

# The Environmental Surveillance of Agricultural Water using WGS and its Impact on Food Safety

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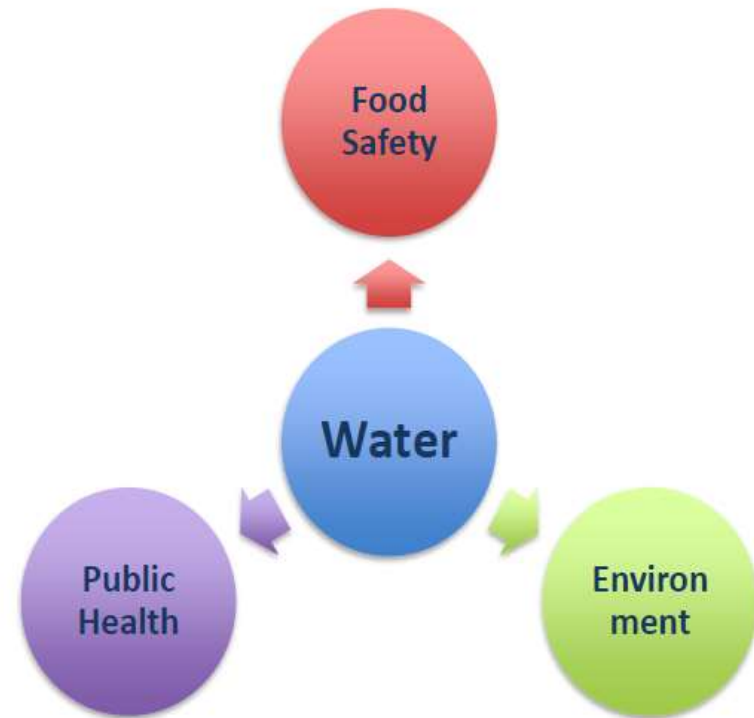
IWRA 2021  
FAO Special Session - Bugs & Superbugs: Water Quality and Food Safety and preventing environmental AMR.

# Importance of Agricultural Water

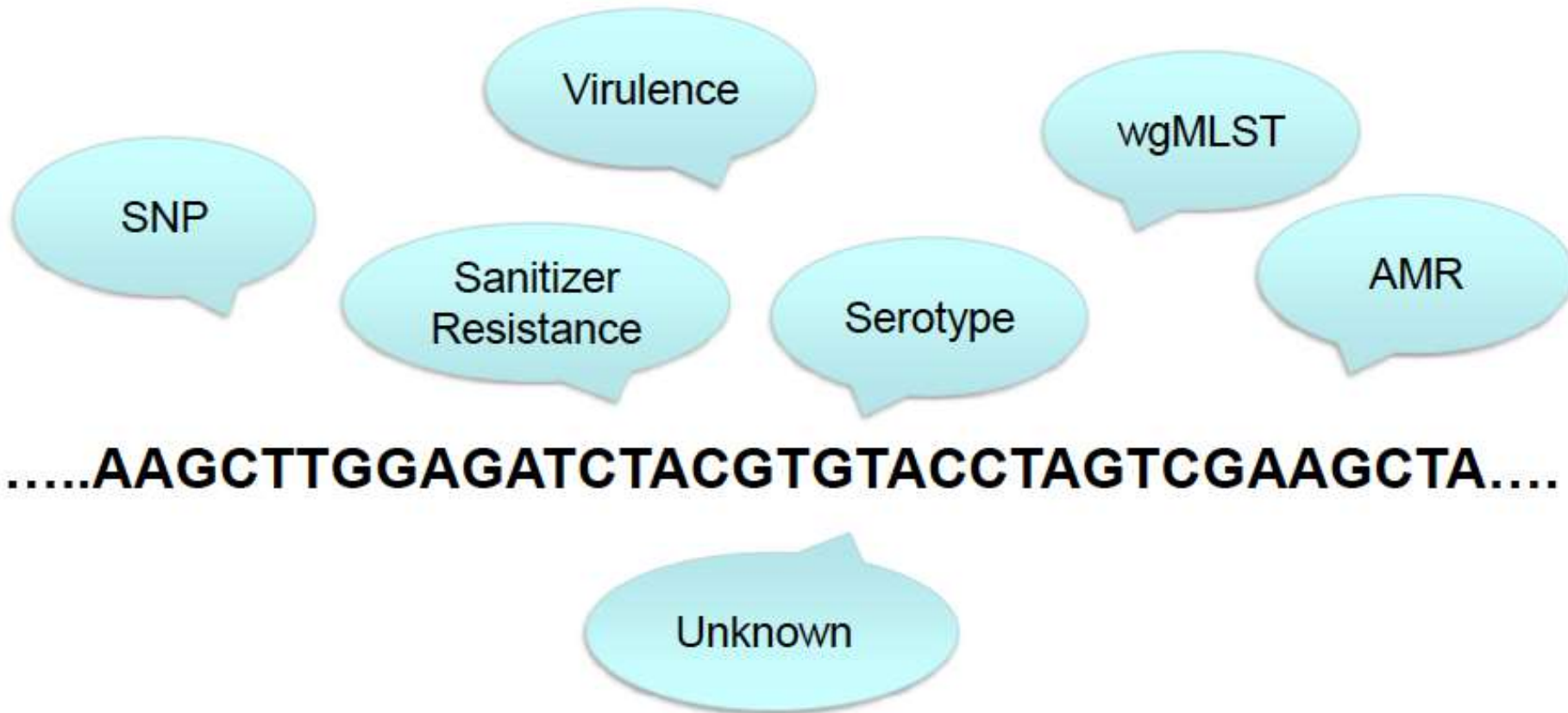


# NGS of Agricultural Water

- Ecology, Distribution, Persistence
- Combine with genomics (traditional/functional)
  - better source tracking
  - development of preventative controls



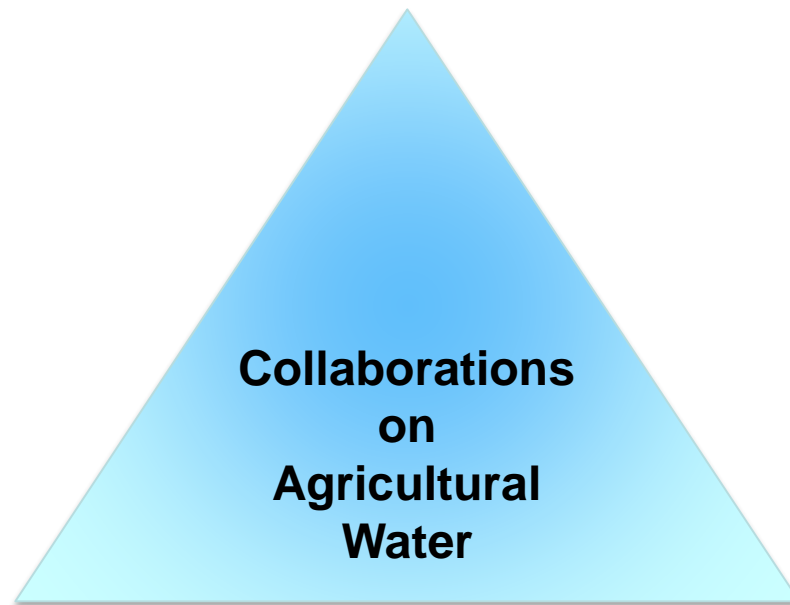
# One Data Record: Many Possibilities



**THUS, Very important to ensure complete and open access to the WGS data**

# Genomics-Based Water Surveillance

**Agriculture community**



**Academic  
organizations**

**Government**

# Meetings - events



The Power of Genomics-Based Water Surveillance: The Fusion of Food Safety, Water Sampling, and Whole Genome Sequencing Provides Insights into Global Pathogen Detection and Spread – November 2019

<https://jifsan.umd.edu/events/water-safety>

Follow-up JIFSAN symposium - TBD

FAO Sponsored regional meetings - TBD

9<sup>th</sup> World Water Forum

<https://www.worldwatercouncil.org/en/dakar-2022>

# Consortium goals

- Build collaborations on pathogen monitoring in surface water
- Optimizing and standardizing methods for sampling pathogens (parasites, bacteria, viruses) in surface water
- Evaluate new NGS approaches and metagenomics technologies
- Provide a publicly accessible platform for sharing data
- Develop and provide data analysis tools
- University collaborators – Brazil, Chile, Mexico, US
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Thank you