advances
- Women, water and peace
- Emerging paradigms: Water-Energy Nexus, Water-energy-food nexus, Blue –Green Paradigm, etc..
- Role of research institutions
- Private sector partnerships

Opportunities: WSF

- World Science Forum 2017 ,8th biennial meeting , 7th to 11 November , Dead Sea Jordan – “Sciene for Peace”
- Discover the latest developments in policy and hard science
- Define a policy agenda to support Agenda 2030
- Engage with old and new networks of scientists and policy makers who share a belief in the power of science



Opportunity : UN Environment

- UN Environment Freshwater Strategy 2016-2021
- The achievement of freshwater related SDGs falls under mandate of UN Environment
- SDG 6.3 Meeing the global water quality challenge
- SDG 6.5 Adnacing the IWRM Approach
- SDG 6.6 Protecting and restoring freshwater ecosystems

Opportunity: MEDRC

- MEDRC Water Research was established to deal with two of the most pressing global and regional grand challenges; water and peace. It is a unique international organization where ten co-equal partners work together on solutions to fresh water scarcity by supporting research, training, knowledge exchange and capacity building

Opportunity: Global High Level Panel on Water & Peace

- Global Conservatory for Water and Peace
- Extensive expertise

Opportunity: CERN

What next?
For DISCUSSION

- Proper mapping of country expertise
- Thorough mapping of how to make use of existing regional initiatives/institutions
- Projects?

Science as a tool for bringing nations together

Herwig Schopper
Former Director General of CERN

Laws of Science do not respect any borders

- Science needs and benefits from international cooperation

This is common practice today (small science)

My main message:

The Inverse is also true

- politics can benefit from science

Requires large ambitious projects attracting the interest of politicians, the public and best scientists

‘SCIENCE for PEACE’

Two organisations created under the umbrella of UNESCO:

CERN

Conceived late 1940s , after WWII with two aims:

- **Enable construction of a facility beyond means of individual Europesn countries**
- **Foster cooperation between peoples recently in conflict**

SESAME in Jordan

Conceived late 1990s with the same aims:

- **Members: Cyprus, Egypt, Iran, Israel, Jordan, Pakistan, Palestinian Authority, Turkey**
- **Contribute to peace building in MENA**

Foundation of CERN

Looking back in history it seems easy- it was not!

Two initiatives in parallel:

Auger, Amaldi,Kowarski

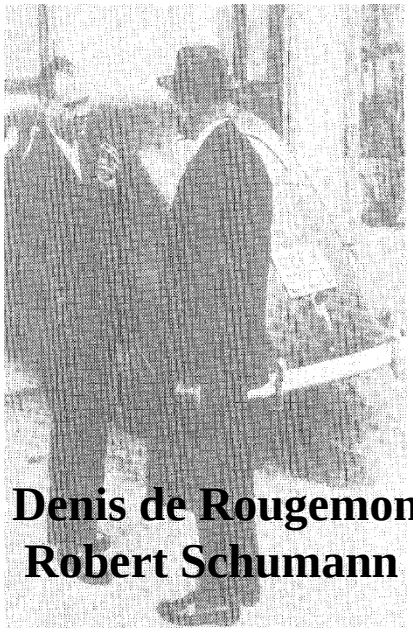
1.Physicists:

join European forces to be competitive with US, in particular for large facilities

2. Political initiative:

European Movement

European Cultural Conference,
Lausanne 8-12 December 1949
Ministers, senators, member of parliaments, others from 22 countries
first time Germans could attend (C. Schmid)



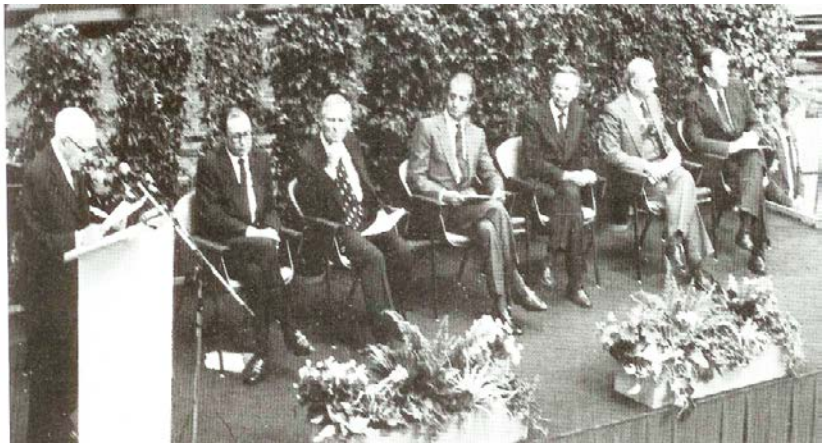
Denis de Rougemont, Robert Schumann

The two initiatives united at 5. General Conference of UNESCO in Florence June 1950

Resolution drafted by Isidor Rabi

7 June 1950 addressed to DG UNESCO

could be considered as 'conception' of CERN (or real birth??)

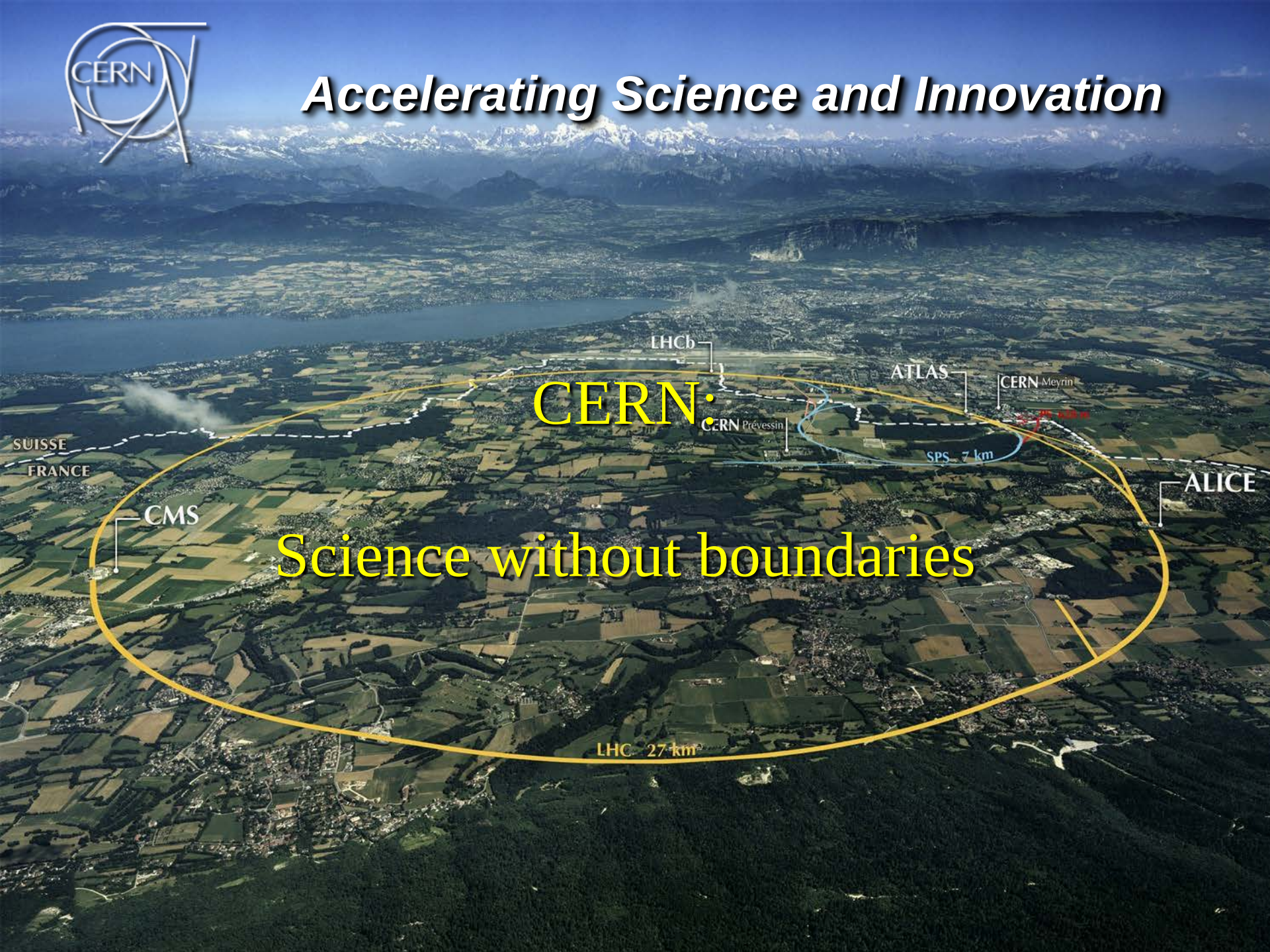


At CERN 30. Anniversary

Rabi's speech: CERN peaceful compensation for building bomb

…So at this point I appeal to the personalities present to remember that CERN is not just an instrument for technical progress in high energy physics, but it is the realization of an ideal which had been part of a civilization for a long time…..
and can help preserve the peace of the world."

Accelerating Science and Innovation



CERN:

Science without boundaries

CERN was founded 1954: 12 European States

"Science for Peace"

Today: 22 Member States

~ 2300 staff
~ 1050 other paid personnel
~ 11000 users

Budget (2012) ~1000 MCHF

Member States: Austria, Belgium, Bulgaria, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Israel, Italy, the Netherlands, Norway, Poland, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom

Candidate for Accession: Romania

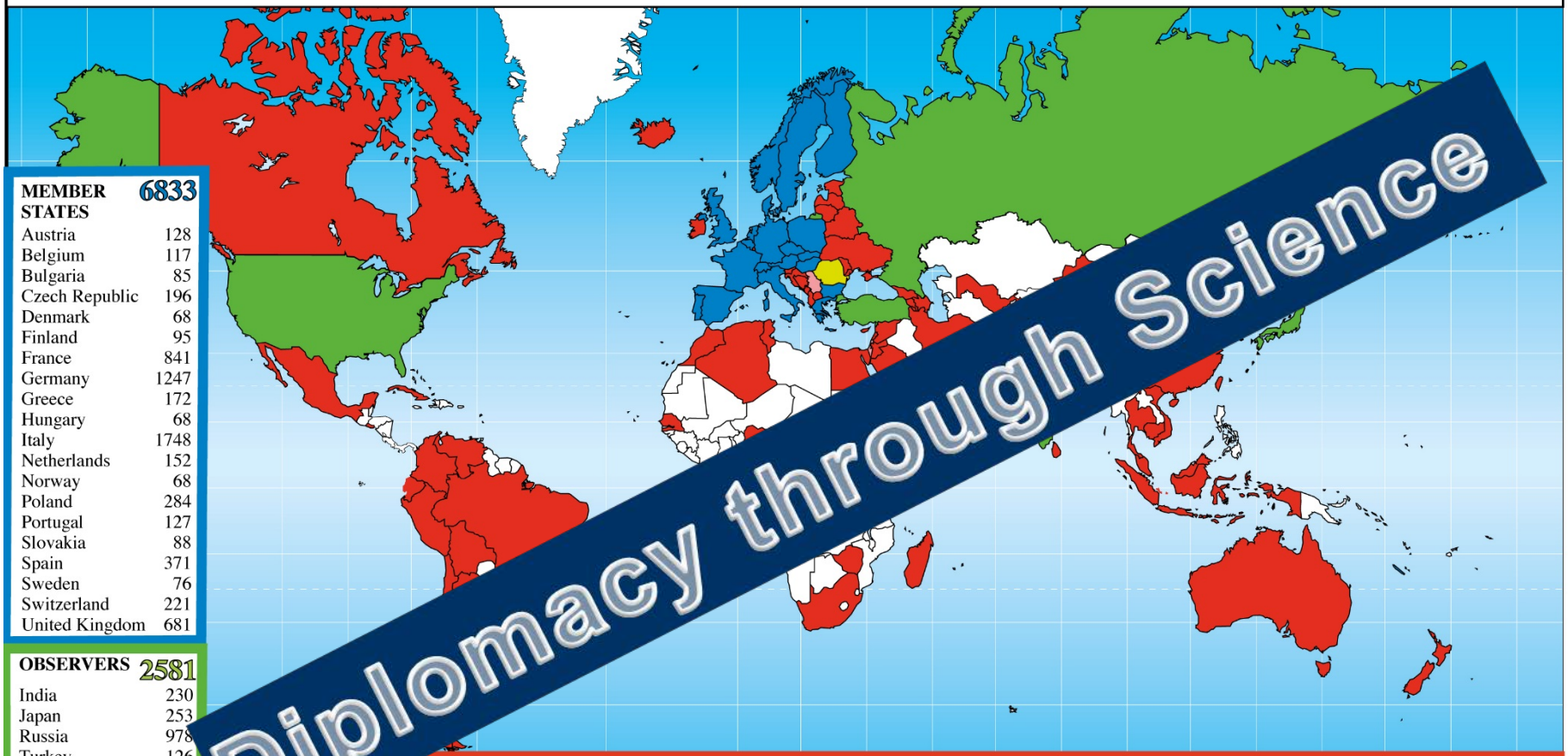
Associate Members in the Pre-Stage to Membership: Serbia

Applicant States: **Cyprus (agreement signed)**, Slovenia, Turkey

Observers to Council: India, Japan, the Russian Federation, the United States of America, Turkey, the European Commission and UNESCO

Science is getting more and more global

Distribution of All CERN Users by Nationality on 3 September 2012



MEMBER STATES	6833
Austria	128
Belgium	117
Bulgaria	85
Czech Republic	196
Denmark	68
Finland	95
France	841
Germany	1247
Greece	172
Hungary	68
Italy	1748
Netherlands	152
Norway	68
Poland	284
Portugal	127
Slovakia	88
Spain	371
Sweden	76
Switzerland	221
United Kingdom	681

OBSERVERS	2581
India	230
Japan	253
Russia	978
Turkey	126
USA	994

CANDIDATE FOR ACCESSION	
Romania	125

ASSOCIATE MEMBERS IN THE PRE-STAGE TO MEMBERSHIP	
Israel	65
Serbia	43

[illegible]	1
[illegible]	2
Algeria	12
Argentina	19
Armenia	23
Australia	25
Azerbaijan	6
Bangladesh	4
Belarus	39
Bolivia	2
Bosnia & Herzegovina	2
Brazil	100
Cambodia	1
Cameroon	1
Canada	138
Cape Verde	1
Chile	7
China	266
China (Tapei)	46
Colombia	33
Croatia	30
Cuba	6
Cyprus	14
Ecuador	3
Egypt	11
El Salvador	1
Estonia	14
Georgia	34
Gibraltar	1
Iceland	2
Indonesia	1
Iran	27
Ireland	22
Jordan	2
Korea, D.P.R.	1
Korea Rep.	119
Kuwait	1
Latvia	1
Lebanon	10
Lithuania	17
Luxembourg	3
Madagascar	1
Malaysia	7
Malta	2
Mexico	66
Moldova	1
Montenegro	2
Morocco	11
Nepal	3
New Zealand	7
Nigeria	1
Oman	1
Pakistan	38
Palestine (O.T.).	4
Peru	6
San Marino	1
Saudi Arabia	4
Senegal	1
Singapore	1
Slovenia	41
South Africa	16
Sri Lanka	6
Syria	3
Thailand	7
T.F.Y.R.O.M.	3
Tunisia	7
Ukraine	51
Uzbekistan	2
Venezuela	11
Viet Nam	10
Zimbabwe	2
	1364

Science can help in Confidence building - without any confidence politics is inoperable

Examples how CERN helped:

CERN-Dubna, CERN- UdSSR:
only scientific link East-West during cold war

- **CERN – IHEP (Soviet Union) agreement in 1968**

only scientific agreement during hot cold war
became model for IHEP- Stanford (USA) agreement
and later for model for USA- SovieUnion agreement *(Breshnev-Ford)*

- **Disarmament meeting at Geneva in 1980ies**

when in deadlock private meeting at CERN unblocked it

- **Chinese physicists from PR China and Taiwan**

in same LEP experiment (1980ies)

- **Help dissidents (e.g. Orlov)**

- **SESAME founded according to CERN's example:**

Israel -Palestine – Iran, Cyprus – Turkey

CERN has brought people together

by discussions, considerations, conflicts, compromises and finally decisions

All are being heard, even the weakest
Competence is essential

Not only scientists but also
administrators and politicians involved
In Council each country has two delegates:
one government official and one scientists
(formal close relations between
scientists – government representatives)

Pragmatism and definite will
to achieve a concrete goal prevailed

CERN has its task splendidly achieved in Europe

CERN became model for other organisations

***JINR*, *ESO, EMBL,* Now CERN is a model for international cooperation on world scale**

SESAME

SESAME

Synchrotronlight for
Experimental
Science and
Application in the
Middle
East

An International Center for Research and Advanced Technology and Training for the Middle East and the Mediterranean Basin

Founded under the auspices of UNESCO according to CERN model

The first international organization in Muslim countries

A short history of SESAME

1997: during a workshop for Middle East Scientific Cooperation organised by S.Fubini (theoretical physicist) of CERN proposal by H.Winick and G.-A.Voss to use components of BESSY I (to be closed down) at Berlin

S.Fubini asks H.Schopper (retired as Director-General of CERN) to take care

Suggestion to F.Mayor, DG UNESCO, to repeat CERN story

June 1999: F.Mayor, DG UNESCO, invites all governments of the region to a meeting at Paris

Positive decision taken,
Interim Council created
with 12 members and 6 Observers (H.Schopper, President)

Formal establishment of SESAME by UNESCO as autonomous international laboratory

UNESCO General Assembly (about180 countries)

October 2001

- asks Director General, K.Matsuura, to elaborate feasibility study and propose Statutes

- authorises Executive Committee to decide definitely (to save time)

Mai 2002: unanimous Authorisation by Executive Committee (about 50 countries) (including approval of Statutes)

Procedure takes normally more than 4 years!!

”...model project for other regions....

Quintessential UNESCO project combining capacity building with vital peace-building through science.”

SESAME is intergovernmental organization

Members of SESAME

- BAHRAIN
- CYPRUS
- EGYPT
- IRAN
- ISRAEL
- JORDAN
- PAKISTAN
- PALESTINIAN AUTHORITY
- TURKEY

Observers

France
Germany
Greece
Italy
Japan*
Kuwait
Portugal
Russia
Sweden
UK
USA

Governing Body

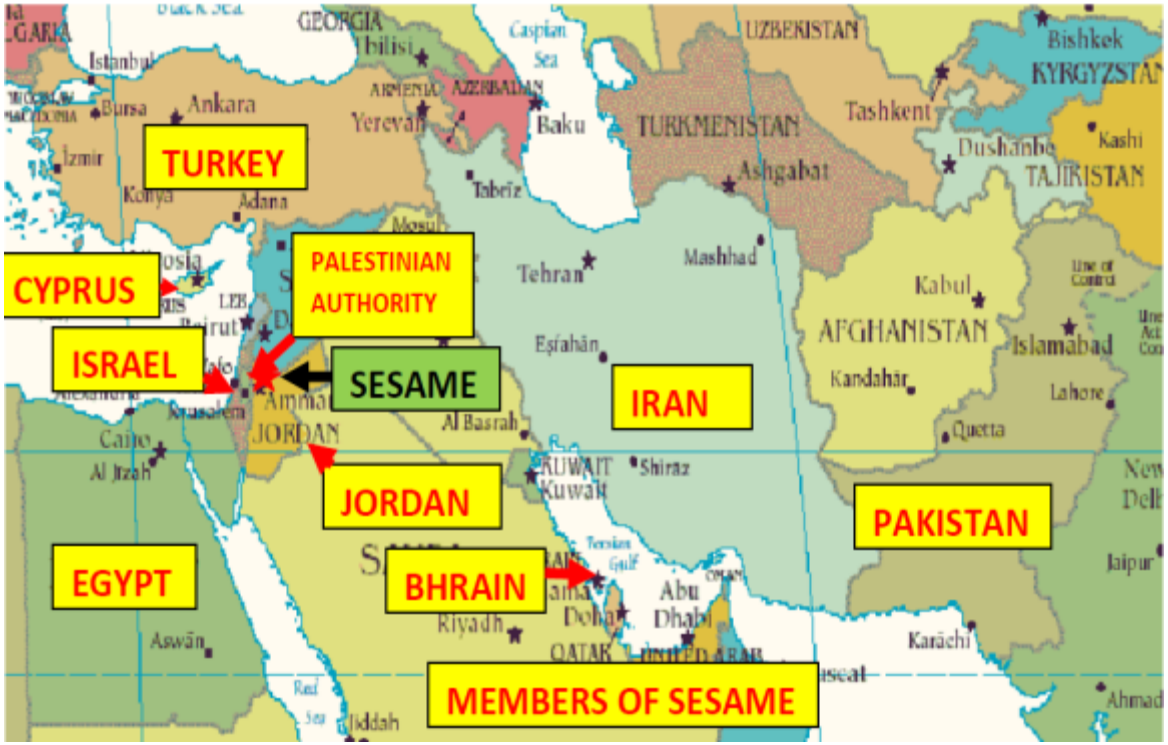
Council

Each Member one vote

SESAME Statutes are 'copy' of CERN Convention

Open for other countries, all are welcome

SESAME's Members in 2016



Observers: Brazil, China, France, Germany, Greece, Italy, Japan, Kuwait, Portugal, Russian Federation, Sweden, Switzerland, UK, USA

Iraq has asked for Membership,

other countries are welcome

Declaration

accepted by the Plenary Meeting of the Nobel Laureates at the PETRA IV on 19 June 2008

We, the undersigned Nobel Laureates, commend the remarkable progress made in creating the SESAME Synchrotron Light Source. It will provide a major center for scientific research, with the ownership shared by many nations of the Middle East. Thereby, SESAME, **as well as producing educational and economic benefits, will serve as a beacon, demonstrating how shared scientific initiatives can help light the way towards peace.**

H.Schopper, International Parliamentary Union 2017

Location decided after difficult negotiations by secret vote of Interim Council

(proposals from 7 countries): Jordan

Conditions:

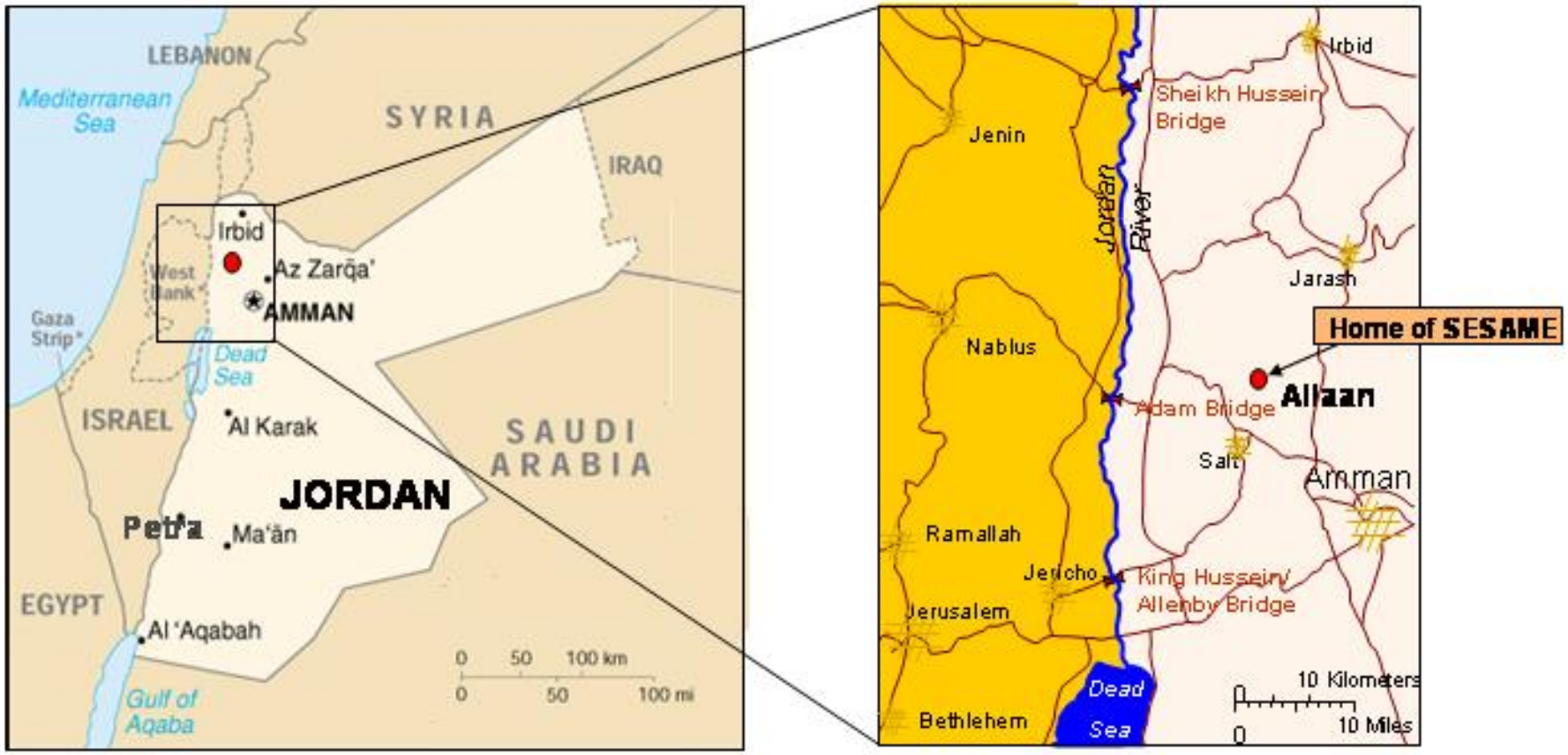
- *all scientists from the world get access*
- *Site and building financed by host state*
- *Strong support by authorities*

Host country has special obligations (Host State agreement, privileges immunity, tax free, etc, like CERN)

Strong support by H.M. King Abdullah II

H.Schopper, UNESCO-ADG Iaccarino, H.M. Abdullah, Prince Ghazi

H.Schopper, International Parliamentary Union 2016



SESAME location in Allaan, Jordan

Groundbreaking SESAME Building January 2003

UNESCO DG Matsuura and H.M.King Abdullah II unveiling marble plate,

H.Schopper, International Parliamentary Union 2016

Completion of building 2008

H.Schopper, International Parliamentary Union 2016

First users‘meeting, January 2003 at Amman

Financed mainly by Japan

H.Schopper, International Parliamentary Union 2016

SESAME 2. Users meeting, Isfahan, October 2003

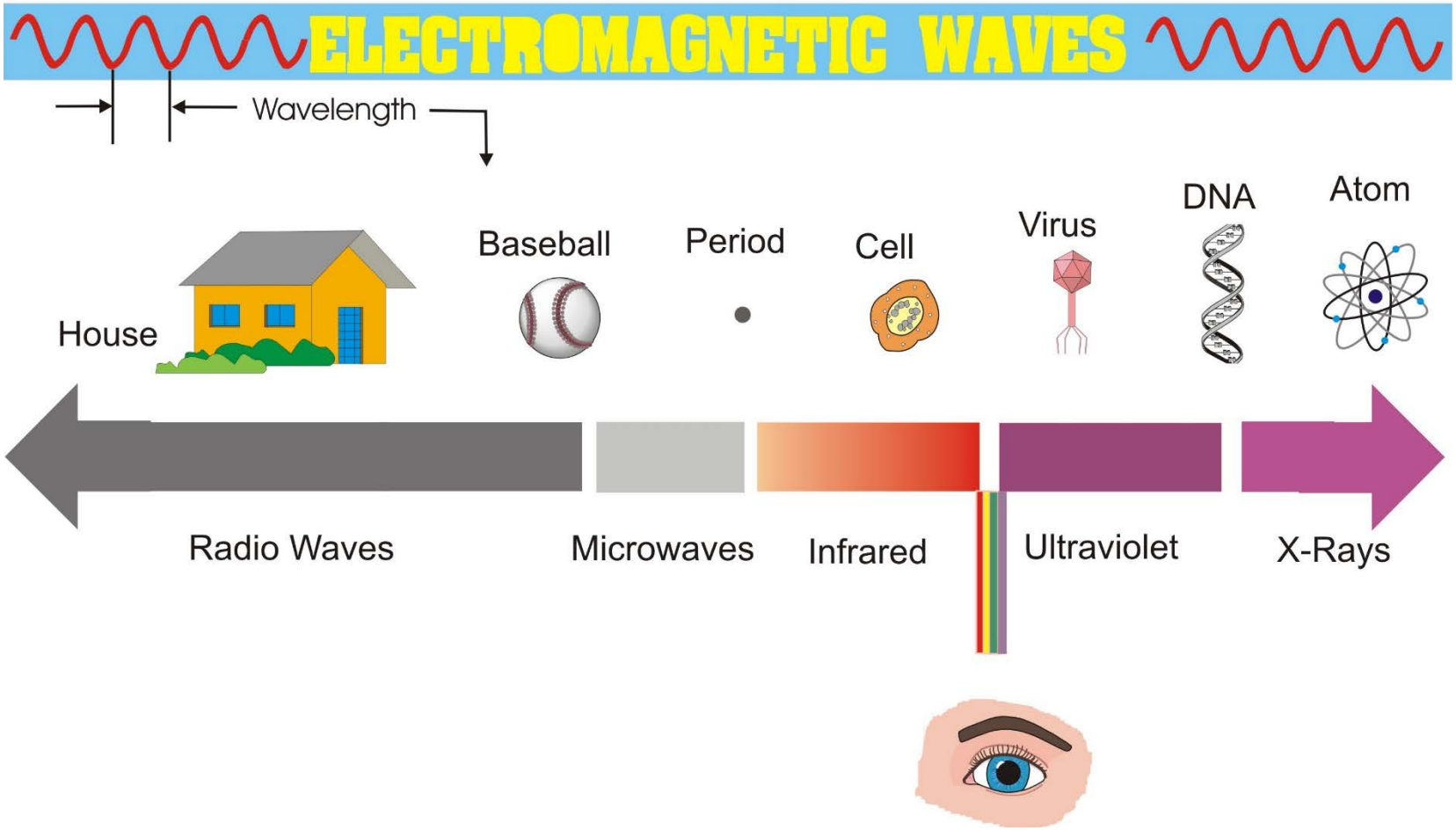
SESAME Inauguration 16 May 2017

King Abdullah II with Heads of Delegations

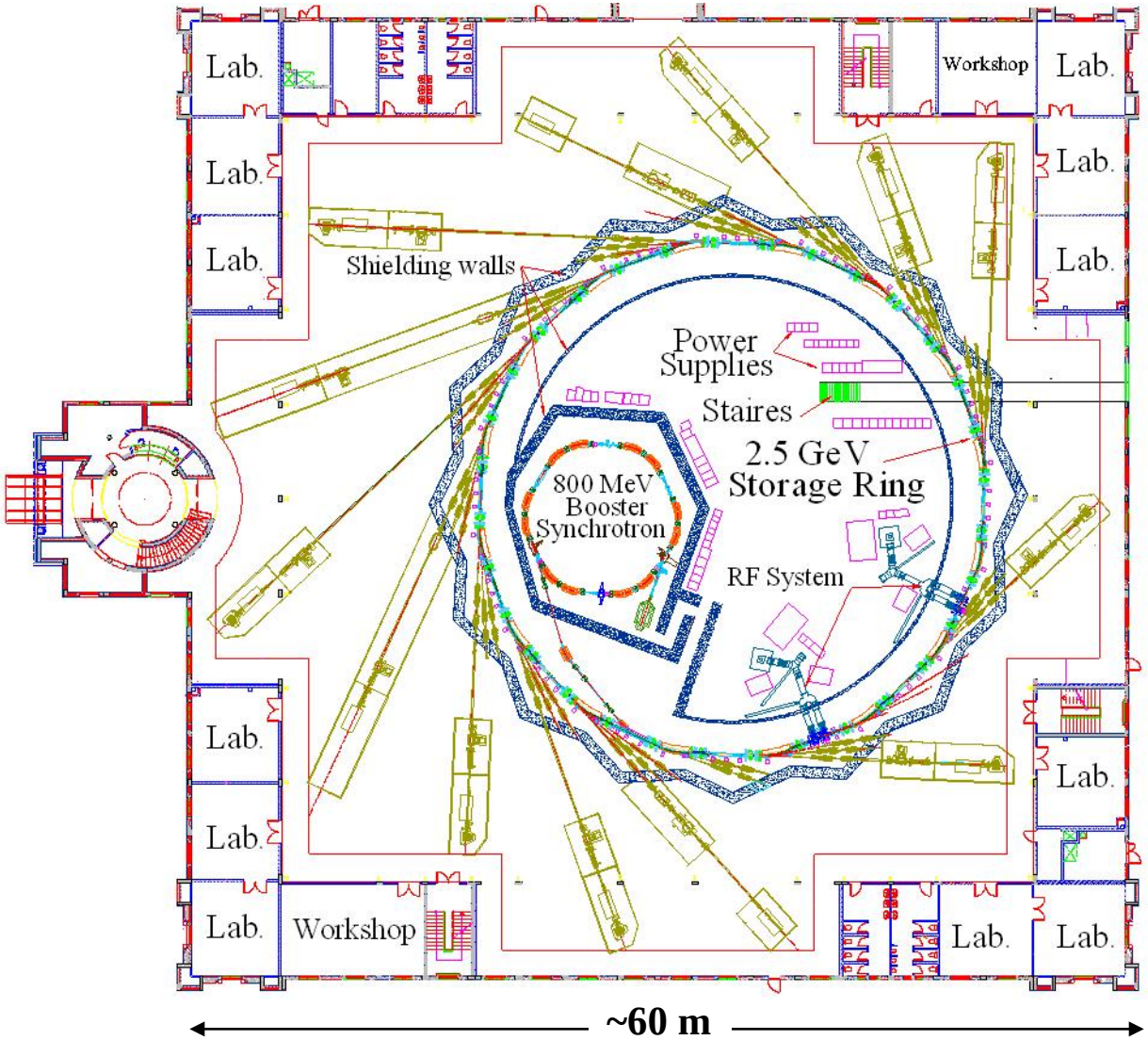
What is the SESAME Facility ?

- **Extremely strong light source (synchrotron radiation, 3. generation)**
- **A synchrotron produces intense light from the infrared region to X-rays.**
- **Apart from high intensities, light has special properties (very short pulses, polarized)**
- **Individual beams for specific research domains**

Electromagnetic Radiation - How It Relates to the World We Know



Synchrotron radiation is used for experiments typically over this region



Energy	2.5 GeV
Current	400 mA
Circumference	128.4m
Emittance (horiz)	26.4 nm-rad
Possible IDs	13
ID Length	2.75 m

e^- Beam Size in Straight Sections

σ_x/σ_y	700μm/35μm
Critical Energy	5.9 KeV
e^- Energy Spread	0.1%
Bending Mag. Field	1.425 T

Parameters: 2.5 GeV ring with 13 possible insertion device beam lines. Beam lines can also come from the 16 bend magnets.

SESAME's SCIENCE

SESAME Light

Life Sciences

- Drug design
- Imaging
- Therapy

Material Science

- New materials
- Energy

Environmental Science

- Air, soil and water
  pollution analyses

Cultural Heriatge

- Non-destructive analyses
  Archeology

Material Science/Physics/Chemistry

Glasses
Ceramics
Magnetic Materials
Polymers
Thin Films
Superconductors

Biological & Medical Sciences

Pathogen structure
Genetic diversity; plants and microorganisms
Metalloenzymes and Metalloproteinases
Biosensors

Industrial Applications

Polymer characterisation
Synthesis and characterisation of novel materials
Chemical analysis
Screening for drug design

Environmental Science

Clay minerals
Mineral analysis of rocks
Soil contaminants
Applications in agriculture and bioremediaiton

Archaeology

ORAGNIZATIONAL STRUCTURE OF SESAME

Permanent Council

Delegates of member countries and UNESCO

Each one vote

Directorate

Director: **K. Toukan** ***(former Minister)***

Technical Director: **E. Huttel** ***(German)***

Scientific Director: **G. Paolucci, (Italian)**

Administrative Director: **Y. Khalil** ***(Egyptian)***

International Advisory Committees

Scientific: Z.Sayers (Turkey)

Beamlines: Z.Hussain (USA)

Training: R.Mansouri (Iran)

Technical: A.Wrulich (Switzerland)

Staff:

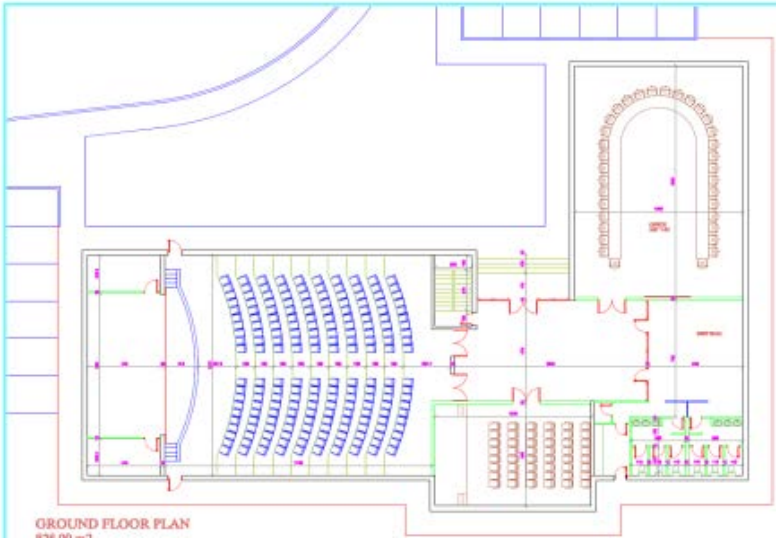
about 40, to increase to 60

The future

SESAME is planning to build a guest house, for users

This will be followed by a Conference Centre

SESAME will be able to house meetings on other topics (food, water, archaeology, ...) in secure/easily accessible surroundings



Dream: SESAME will become international meeting place

Remark

A new project following the CERN-Model is presently being discussed for the Balkan

a “SESAME 2”

Coordination government of Montenegro

Conclusion

Cooperation in large scientific projects requires scientific, administrative and political efforts on "lower level" which irradiate into different and even highest political levels.

In times when relations between some nations are often characterised by hatred and violence it is gratifying that organisations like CERN and SESAME bring together politicians and scientists to work peacefully together

Small light in dark times

Thank you

National Science Policy

❖ **Priority is given to short-term national problems**

(infrastructure, roads, water)

mercantile mentality prevails, promote activities with short return (tourisms)

❖ **Funding of R&D is completely unsatisfactory**,

is necessary for long-term development (unemployment),

should spend a very small amount of available funds for long term development

❖ **Learn how to establish priorities** and introduce evaluation.

mechanisms for decision taking and priority setting are missing

❖ **Lack of cooperation inside individual countries**

encourage establishment of national networks

International Cooperation

•**little experience in international scientific collaboration**

countries think in terms of national or at best bilateral projects

(e.g. with international organisations EU, IAEA, UNESCO, TWAS)

convince leaders and scientists that excellence can only be achieved in international cooperation

•**lack of experience in management of international cooperation**

Teach administrators how to deal with international bureaucracy

•**Declaration of intention replaces sometimes real actions**

•**Political problems often only pretext to cover other issues**

Discourage the latter attitude, use scientific cooperation for building trust

"Science for Peace"

The role of parliaments and parliamentarians in the implementation of SDG 6

2nd Middle East Roundtable on Water

From Words to Actions

Amanda Loeffen

a.loeffen@waterlex.org

Geneva – 6-7th July 2017

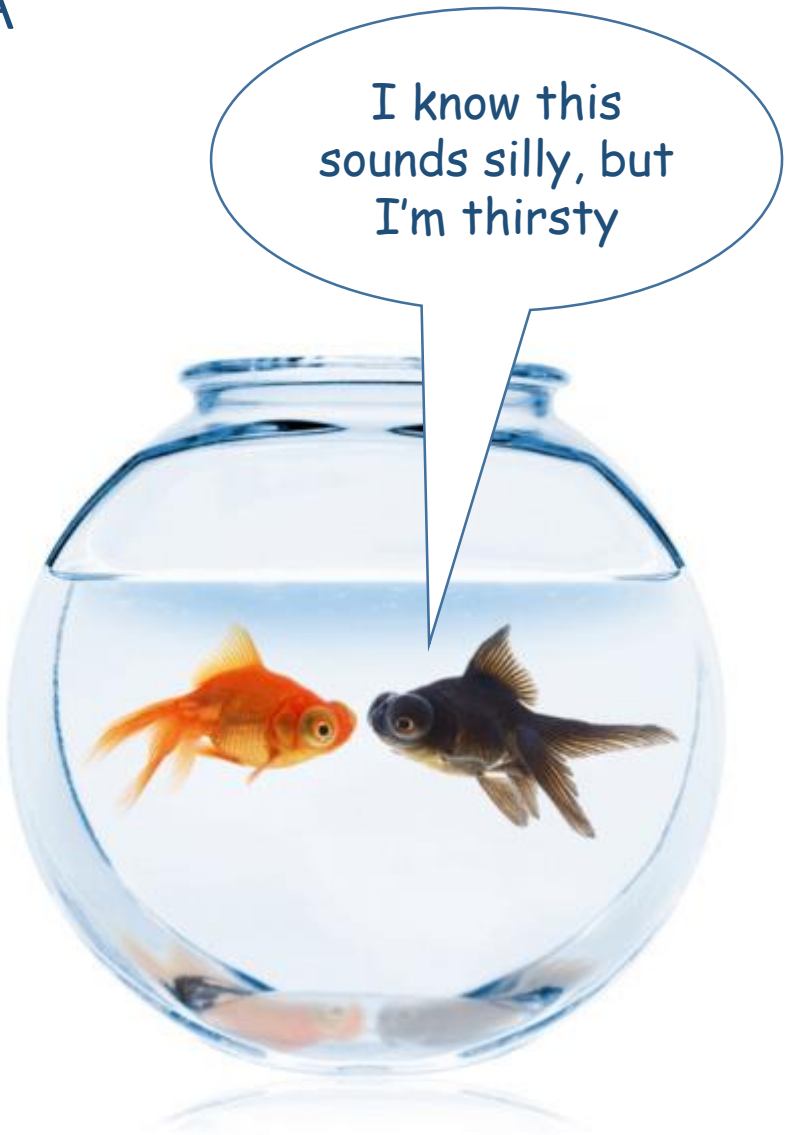
Inter-Parliamentary Union

For democracy. For everyone.

WaterLex

AGENDA

1. WaterLex and IPU
2. Global Risk and the Reality in Middle-East
3. Development of the Human Rights to Water and Sanitation and SDGs
4. The role of Parliaments in SDG Implementation
5. Baseline Analysis
6. Progressive Realisation
7. Programme of Action



WaterLex

WATERLEX

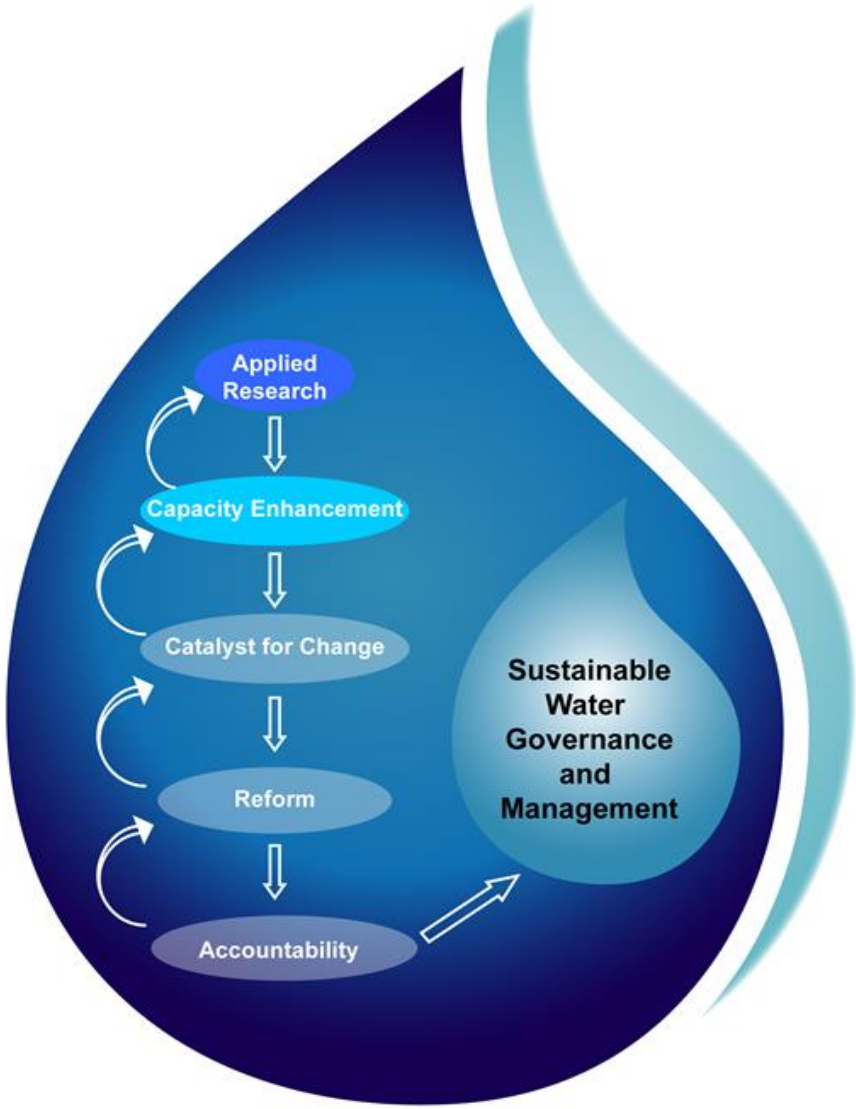
Our Vision is a world where there is **sustainable use and access to safe water and sanitation for all**

Our Mission is to secure the **human rights to water and sanitation through law and policy reform**

WaterLex

WATERLEX SUPPORTING WORK AT IPU

Inter-Parliamentary Union
For democracy. For everyone.



Advice and legal thinking

- 2015 IPU Resolution

✓ *"Shaping A New System Of Water Governance: Promoting Parliamentary Action On Water And Sanitation"*

Water Dialogues

- Middle East Roundtable on Water 2016

✓ Strategic Advice

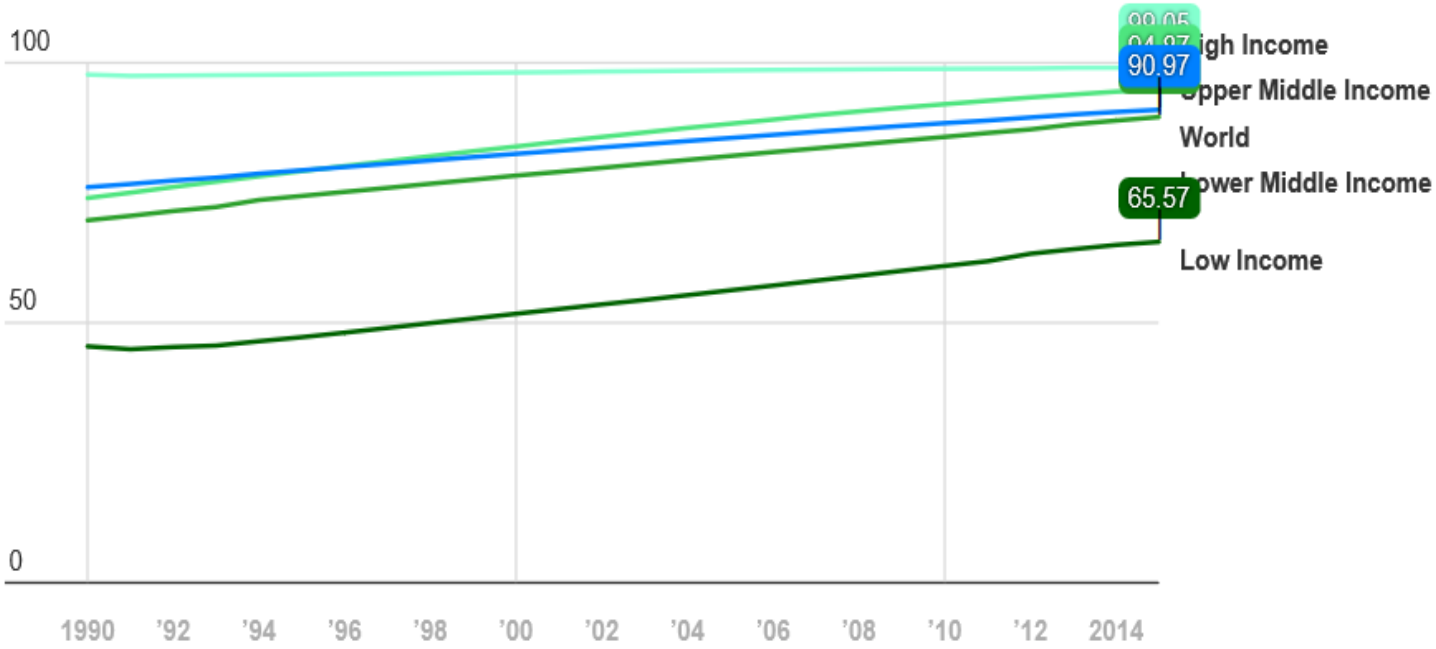
✓ Technical ideas/methodology

WaterLex

ACCESS TO WATER

A third of people in low-income countries struggle to access clean water.

Share of population with access to an improved source of drinking water (%)

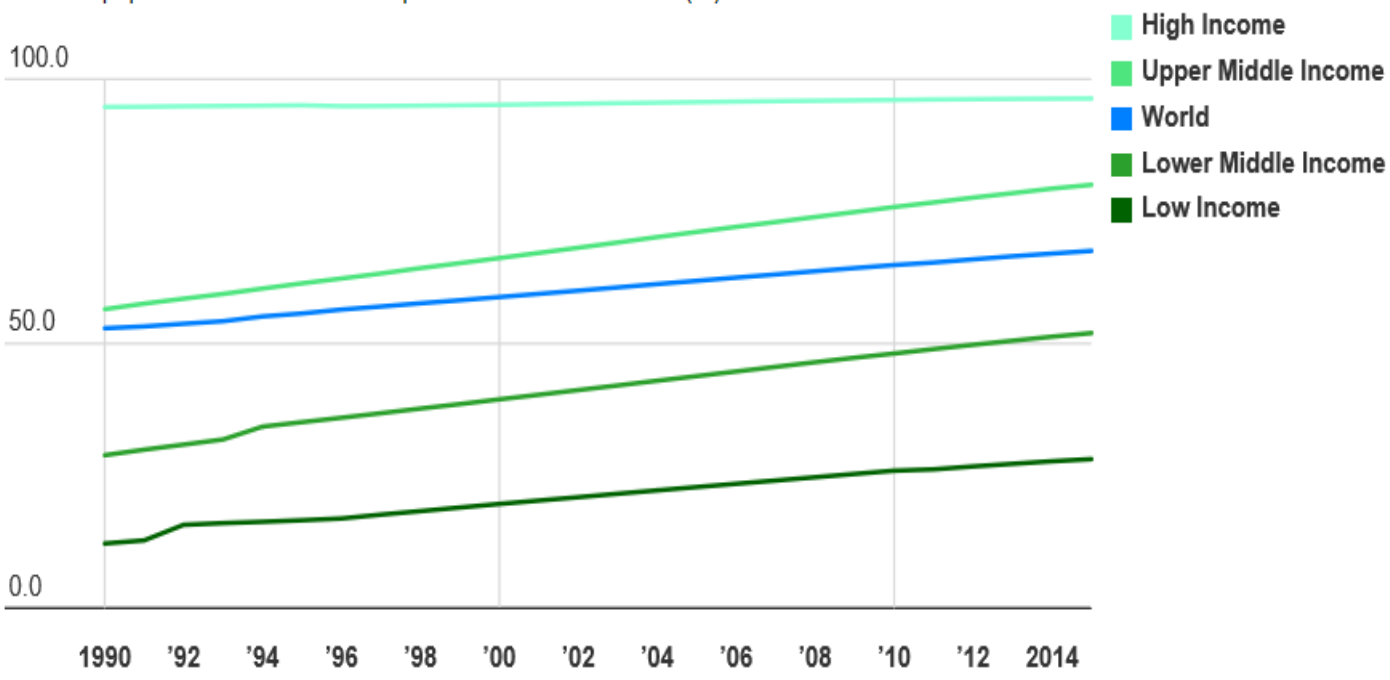


Source: World Development Indicators

ACCESS TO IMPROVED SANITATION

Nearly a third of world's population does not have access to improved sanitation facilties

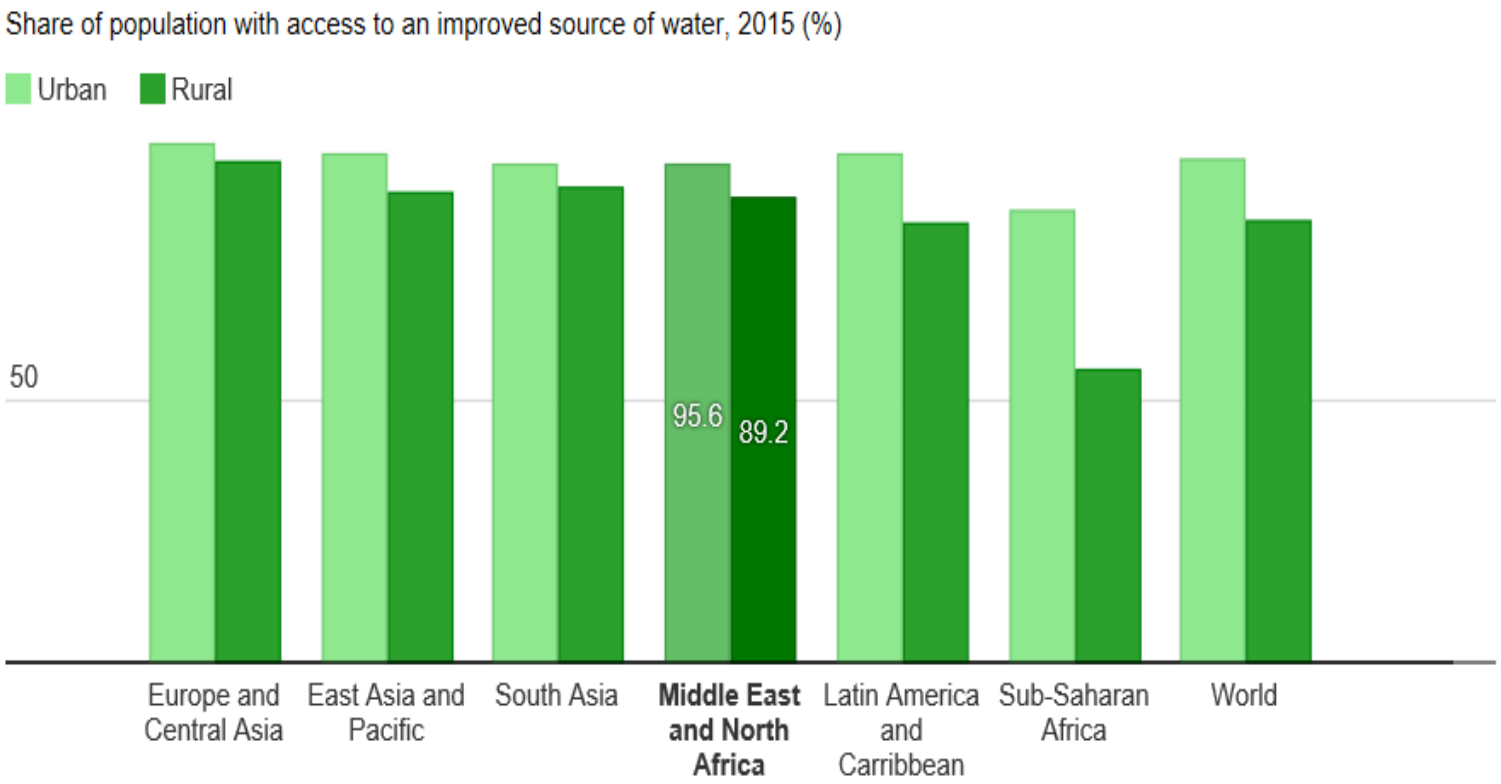
Share of population with access to improved sanitation facilities (%)



Source: World Development Indicators

WaterLex

MIDDLE-EAST AND NORTH AFRICA NOT ALONE IN RURAL-URBAN DISCREPANCY



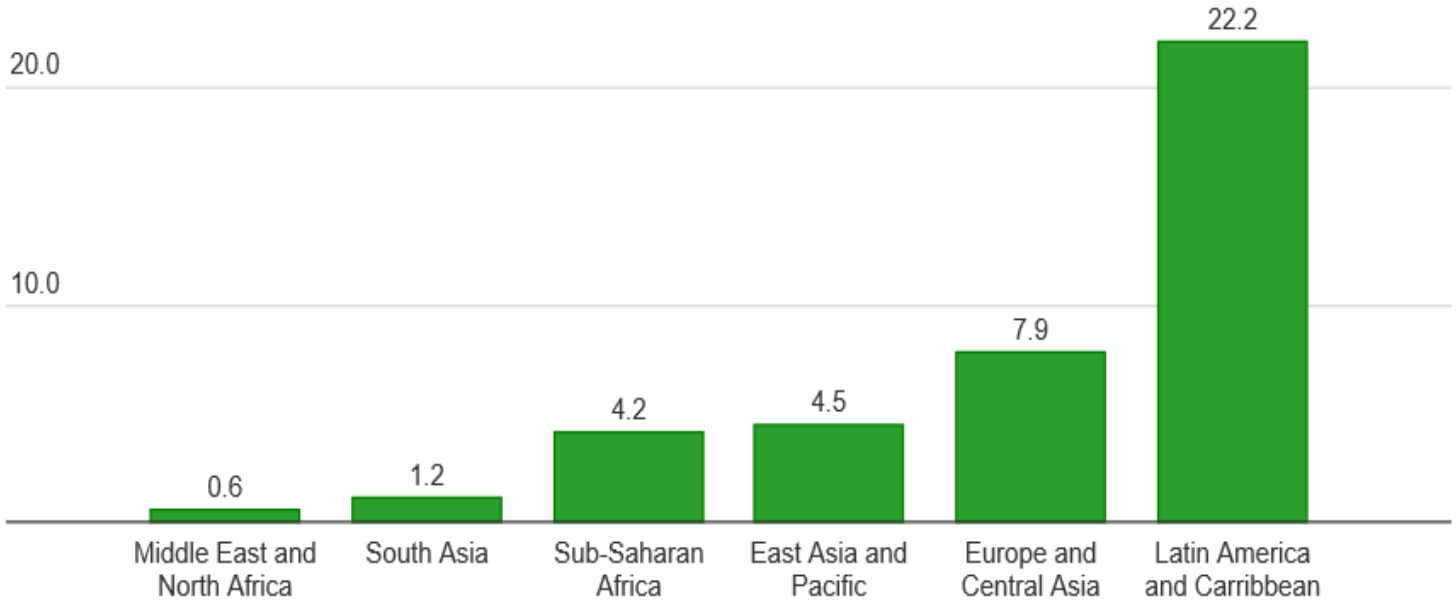
Source: World Development Indicators

WaterLex

WATER STRESS ADDS TO THE PROBLEM

Middle East and North Africa and South Asia are the most water-stressed regions.

Renewable internal freshwater resources per capita, 2014 (thousands of cubic meters)



Water stress occurs below 1,700 cubic meters per capita per year

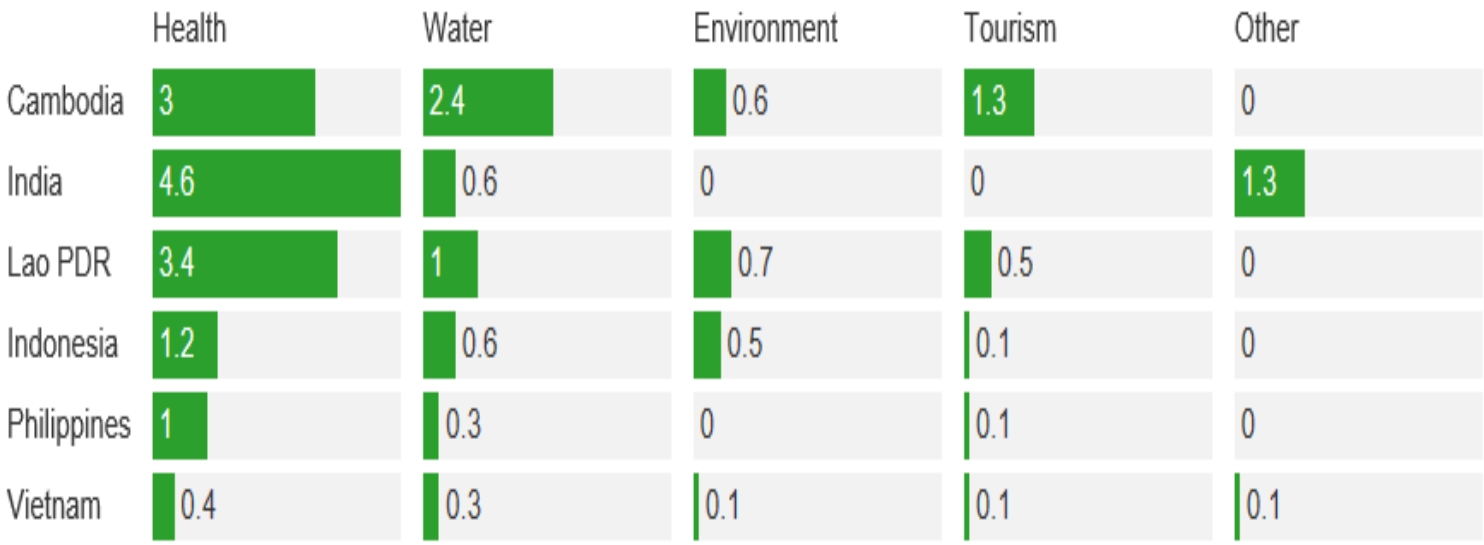
Source: World Development Indicators

WaterLex

HOW IMPROVED SANITATION CAN HELP ECONOMY

Many sectors can be affected by inadequate sanitation

Percent of GDP lost by sectors through inadequate sanitation



Source: World Bank

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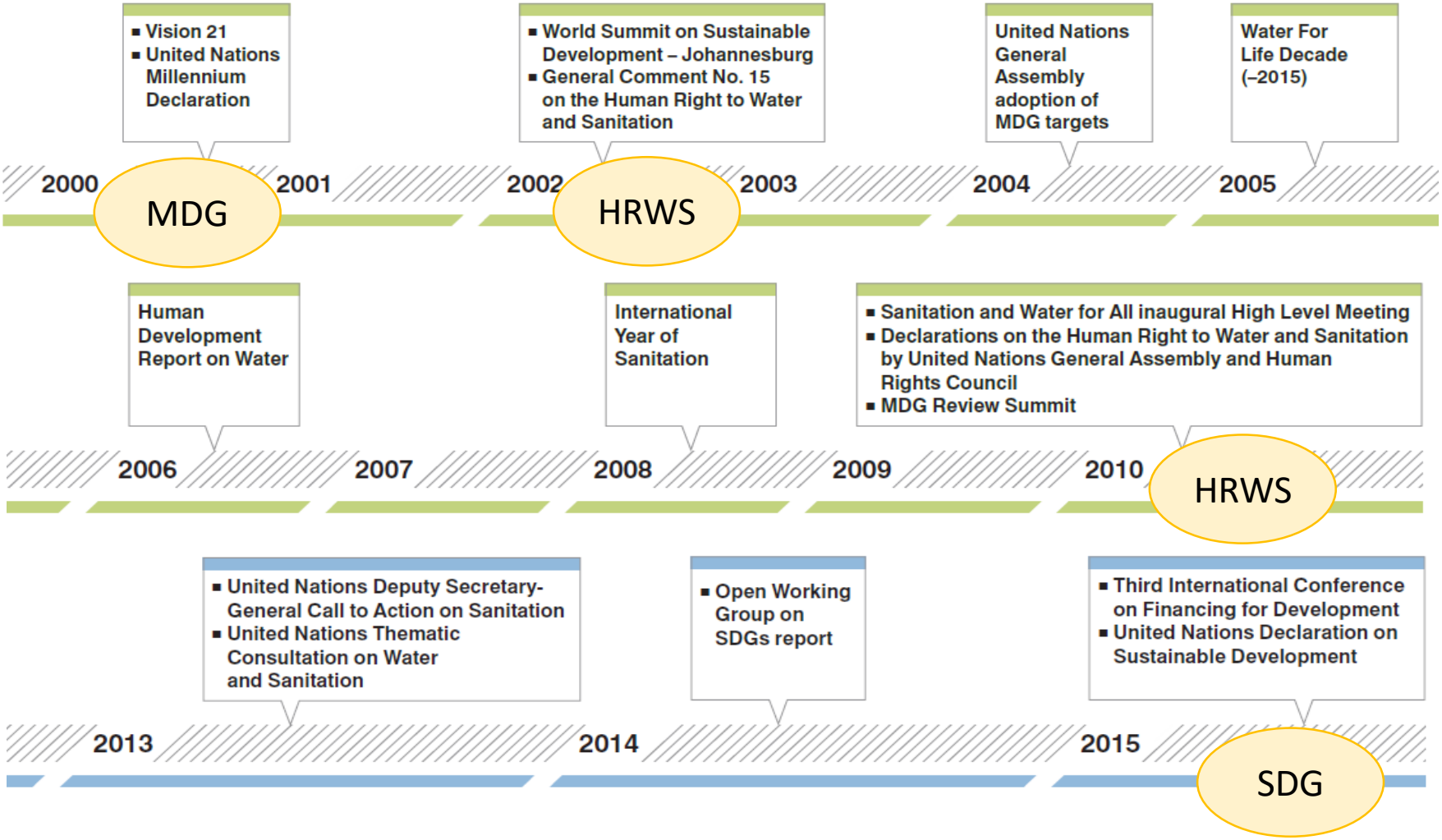
FROM MDGs TO SDGs



JMP 2015 REPORT

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WATER AND SANITATION AS HUMAN RIGHTS

Access to:

SAFE

AFFORDABLE

ACCESSIBLE

AVAILABLE

ACCEPTABLE

✓Recognition by the United Nations General Assembly in 2010

✓Progressive realisation: achieve universal coverage over time

✓Legal obligations of States to respect, protect and fulfil human rights

…Water and Sanitation is a Human Right

WaterLex

WATER IN THE AGENDA 2030

Linkages between the rights to water and sanitation and the SDGs

- ✓SDGS are grounded in a human rights framework
- ✓"Leave no one behind": **Non-discrimination**
- ✓Renewed commitment to implement the human rights to water and sanitation
- ✓SDG 6.1 and 2: Universal access

Target 6.1 "By 2030, achieve **universal** and **equitable access** to **safe** and **affordable** drinking water for **all**

WaterLex

WATER & SANITATION GOAL 6 SUB-TARGETS

6.1
UNIVERSAL EQUITABLE ACCESS TO DRINKING WATER

6.2
UNIVERSAL EQUITABLE ACCESS TO SANITATION

6.3
IMPROVE WATER QUALITY

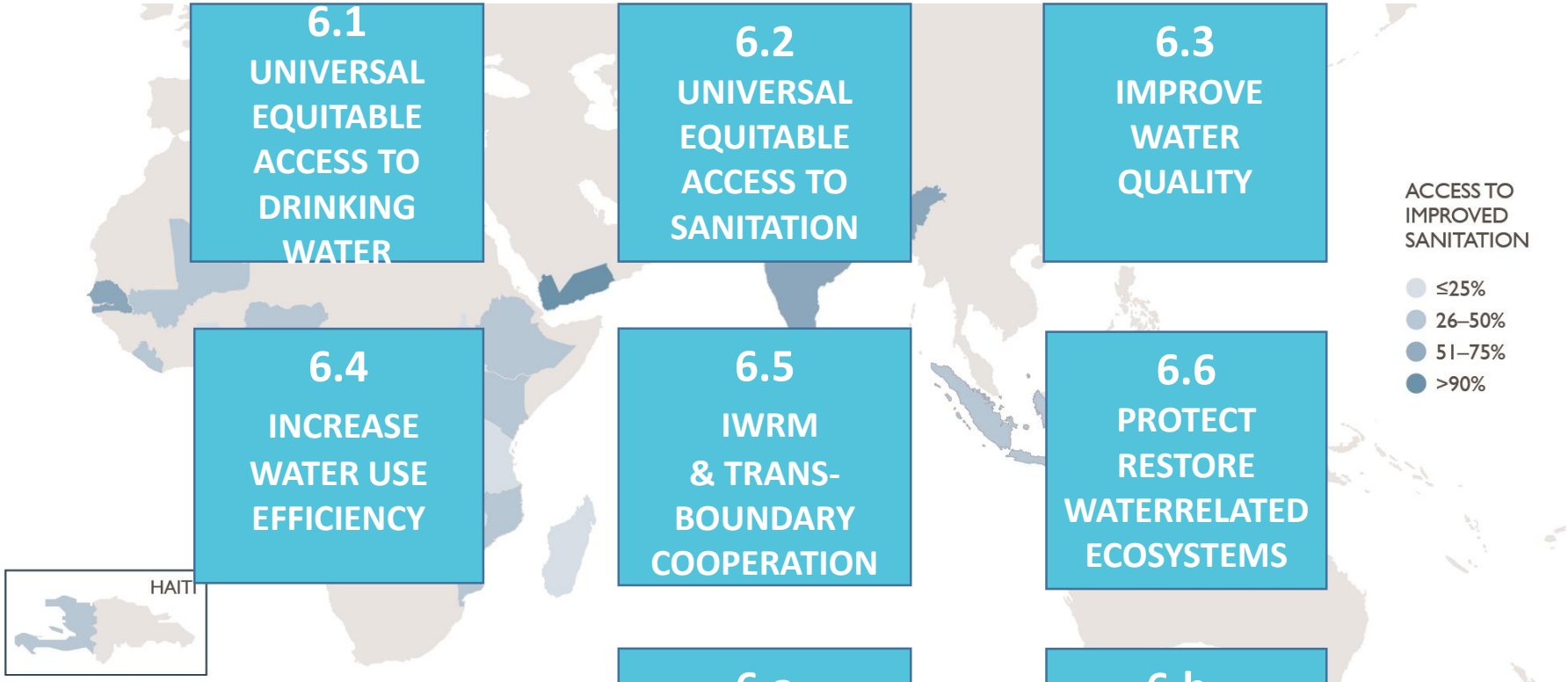
6.4
INCREASE WATER USE EFFICIENCY

6.5
IWRM & TRANS-BOUNDARY COOPERATION

6.6
PROTECT RESTORE WATERRELATED ECOSYSTEMS

6.a
INTERNATIONAL CO-OPERATION CAPACITY-BUILDING

6.b
SUPPORT STRENGTHEN PARTICIPATION COMMUNITIES



Percentage of population with access to improved sanitation. *WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation.*

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ROLE OF PARLIAMENTS in SDG AGENDA

Human Rights, transparency, efficient governance, inclusiveness, non-discrimination

Achieved through:

- Ambitious legislation to implement SDG 6
- Budget for SDG6 implementation
- Accountability for SDG 6 commitments of the government
- Monitoring
- Ensuring policy and institutional coherence among sectors
- Fostering multi-stakeholder collaboration
- Mobilization of finance, capacity building, transfer of technology

WaterLex

ROLE OF PARLIAMENTARIANS

- Annual Parliamentary Hearing, UN HQ, Nov'2014

"Ensuring a people-centred approach to the new SDGs: A shared responsibility"

- Every time a law is made, MPs can call attention to whether it is consistent with the SDGs, and move amendments if it is not

- Parliamentary committees can ensure that their scrutiny procedures hold Ministers and officials to account for national progress on the SDGs

- And parliamentarians, in representing those who elected them, can ensure an ongoing dialogue with civil society over such progress

WaterLex

SDG 6: START WITH BASELINE ANALYSIS

DESKTOP RESEARCH:

- Establish baseline
- Legal and policy research

FIELD TESTING:

Understand:
- Based on desktop research
- Situational analysis (incl.marginalised)
- Baseline of compliance

SDG 6 IMPLEMENTATION RECOMMENDATIONS:

Identify:
- Good practice/ areas for improvement
- National indicators/monitoring
- Technical solutions

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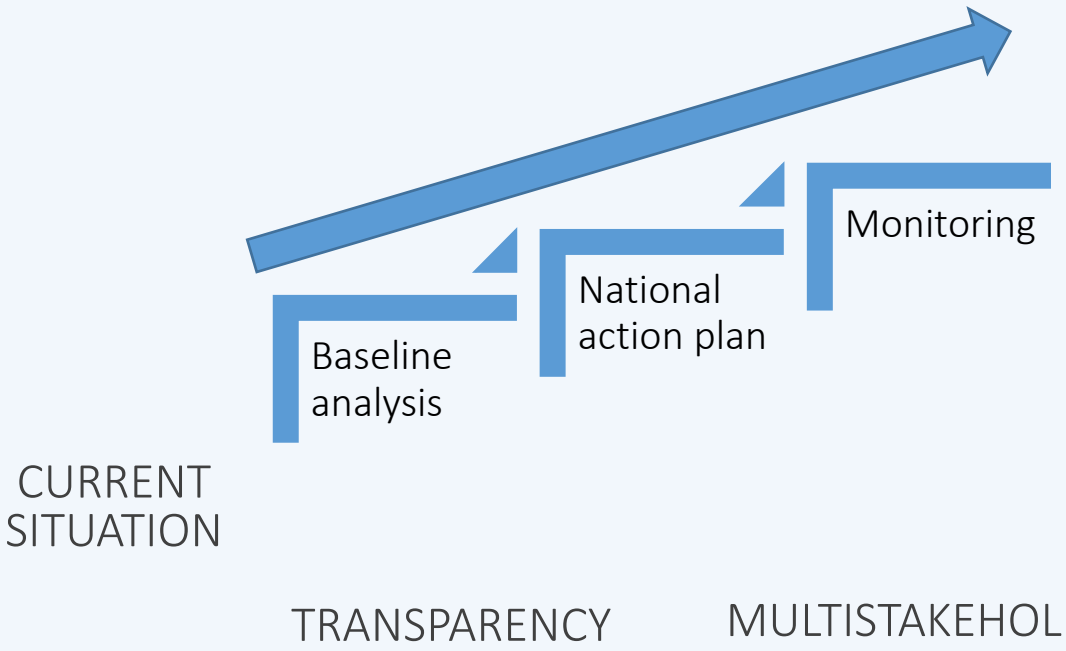
PROGRESSIVE REALISATION OF SDG 6



OBJECTIVE:

SECURING

SDG 6 + Legal Compliance

= Sustainable Water Governance & Management

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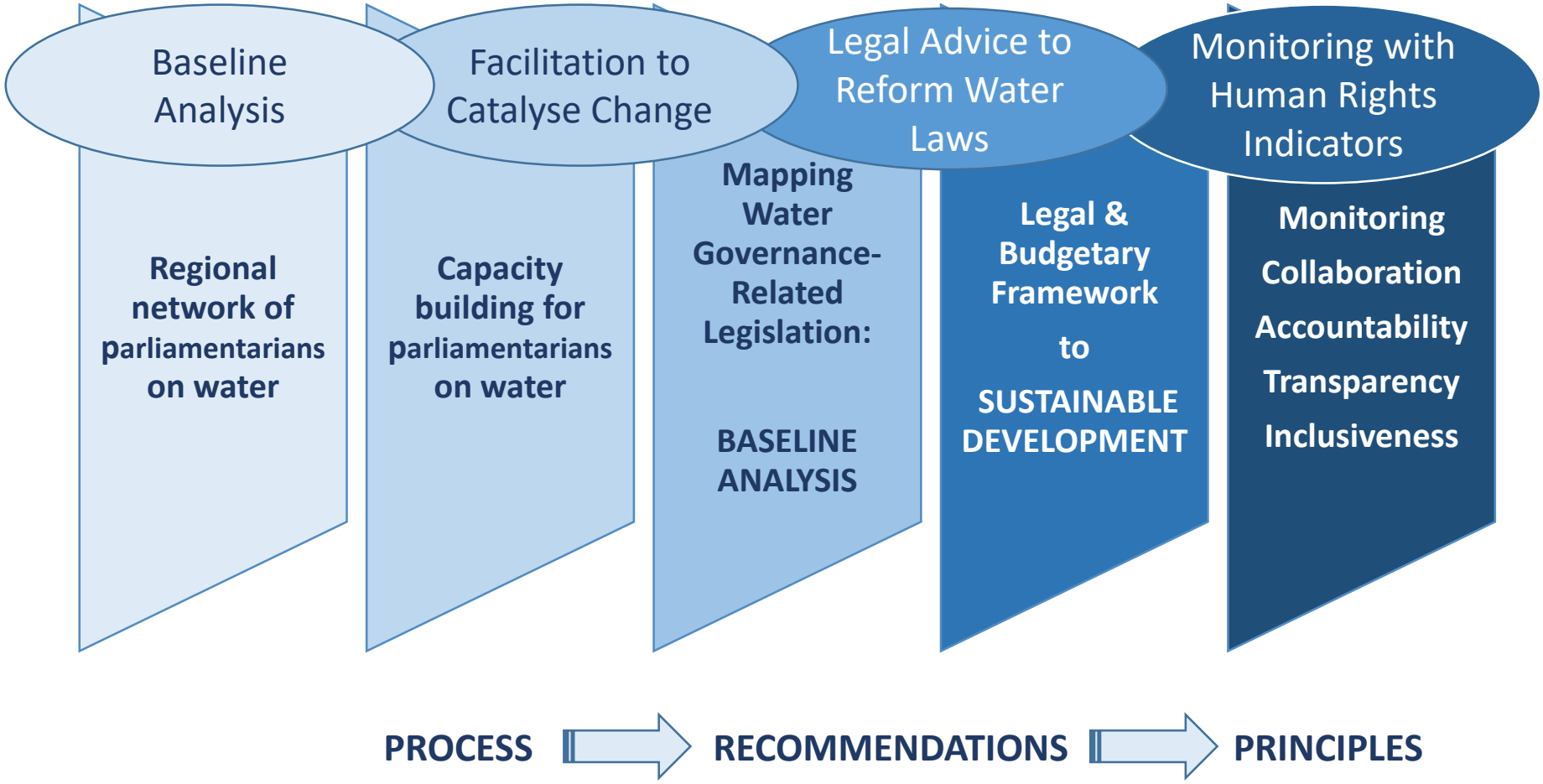
PROGRAMME OF ACTION



Human Rights-Based Roadmaps

WaterLex

“Acting now is a matter of human dignity, justice and survival. Waiting to act is no longer an option”

Quote, Budapest Water Summit, 2016

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PNoW
(Parliamentary Network on Water)
Objectives, Working Modalities and Next Steps

2nd Middle East Roundtable on Water

From Words to Actions

Amanda Loeffen

a.loeffen@waterlex.org

Geneva – 6-7th July 2017

Inter-Parliamentary Union

For democracy. For everyone.

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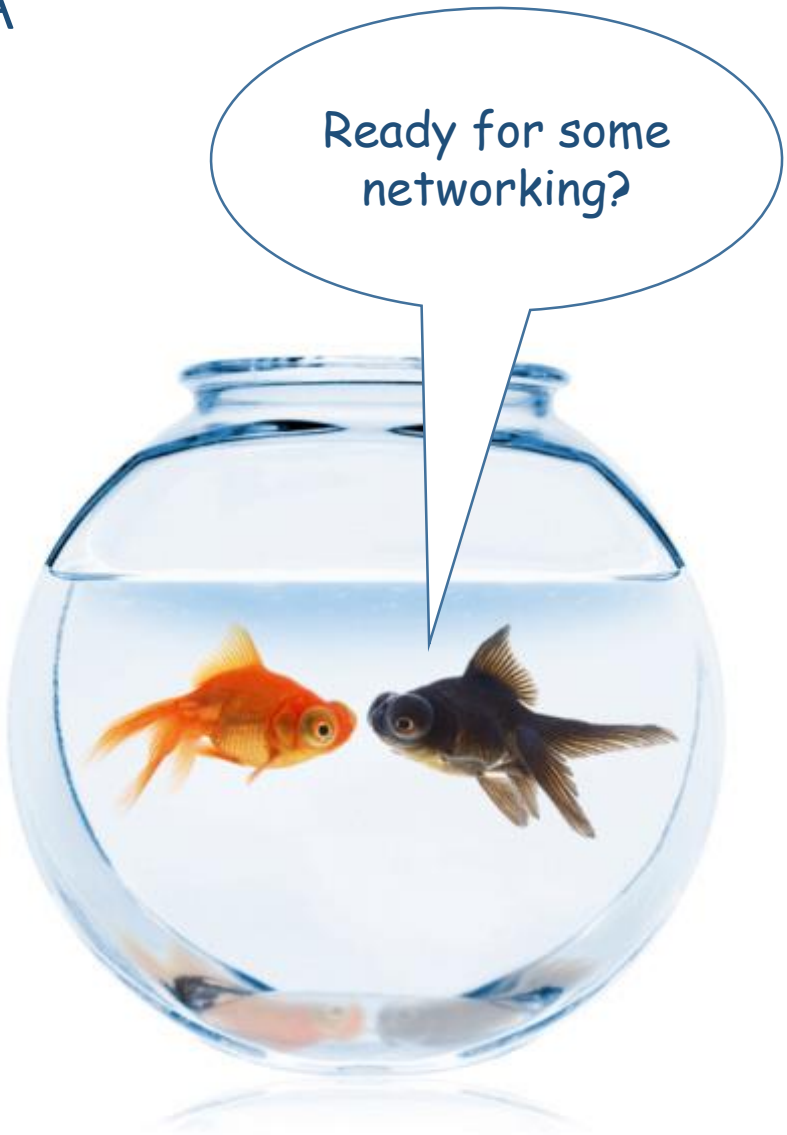
AGENDA

1. Objectives for the PNoW
2. Role of PNoW
3. Programme of Action
4. Next Steps



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OBJECTIVES

- Improve water governance in the Middle East through cooperation between States on SDG6 implementation

PNoW:

Participation

Monitoring

Progressive realisation

Sharing of technology

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ROLE OF PNOW IN SDG 6 IMPLEMENTATION

SHARE INFORMATION

- Existing data
- 2 pilot countries in depth
- Technology solutions

ANALYSE

- Pilots as guide to good practice
- National situations
- Possibilities for co-operation

LEARN

- Regional guidelines for:

Law reform

Indicator monitoring

Data sharing

WaterLex

PROGRAMME OF ACTION

Programme for SDG 6 Implementation in Middle East Region

Timetable

			PHASE 1				PHASE 2				
			2017	2018				2019			
	Programme	Activities	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	ME Roundtable on Water	Steering role				3rd Roundtable				4th Roundtable	
		Receives feedback from PNOW									
2	PNOW	Parliamentary Network on Water			PNOW, GA				PNOW, GA		
		Knowledge sharing meetings									
3	Capacity Building	Research preparation for workshop	Workshop prep								
4	Pilot country 1	Research: water laws/policies	Baseline Pilot 1								
		Stakeholder engagement		Field Research							
		Develop National Action Plan					National Action Plan				
5	Pilot country 2	Research: water laws/policies	Baseline Pilot 2								
		Stakeholder engagement		Field Research							
		Develop National Action Plan					National Action Plan				
6	Science and innovation	Technology sharing through PNOW			Technology sharing						
		Governance private sector solutions			Design enabling governance						
7	Public awareness	Develop targeted brochures/guides							Communication material		
		Translation									

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1. MIDDLE EAST ROUNDTABLE ON WATER

- **Steering Role** over PNoW International Secretariat
- **Decisions** on budget, Programme of Action, Strategic Direction
- Receives feedback and recommendations from PNoW
- **Presents results** to IPU GA
- **Recommendations** for using this model in other regions

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2. PNOW – NETWORK OF PARLIAMENTARIANS ON WATER

- **Middle East Region** fully represented by parliamentary delegations
- **Platform for sharing** of information with respect to implementation of SDG 6
- **Regional Experts** on water
- **Information sharing/learning**:
  - Results of pilot country mapping demonstrating good practice
  - How to extrapolate this information regionally into processes for:
    - Regional indicators to track SDG 6 progress
    - Monitoring solutions: technology, data sharing, strategies
- **Identify technology solutions** to fill some of the gaps in good governance
- **Create enabling governance** framework to support sustainable management

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3. PILOT COUNTRY MAPPING AND SDG 6

July 2017

Select 2 pilot countries in the MENA Region

Nov 2017

Review of existing water law, policy

Feb 2018

Field testing of results to check compliance

April 2018

Share good practice with PNoW

May 2018

Develop National Action Plans

April 2019

Develop Regional Strategy

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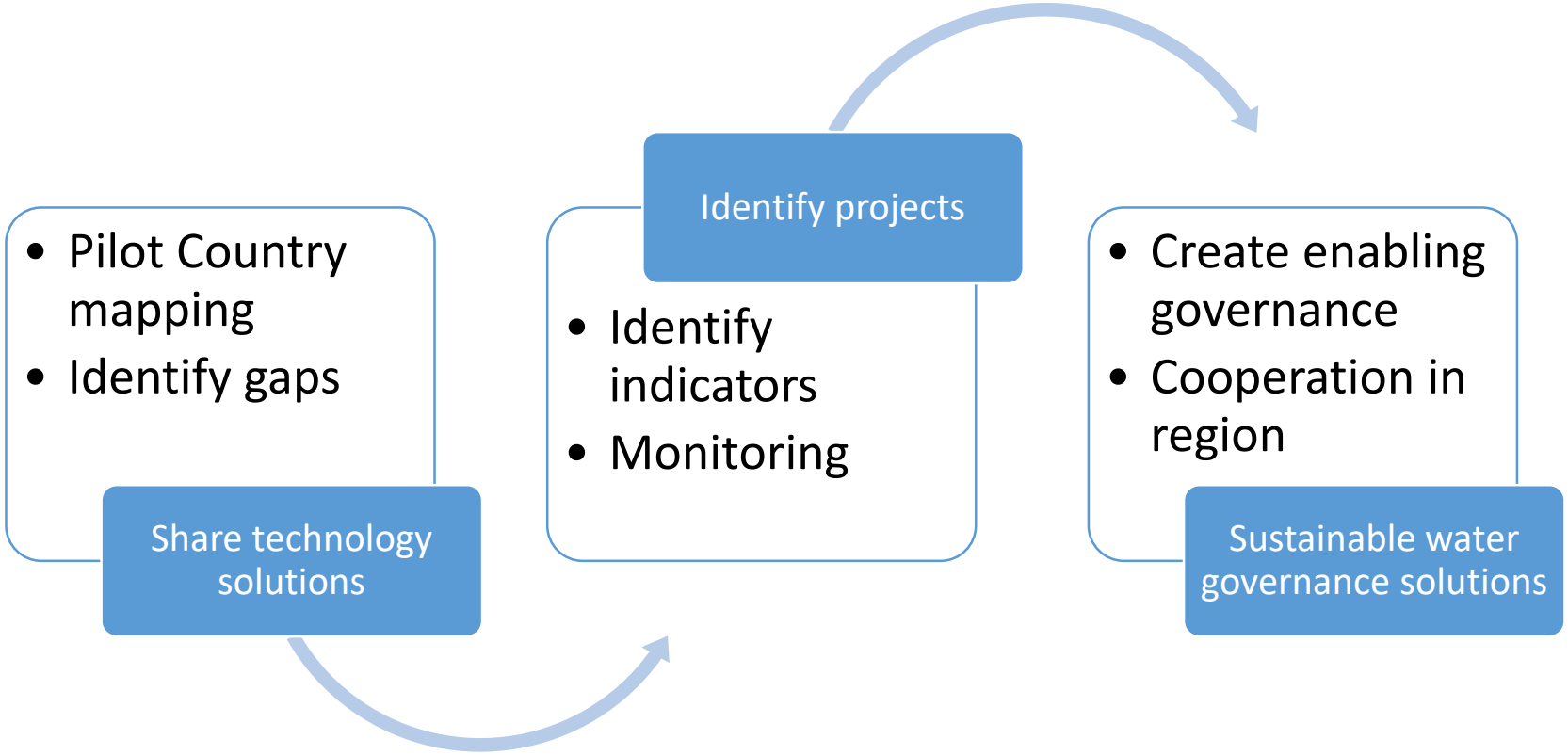
4. SCIENCE AND INNOVATION



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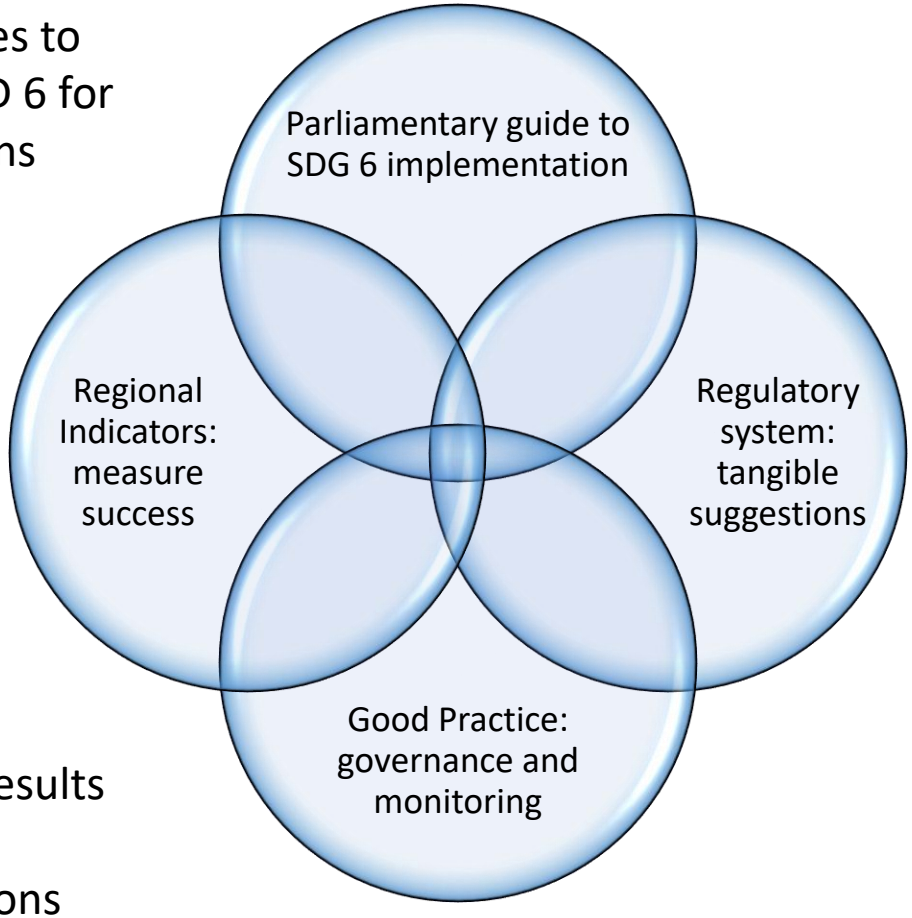
5. COMMUNICATION MATERIALS

"How-to" guides to implement SGD 6 for parliamentarians



Created from results of PNoW recommendations

WaterLex

NEXT STEPS

JULY '17	Choose pilot countries
OCT	Present at St Petersburg GA for adoption
NOV	Set up International Secretariat (IS) for management of the PNoW (IPU plus WaterLex), based in Geneva initially
NOV	Research on pilot countries to start Q4'17
DEC	Select participants of PNoW for each country
APRIL '18	First PNoW proposed at IPU GA
	AGENDA

- Capacity building on SDG 6
- Review of pilot country mapping and learnings
- Technology ideas for solutions

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OBJECTIVE:

SECURING

SDG 6 + Legal Compliance

= Sustainable Water Governance and Management

"Be a global citizen. Act with passion and compassion. Help us make this world safer and more sustainable today and for the generations that will follow us. That is our moral responsibility."

Quote, Ban Ki Moon, about the SDGs

WaterLex

Committee on Middle East Questions
Second Roundtable on Water: From words to actions
6 - 7 July 2017 IPU Headquarters Geneva, Switzerland

The Country Mapping Approach

Case Studies and Pilot Countries

Rose Osinde Alabaster
Program Director, WaterLex
r.osindealabaster@waterlex.org

Inter-Parliamentary Union
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Current Situation

MENA region - most water scarce region in the world - average of 656 m^3 of renewable freshwater per capita…

- ❑ Most water scarce region
- ❑ Lowest productivity of water in the world.
- ❑ Among the lowest water tariffs in the world.

Governments give the highest level of subsidies globally – approaching 2 % of GDP on average

BUT

Benefits are disproportionately captured by the wealthiest quintile of the population.

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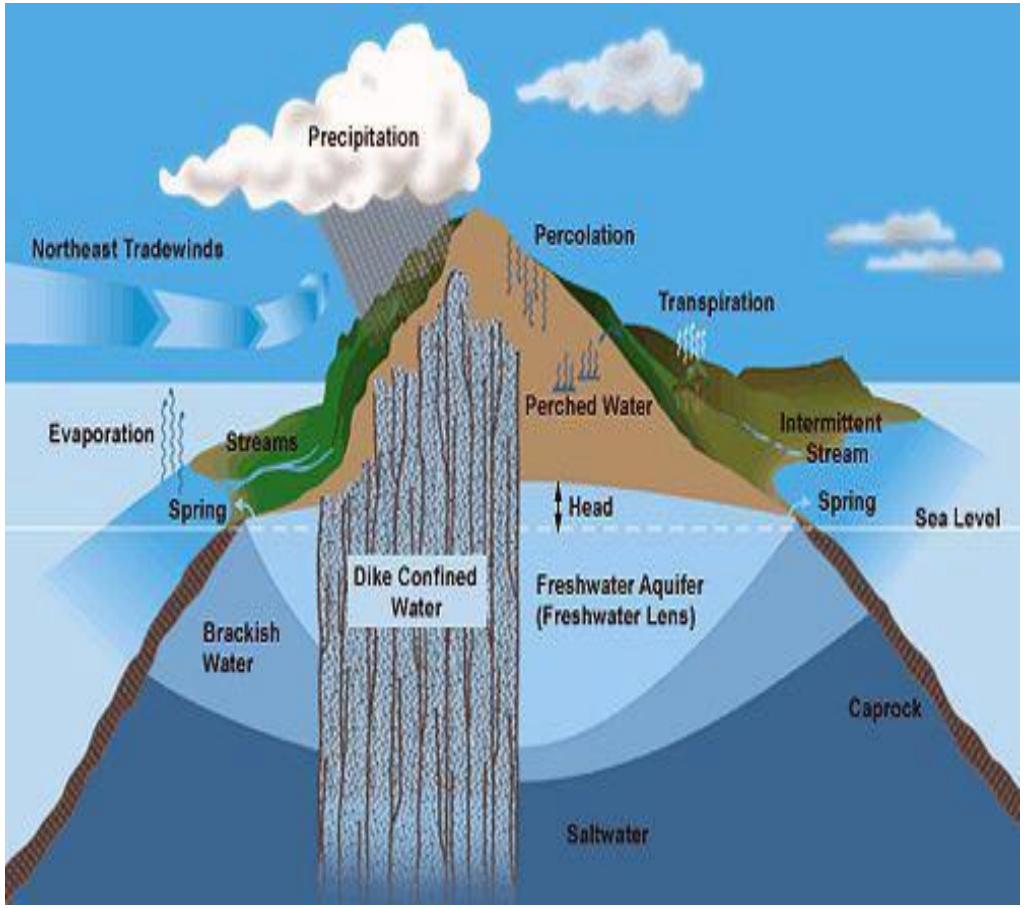
Effective Management and Governance

Water Quality, Availability and Sustainability



- Effective management of natural resources across the region, human and economic development
- Strengthened decision-making processes
- Effective institutions
- Alignment with key governance principles

  (participation, access to information, accountability, sustainability)

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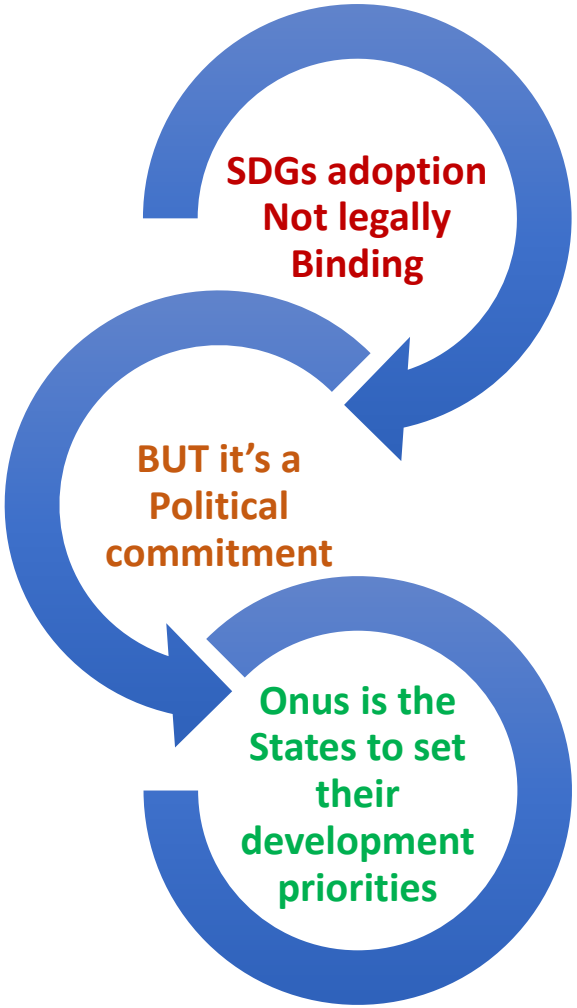
Enabling Environment for National Priorities for SDGs

- ❑ Laws
- ❑ Policies
- ❑ Implementation mechanisms
- ❑ Monitoring and Compliance



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Legal Policy Assessments

- The Transformative Agenda 2030 Imperative to ``*leave no one behind*``
- Each country needs to proceed in adopting the main principles in national legislation, or, where possible or necessary, in the constitution.

- For SDGs to succeed, legal implementation on the national level is required
- Parliamentarians need to translate SDGs into actionable, sound legislation

WaterLex

International & Regional Commitments to National Priorities

Integrating the SDGs agenda in established national strategies **Requires cooperation between the legislative and executive powers.**

Through **practical and technical support** for the agenda adopted by the parliament.

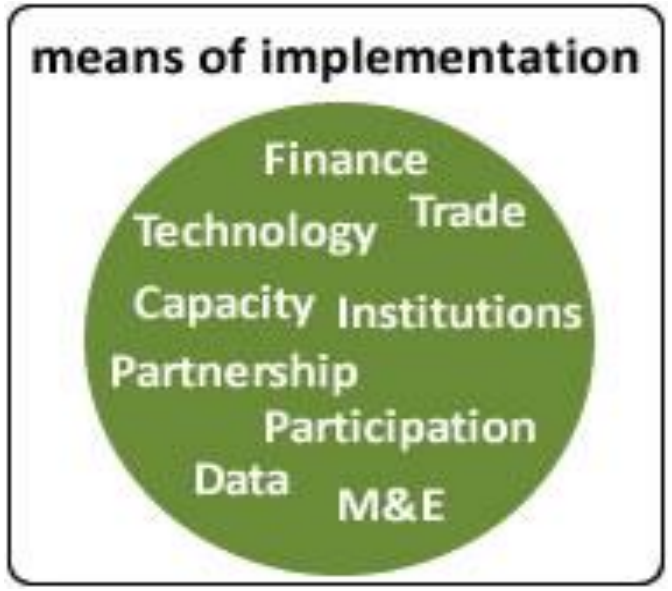
Alignment between its international commitments and its national development priorities is crucial -

reduces the monitoring/ reporting burden

WaterLex

Practical and Technical support

- Targets 6.a and 6.b, Goal 17 lay out seven building blocks
  - Mutually reinforcing and interdependent
  - Means of implementation
- Successes & Good Practices?
- Enabling environment includes:
  - Laws and policies
  - Knowledge Sharing
  - Technology Transfer &
  - Innovations



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Law, Policy, Regulations & Institutions

- Inadequately articulated laws and policies have cumulative impact:
  - Distort of signals of scarcity
  - Undermine incentives for innovations in water management or technology

WaterLex

Political Support for Legal – Policy Reform

- LAW-Policy Reform
  - Takes time
  - Establish baselines
  - Identify and share good practices
  - Making concrete recommendations to fill existing gaps
- Regional co-operation
  - Build political support for reforms
  - Institutional arrangements for collaboration.

WaterLex

Financing

- Water is not tradeable, but when you trade in agricultural products, you are trading water.
- When countries trade with and invest in each other, they need to cooperate with each other…

SDG implementation will require **forging partnerships** and collaboration between a range of actors.

Build on governments work with other stakeholders, including civil society, the private sector and academia

WaterLex

Financing – Private Sector Engagement

- United Nation sees engagement of private sector, investor, academics and institution as an important step in implementing the SDGs
- SDG framework offers no definitive framework for monitoring the activities of private sector - compliance and accountability
- Parliaments can facilitate investments and cooperation through legislation e.g. in favour of fair trade

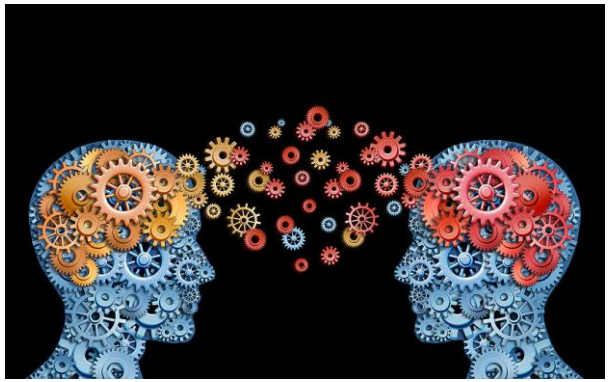
Capacity Enhancement

- State and Non-State Actors
- Strengthened decision-making processes
- Alignment with key governance principles
  - participation, access to information, accountability, sustainability

WaterLex

Knowledge Sharing & Technological Innovations

- Where is the Knowledge?
- Terms for knowledge-sharing & transferability
- Adaptations needed



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Enabling Environment

Knowledge-Sharing, Technology Transfer, Innovation

- Cost-effective technological solutions
  - Readily available and implementable
- Challenge - sustainable solutions
  - Enabling environment
- Legal, policy and regulatory frameworks
  - Clear mechanisms & structures for operationalisation
  - National programme and project levels

WaterLex

Inclusive Partnership, Innovations and Accountability

- How can laws, policies, procedures and instruments be adapted to create incentives for engagement and partnership?
- Operations and value chains of the private sector involved should comply with UN Guiding Principles for private sector engagement

- Inclusive partnerships
- Innovative modalities and partnerships for development
- Accountability & respect for human rights

WaterLex

Incentives for Private Sector Partnership

- Overall there is a need to establish conditions for accelerated and inclusive growth to foster tangible wealth for ordinary people

1. Renewing the social contract

To generate a new development models that are built on:

- greater citizen trust
- more effective protection of the poor and vulnerable
- inclusive and accountable service delivery
- a stronger private sector that can create jobs and opportunities for MENA's youth

2. Regional cooperation

- Particularly around regional public goods and sectors such as education, water, and energy so as to foster greater trust and collaboration across Middle East countries
- Incentivise private-sector job creation and/or improve the quality of public services

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“A development path in which human rights are not respected and protected cannot be sustainable, and would render the notion of sustainable development meaningless,”

Anita Ramasastry - member of the UN Working Group on business and human rights

WaterLex

Why Undertake a Country Mapping?

LEGAL MAPPING

- The Quito Communique, 27 March 2013, 128th IPU
  - A call to action to parliaments **to pass legislation** in support of the SDGs
- All countries require parliamentary approval on legislation pertaining to the SDGs

WaterLex

Why Undertake a Country Mapping?

- The Parliamentary Hearing entitled ***"Ensuring a people-centred approach to the new SDGs: A shared responsibility***" Nov'2014
  - Every time a law is made, MPs can call attention to whether it is consistent with the SDGs, and move amendments if it is not
  - Parliamentary committees can ensure that their scrutiny procedures hold Ministers and officials to account for national progress on the SDGs
  - And parliamentarians, in representing those who elected them, can ensure an ongoing dialogue with civil society over such progress

WaterLex

Why Undertake a Country Mapping?

Fourth World Conference of Speakers of Parliament August 2015

Speakers of parliament assured their **support of the SDGs** and their will to **actively implement them through national parliaments**

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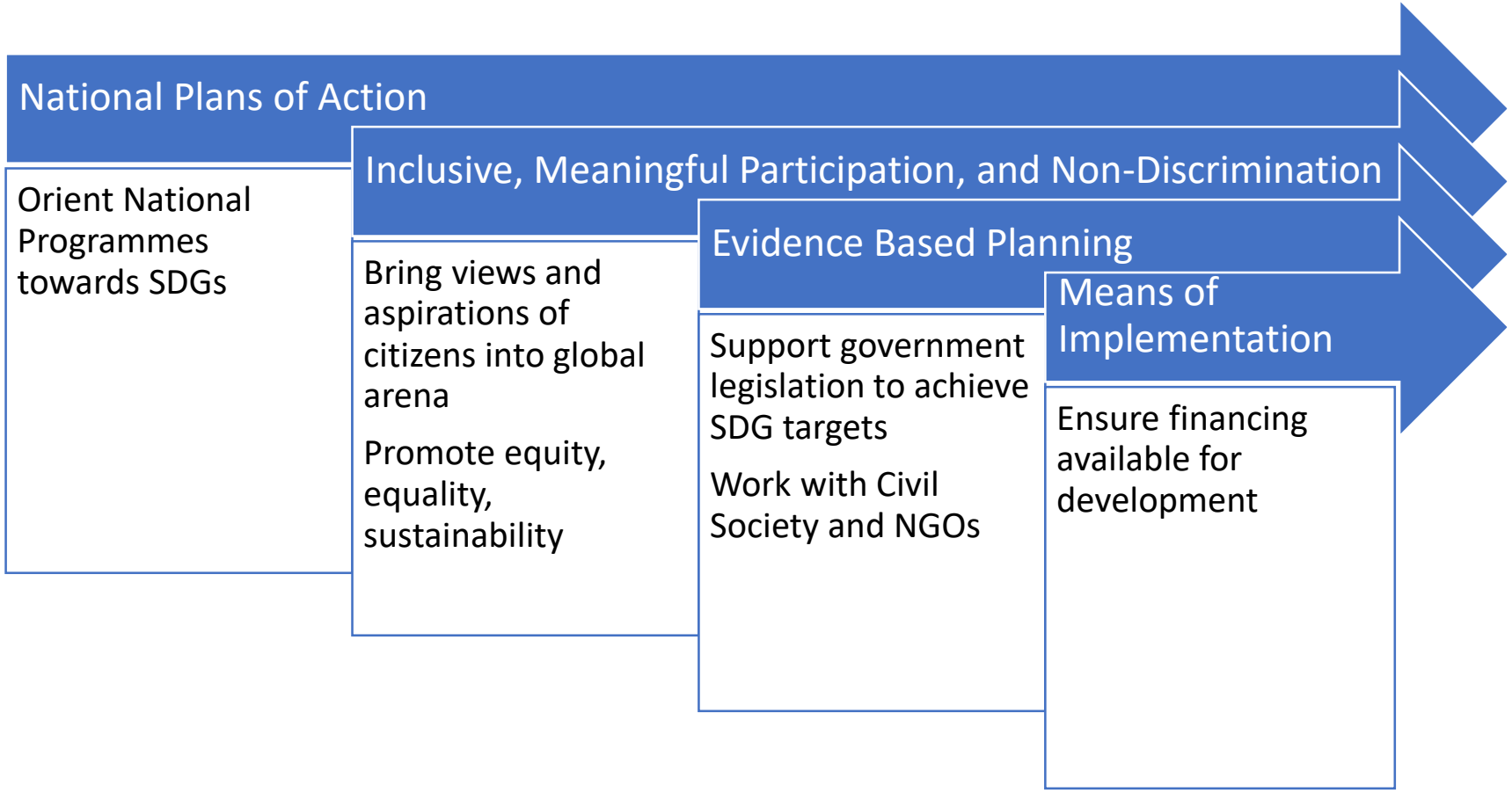
Central Role of Parliamentarians in Policy



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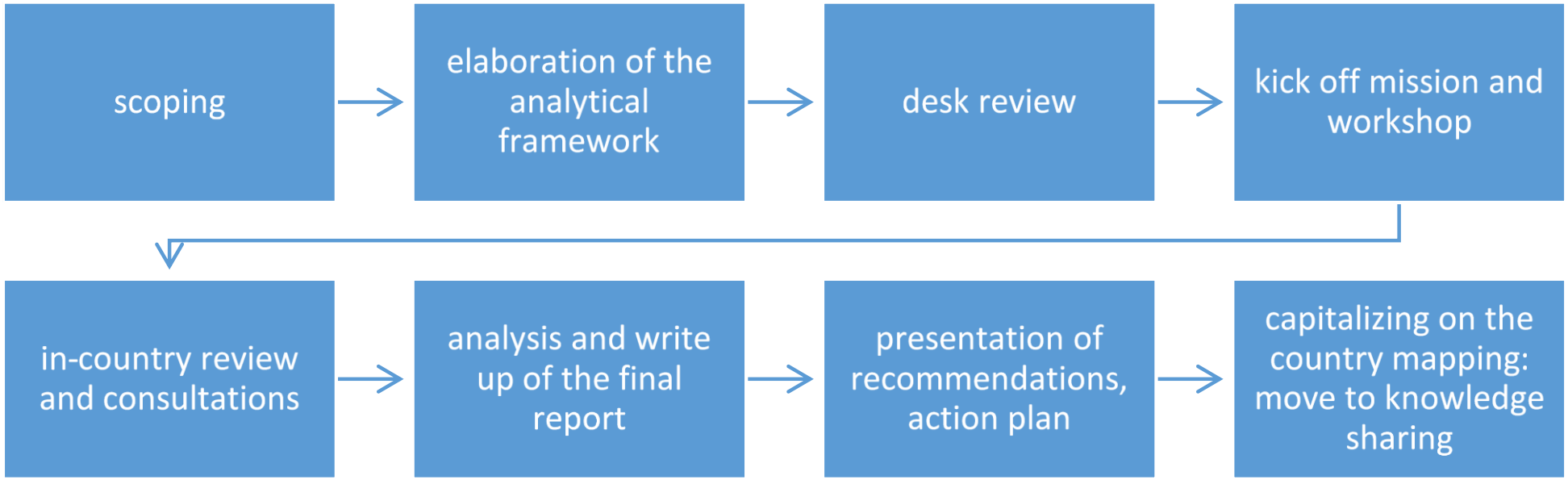
Steps Involved in Country Mapping



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Methodology

- Analytical Framework
  - Refined by WaterLex Dec'14
  - Peer reviewed during WaterLex Indicators Conference, Nov'14, Geneva
  - Matrix table with guiding questions
- Legal mapping
  - Strategic questions on status of right to water and sanitation in country
- Policy mapping and institutional mapping follows same methodological approach
- Methodology demonstrated in several Countries
  - Law policy and monitoring framework adjustments and alignment with SDGs

WaterLex

Case Study : Uganda Country Mapping

1	2	3	4	5	6
Government Invitation	Inception Seminars	Mapping of Stakeholders, Institutions	Multi-stakeholder engagements	National Plan of Action	Capacity Enhancement
• Clear Outputs • Process of engagement • ADA/ DANIDA funding	• Quick scoping • Identify local partners • Establish project team	• Desk review government docs • legal, policy, monitoring and development • Preparation of contextual tools	• National and sub-national consultation • Collection of good practices	• Develop Plan based on collective study	• Integration of SDGs into Programs and Developmt Planning • Establish Indicators

WaterLex

UGANDA 2016

BENIN 2015

Possible Key Outcomes & Outputs

Key Outcome:
Sharing of Good Practices; Capacity Enhancement and Technology Transfer

Key Outputs:

- **Domestic water governance law-policy adjustments**
  - policy coherence and alignment with new elements in the SDGs
- **Targeted capacity building activities**
  - National and Regional multi-stakeholder engagements
- **Established and maintained SDG good practices**
  - SDG implementation for national parliaments/legislators/MPs
- **Fostered regional cooperation mechanisms**
  - Legislators/MPs

WaterLex

Moving Forward

- The Middle East Committee on Water
  - How parliaments should institutionalize SDGs to capture synergies and build coherence when policies are being developed
- Each parliament
  - Needs to evaluate its own legal, policy and institutional processes
- Each parliamentarian
  - Needs to exercise their legislative, oversight, budgetary and representative functions
  - Effectively translate global commitments of SDGs into meaningful change

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Identify Pilot Countries

Two countries to share results of Baseline Analysis as case study. Requires:

- ❑ Government invitation
- ❑ Transparency
- ❑ Leadership

Benefits:

- ❑ Highlight Successes
- ❑ Good practices
- ❑ Strengthen the enabling environment
- ❑ Progress on SDG 6 implementation
- ❑ Regional strategy based on this study

WaterLex

Thank you!

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Inter-Parliamentary Union

For democracy. For everyone.

Technologies, policies and regulation for wastewater reuse

WaterLex

Florian Thevenon
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Historical wastewater reuse for aquaculture, India

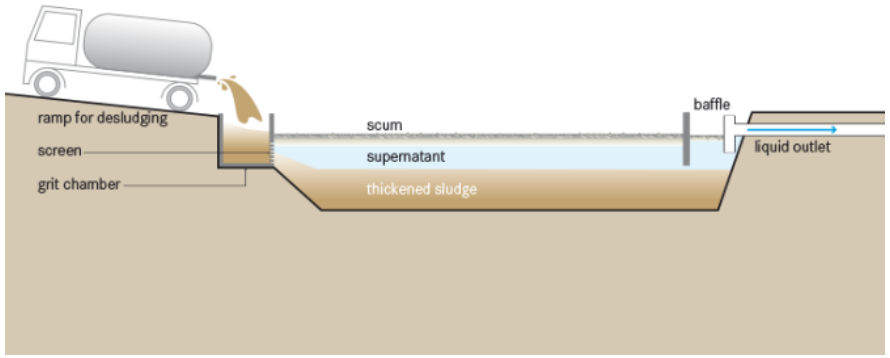
- Non-treated wastewater & urban runoff from Calcutta
- **Employment and protein: 1’000 tons of fish per year**
- But toxic chemical pollution

Historical wastewater reuse for agriculture, Mexico

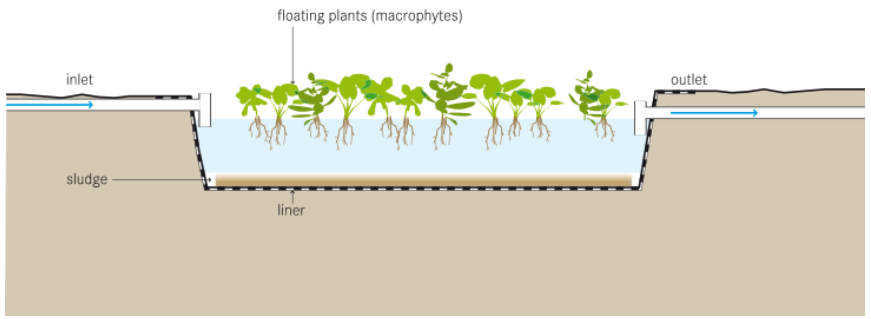
- Land is irrigated with wastewater from Mexico City
- Restricted irrigation excludes raw vegetables but health risks
- **World's largest WWTP 1.5 billion USD – irrigation and biogas**

Wastewater treatment in artificial ponds and lagoons

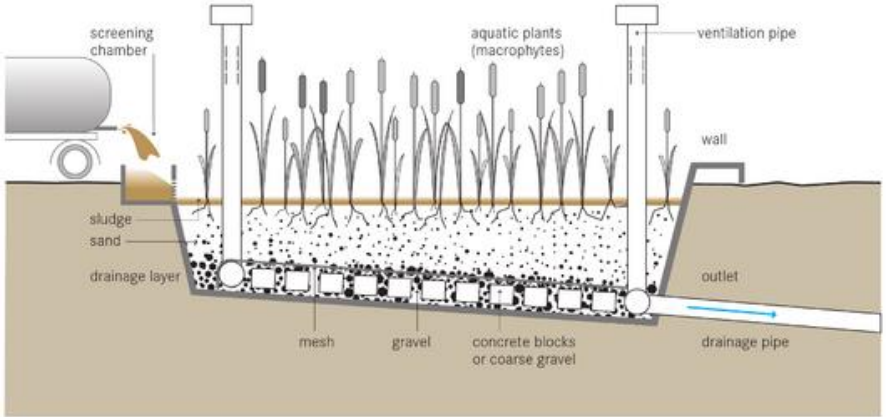
Thickening ponds



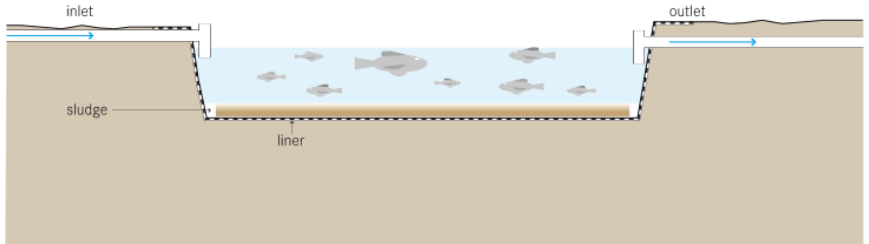
Floating Plant Pond



Planted drying beds



Fish Pond (Aquaculture)



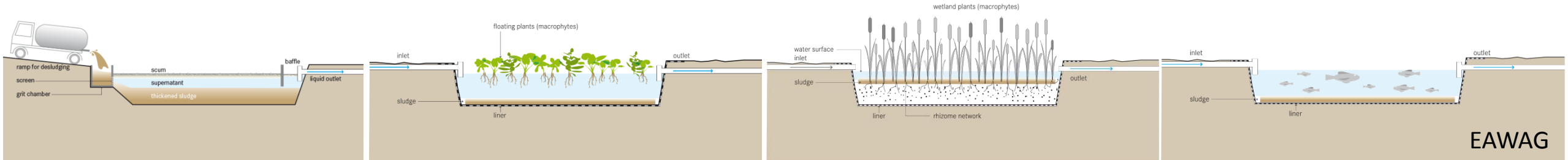
EAWAG

Wastewater treatment in artificial ponds and lagoons

- Cheap but long-term maintenance (analysis of cost for investment)

- Insects, odours, do not remove chemical pollutants

- **Effluents can be used, local regulations and reuse options**



EAWAG

Market-based approaches

- 80% of the jobs depend on water-related services (global economy)

➢ **Renewable energy (ex. biogas or faecal pellets)**

- Can offset wastewater treatment cost

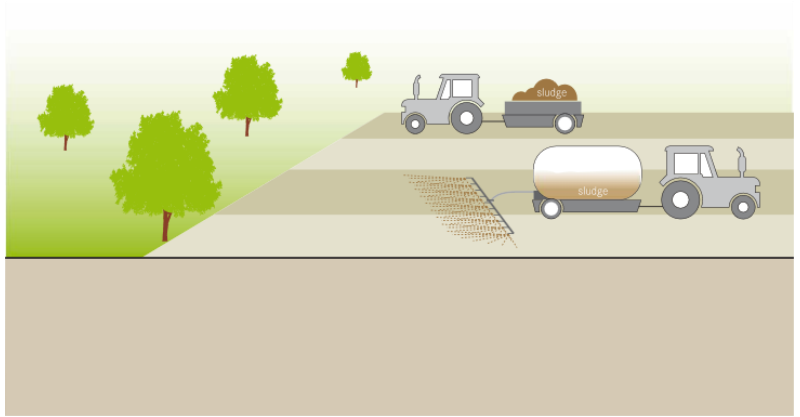
Market-based approaches

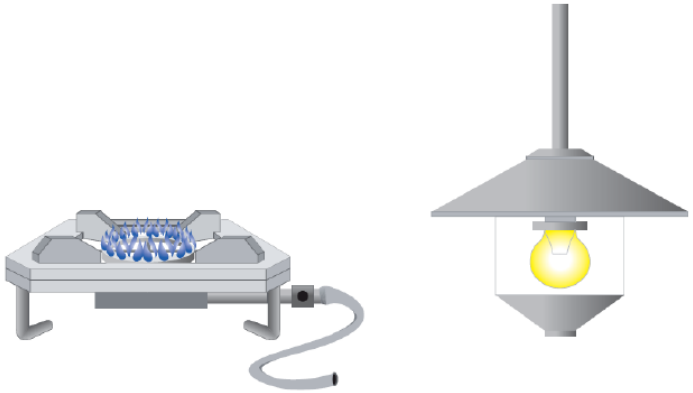
Market value (USD) of different products derived from faecal sludge

(per tonne of dry weight)

	Soil conditioner	Fuel biogas electricity	Protein
Dakar	7		22
Accra	7	31	29
Kampala	16	32	26

Unwillingness to use faecal sludge products (social/cultural/religious acceptability & taboos)

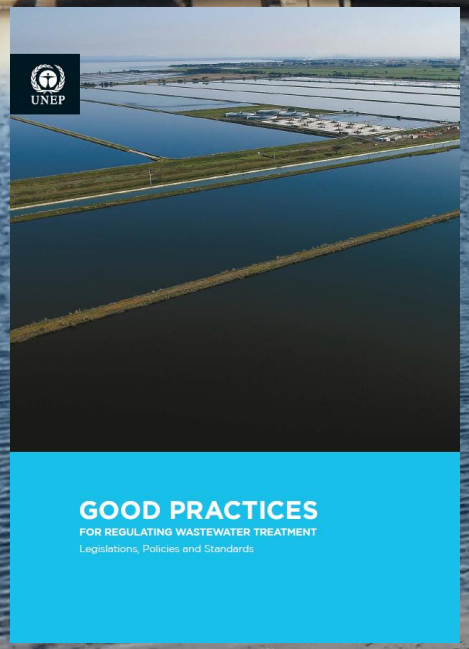




Diener et al., 2014

EAWAG

Ex. National regulation/technologies for wastewater treatment



Institutional stakeholders

Laws & policies

Technologies

Florian Thevenon

WATER SITUATION

- Climate & population → Water scarcity. Water consumption reduced by 40%

- **Wastewater is a valuable resource**

- Agriculture, municipal, industrial commercial uses, also environment

TECHNOLOGIES

➤ The largest lagoon-based wastewater treatment plant & biodiversity

- 580 municipal plants
- 92% of the collected wastewater is treated

Melbourne Water

Australia: Environmental awareness & lagoons

GOVERNANCE

- Federal country

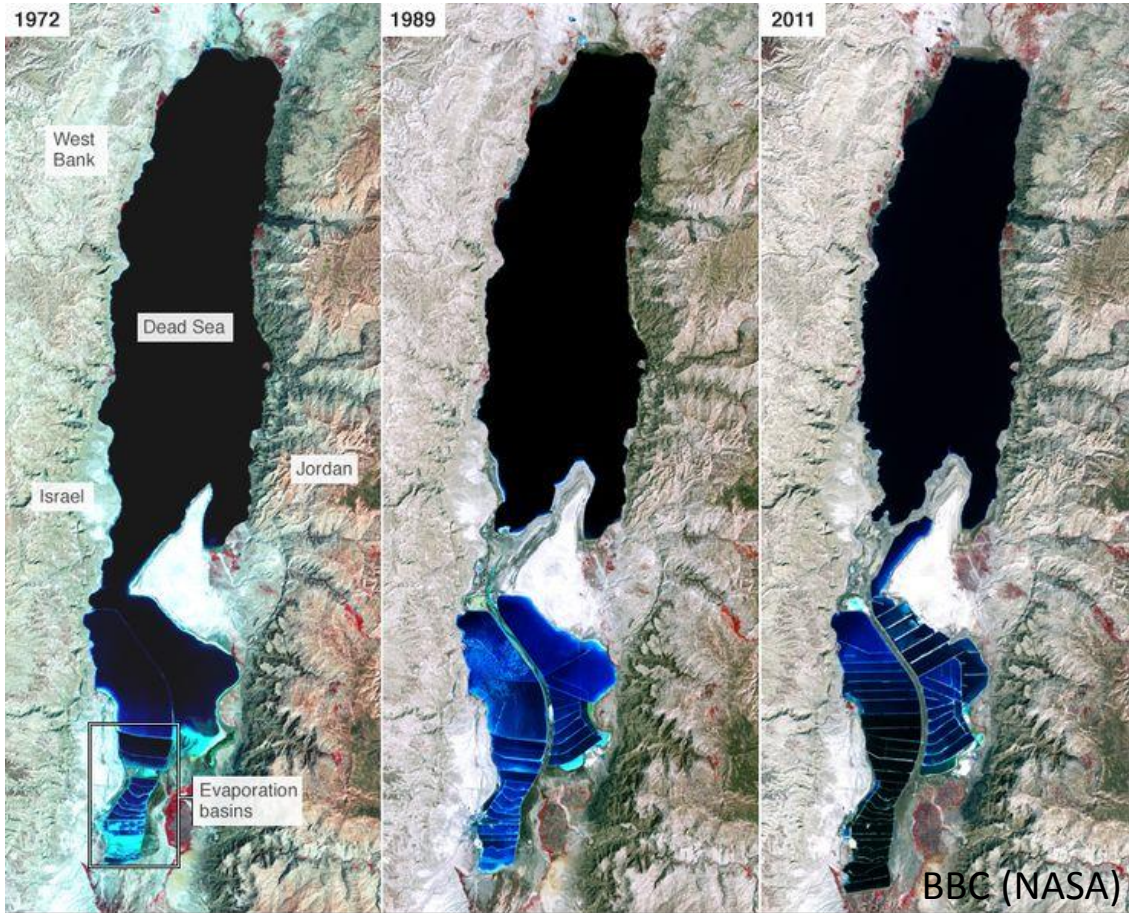
- **But homogenous approach: The National Water Initiative**

- Water conservation & recycling initiatives

Melbourne Water

WATER SITUATION

- Aggravation of the water scarcity
- Institutions & cooperation
- **Well designed policy & stakeholders**



BBC (NASA)

Jordan: Policy effectiveness & wastewater reuse

GOVERNANCE

- The Wastewater Management Policy

- **Treated effluents considered as a water resource**

- The National Water Strategy

Sumaya Agha (Zaatari camp)

TECHNOLOGIES

- 34 treatment plants (one in the 1960s)
- ~ 98% of the collected wastewater is treated
- **~ 90 % being reused in agriculture, rivers & industries**
- But accumulated treated sludge considered as a waste

Singapore: Unique holistic approach

WATER SITUATION

- Water as a national priority

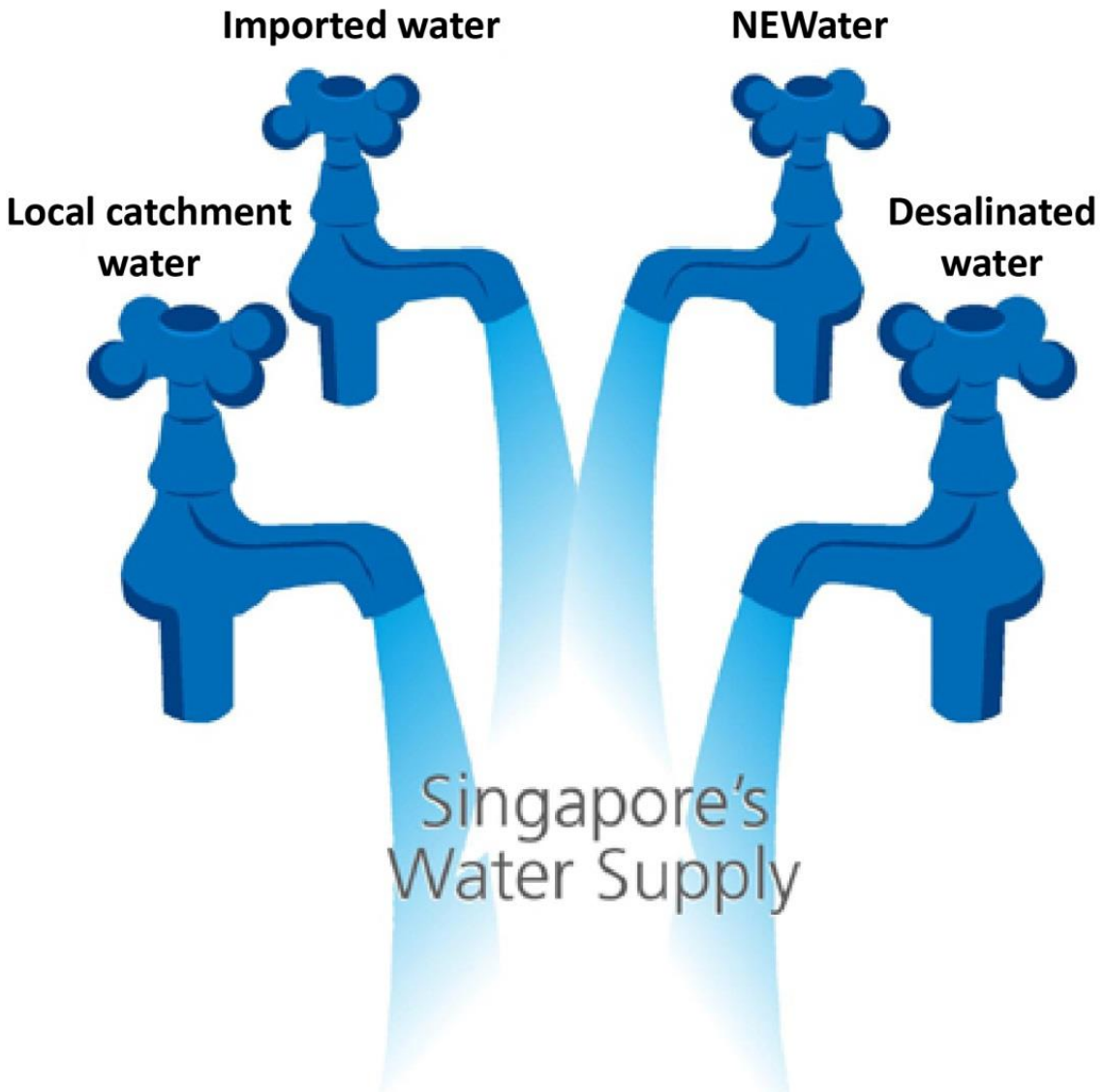
- **99.5% of the collected wastewater is treated**

- 7 wastewater treatment plants

Singapore: Unique holistic approach

TECHNOLOGIES

"Four National Taps":



- **Drinking water can be produced from wastewater using reverse osmosis**

Singapore: Unique holistic approach

GOVERNANCE

- Holistic approach

  Policy axis

  Institutional axis

  Legislation axis

- **Innovation: Food waste and wastewater to produce energy**

WATER SITUATION

- Legal framework based on racial segregation until 1994

- **A new legislation for wastewater**

25% no access to sanitation services

57% connected to wastewater treatment

TECHNOLOGIES

- A better efficiency of water use
- ~1000 treatment plants, but many need investment
- **New granular sludge technology**
  Dutch Public-Private Partnership

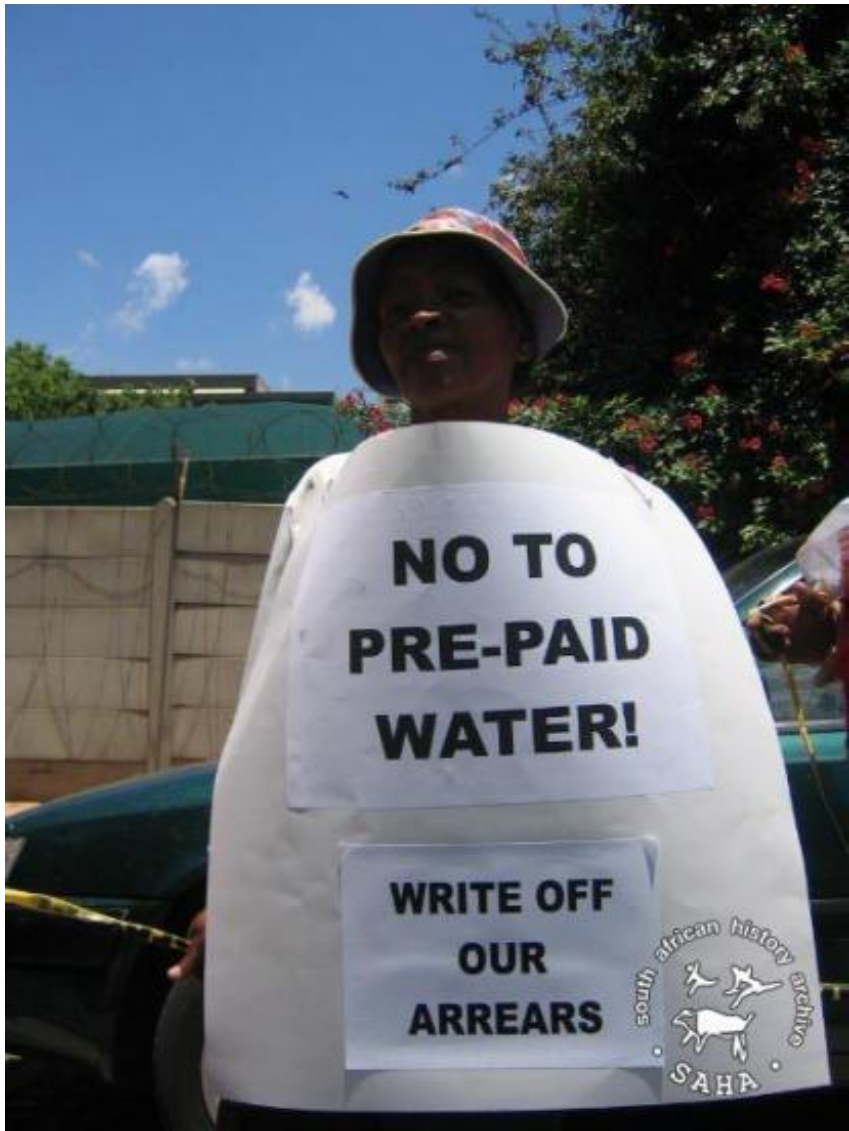

Nereda

GOVERNANCE

- **Policy based on a human rights-based approach**

- Recognition before the UN General Assembly

- The Free Basic Sanitation Implementation Strategy

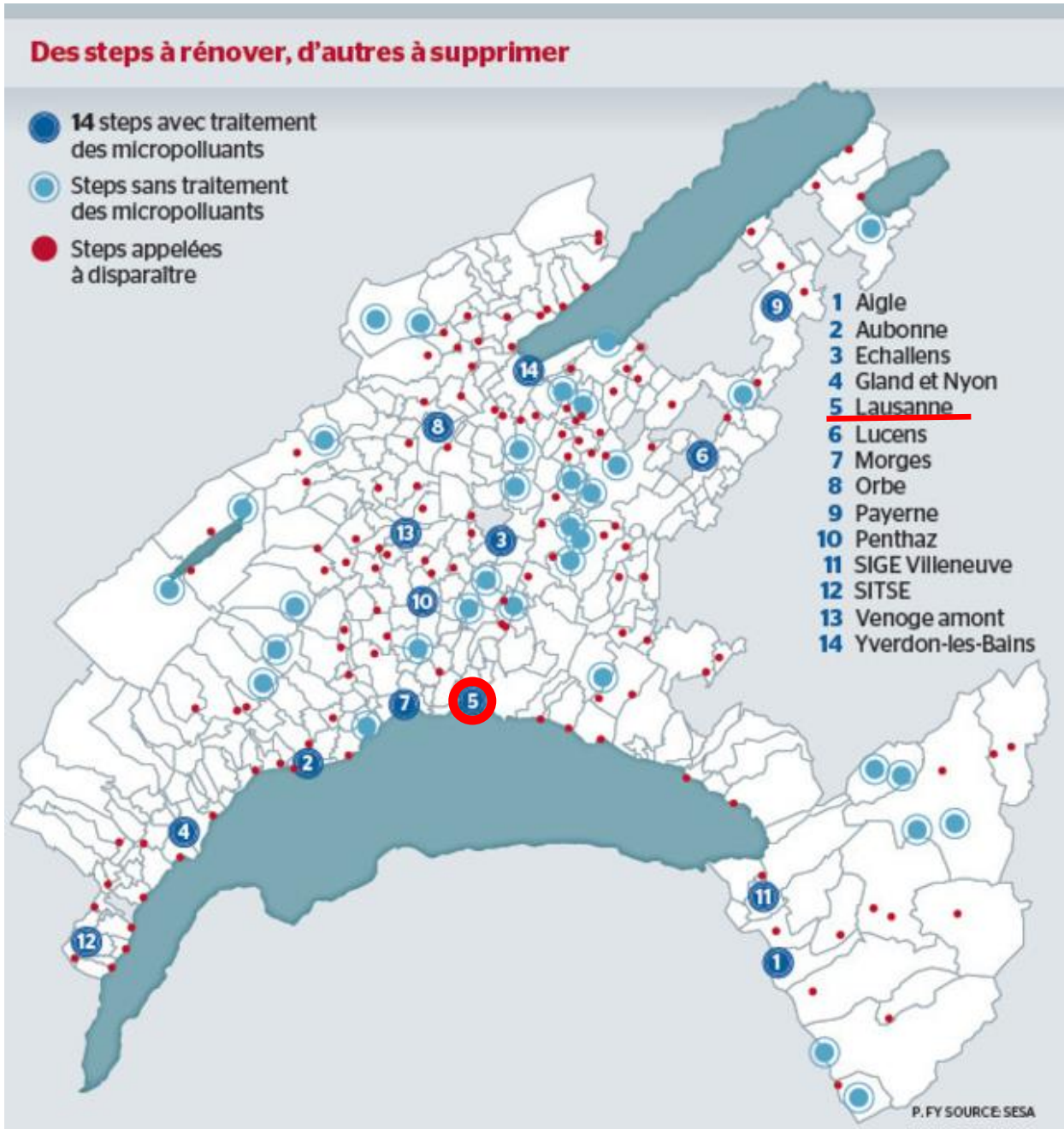


Switzerland: New tax for upgrading wastewater treatment plants

- **Swiss Parliament amended the Water Protection Act**

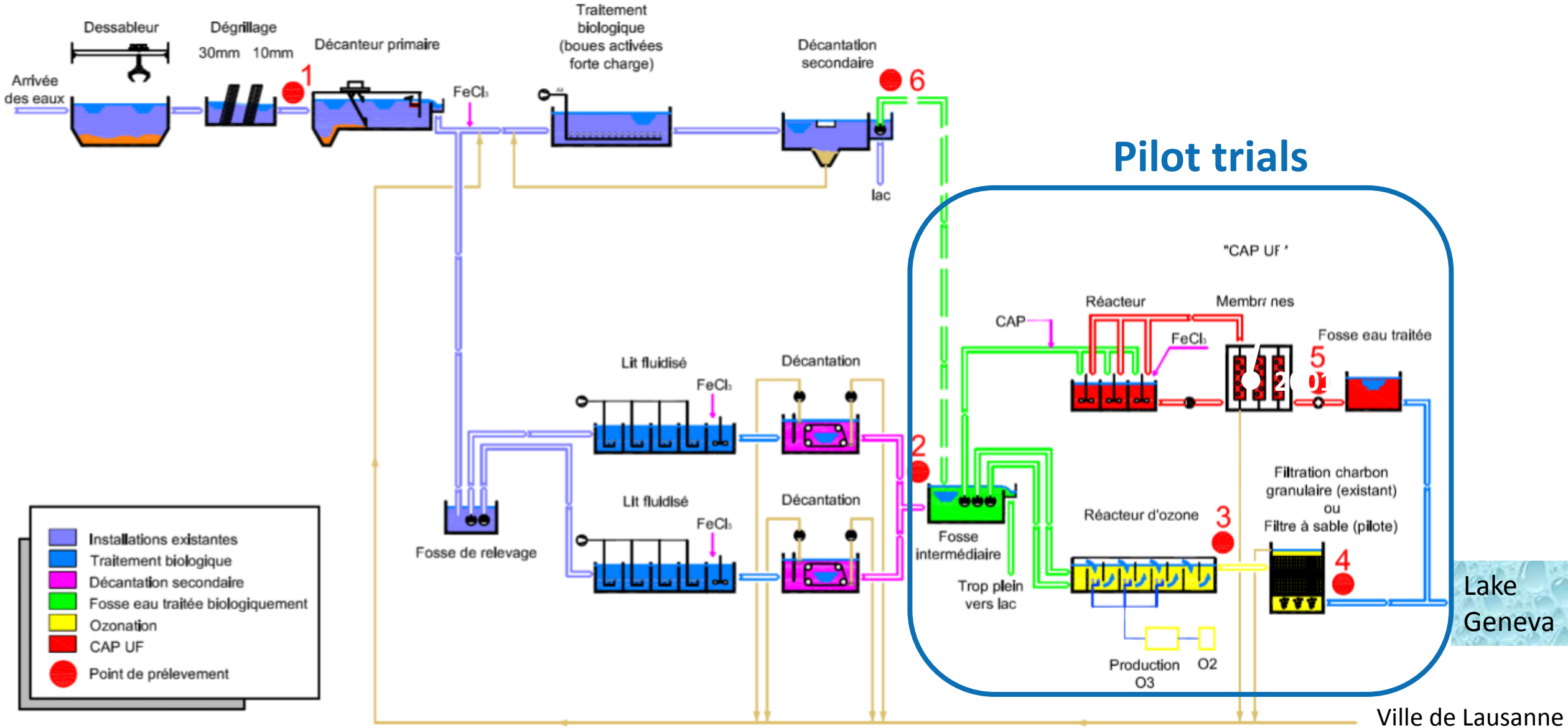
- First country with a (Federal) legislation obliging large cities to treat micropollutants from wastewater

- 100 wastewater treatment plants to be upgraded. Financed by a new tax of 9 euros until 2040



Lausanne: 300 million € for treating micropollutants

Pre-treatment	Primary	Secondary/Tertiary	Micropollutants (20 to 80% treated)

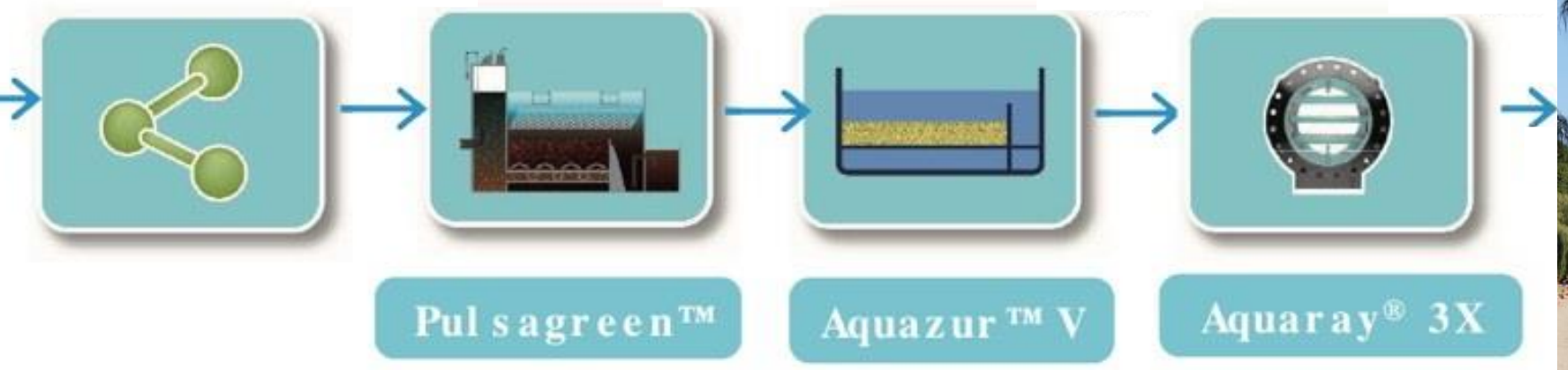


Ville de Lausanne

Lausanne: Treatment of micropollutants in municipal wastewater

- 58 potentially problematic substances monitored

➤ **0.1-0.15 € per m³ treated, financed by new Federal tax of 0.11€ on water bill**

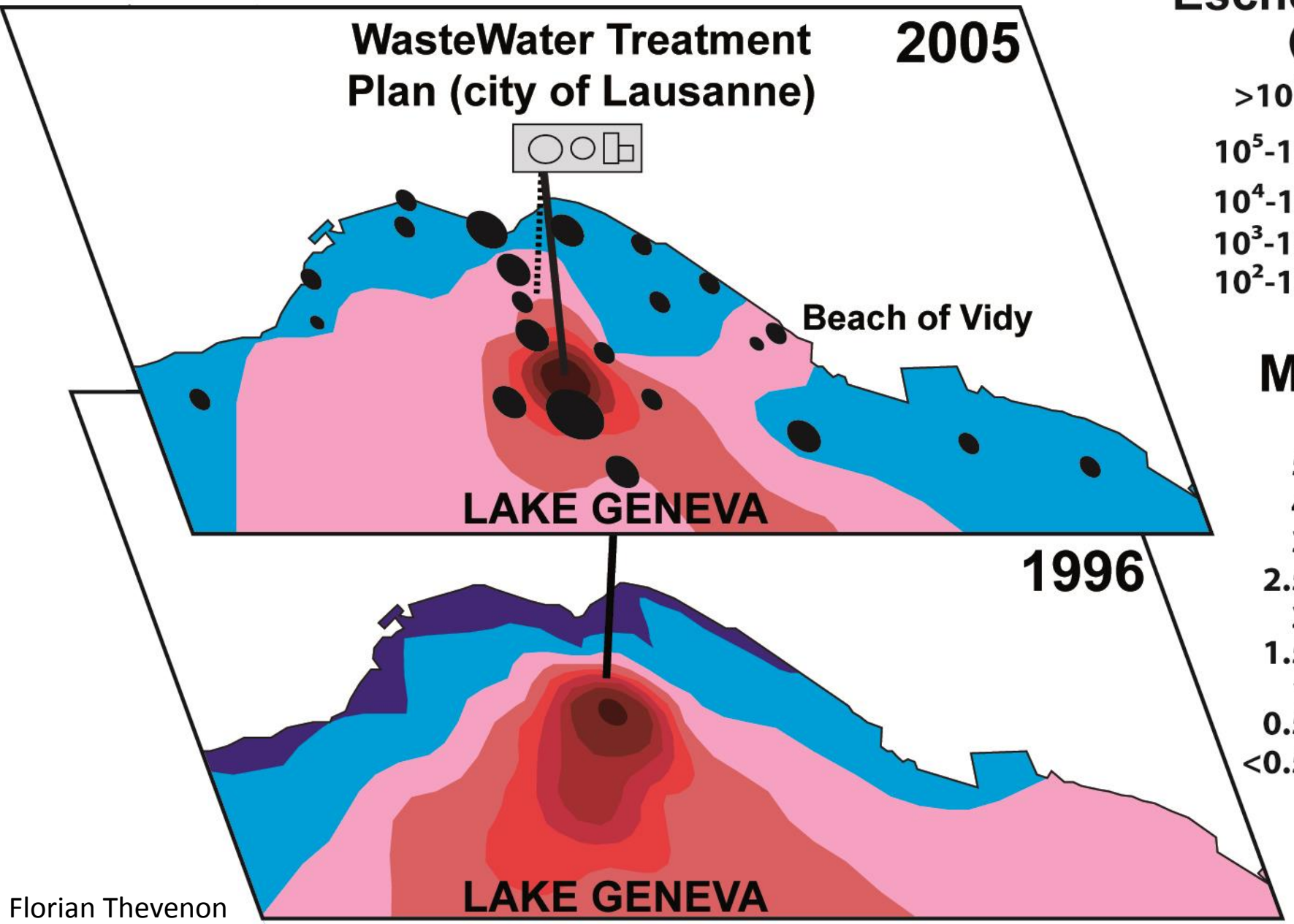


Ozonation | **Activated charcoal** | Sand filters | UV Disinfection

Lausanne: increasing population, wastewater treatment challenges

- Site (road and lake) & archaeological artefacts
- **24h/24h wastewater treatment for 200’000 inhabitants (400’000 in 2040)**
- Pollution by treated and non treated wastewater in the bathing Bay

Lausanne: increasing population, wastewater treatment challenges



Escherichia coli
(CFU/g)

- $>10^6$
- 10^5-10^6
- 10^4-10^5
- 10^3-10^4
- 10^2-10^3

Mercury
(µg/g)

- 5
- 4
- 3
- 2.5
- 2
- 1.5
- 1
- 0.5
- <0.5

SCIENCE & water quality data to find solutions and to improve water governance

Florian Thevenon

The need of regulation: Legislation, Policies and Standards

- Water & wastewater technologies & **regulation** are **highly context specific**
- **Public-private** & multi-stakeholder **partnerships** are necessary for **scaling up technological innovation, resources and action**
- **Needed:** Integrated approach to economic, social and environmental dimensions **innovative business models**, **effective public water policies & regulation**
- Wastewater is a valuable resource of **water** (e.g. industrial reuse), **nutrients** (e.g. agriculture), **energy** (e.g. electricity) and **material** (e.g. cement)

Thank you for your attention

Chuntao Zhou

Committee on Middle East Questions
Second Roundtable on Water: From words to actions
6 - 7 July 2017 IPU Headquarters Geneva, Switzerland

Enabling Environment for Knowledge Sharing and Technology Transfer

Rose Osinde Alabaster
Program Director, WaterLex
r.osindealabaster@waterlex.org

Inter-Parliamentary Union
For democracy. For everyone.

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Current Situation

MENA region - most water scarce region in the world - average of 656 m^3 of renewable freshwater per capita…

- ❑ Most water scarce region
- ❑ Lowest productivity of water in the world.
- ❑ Among the lowest water tariffs in the world.

Governments give the highest level of subsidies globally – approaching 2 % of GDP on average

BUT

Benefits are disproportionately captured by the wealthiest quintile of the population.

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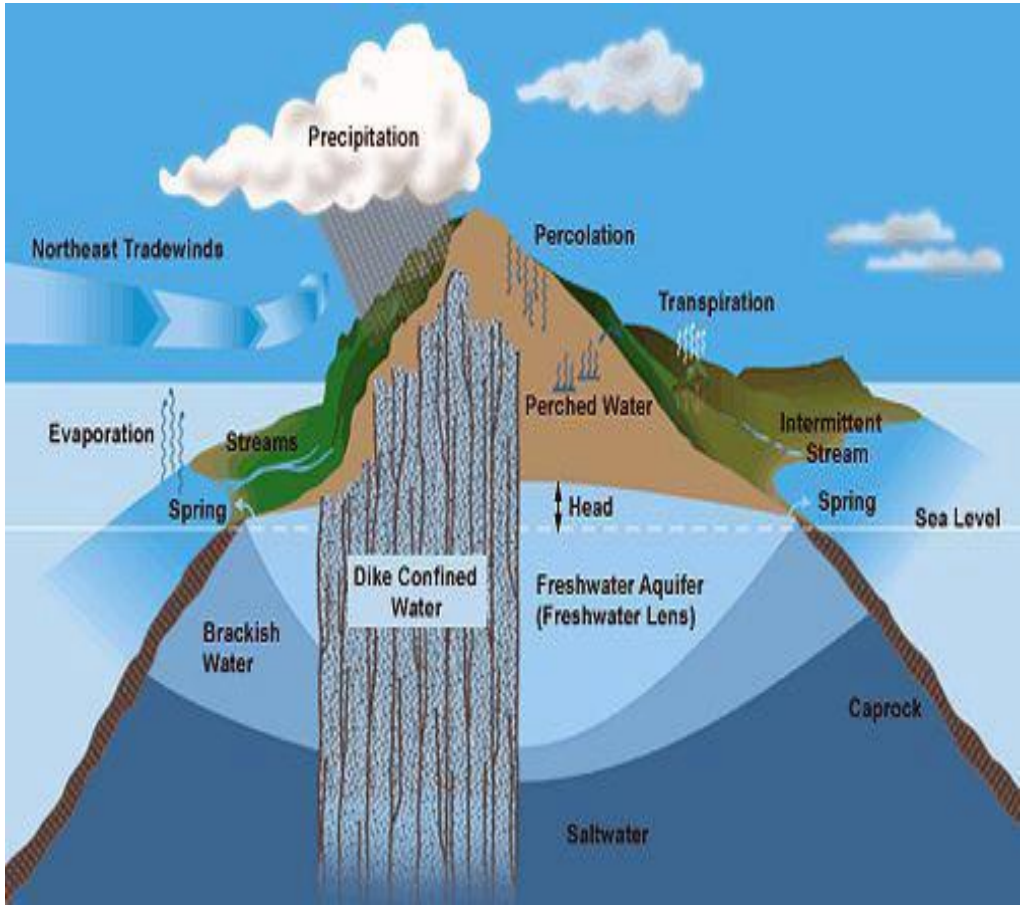
Effective Management and Governance

Water Quality, Availability and Sustainability



- Effective management of natural resources across the region, human and economic development
- Strengthened decision-making processes
- Effective institutions
- Alignment with key governance principles

  (participation, access to information, accountability, sustainability)

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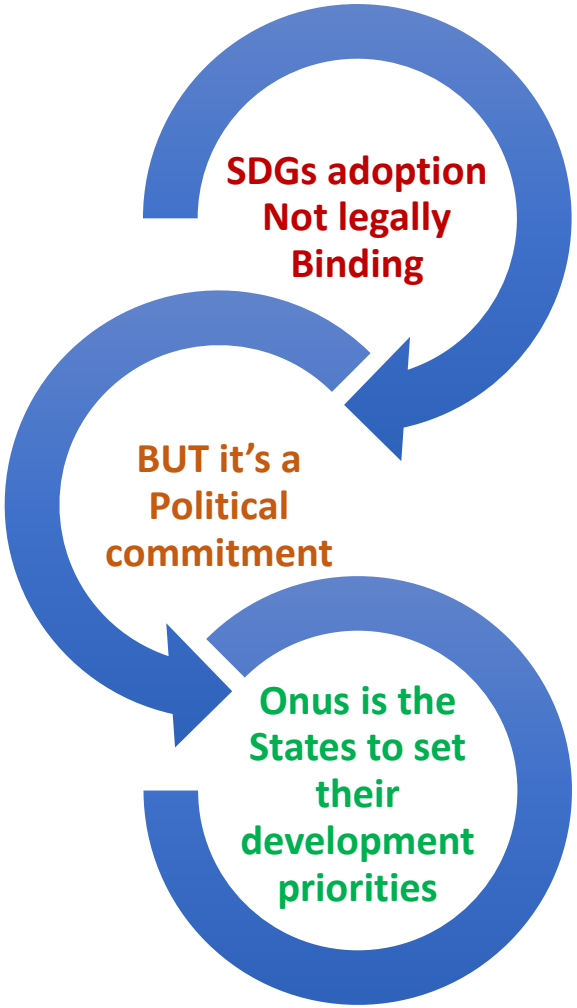
Enabling Environment for National Priorities for SDGs

- ❑ Laws
- ❑ Policies
- ❑ Implementation mechanisms
- ❑ Monitoring and Compliance



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Legal Policy Assessments

- The Transformative Agenda 2030 Imperative to ``*leave no one behind*``
- Each country needs to proceed in adopting the main principles in national legislation, or, where possible or necessary, in the constitution.

- For SDGs to succeed, legal implementation on the national level is required
- Parliamentarians need to translate SDGs into actionable, sound legislation

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International & Regional Commitments to National Priorities

Integrating the SDGs agenda in established national strategies **Requires cooperation between the legislative and executive powers.**

Through **practical and technical support** for the agenda adopted by the parliament.

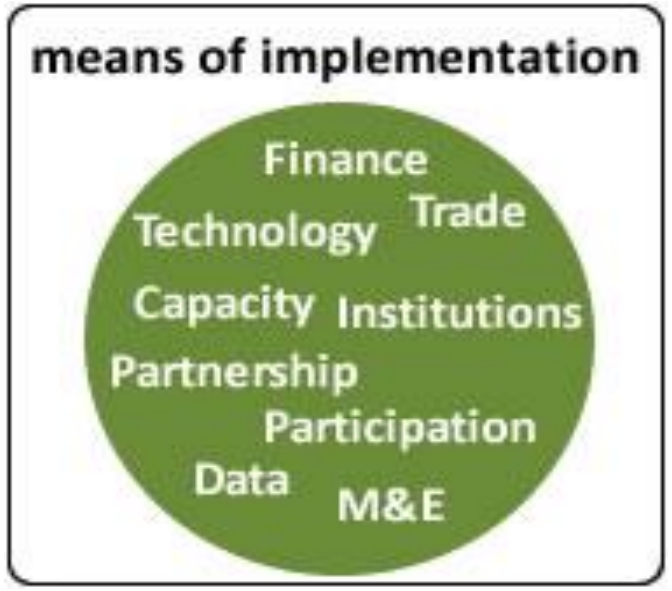
Alignment between its international commitments and its national development priorities is crucial -

reduces the monitoring/ reporting burden

WaterLex

Practical and Technical support

- Targets 6.a and 6.b, Goal 17 lay out seven building blocks
  - Mutually reinforcing and interdependent
  - Means of implementation
- Successes & Good Practices?
- Enabling environment includes:
  - Laws and policies
  - Knowledge Sharing
  - Technology Transfer &
  - Innovations



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Law, Policy, Regulations & Institutions

- Inadequately articulated laws and policies have cumulative impact:
  - Distort of signals of scarcity
  - Undermine incentives for innovations in water management or technology

WaterLex

Political Support for Legal – Policy Reform

- LAW-Policy Reform
  - Takes time
  - Establish baselines
  - Identify and share good practices
  - Making concrete recommendations to fill existing gaps
- Regional co-operation
  - Build political support for reforms
  - Institutional arrangements for collaboration.

WaterLex

Financing

- Water is not tradeable, but when you trade in agricultural products, you are trading water.
- When countries trade with and invest in each other, they need to cooperate with each other…

SDG implementation will require **forging partnerships** and collaboration between a range of actors.

Build on governments work with other stakeholders, including civil society, the private sector and academia

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Financing – Private Sector Engagement

- United Nation sees engagement of private sector, investor, academics and institution as an important step in implementing the SDGs
- SDG framework offers no definitive framework for monitoring the activities of private sector - compliance and accountability
- Parliaments can facilitate investments and cooperation through legislation e.g. in favour of fair trade

Capacity Enhancement

- State and Non-State Actors
- Strengthened decision-making processes
- Alignment with key governance principles
  - participation, access to information, accountability, sustainability

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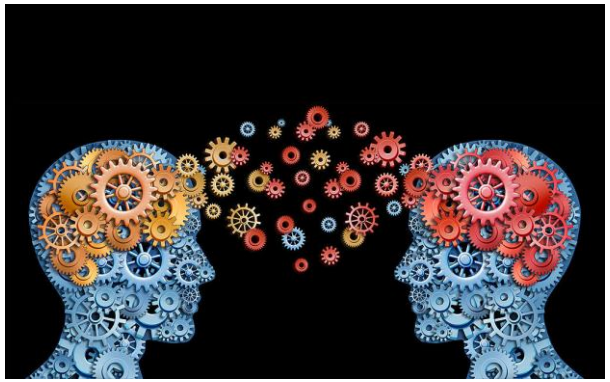
Knowledge Sharing & Technological Innovations



- ❑ Where is the Knowledge?
- ❑ Terms for knowledge-sharing & transferability
- ❑ Adaptations needed

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Enabling Environment

Knowledge-Sharing, Technology Transfer, Innovation

- ❑ Cost-effective technological solutions
  - Readily available and implementable
- ❑ Challenge - sustainable solutions
  - Enabling environment
- ❑ Legal, policy and regulatory frameworks
  - Clear mechanisms & structures for operationalisation
  - National programme and project levels

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Inclusive Partnership, Innovations and Accountability

- How can laws, policies, procedures and instruments be adapted to create incentives for engagement and partnership?
- Operations and value chains of the private sector involved should comply with UN Guiding Principles for private sector engagement

- Inclusive partnerships
- Innovative modalities and partnerships for development
- Accountability & respect for human rights

WaterLex

Incentives for Private Sector Partnership

- Overall there is a need to establish conditions for accelerated and inclusive growth to foster tangible wealth for ordinary people

1. Renewing the social contract

To generate a new development models that are built on:

- greater citizen trust
- more effective protection of the poor and vulnerable
- inclusive and accountable service delivery
- a stronger private sector that can create jobs and opportunities for MENA's youth

2. Regional cooperation

- Particularly around regional public goods and sectors such as education, water, and energy so as to foster greater trust and collaboration across Middle East countries
- Incentivise private-sector job creation and/or improve the quality of public services

WaterLex

Thank you!

Committee on Middle East Questions
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The Country Mapping Approach

Case Studies and Pilot Countries

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Inter-Parliamentary Union
For democracy. For everyone.

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Technology Transfer

- A product, process or a body of knowledge from one party to its adoption by another party
  - a planned process
  - a multi-stage process - not linear as feedback is important
  - passing the control of a technology
  - involves participants
  - adoption of technology presupposes
  - commitment - mutual dependency

Technology Transfer

CONTROLLED FACTORS

- **Legal aspects:** intellectual property rights, transfer agreements, licensing, patent rights, royalties
- **Technical competence**
- **Industry standards and regulations:** performance requirements, applications, bureaucracy, formalized procedures, institutional policies

CONTEXT

- **Economic structure:** global trade, job creation, supply and demand, state funding, trade agreements
- **Social legacy:** illiteracy, values, culture, previous exposure to new technology
- **Political framework:** political stability, protection of monopolies

Technology Transfer – Practical Considerations

- **Pace of technological change viz** organizational change assimilation and institutionalization

- **RECEIVER organization's capacity or ability to absorb new technology**

- **A culture of action orientation, risk taking, receptiveness**
  - Short-term tenure of management - may not consider long-term technology development.

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Technology Transfer – Human Factors

- People (and not papers) transfer technology.

- People in the transfer process have to be:
  - **informed on process**
  - **consulted** - needs, concerns, perceptions, attitudes and expectations
  - **trained/mentored** - to understand and utilize the technology to its fullest extent.

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Technology Transfer – Possible Barriers

- The balance between technology-push and market-pull is important.
- Communicate the **technology value** - **Impact ripping** - is it going to be easily integrated into the existing system?
- Communication Barrier – strategy

IMPORTANT to build/develop and maintain solid and respectful, long-term relationships among stakeholders

WaterLex

Why Undertake a Country Mapping?

LEGAL MAPPING

- The Quito Communique, 27 March 2013, 128th IPU
  - A call to action to parliaments **to pass legislation** in support of the SDGs
- All countries require parliamentary approval on legislation pertaining to the SDGs

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Why Undertake a Country Mapping?

Fourth World Conference of Speakers of Parliament August 2015

Speakers of parliament assured their **support of the SDGs** and their will to **actively implement them through national parliaments**

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Methodology

- Analytical Framework
  - Refined by WaterLex Dec'14
  - Peer reviewed during WaterLex Indicators Conference, Nov'14, Geneva
  - Matrix table with guiding questions
- Legal mapping
  - Strategic questions on status of right to water and sanitation in country
- Policy mapping and institutional mapping follows same methodological approach
- Methodology demonstrated in several Countries
  - Law policy and monitoring framework adjustments and alignment with SDGs

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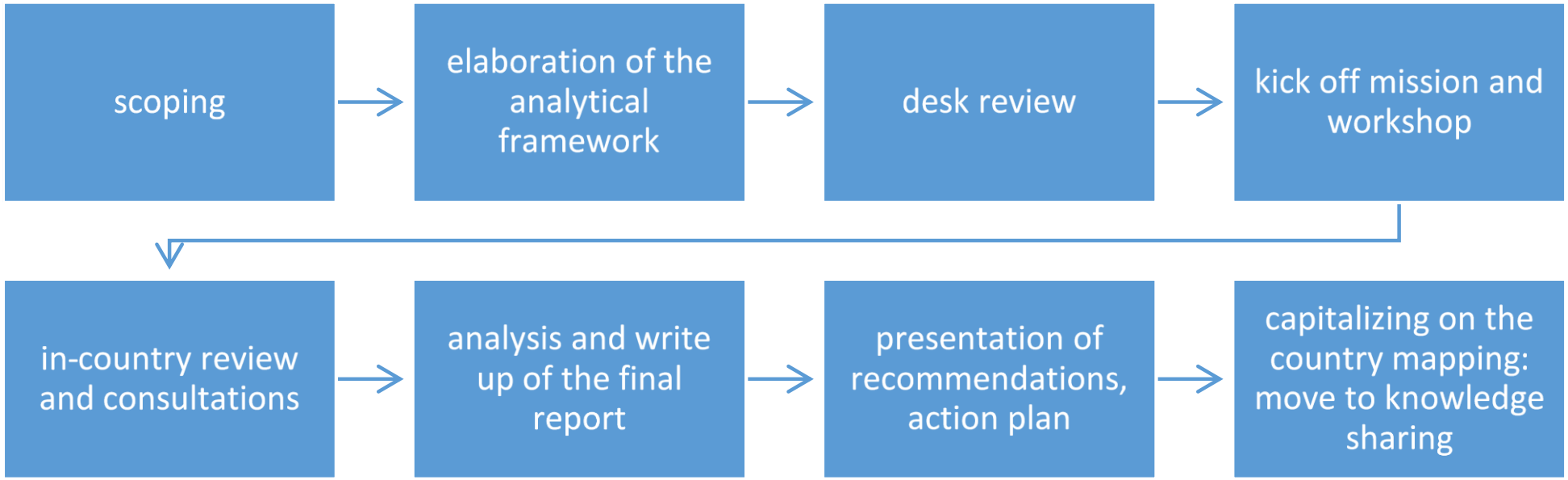
Steps Involved in Country Mapping



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Case Study : Uganda Country Mapping

1	2	3	4	5	6
Government Invitation	Inception Seminars	Mapping of Stakeholders, Institutions	Multi-stakeholder engagements	National Plan of Action	Capacity Enhancement
• Clear Outputs • Process of engagement • ADA/ DANIDA funding	• Quick scoping • Identify local partners • Establish project team	• Desk review government docs • legal, policy, monitoring and development • Preparation of contextual tools	• National and sub-national consultation • Collection of good practices	• Develop Plan based on collective study	• Integration of SDGs into Programs and Developmt Planning • Establish Indicators

WaterLex

UGANDA 2016

BENIN 2015

Mexico 2017

India 2017

Possible Key Outcomes & Outputs

Key Outcome:
Sharing of Good Practices; Capacity Enhancement and Technology Transfer

Key Outputs:

- **Domestic water governance law-policy adjustments**
  - policy coherence and alignment with new elements in the SDGs
  - Industry standards and regulation
- **Targeted capacity building activities**
  - National and Regional multi-stakeholder engagements
- **Established and maintained SDG good practices**
  - SDG implementation for national parliaments/legislators/MPs
- **Fostered regional cooperation mechanisms**
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WaterLex

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- The Middle East Committee on Water
  - How parliaments should institutionalize SDGs to capture synergies and build coherence when policies are being developed
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WaterLex

Identify Pilot Countries

Two countries to share results of Baseline Analysis as case study. Requires:

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- ❑ Transparency
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Benefits:

- ❑ Highlight Successes
- ❑ Good practices
- ❑ Strengthen the enabling environment
- ❑ Progress on SDG 6 implementation
- ❑ Regional strategy based on this study

WaterLex

Thank you!

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WaterLex

CERN: Sixty years of science for peace and development

IPU Committee on Middle East Questions

Second Roundtable on Water: From words to action

Geneva, 6 - 7 July 2017

Session 5: Science models to promote the dialogue and Science for Peace School

Maurizio Bona, CERN

Maurizio.Bona@cern.ch

- **Introduction to CERN**
- **CERN's advocacy for science in the international Community**
- **Science and diplomacy; science for peace.**
- **Science for Peace Schools**

CERN: founded in 1954: 12 European States

"Science for Peace"

Today: 22 Member States

~ 2300 staff
~ 1400 other paid personnel
~ 12500 scientific users

Budget (2016) ~1000 MCHF

Member States: Austria, Belgium, Bulgaria, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Israel, Italy, Netherlands, Norway, Poland, Portugal, Romania, Slovak Republic, Spain, Sweden, Switzerland and United Kingdom

Associate Member States: India, Pakistan, Slovenia, Turkey, Ukraine

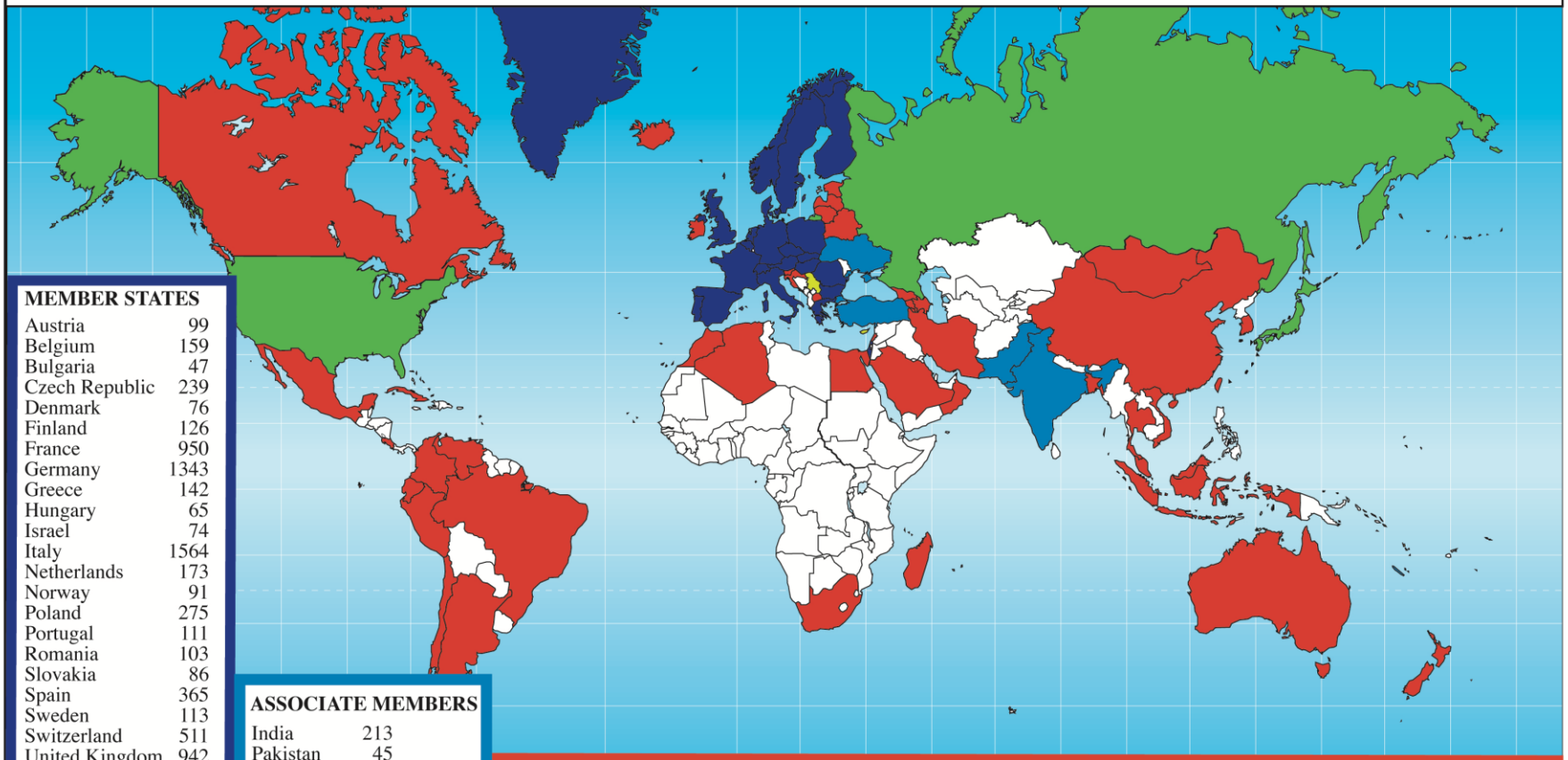
States in accession to Membership: Cyprus, Serbia

Applications for Membership or Associate Membership: Brazil, Croatia, Lithuania, Russia

Observers to Council: Japan, Russia, United States of America; European Union, JINR and UNESCO

Science is getting more and more global

Distribution of All CERN Users by Location of Institute on 12 January 2017



MEMBER STATES

Austria	99
Belgium	159
Bulgaria	47
Czech Republic	239
Denmark	76
Finland	126
France	950
Germany	1343
Greece	142
Hungary	65
Israel	74
Italy	1564
Netherlands	173
Norway	91
Poland	275
Portugal	111
Romania	103
Slovakia	86
Spain	365
Sweden	113
Switzerland	511
United Kingdom	942

7654

ASSOCIATE MEMBERS

India	213
Pakistan	45
Turkey	128
Ukraine	30

416

OBSERVERS

Japan	294
Russia	1046
USA	2018

3358

ASSOCIATE MEMBERS IN THE PRE-STAGE TO MEMBERSHIP

Cyprus	15
Serbia	35

50

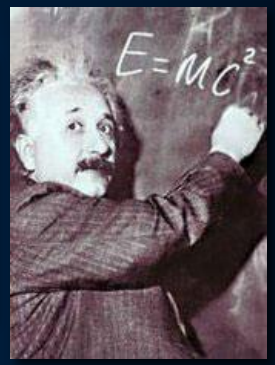
OTHERS

Algeria	1	Chile	19	Hong Kong	21	Malaysia	12	Slovenia	22
Argentina	24	China	216	Iceland	5	Malta	9	South Africa	58
Armenia	19	Colombia	21	Indonesia	9	Mexico	60	Taiwan	74
Australia	39	Costa Rica	1	Iran	34	Mongolia	2	Thailand	17
Azerbaijan	3	Croatia	27	Ireland	9	Morocco	10	TFYROM	2
Bangladesh	4	Cuba	3	Korea	163	New Zealand	8	Venezuela	1
Belarus	23	Ecuador	2	Latvia	1	Oman	3	Viet Nam	1
Brazil	136	Egypt	27	Lebanon	3	Peru	3		
Canada	180	Estonia	16	Lithuania	17	Saudi Arabia	1		
		Georgia	26	Madagascar	2	Singapore	4		

1338

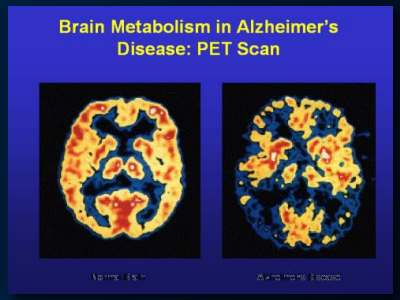
Innovation Education
CERN
uniting people
Research

The Mission of CERN



- **Push back** the frontiers of knowledge

  E.g. the secrets of the Big Bang …what was the matter like within the first moments of the Universe's existence?



- **Develop** new technologies for accelerators and detectors

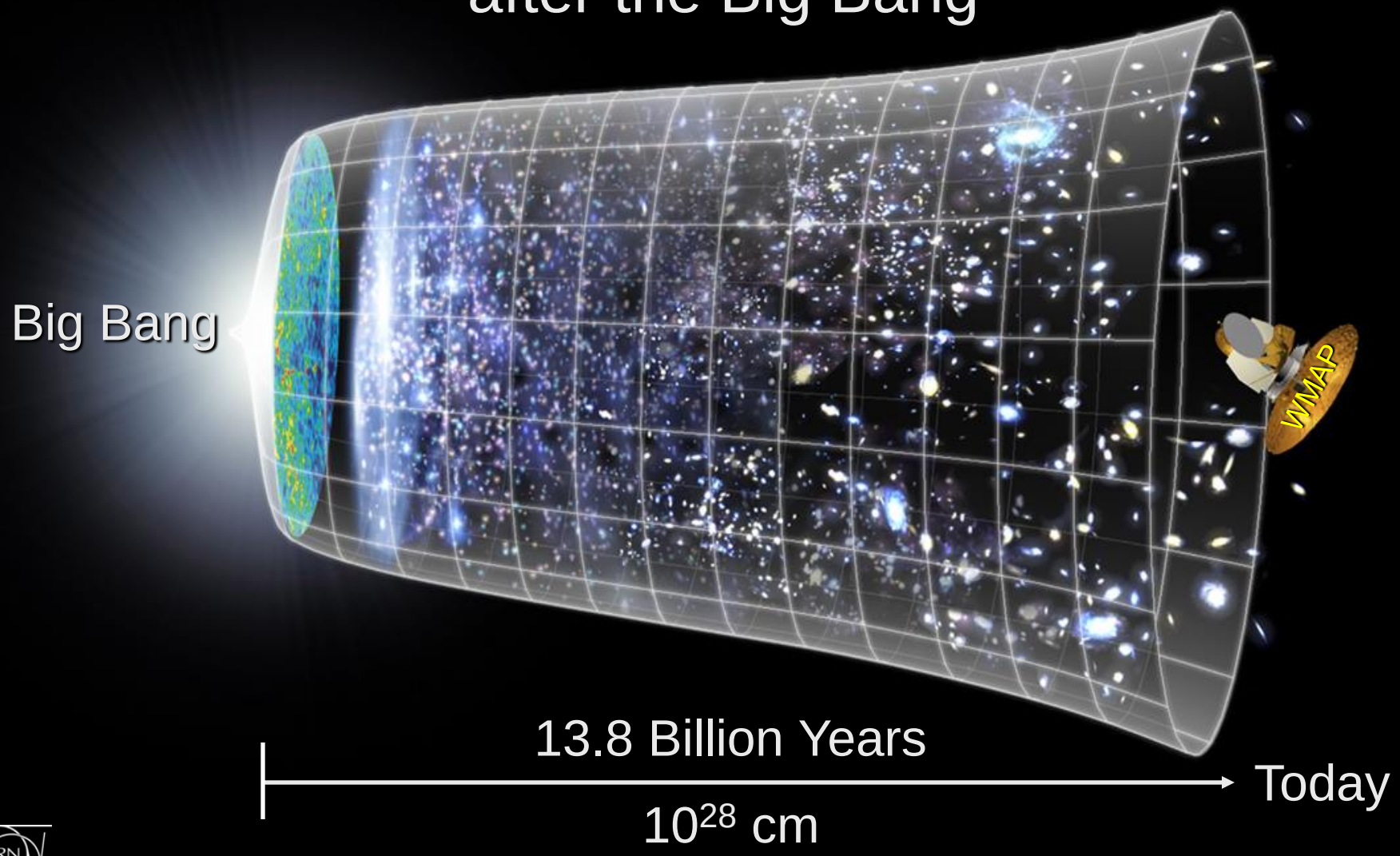
  Information technology - the Web and the GRID

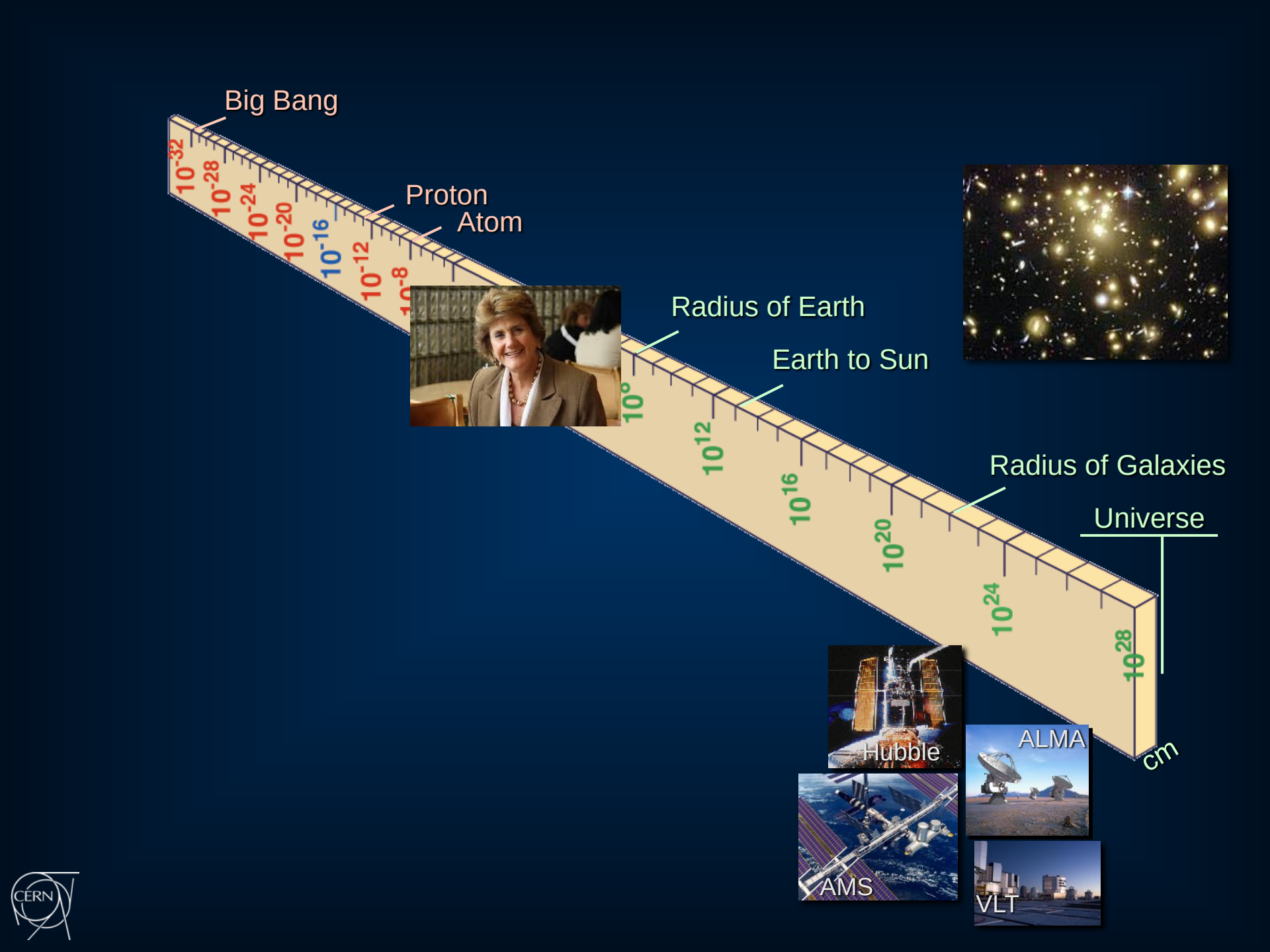
  Medicine - diagnosis and therapy

- **Train** scientists and engineers of tomorrow

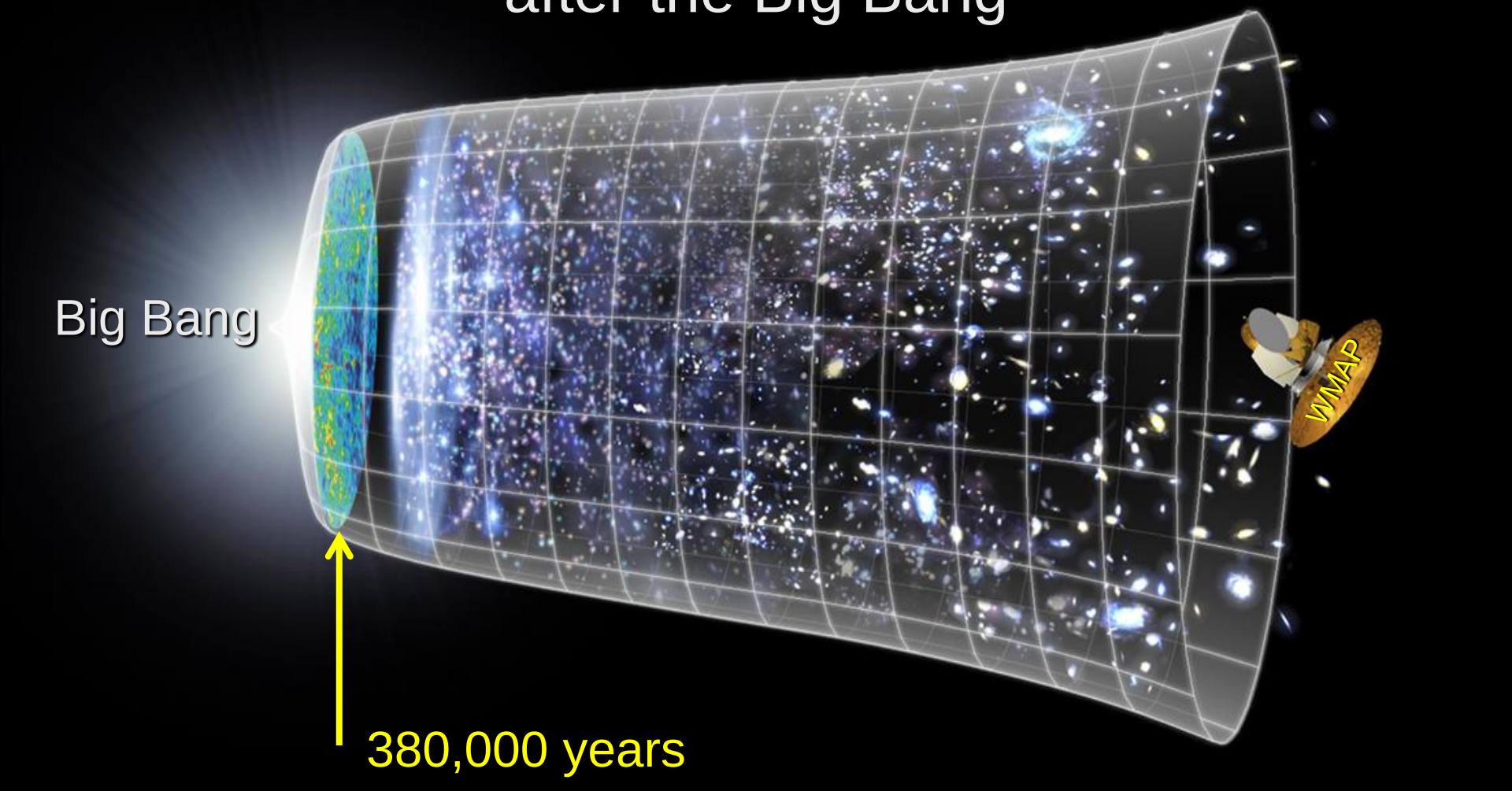
- **Unite** people from different countries and cultures

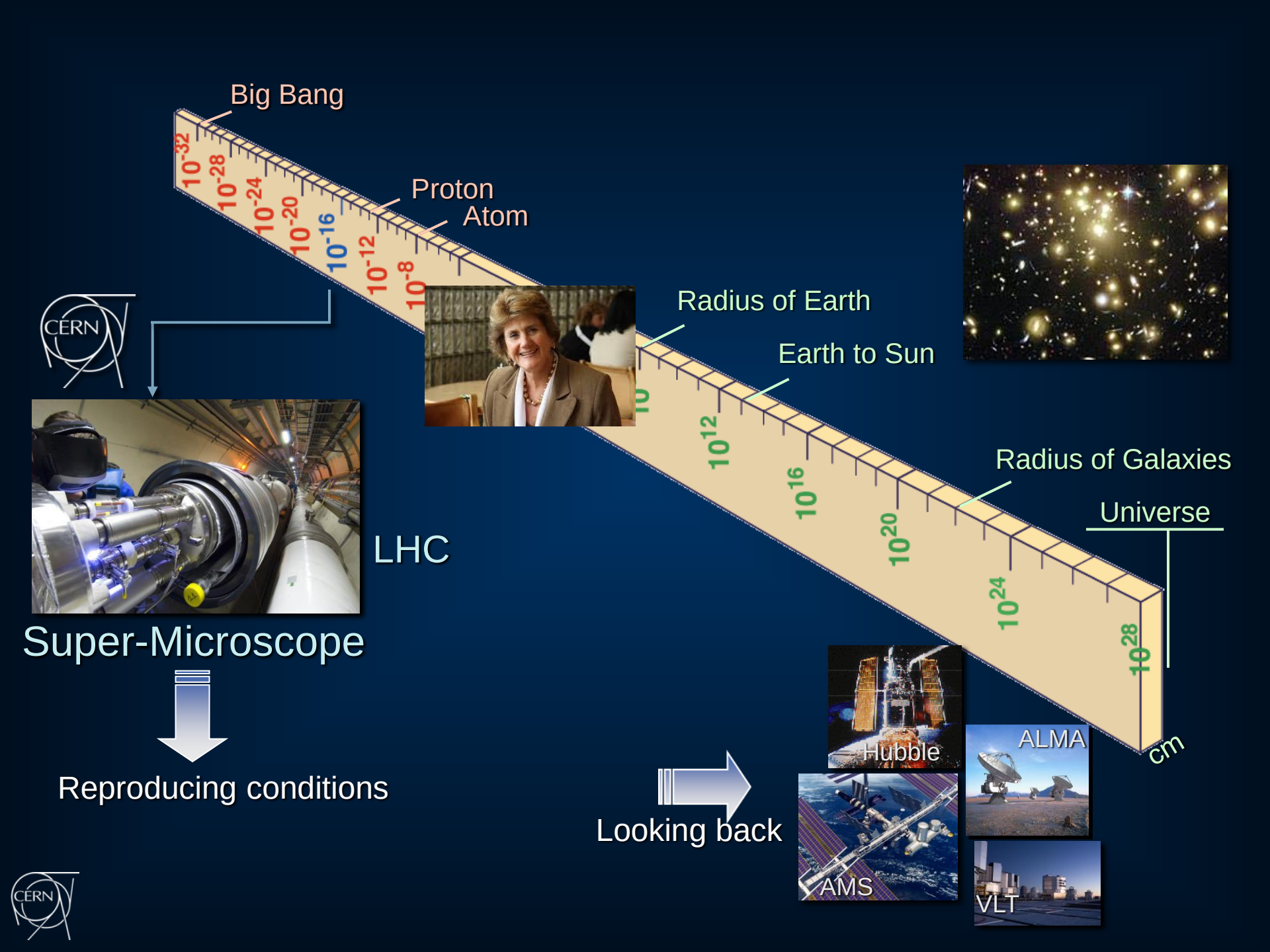
Our Scientific Challenge:
to understand the very first moments of our Universe after the Big Bang




Big Bang
Proton
Atom
Radius of Earth
Earth to Sun
Radius of Galaxies
Universe
10^{-32}
10^{-28}
10^{-24}
10^{-20}
10^{-16}
10^{-12}
10^{-8}
10^{0}
10^{12}
10^{16}
10^{20}
10^{24}
10^{28}
cm
Hubble
ALMA
AMS
VLT
CERN

Our Scientific Challenge:
to understand the very first moments of our Universe after the Big Bang




Big Bang
Proton
Atom
Radius of Earth
Earth to Sun
Radius of Galaxies
Universe
10^{-32}
10^{-28}
10^{-24}
10^{-20}
10^{-16}
10^{-12}
10^{-8}
10^{12}
10^{16}
10^{20}
10^{24}
10^{28}
cm
CERN
LHC
Super-Microscope
Reproducing conditions
Looking back
Hubble
ALMA
AMS
VLT
CERN


CMS
LHCb
ALICE
ATLAS

$$-D \nabla n = \vec{J}_{diff}$$ Fick's law

current (density)

$$\frac{\text{number}}{\text{Area time}}$$

$$j_{diff} = (-e)(-D \nabla n)$$ El. current

$$\frac{\text{charge}}{\text{Area time}}$$

$$\vec{E} = -\nabla \Phi$$

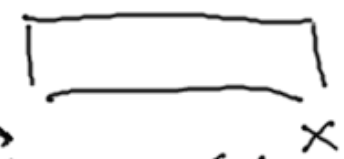
$$v_{drift} = (-e\vec{E}\cdot)\tau$$ relaxation time

$$\vec{j} = (n \cdot e)(v_{drift})$$

$$\vec{v}_{drift} = \mu \cdot \vec{E}$$

$$\vec{j}_{drift} = ne\mu\vec{E}$$

$$eD\nabla n + n \cdot e\mu\vec{E} = 0$$



$$\vec{\nabla n} \rightarrow \left(\frac{dn}{dx}, 0, 0\right)$$

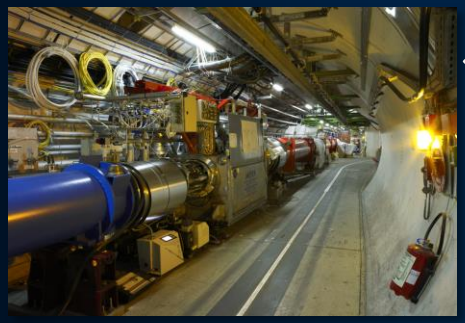
$$\frac{1}{n}\frac{dn}{dx} = -\frac{\mu}{D}\left(-\frac{d}{dx}\Phi\right)$$

$$\ln n \Big|_a^b = \frac{\mu}{D}\left[\phi(b) - \phi(a)\right]$$

$$E = m c^2$$

Medical Application as an Example of Particle Physics Spin-off

Combining Physics, ICT, Biology and Medicine to fight cancer

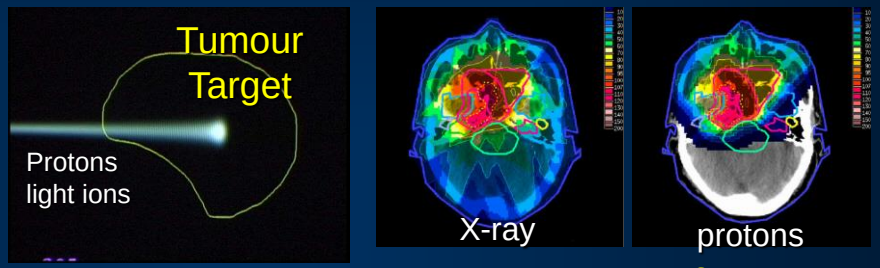


Accelerating particle beams

~30’000 accelerators worldwide

~17’000 used for medicine

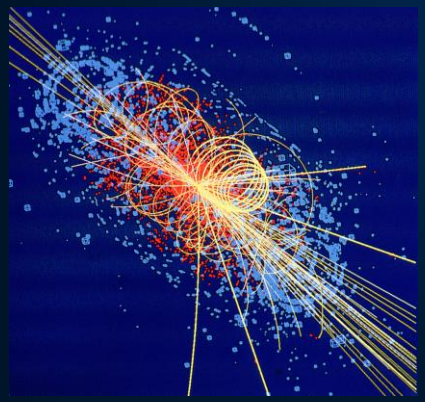
Hadron Therapy



Leadership in Ion Beam Therapy now in Europe and Japan

>100’000 patients treated worldwide (45 facilities)

>50’000 patients treated in Europe (14 facilities)

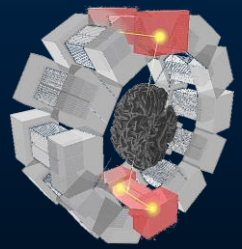


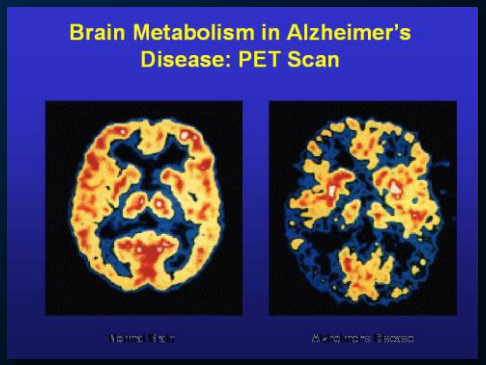
Detecting particles

Imaging

Clinical trial in Portugal, France and Italy for new breast imaging system (ClearPEM)

PET Scanner





CERN Education Activities

Scientists at CERN

Academic Training Programme

Young Researchers

CERN School of High Energy Physics
CERN School of Computing
CERN Accelerator School

Physics Students

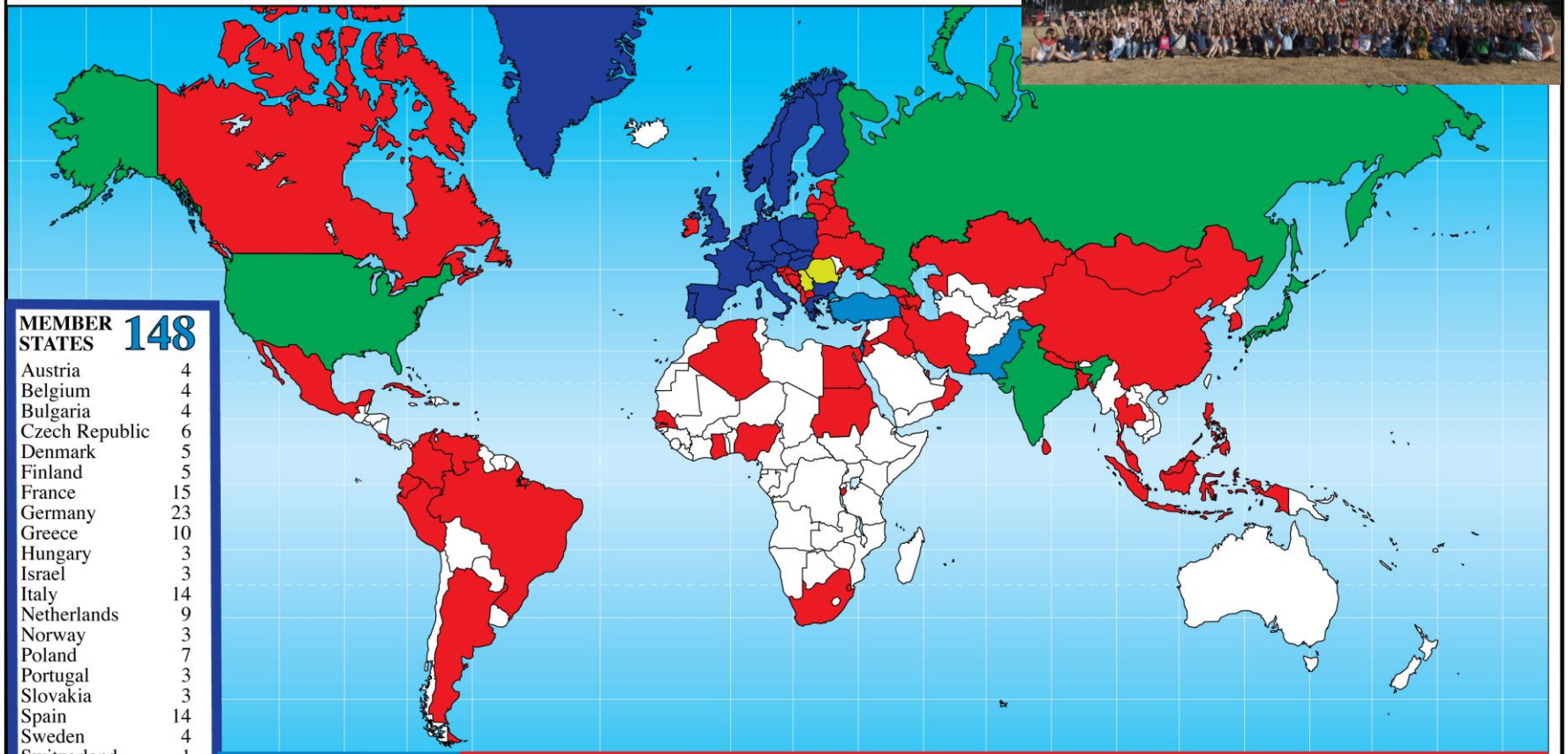
Summer Students
Programme

CERN Teacher Schools

International and National
Programmes

Summer Students 2015

Summer Students 2015



MEMBER STATES 148

Austria	4
Belgium	4
Bulgaria	4
Czech Republic	6
Denmark	5
Finland	5
France	15
Germany	23
Greece	10
Hungary	3
Israel	3
Italy	14
Netherlands	9
Norway	3
Poland	7
Portugal	3
Slovakia	3
Spain	14
Sweden	4
Switzerland	1
United Kingdom	8

OBSERVERS 44

India	13
Japan	4
Russia	9
USA	18

ASSOCIATE MEMBERS 15

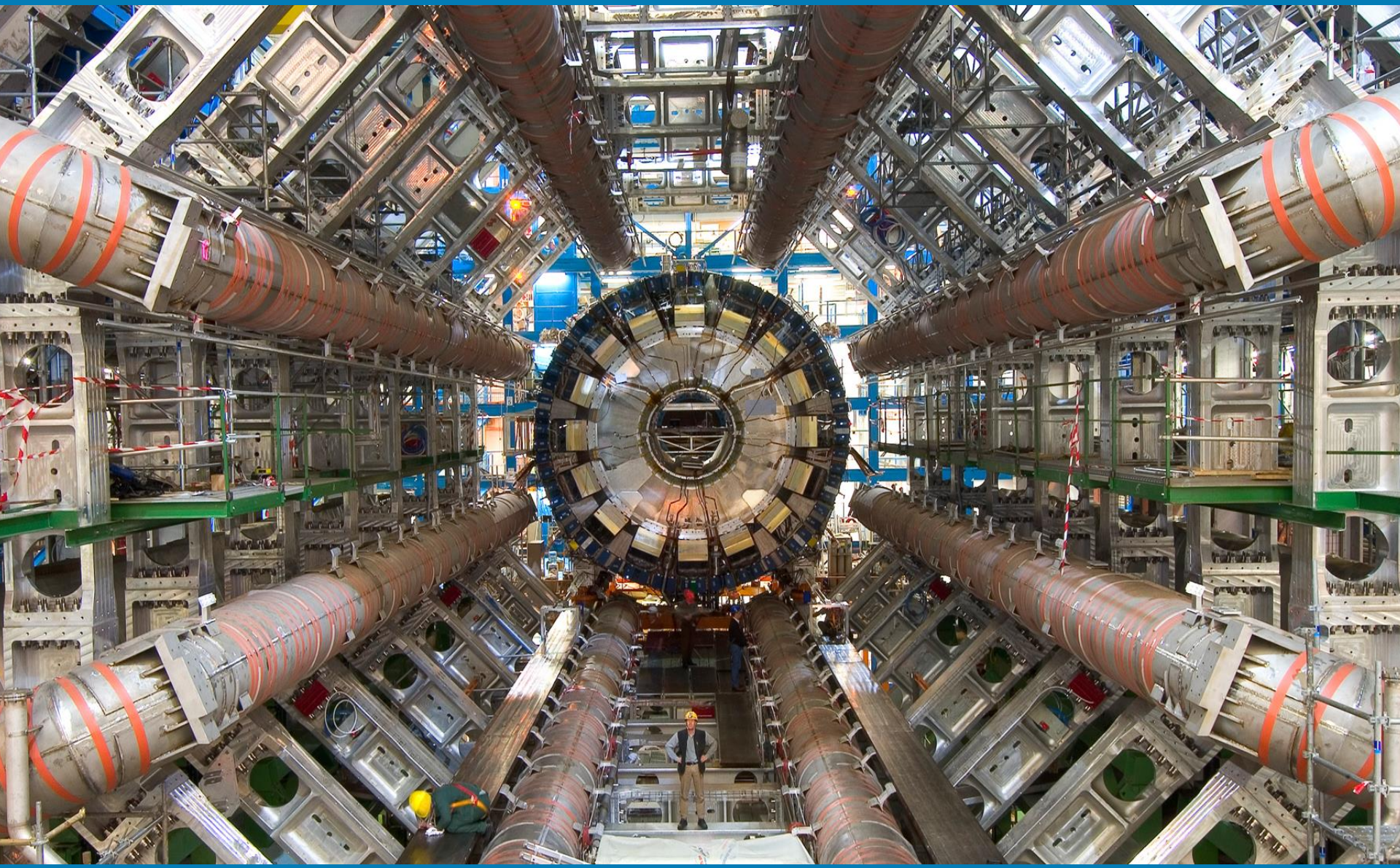
Pakistan	8
Turkey	7

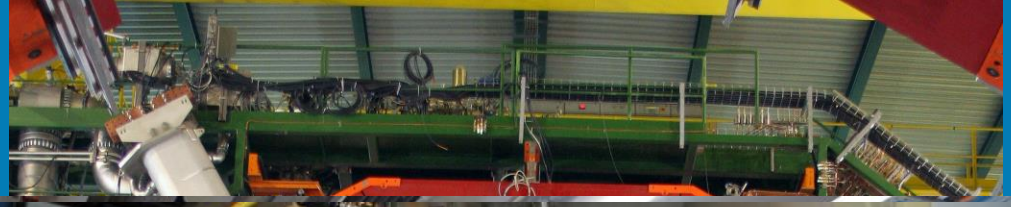
CANDIDATES FOR ACCESSION 9

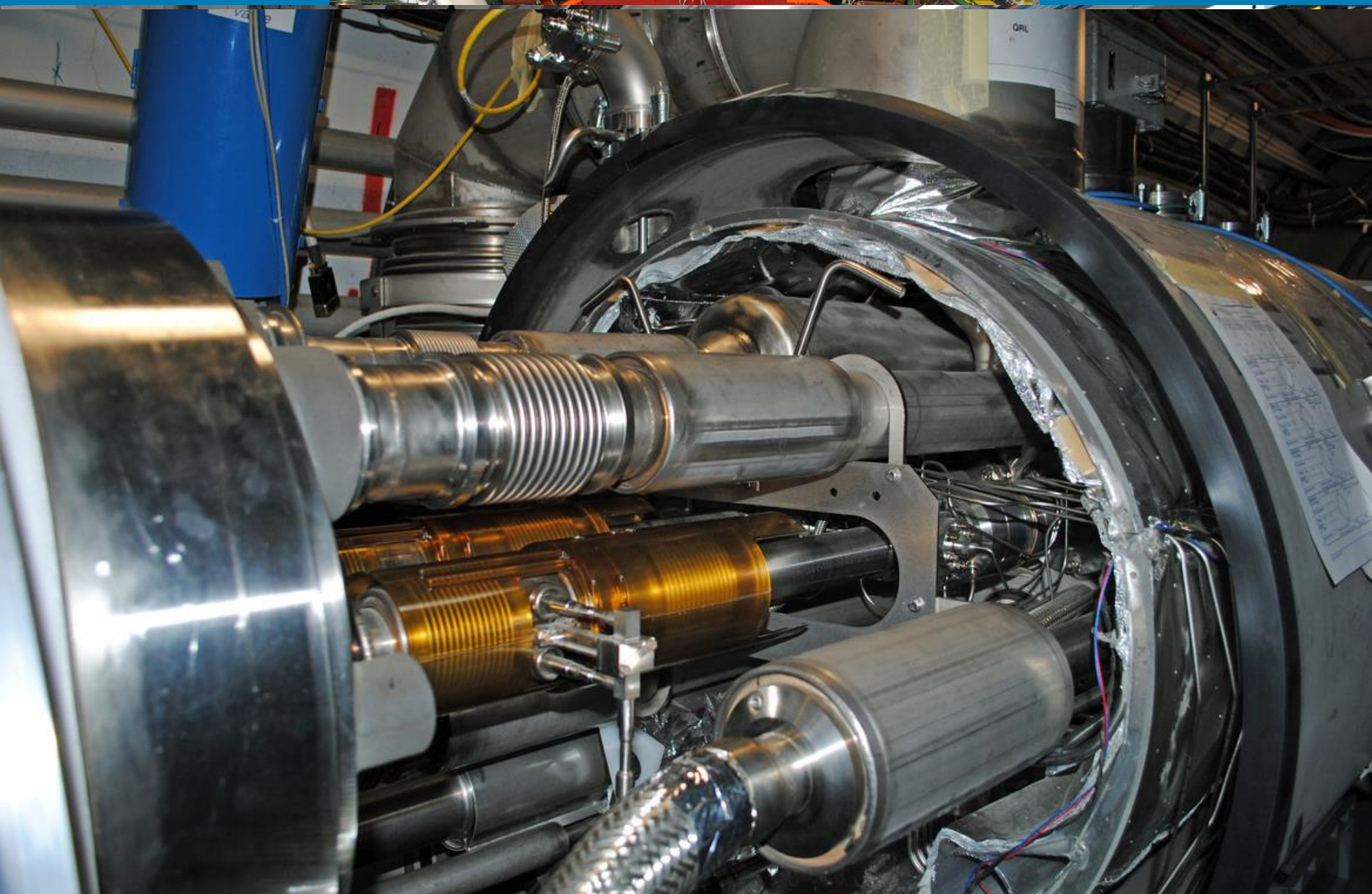
Romania	6
Serbia	3

OTHERS 105

Albania	2	Brunei	2	Egypt	2	Kazakhstan	1	Nepal	1	South Africa	2
Algeria	4	Burundi	1	Estonia	2	Korea	1	Nigeria	1	Sri Lanka	1
Argentina	3	Canada	3	Georgia	1	Latvia	1	Oman	1	Sudan	1
Armenia	1	China	12	Ghana	1	Lebanon	3	Palestine	1	Thailand	3
Azerbaijan	1	Colombia	1	Gibraltar	1	Lithuania	2	Peru	1	T.F.Y.R.O.M.	3
Bangladesh	1	Costa Rica	2	Indonesia	1	Malaysia	3	Philippines	1	Ukraine	1
Belarus	1	Croatia	2	Iran	2	Malta	4	Puerto Rico	1	Venezuela	1
Bosnia	1	Cuba	1	Iraq	1	Mexico	1	Qatar	1		
Brazil	2	Cyprus	1	Ireland	1	Mongolia	2	Singapore	2		
		Ecuador	1	Jordan	1	Montenegro	1	Slovenia	1		






QRL


CAPE VERDE
CYPRUS

The birth of CERN

- **The CERN "parents"**

A group of farsighted **scientists**, **politicians**, **diplomats**.

- **CERN's main objectives**

. Resume the dialogue after World War II among former belligerent European Countries, and beyond.

. Carry out **excellent** scientific programmes.

The first 60 years of CERN

- **The CERN Convention (signed in 1953)**

"The Organization shall have no concern with work for military requirements and the results of its experimental and theoretical work shall be published or otherwise made generally available"

- **30 years later …**

"I hope that the scientists at CERN will remember that they have other duties than exploring further into particle physics. They represent the combination of centuries of investigation and study... to show the power of human spirit. So I appeal to them <u>not to consider themselves as technicians</u> ...but... as guardians of this flame of European unity so that Europe <u>can help preserve the peace of the world</u>. "

Prof. I. Rabi, US (celebrations for 30th anniversary of CERN, 1984)

CERN in a nutshell

- **Accelerators and infrastructures**

  . Under the financial & technical responsibility of the Organization.

- **Experimental collaborations**

  . Hundreds (thousands) researchers from Member States and non-Member States.

  . Autonomously organized, including finance; placed under DG's authority. Top-down and bottom-up approach.

- **The scientific programme**

  . Decided by Council on proposal by the Scientific Policy Committee

CERN Scientific Policy Committee
(2014)

Chair
NAKADA Tatsuya EPFL,CH

Ex-officio members
ELSEN Eckhard Chairman, LHCC, DE
BLAUM Klaus Chairman, INTC, DE
KRAMMER Manfred Chairman, ECFA, AT
VALLEE Claude Chairman, SPSC, FR

Also present
HEUER Rolf-Dieter Director-General
ZALEWSKA Agnieszka President of the Council
JAMIESON Charlotte Chairman of Finance Committee

Members
DIEMOZ Marcella INFN, Roma ELLIS Richard Keith Fermilab, USA GAVELA Belen UAM, Spain HARRISON Michael LBNL, USA HUYSE Mark KUL, BE
LE DIBERDER François LAL Orsay
MURAYAMA Hitoshi FR IPMU Tokyo; LBNL
REDLICH Krzysztof Wroclaw Univ, PL
RIVKIN Leonid EPFL/PSI, CH
RODRIGO Teresa IFCA, ES
ROE Natalie LBNL, USA
RUBAKOV Valéry INR, RU
SPIERING Christian DESY, DE
TOKUSHUKU Katsuo KEK, JP
WARK David Imperial College, UK
WYATT Terry Univ. of Manchester, UK

The world of science

. Inclusive by its nature.

. Individuals are evaluated by peers based on concrete results.

. Results evaluated by the international community; scientific method.

. **Excellence** is required.

. Results are achieved only if all participants share the **same objective**.

. Excellence

. Trust

Science at CERN; the CERN model

. A simple but strong Convention, excluding military applications.

. Researchers from everywhere, including from non-Member States.

. International experimental collaborations, where CERN is minority.

. Open access philosophy, in all fields.

. Inclusion: no barriers of nationality, age, religion, gender etc …

. Collaboration and competition : "**Co-opetition**".

. **Stay away from politics**.

Science for peace and development

CERN is actively engaged to promoting:

. The role of science for the sustainable development of society : knowledge; technology and innovation; education.

. Science as enabler for dialogue and peace.


EUROPEAN ORGANIZATION
FOR NUCLEAR RESEARCH
NIGERIA
MONGOLIA
INTERNATIONAL UNION FOR
CONSERVATION OF NATURE

Observer status at the UN, Dec 2012

CERN (and science) for Peace

In the recent years CERN organized:

- Various initiatives like conferences, workshops, with other partners (Governments, Academies, other international organizations).

- Event with the UN in Geneva on the CERN model for global public goods, including science for peace *(Geneva, Nov. 2015)*.

- Event on "Science for Peace and Development" at the UN Headquarters in New York *(New York, Oct. 2014)*.

"CERN: Sixty years of Science for Peace and Development" - United Nations, New York, Oct. 2014

Science and diplomacy

. "Science diplomacy": what does it means ?

. **Diplomacy for science**: CERN would have probably not existed and not developed as it did without diplomats. **And without Parliaments !**

. **Science for diplomacy**: science (STI) and education (STEM) can help policy makers**, including Parliaments**, to take sound decisions for the benefit of society, and can offers models of cooperation.

Science and diplomacy *(cont.)*

Two basic statements:

Science (STI) and (STEM) education are important elements for the sustainable, peaceful, development of society.

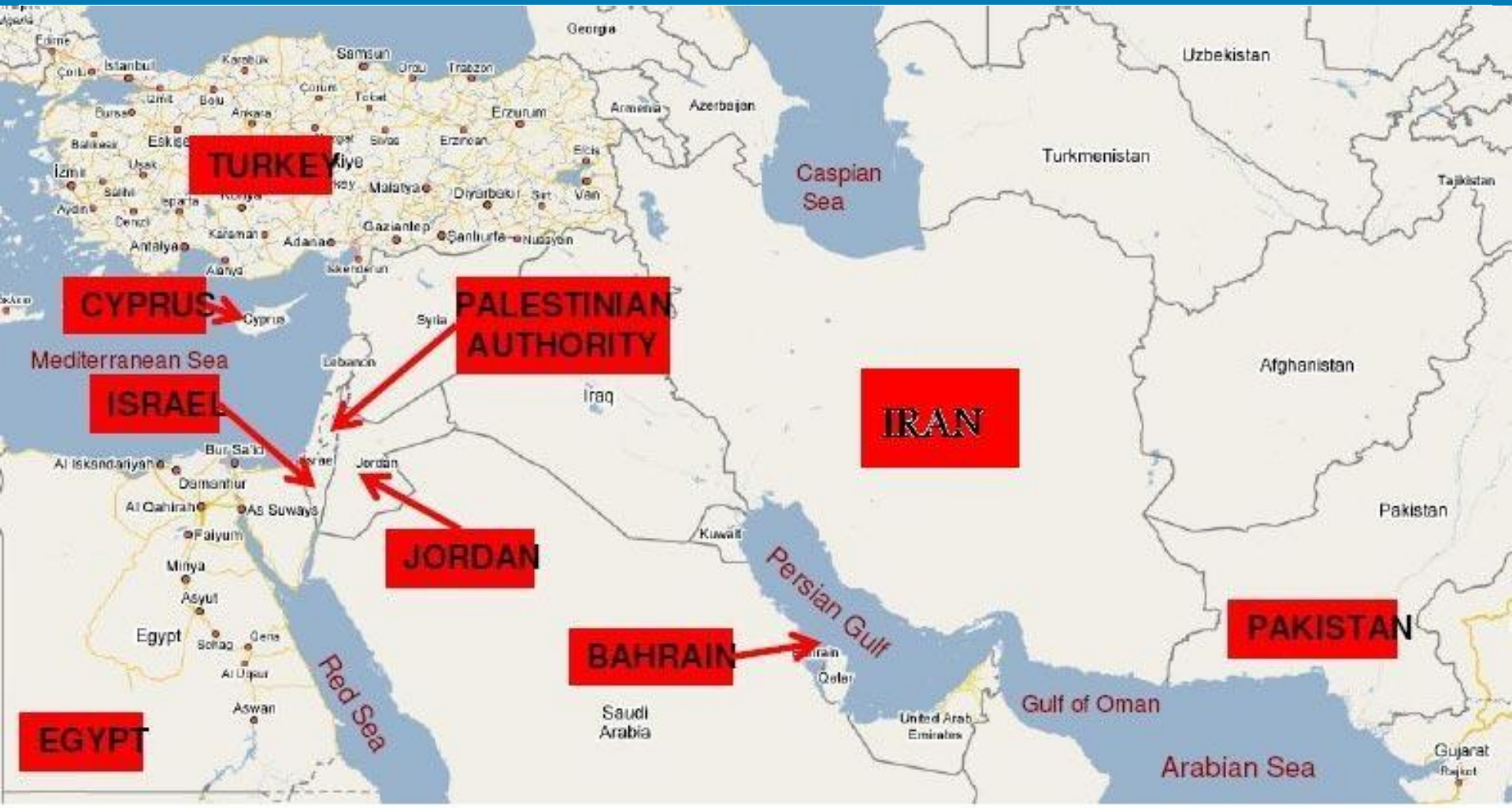
Cooperation models developed by the world of science can help fostering the dialogue and contributing to peace.

Should these statements be agreed beyond the world of science, and in particular by Parliaments:

Parliaments can increase the effectiveness of their action as policy makers, and also help connecting the world of science with the other policy makers.

SESAME - Synchrotron-light for Experimental Science and Applications in the Middle East

Amman, Jordan



SESAME Members

Teacher Training Schools

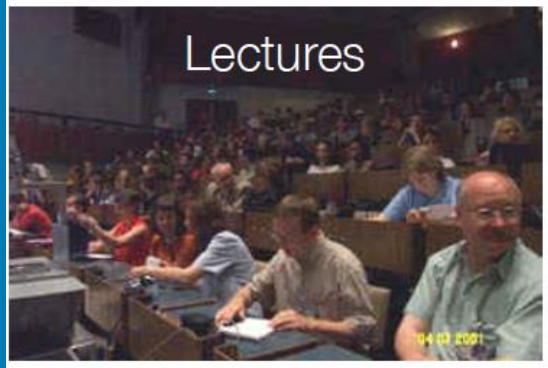
. Target: high school teachers.

. Goal: stimulate vocation of young people, in particular females, to invest in scientific university studies.

. Modules originally developed for Member States teachers, progressively extended also to teachers from non-Member States.

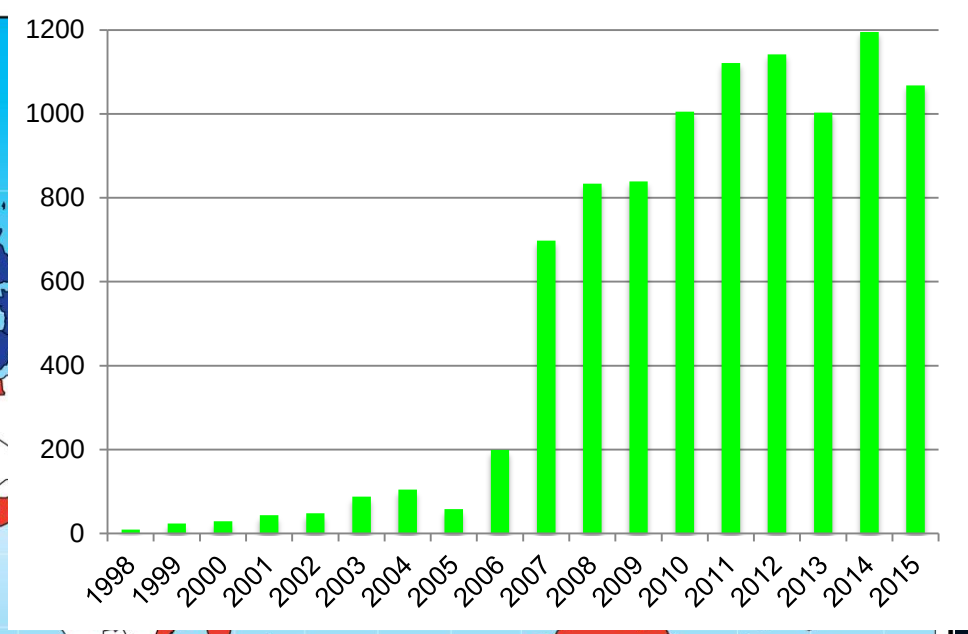
. Particular attention to specific regions, i.e. Africa with UNESCO.

CERN Teacher Programmes



CERN Teacher Programme

Teacher Programme Participants 1998 - 2015 (Total: 9509)



MEMBER STATES

Austria	177
Belgium	123
Bulgaria	455
Czech Republic	154
Denmark	199
Finland	498
France	314
Germany	902
Greece	671
Hungary	446
Israel	47
Italy	551
Netherlands	143
Norway	106
Poland	580
Portugal	386
Slovakia	222
Spain	441
Sweden	216
Switzerland	124
United Kingdom	1161

7916

ASSOCIATE MEMBERS 163

Pakistan	2
Turkey	161

CANDIDATES FOR ACCESSION

Romania	14
Serbia	68

82

OBSERVERS

India	4
Japan	7
Russia	336
USA	97

444

OTHERS

Angola	7	Cape Verde	4	Ghana	6	Malta	36	Sao Tome	6	Uganda	3
Armenia	1	Chile	3	Guinea Bissau	1	Mexico	14	Saudi Arabia	1	Ukraine	117
Australia	6	China	2	Iran	6	Mongolia	1	Singapore	2	U.A.E.	1
Azerbaijan	1	Costa Rica	4	Ireland	8	Montenegro	14	Slovenia	21		
Bahrain	2	Croatia	23	Jordan	11	Morocco	2	South Africa	7		
Belarus	3	Cyprus	10	Kazakhstan	8	Mozambique	21	South Korea	48		
Brazil	167	Dominican Rep.	45	Kenya	4	Nepal	2	Swaziland	1		
Burundi	2	Ecuador	2	Latvia	1	New Zealand	2	Taiwan	1		
Cameroon	4	Egypt	2	Lebanon	1	Palestine (O.T.)	4	Thailand	12		
Canada	8	Estonia	66	Lithuania	32	Qatar	1	T.F.Y.R.O.M.	12		
		Georgia	104	Madagascar	2	Rwanda	20	Timor-Leste	9		

904

CERN-UNESCO Schools for Teachers from SESAME Member States

. One School for Teachers (and students) from SESAME Member States was held at CERN in September-October 2015.

. Great interest to repeat the experience: discussions are ongoing for further funding.

. Should money become available, 36 teachers/School can be trained.

Science for peace: an exportable model?

. In its 60 years of life CERN, with its model, was a positive example of a worldwide platform for dialogue and peace through science.

. SESAME, based on the same model, is profiling itself as a platform in the Middle East for excellent science as well as for dialogue and peaceful cooperation.

Questions:

. Can these examples be exported to fields other than science?

. Can such models and platforms be used to tackle and solve basic societal needs, like ensuring **water, energy, food** etc ... ?

Some characteristics of science

. Science is by its nature **neutral**.

. Science promotes and requires **trustful** cooperation.

. Science is one of the few real **universal languages**.

Question:

. **Does science bring peace?**

West-Eastern Divan Orchestra

founded by Daniel Barenboim - Edward Said, 1999

Musicians from :

Syria

Turkey

Egypt

Israel

Palestine

Jordan

Lebanon

Spain

Excellence

Sharing the same objective

West-Eastern Divan Orchestra

founded by Daniel Barenboim - Edward Said, 1999

"The West-Eastern Divan Orchestra ….. has been sometimes described in a very flattering way for us as an "orchestra for peace". Let me tell you something: **this is not going to bring peace**. What it can bring is **understanding**, the **patience**, the **courage,** and the **curiosity to listen to the narrative of the other**"

Daniel Barenboim, Ramallah concert, August 2005.

Question:

Does science bring peace?

Question:

Does science bring peace?

My personal answer:

Science itself **cannot bring peace**.

What it can bring is **understanding**, the **patience**, the **courage**, and the **curiosity** to **listen to the narrative of the other**.

Science for Peace School

(1/5)

. The idea is based on CERN Schools, where international participants spend one or more weeks together, **learning** and **working** on specific topics.

. Not a School just to talk about science and peace. It must be based on concrete goals, to start implement regional strategies for cooperation.

. Main goals:

- **learn** the models that science, technology and innovation can offer to **tackle** and **solve** specific regional/international problems.
- get used to working together for the same objective.
- start **working** on the possible solutions, and prepare the road map for their implementation.

Science for Peace School

(2/5)

. What

- A one-week School, possibly repeated during the year.
- Possibility to have Schools at different levels (basic; advanced).

. Where

- In the Middle East Region or in Geneva.
- Follow-up in the Middle East Region, including implementation.

. When

- As soon as money is made available.
- Planning: Class 1 in 1st quarter 2018; Class 2 in 2nd quarter 2018.

. Who

- Students/young entrepreneurs from the region: ~ 2 per Country.

Science for Peace School

(3/5)

. Leader

- IPU

. Partners

- High-innovation companies.
- High-level technology universities.
- Institutes for development and international cooperation agencies.
- CERN, for the scientific and technological support to IPU.

Science for Peace School

(4/5)

. Class 1: experimental Class (water). Main topics:

- Cooperation models offered by the world of science.
- Possible concrete solutions for water in the Region.
- Road map for implementation of the retained solution in the context of the Parliamentary Network on Water.

Invited per Country: one young scientist from the national water Authority, plus a young representative from Administration (e.g. Parliament's Secretariat on water).

. Class 2 and following (other themes). Main topics:

- Cooperation models offered by the world of science.
- Science, technology, innovation: mechanisms to benefit the society.
- Identification of proposed solutions and relevant road map.

Science for Peace School *(5/5)*

Next steps

1. Get the formal support of the Committee on Middle East Questions.
IPU Assembly of St. Petersburg, October 2017

2. Set up a group of Partners, including those who can help IPU to finance the initiative.

3. Prepare a business plan, including budget for the first **three** Classes.

4. Elaborate in detail the content of the School(s), with priority for School 1.

Some personal reflections (1/2)

Some statements retained from yesterday morning's discussion (free interpretation):

Some personal reflections (1/2)

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… It would be important to leave politics apart, and to run this meeting as a frank and trustful discussion and not as a negotiation …

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… It would be important to leave politics apart, and to run this meeting as a frank and trustful discussion and not as a negotiation …

… Which are the concrete projects on water that can be developed in the region ? …

Some personal reflections (1/2)

Some statements retained from yesterday morning's discussion (free interpretation):

… It would be important to leave politics apart, and to run this meeting as a frank and trustful discussion and not as a negotiation …

… Which are the concrete projects on water that can be developed in the region ? …

… We should identify the problems in the region, but also the opportunities for their solution …

Some personal reflections (1/2)

Some statements retained from yesterday morning's discussion (free interpretation):

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… Which are the concrete projects on water that can be developed in the region ? …

… We should identify the problems in the region, but also the opportunities for their solution …

… Suspicion permeates a large part of UN activities …

Some personal reflections (1/2)

Some statements retained from yesterday morning's discussion (free interpretation):

… It would be important to leave politics apart, and to run this meeting as a frank and trustful discussion and not as a negotiation …

… Which are the concrete projects on water that can be developed in the region ? …

… We should identify the problems in the region, but also the opportunities for their solution …

… Suspicion permeates a large part of UN activities …

… We are not used to talk to each other, even if we live close to each others. IPU is a good platform to start doing it …

Some personal reflections (2/2)

A "conditio sine qua non":

. Build up mutual trust.

Some personal reflections (2/2)

A "conditio sine qua non":

. **Build up mutual trust.**

For the long term:

. **Define and "plant" seeds that can foster the dialogue in region, also through models taken from the world of science.**

Supporting "Science for Peace" schools can be a good start.

Some personal reflections (2/2)

A "conditio sine qua non":

. **Build up mutual trust.**

For the long term:

. **Define and "plant" seeds that can foster the dialogue in region, also through models taken from the world of science.**

Supporting "Science for Peace" schools can be a good start.

For the water problem in the region:

. **Fly High! Define** and support the **main objectives** - in the interest of the local populations - that all parties have to work for.

THANK YOU FOR YOUR ATTENTION !

Israel –Strategic Player in Global Water Solutions

Parliamentary Cooperation on WATER

MK Dr. Nachman Shai

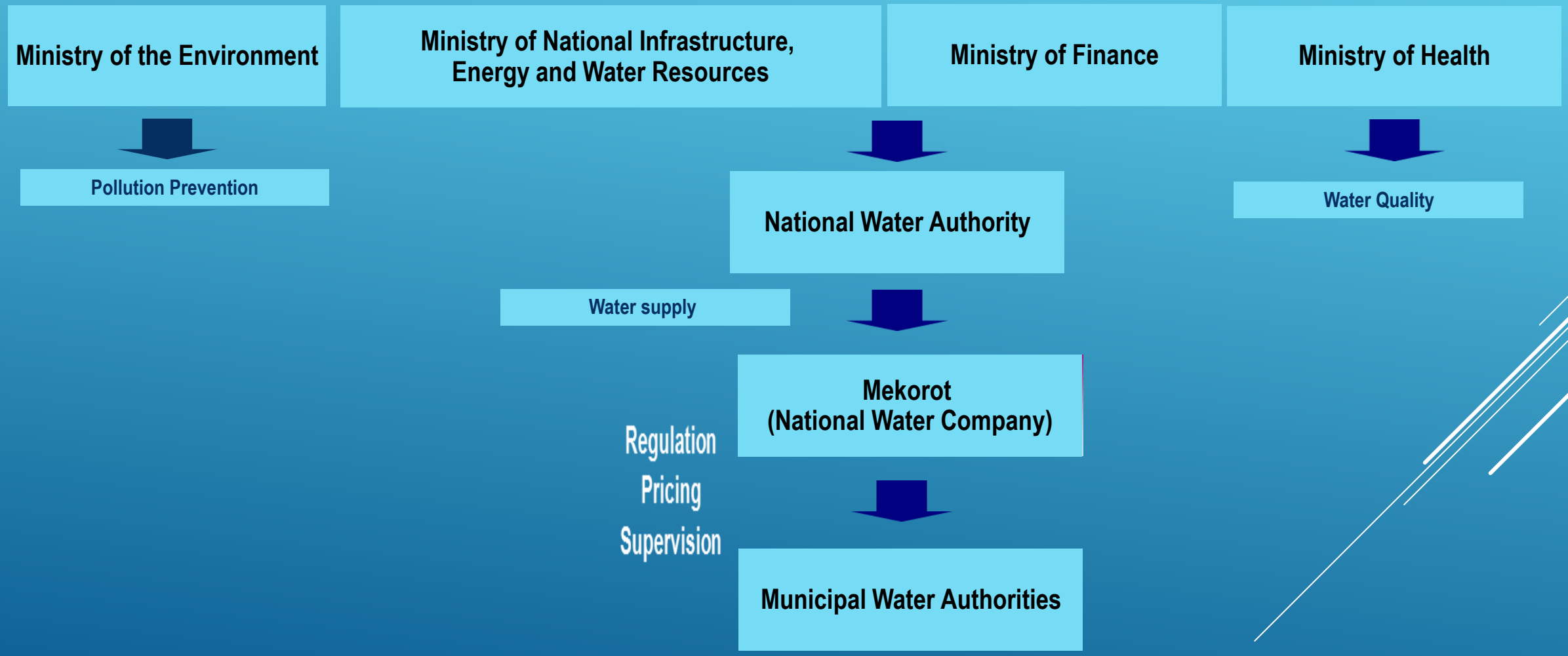
Israel's Integrated Approach

- Centralizing water planning + strategy for improving efficiency
- Real water pricing
- Appointing regulators
- Educating citizens to conserve water
- Desalinating seawater
- Using advanced technologies (e.g., drip irrigation)
- Treating and recycling sewage

Shlomo Blass : Inventor of drip irrigation (1956)

HTTPS://YOUTU.BE/2TNKKBRM7QS

Centralized water planning



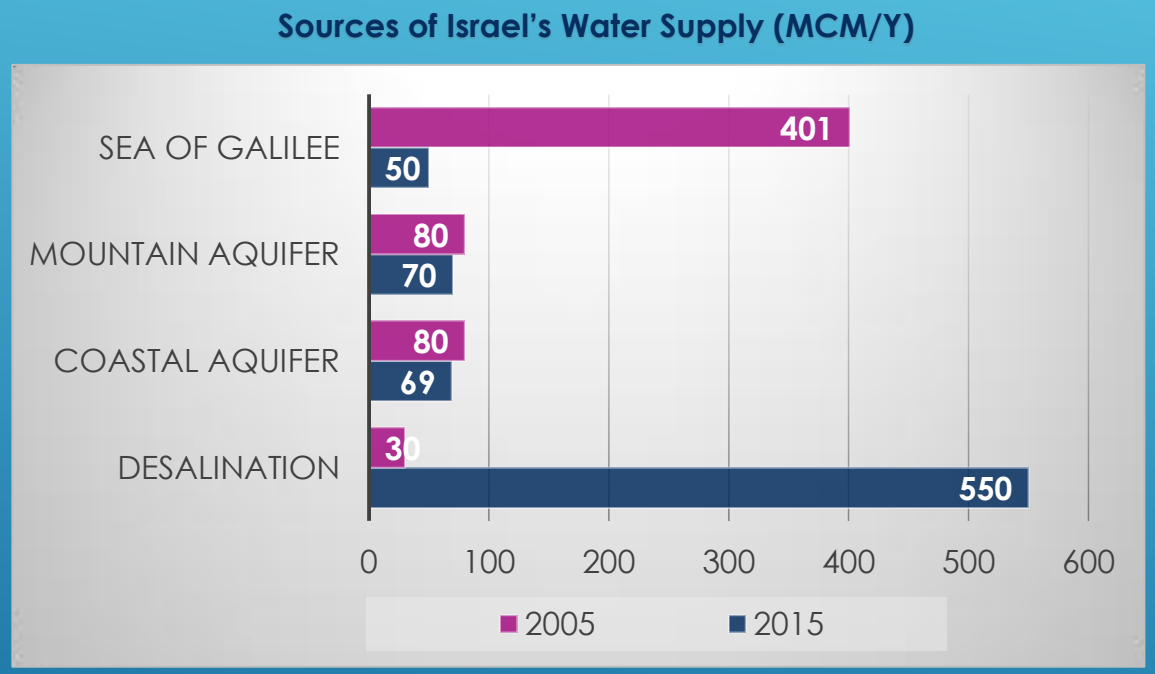
Water Pricing and Legislation

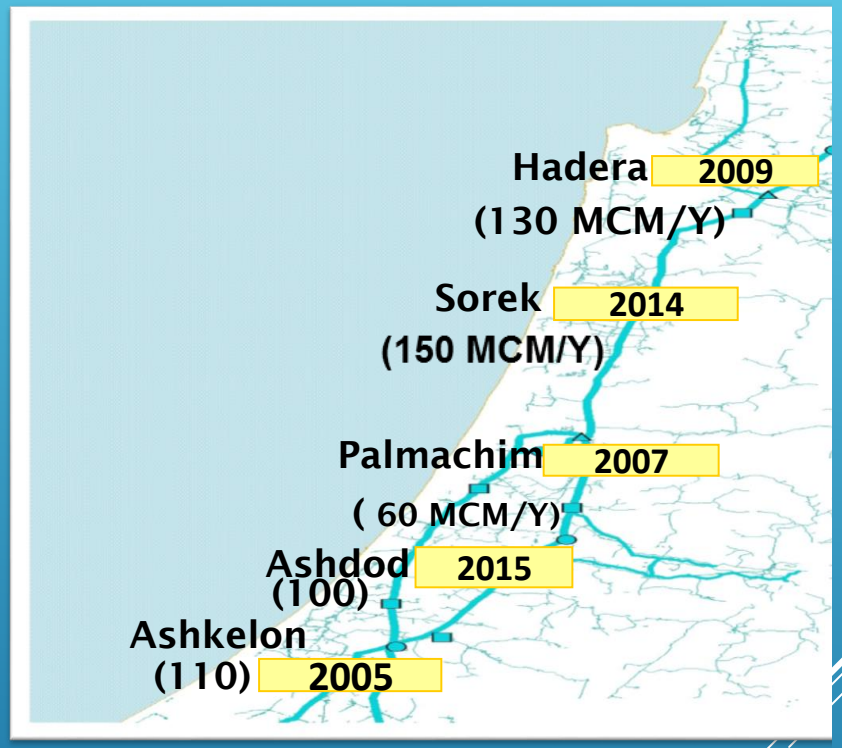
Two key laws: Water Law – 1959 (amended 2006) & Water and Sewerage Corporations Law – 2001

- 2006 amendment to Water Law created Governmental Authority for Water and Sewerage ("Water Authority")
- Inter-agency body: Ministries of Finance, Energy and Water, Environmental Protection, and Interior.
- Water tariffs are levied for all uses and at all stages of production.
  - Financed by self-financing, commercial debt, and subsidies.
- Domestic water rates charged by local authorities set by the Water Authority.
  - Progressive (increasing-block) rates
- Mekorot rates set by the Water Authority, approved by the Knesset's Finance Committee, and updated from time to time.
  - Categorized by use: domestic consumption and services, industry, and agriculture

Desalination

Desalination plants supply 70% of household water consumption

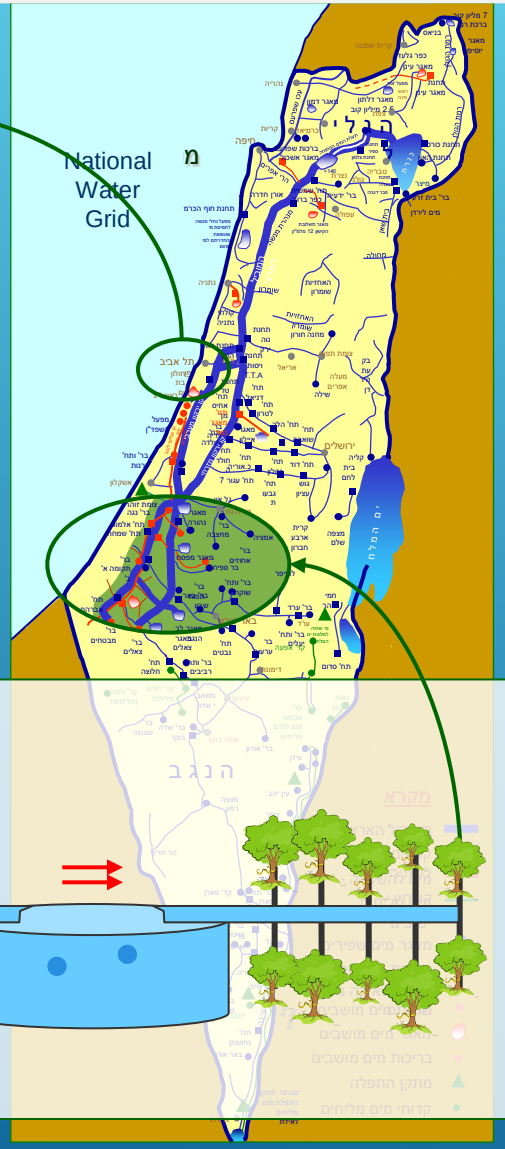


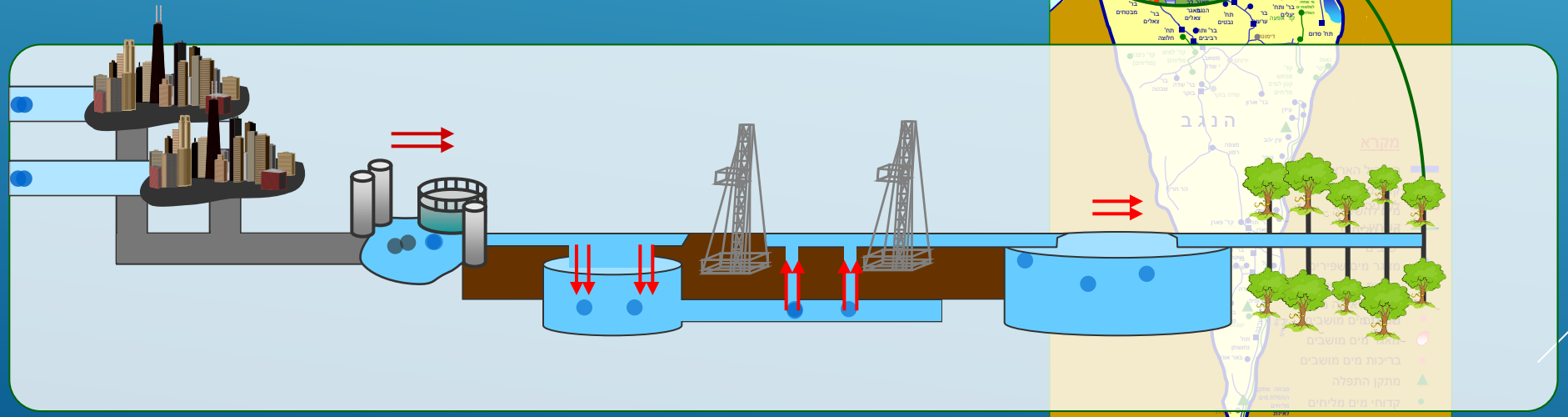


Sewage Treatment

Wastewater Treatment Plant (Shafdan) and the Pipeline to the Negev

- **Sewage from the Greater Tel Aviv area – 125 MCM/Y**
- **90km pipeline to Negev**
- **32 pumping stations, operational storages and seasonal storages**
- **Final product used for Negev agriculture**





Strategic planning

National Master Plan for improving water consumption and efficiency for years 2010 – 2050.

The Nana vineyard, which, like many others in Israel, is irrigated with recycled wastewater. Israel has become the world leader in recycling and reusing wastewater for agriculture. It treats 86 percent of its domestic wastewater and recycles it for agricultural use — about 55 percent of the total water used for agriculture.

"A revolution has taken place here. A major national effort to desalinate Mediterranean seawater and to recycle wastewater has provided the country with enough water for all its needs, even during severe droughts. More than 50 percent of the water for Israeli households, agriculture and industry is now artificially produced."
—New York Times, 29 May 2015

Innovation Showcase – AIPAC
https://www.youtube.com/watch?v=f7-RSzKkT1s

WATEC Israel 2017

September 12-14, 2017

http://watec-israel.com/

We would like to thank the Ministry of Economy and the Ministry of Foreign Affairs for the advice and materials used in the presentation.

INTER-PARLIAMENTARY UNION

COMMITTEE ON MIDDLE EAST QUESTIONS

SECOND ROUND TABLE ON WATER

FROM WORDS TO ACTION

6 - 7 JULY 2017

IPU Headquaters, Geneva

CASE STUDY OF MOROCCO

By the Moroccan delegation

SECOND ROUND TABLE ON WATER

CASE STUDY OF MOROCCO

I - INTRODUCTION :

Morocco lies in the west corner of North Africa. Out of its total area of 710.000 Km², 95% is in semi-arid, arid and desertic areas. The mediterranean harsh and fragile climate, as well as the reliability on agriculture with a significant growing population which increased from 11 millions in 1960 to 35 millions inhabitants in 2014 makes Morocco at high risk of water scarcity and shortage. However, aware of the vital role and sensivity of water resources, and taking benifit from ancestral experience and human heritage as well as innovative solutions, Morocco is amongst the most advanced countries in the management and best use of water both for access and good sanitation. Thus it has committed itself in 1990 to SDG (MDG at that time).

Today, with its long experience, we can confidently say that Morocco can meet the challenge.

In this review, we shall deal with water law and policy reforms, access to water and good sanitation, the advisory body and planification of the sector.

II - LAW AND POLICY REFORM :

These issues have gone through many changes and updates in the last two decades.The aim of such reforms was to make the best of the water resource, to ensure its availability and supply, its economy and sustainable use and the prevention of its pollution in all its sources. These reforms aim also to minimise the impact of associated risks and adaptation to climate change. This includes the implementation of a drought management program and a national programme for the protection against floods other measures imply updating of the 10-95 law in accordance to the new constitution implying the full right of citizens to water access and good environment. This includes also the promulgation of the new law 36-15 to ensure the rational use of water by various stakeholders and its preservation. The new law dictates also the set up of water shed councils to allow information supply and ensure the involvement of users within a contractual management framework.

III - WATER ACCESS : WHAT PROGRESS HAS BEEN MADE ?

Since the early 19th century, Morocco involved itself in the search for an adequate water policy to ful fil lits needs.

By the 1970s, he adopted a dynamic waterdam policy construction to accomplish self sufficiency both for drinking water and agriculture developement. It should be noted that the country has a central water reservoir (the middle Atlas) from which rise most of the rivers, and a series of mountain chains of the Anti and High Atlas and the Rif. Besides the mountains, there are the Plateaus that contribute also to water supply. Morocco holds also a real network of rivers distributed over its entire territory.

Nowdays,the country has got 130 big water dams and over 100 small ones of which the capacity is estimated to be 17.2 billion cubic meter (BCM). The use of underground water is also customary especially

under harsh and xeric conditions. Traditional and other water storage systems are also used in many areas. The use of new technologies for sea water desalination have recently been used and are evolving gradually. About six desalination plants are planed some of which are in service. Their capacity amounts to 12.000 m3/day. The reuse of wastewater especially for green space irrigation is also practised in big cities.

This water policy resulted nowadays in 100% water access in urbain areas and a very spectacular improvement in rural areas, from 14% water access in 1994, Morocco reached about 96% water access today.

In order to fullfil its SDD commitments and meet the challenge, Morocco has planed other actions :

- the construction of about 40 big water dams by 2030 with a 4.5 Million cubic meters capacity
- the desalinisation of 500 Million cubi meters of sea water by 2030 and the reuse of about 325 Million cubic meters of depolluted wastewater for the same period.

IV - ACCESS TO ADEQUATE SANITATION :

The quantity of wastewater produced annually in Morocco was estimated to be 700 Million m3 in 2010 and is expected to reach 900 Million m3 by 2020. 43% of the total amount is produced in coastal cities.

The access to adequate sanitation in urban areas is well advanced and covers 75% of the total urban area and it is expected to reach 100% by 2030. However, in rural areas, the rate of access to water sanitation remains very low and did not exceed 10% in 2015 but it is

expected to reach 100% by 2040 according to the national plan for wastewater.

The reuse of recycled wastewater is in its beguining today used mainly for gardening and golf fields. It is hoped to use 40% of the wastewater by 2030 mainly for green space irrigation and sport fields. Many research efforts are made to qualify the water for agricultural irrigation..

V - INSTITUTIONAL FRAMEWORK OF THE SECTOR :

This comprises the set up of sectorial planning body, regional institutions and other stakeholders of which we find

1- The Supreme Council for Water
2- The State Secretariat in charge of Water under the auspice of the ministry of Infrastructure, Transport, Logistics and Water
3- The water Bassin Agencies
4- The National Office for Electricity and Drinking Water
5- The Regional Offices for Agricultural Development
6- The Autonomous Agencies for Water and Electricity Distribution

VI - TRAINING AND RESEARCH PROGRAMS :

Morocco has a long experience in training and research in the field of water management and utilities. The country houses leading specialized universities, high standard engeneering institutes and schools as well as very renouned research institutions and laboratories in the subject matter. These institutions have been the

basis for humain resources building capacity nationally and internationally. They are also the support for specialized research programs carried out by individual researchers or research teams a national level or in partnership with other world leading institutions from the USA, Europe and other parts of the world.

The various research programs involve conventional as well as new techniques of water management. These programs are related to.

- Means and tools of mobilizing surface and undergroundwater.
- Water economy and sustainable use of the resource
- Desalination of seawater
- wastewater treatment and reuse
- Innovative solutions to water access and sanitation
- Laws and policy reforms
- Etc

VII – CONCLUSION

No doubt, water will remain for ever a vital resource. It is basic for life and water demand will ever remain increasing as it is used in all sectors of humain life. This makes its good management, its best and rational use a necessity and a must. Morocco, due to its dry climate and owing to its long experience and ancestral heritage in water management is one of the few leading countries in water issues.

The various national programs on access to water and adequate sanitation and the different laws and policy reforms in the subject matter makes of the country a good exemple to follow. It allowed

the country to meet the SDDs and fulfill its commitments towards the international community. However, there still is a genuine need for exchange of experience and international cooperation.