



WATERSHED

REPLENISHING WATER VALUES
FOR A THIRSTY WORLD

Setting Priorities for Water Education
Workshop

March 23, 2017

World Water Day at the Vatican
March 22, 2017



circle of blue





The world will not become resilient to drastic changes in water availability by following yesterday's playbook.

Supplying adequate water for all means adapting to new ecological conditions and expanding the circle of participants in decision making: from a narrow technical-managerial focus to embracing ethical, moral, and cultural perspectives from all ages and social classes.

These new perspectives should be strengthened by data from satellites and scientific studies that reveal water's deep connection to food and energy systems and be animated by narratives that connect the sacred and the mundane.

Those were central messages at Watershed, an international conference held at the Vatican March 22 and 23 to discuss how to incorporate water's myriad values into a common language.

The conference, which coincided with World Water Day, was hosted by the Pontifical Council for Culture, the Vatican's intermediary for scientific and religious inquiry, and the Club of Rome, a global policy think-tank, in collaboration with Circle of Blue, the journalism and research organization focused on water, food and energy globally.

Four hundred leaders of government agencies, businesses, nonprofits, religious institutions, and research organizations took part in the seven-hour event that was broadcast live on the internet.

The following day some 80 individuals participated in a planning workshop to develop a roadmap for new water values.

Education was a prevailing theme.

The Pontifical Council for Culture was keen to mobilize the Catholic Church's schools, universities, and religious centers – a network of 1.2 billion people worldwide – to teach members about the importance of water.

“Even cardinals can understand what water is about,” said Monsignor Tomasz Trafny, head of the council's science and faith department. Trafny noted that the Church wants to develop a “new culture of care” for the world's water, a view that Pope Francis shared in his 2015 encyclical letter *Laudato Si*, a call to Earth stewardship.

Repositioning water in an ecological and spiritual context means being able to listen with all human capacities – technical as well as social.

Watershed:

Hosted by the Vatican
Pontifical Council on Culture
and the Club of Rome

Produced by Circle of Blue
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One way of doing so is through scientific inquiry. Rabi Mohtar, a professor at Texas A&M University, presented research that traced the links between water, food, and energy. Reducing food waste by 20 percent in Lebanon would cut farm water consumption by 3 percent. Reducing food waste by 20 percent in Morocco would save 2 percent of national electricity generation.

Seeing in the data these synergies between sectors “allows us to reduce dependencies” in the real world, Mohtar said.

Another path is through technological tools. Dr. Kathryn Sullivan, a former NASA astronaut and recent past administrator of the National Oceanic and Atmospheric Administration, mentioned that this is the first generation of humans to use satellites to predict the future through weather forecasting, a capacity she called “environmental intelligence.”

Sullivan hoped that the foresight resulting from that technology could be the basis for collaboration – emergency responders, for instance, can be positioned just outside a hurricane’s danger zone and supplies can be staged before the storm hits. But she noted that the skills and computer outputs still require significant refinement.

“We’re teenagers at having this space-based ability and being able to bring it into our decision making,” she said.

Cities, meanwhile, must adapt as they go. Already they are designing urban spaces with a far different set of values than those that were expressed in the concrete and asphalt eras of past decades, said Mark Fletcher, global water business leader with Arup, an engineering firm. He spoke of Singapore, Philadelphia, and others that are softening the hardscape of urban design.

“I know one thing,” he said. “All of the diagrams I see of future cities, wherever they are around the world, whenever they are drawn up they look greener and bluer than the existing cities.”

Fletcher mentioned Bosco Verticale, a pair of forested apartment towers in Milan, as a standout example. “Rather than have monolithic concrete skyscrapers we have trees in buildings, going up buildings to capture water, process water,” he said. “It’s a very exciting time.”



“The need to protect water as a treasure belonging to everyone, mindful too of its cultural and religious significance. I especially encourage your efforts in the area of education, through programs directed to children and young people.” — Pope Francis

**“In this education we find our moral mandate and our sacred legacy.”
— Archbishop Paul Richard Gallagher**

**“My hope always is that reliable foresight can be the basis for coming together and looking at a common picture of what our common future might be and finding ways to identify shared interests and shared needs and develop collaborative solutions.”
— Dr. Kathryn Sullivan, Astronaut, NOAA administrator (ret.)**

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— Mark Fletcher, global water business, Arup**

**“We can’t just fix the pipes. We need to fix the institutions that fix the pipes.”
— Jennifer Sara, director, Water Global Practice, World Bank**

**“Either we succeed together or we fail altogether.”
— Dr. Assia Bensalah Alaoui, ambassador at large for the King of Morocco**



Topic #1

COMMUNICATION

Proposed Strategy:

Elevate the profile, scope, modes, frequency, and effectiveness of communications with water organizations — and those working at the nexus of water, food, and energy — and external constituencies

RATIONALES

- To gather and disseminate information in a consistent and timely fashion with a united voice through one organization
- To create an information protocol
- To ensure all participating organizations send positive messages about water's value

INITIAL ACTION STEPS

- Build a data base of all water orgs including their mission, successful and not activities, things planned for the future
- Maintain the data base and encourage regular updating by participating organizations
- Highlight for participating organizations activities worthy of consideration for replication



Topic # 2

EDUCATION

Proposed Strategy:

Develop offerings that better inform, through a multitude of programs, to all ages water's importance to our existence

RATIONALES

- To inspire all citizens of our planet to have a more conscience understanding and respect for the values and value of water
- To address the need in many regions for cleaner water to reduce disease
- To develop educational programs which engage all learners in helping manage our most critical and natural resource

INITIAL ACTION STEPS

- Compile a list of all educational resources available and make available to all organizations
- Provide online teaching in the use of identified materials
- Develop new educational programs/materials for use by different age groups - child to senior citizen



Topic #3

WATER MANAGEMENT

Proposed Strategy:

Explore being a strategic partner with municipalities, businesses, organizations and individuals to develop policies and practices that consider the appropriate use of water

RATIONALES

- To address the diminishing water supply and increasing human need for it
- To glean from water operations departments or organizations best practices in water conservation
- To heighten awareness amongst those engaged in land development the concerns about the availability of clean water

INITIAL ACTION STEPS

- Offer water information and consulting services to municipalities, businesses, organizations and individuals
- Develop materials that can be easily distributed to gov't authorities about the state of water in their region
- Engage local environmental organizations in proactive positions on water scarcity



Topic #4

COLLABORATION

Proposed Strategy:

Create an organization that brings together all stakeholders working to provide and protect the supply clean of water

RATIONALES

- To better understand what each stakeholder does, facilitate better communication and less silo-ization
- To facilitate better use of technology for coordinating organizations
- To ensure organizations focus on big picture items

INITIAL ACTION STEPS

- Develop a diversity platform to move away from the anglo-saxon centric world view
- Create an online community to share tools/resources
- Get organizations out of their silo's



Topic #5

FINANCES

Proposed Strategy: Develop better utilization of financial resources through heightened organizational communication and collaboration

RATIONALES

- To remedy the probable mis-use of resources through lack of communication worldwide around what is working and not
- To encourage funding organizations to provide more multi-organizational funding
- To address the need for more grassroots funding by investors

INITIAL ACTION STEPS

- Move away from an organizational debt financing strategy
- Collect all water research and place under one roof to benefit all water organizations
- Ensure that proper accounting procedures are being utilized by all water organizations



Topic #6

SAFETY AND SECURITY

Proposed Strategy:

Create policies and procedures countries should adopt which establish standards for the safety and security of the world's water supply

RATIONALES

- To deepen the global understanding of scarcity, safety and security of our worlds water supply
- To engage the voiceless, disempowered/excluded in the water discussions
- To demonstrate more timely and thorough communication about water issues around the world

INITIAL ACTION STEPS

- Reach out to all international organizations involved with water safety and security and advise them of this effort and encourage their participation in the sharing of pertinent information
- Work to restore trust in public institutions involved with water
- Conduct a broad societal campaign on the roles and responsibilities of governments in protecting our water



What has been your organization's most impactful activity and why?

- In Argentina - provided access to water to two communities of indigenous people
- NOAA- pulled together the scientific data and understanding of the hydrologic cycle to model and forecast streamflow of an entire river- pulling together 6 organizations in the US to make this model a reliable platform
- In political sector - GFFA (Global Forum for Food & Agriculture) gathered 83 ministers from around the world to work on a global communiqué; did this back-to-back with G20 summit ministers meeting
- First time in Swiss ministry of foreign affairs - 4 year strategy through 2020 - they have 50 partners- empowerment of women, young people, different sectors (energy, transport, etc.) focus on making the water sector more attractive to capture more engagement
- Toilet Board Coalition - 2 streams of programs- toilet accelerator program (mentorships) & thought leadership programs (circular economy)
- Virtual Reality use - film debuted at Metropolitan Museum of Art- raised \$2.5M at end of showing & collected 11,000 email addresses; dropped 3,000 remote sensor (\$5M grant from Google)- sensors dropped in Africa and 23,000 water points around the world (open sourced entire data set to raise awareness)
- Circle of Blue - biggest innovation or mindset shift - world of perception vs. reality- using new tools to understand perception vs. reality
- Hungary - initiated with Government Academic Science- re-wrote national scientific program on water, requiring new approach to understanding of water nationally and beyond. Program will be launched in next 2-3 months with a new institution. On international level, HLPW- approaching the difficulties, bottlenecks and finding solutions for financing water infrastructure- how to involve knowledge, investment and management
- Water Action Day and interlinking STG and climate agenda -



- During World Water Week - highlighting thought leaders. Stockholm Water Prize (adult and junior level)
- Global Water Partnership - have seen a very effective engagement of youth organizations in the policy arena- active and well-informed to shape major policy events (inside the box) - Outside the box they are bringing faith-based organizations to the water talks- outreach to the finance industry is an area to grow (don't speak the same language- this area needs work)
- Sweden - working in partnership with colleagues around the world (donor colleagues, NGOs, corporations and Governments)- gender-balanced approach to foreign policy and government- they have been very active to bring attention to women and girls (WASH) in schools and with partners- links to health and education- systems approach- seeing positive results

- Expanding on services to water beyond just access and hygiene, mobilizing villages to create their own food sovereignty, climate change strategies. Water counting- scientific approach to understanding where the greatest need for water is within a village— where wells are most needed—a scientific method to avoid the politics of location of wells. GPS mapping and overlays of population density to understand where the greatest needs are in a community, what water is used for in different locations (agriculture, animal husbandry, human needs) to gain an understanding of where the gaps are and the smartest locations to drill for water.
- Student volunteerism - Created online symposium for students to interact with leaders from around the world— measuring volunteerism—in high school students it has increased by 28%.
- Promoting the future of blue-green cities—looking around the world to learn and then share—city water index to see where priorities need to be focused



- Remedy human folly - Salton Sea in southern CA- a depression in the desert that filled from a canal- has rights to 1/3 of the water from the Colorado River. Lake has been receding and lake bed is exposed generating toxic fumes. (highest rate in asthma and unemployment in CA) Rockefeller collaborated with communities & government to address water deficit in Lake Mead, restore the lake bed, diversify the economy, improve bird habitats
- Design road infrastructure in arid regions to maximize capture of rainfall. Design innovation with NGO in Ethiopia & scaled nationally- 1.5 million farmers expected to benefit
- World Bank - new partnership for a water secure world for all. Allows for more technical assistance around the world. WASH diagnostics and linkage to local communities to determine investment. Eco- sludge management- alternatives to pipe sewers.
- Stockholm - leaders meeting in Africa?

- Head of UN Nairobi - children's meeting place to be developed for leaders to learn from children
- Ghana - effort to encourage children to attend school; free uniform, food and education for children – so popular it has increased enrollment and education in a significant way. Children having to walk 2-3 hours to gain access to water— crossing borders. Leaders need to meet in Africa to learn more about the challenges they are facing there.
- Project WET Foundation – one of the most important things that happened is when they were founded there were many organizations they were working with who were working in silos- they put WATER in the middle and set up an activity called “water works” so that every child understood they were connected to water and couldn't take sides
- Working on humanitarian emergencies (Sweden) providing additional funding such as the crisis in Syria and looking for innovative technologies to solve some of these crises



- India project - serving 20,000 families every day- funding access is a big challenge; WASH and school programs – funds come in bits and pieces vs. sustainable support. Need a common platform.
- Cape Verde Islands - in 1 hectare, 40 million liters of water saved through a new invention (powder) (used 4x per year= saving of 160 million liters of water)
- 6 months ago UNESCO International Journalism program (IHP)- water culture & water perceptions - global network/ workshop

What have been the biggest failures? What have you tried that hasn't really worked/ met your expectation (apart from not having the financial resources).

- Accelerator program – communication failure- entrepreneur didn't show up for VIP level meeting. Translation is necessary for people on the ground in NGO world and corporate world. Common language is needed so expectations are defined and met.
- Working with government(s) - whatever idea is presented it is stuck on the governmental level. In 7 years experience in different countries is that if you want to start something, start at a lower level and then build up.
- Governmental corruption – pervasive; have become more aware of that. Sometimes have to suspend projects. Others driven by numbers and behavior change isn't addressed.
- Transparency & corruption - huge challenge for many donors- disrupts the whole system. Water Integrity Global Outlook (10% of investments in water sector are lost to corruption). Innovations that might offer solutions to



countries might be unaffordable or unacceptable to a country (due to ownership). Sustainable Development Goal #6- refers to saving water vs. claiming water

- Club of Rome, Bigger picture- In 70s identified that if we continue on the economic footprint we were on, we would see a significant decline. Some progress but for every battle we are winning the war is being lost.
- In science arena there is a mismatch of timeframes and measurement. Sponsors (congress or funders) operating on a timeframe whereby they want to see a return but the problems we are working on are often on a different time cycle—need alignment or mutual understanding about the timeframe. Expectations need to be clarified if we are serious about making a difference. We don't own the time processes in terms of the future of the planet.

- UN - 1. tried to introduce a 4th dimension of sustainable development—Governments/ functioning of our societies. Haven't been able to implement. Probably need a few more collapses for there to be an understanding for this need. 2. Need to identify the tipping points- how to factor in to calculations- haven't been able to do this yet
- Success in engaging youth, but at the cost of others feeling that they haven't had a role (how to push out a volunteer that feels they haven't been heard?) Cultural contexts- there is not a single global recipe.
- Armchair philosophers - There is nothing like a quick fix- must provide complete solutions- not doing that leads to failure
- Inability to partner with the right person/ organization – trying to bring together dynamic partners with creative approaches—must dedicate time for that. There has been a lack of time to find the right partner. (administration or civil society)- who are they representing?



- Convince political leaders to dedicate financing to the invisible issue- water pollution (250 million globally- people dying from water born diseases) Long-term payoff vs. short term.
- Federal Ministry of Food & Agriculture (Germany) - willing to take responsibility now—biggest user of water—time to take a seat at the table

BREAKOUT SESSION

Does one's age require different messaging?

- The “what” should be consistent - For different ages it is more important HOW you convey a message - appropriate to age, religious, cultural, economic status. A message needs to be 2-way. Feedback is essential- clear and consistent. Use feedback to refine message.
- Approach according to geography and culture

- Different age groups are important but there are overlaps (VENN Diagram)- message becomes more developed and complex as you work out (age groups)
- Link education to action—from little ones (making message relevant—i.e. “water is life”) to older. Message can be the same but methodology is age-appropriate.

What should be our top initiatives—and directed at whom?

- Behavioral change is really important
- Use the Pope as a global champion, providing opportunity to give independent message from a faith leader
- Local outreach/ education- i.e. Hygiene through schools—ripples out and reaches more people
- Use a communication/collaboration tool (maybe LinkedIn group) for communication and collaboration



2 themes

- Awareness about *values* of water
- Education

o Working with schools- Center for Imagination- get young people excited about imagining about their future

o Universities- water resources education- we have engineers, water management foci—but that reinforces the silos. How do we revisit? - interdisciplinary, collaborations—need to push on the approach here with those who set the agenda—water leaders, government leaders etc.

o Those who don't have formal education opportunities- everyone depends on water in different ways and we have to have ways to reach homeless and others not in traditional schooling environments—water as a life skill

- You can use, protect water from many approaches—link messaging to action—appropriate to participant in the process

- Need for a multi-stakeholder coalition inclusive of the willing- convened by a champion (or the Vatican)- three arms of activity- water is a moral question and issue and the Vatican has a unique opportunity to approach from that angle

o Education & communication initiative on the quality and quantity issues around water

o Focus on impact measurement- becoming a funnel and vector for the solutions and disseminating out to others

o Turning obstacles into opportunities- chart a course that is sustainable.

How do we make opportunities from obstacles?

- Identify obstacles—understanding. Think about the different perspectives and backgrounds to be able to develop options
- Opportunity is about perspective related to perceived obstacle



- No matter what kind of wall, there needs to be listening, trust building, humility, ability to incarnate the message but ready to ask questions more than deliver simple messages. Challenge the walls and blockages—ask others—are you blocking? Are you walking the talk?
- This is a long-term/ forever issue and every generation has opportunities to make our existence better for future generations

Additional comments

- Spirit of this issue is ecumenical – yet we can build upon the support from the Vatican.
- How much time are we going to share and give to this work? — the commitment?









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Circle of Blue

circleofblue.org

+1.231-941-1355

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Etagé Creative

etagecreative.com

