



6TH

UNITED NATIONS | COSTA RICA | PSIPW

CONFERENCE ON SPACE TECHNOLOGY FOR WATER MANAGEMENT

HOSTED BY THE INTER-AMERICAN INSTITUTE
FOR COOPERATION ON AGRICULTURE

7-10 MAY, SAN JOSÉ, COSTA RICA



MINISTERIO DE
RELACIONES EXTERIORES
Y CULTO

GOBIERNO
DE COSTA RICA



Prince Sultan Bin Abdulaziz
International Prize for Water



Space Technology and Data For Water Quality Monitoring

Observations

- ❑ Billions spent on satellite research and development; and building satellites infrastructure, yet little spent on applications and tech transfer.
- ❑ The science and technology of satellite remote sensing of water quality is continually evolving. Our capacity to measure and quickly disseminate WQ information will look much different in a decade.
- ❑ Many factors contribute to the degradation of water quality. Parallel situations occurring in many regions of the world (ag runoff, untreated wastewater, climate change_
- ❑ A common thread of the talks was how do we improve our confidence in the products and services we're generating. Uncertainties just as important as absolute values
- ❑ We continue to stretch our capacity to use these tools, from exploring our ability to distinguish algal types to measure pesticide applications in an agricultural context. In a different approach, we heard about not the direct measurement of water quality but watershed and climatic factors which can influence current and future water quantity and quality conditions.
- ❑ Areas of interest examined included lakes, rivers, reservoirs and mega-delta regions (contaminant plume transport)
- ❑ Highlighted Asadas, the water management agencies are developing Risk management tools, defined by (hazard exposure, vulnerability and capacity, and successfully using this info to manage their basins By compiling a number of data layers we can perform a comprehensive risk assessment and inform investment to anticipate future issues
- ❑ Harmful algal blooms are an increasing global problem. Advancing the use satellite RS to better quantify HABs and bloom ecology



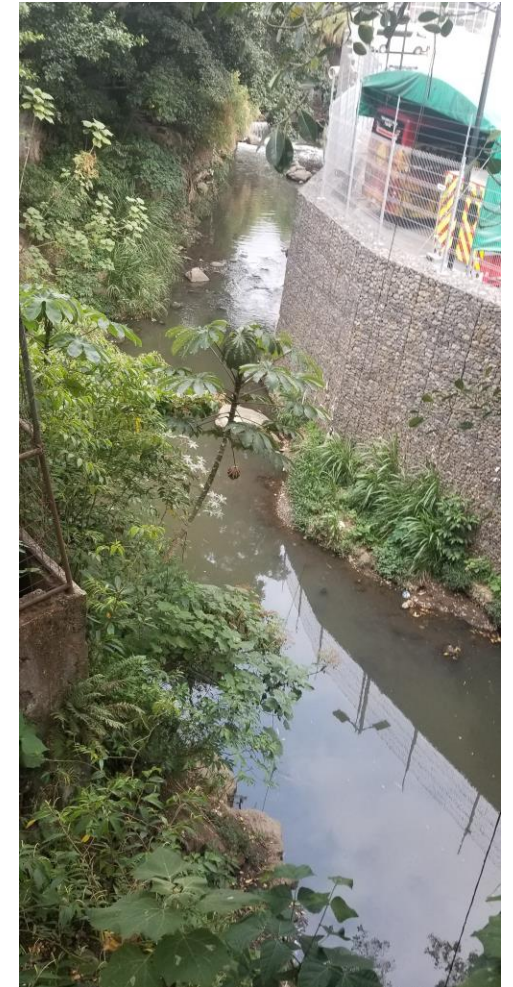
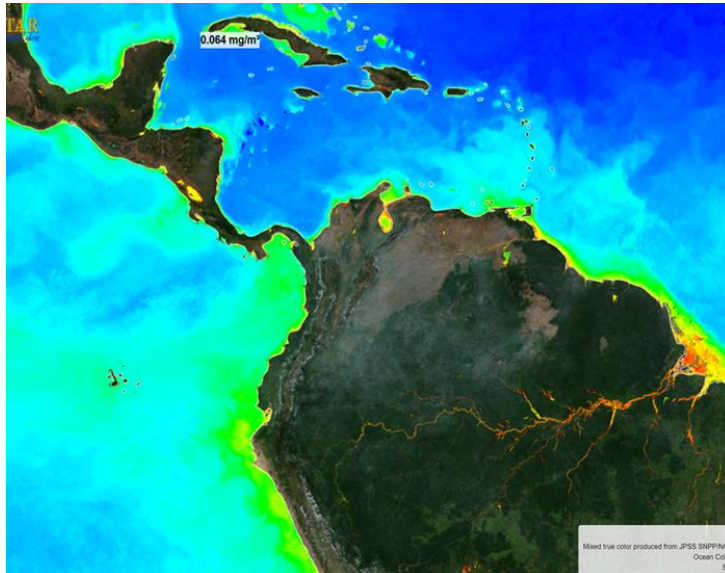
Gaps and Barriers

- ❑ Greater understanding of enduser needs, i.e. parameters, temporal and spatial resolutions
- ❑ Increase awareness of RS information with enduser community on these new sources of data
- ❑ Educate on errors in existing methodologies. Understand current errors in traditional measurements. One sample in middle of lake
- ❑ Institutional and regulatory barriers. Codified water quality limit values
- ❑ In situ data needs (uneven distribution globally)
- ❑ In situ optical equipment needs
- ❑ New satellites with higher spectral resolution (PACE) will require more sophisticated in situ measurements (hyperspectral)
- ❑ Training opportunities



Recommendations

- ❑ CAL/VAL- Greater coordination and sharing of optical data and water quality data by data producers
- ❑ Build global validation network
- ❑ Increased training and capacity development for building expertise
- ❑ Find success stories (success begets success)
- ❑ Cultivate citizen science network to engage local community





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Thank you
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