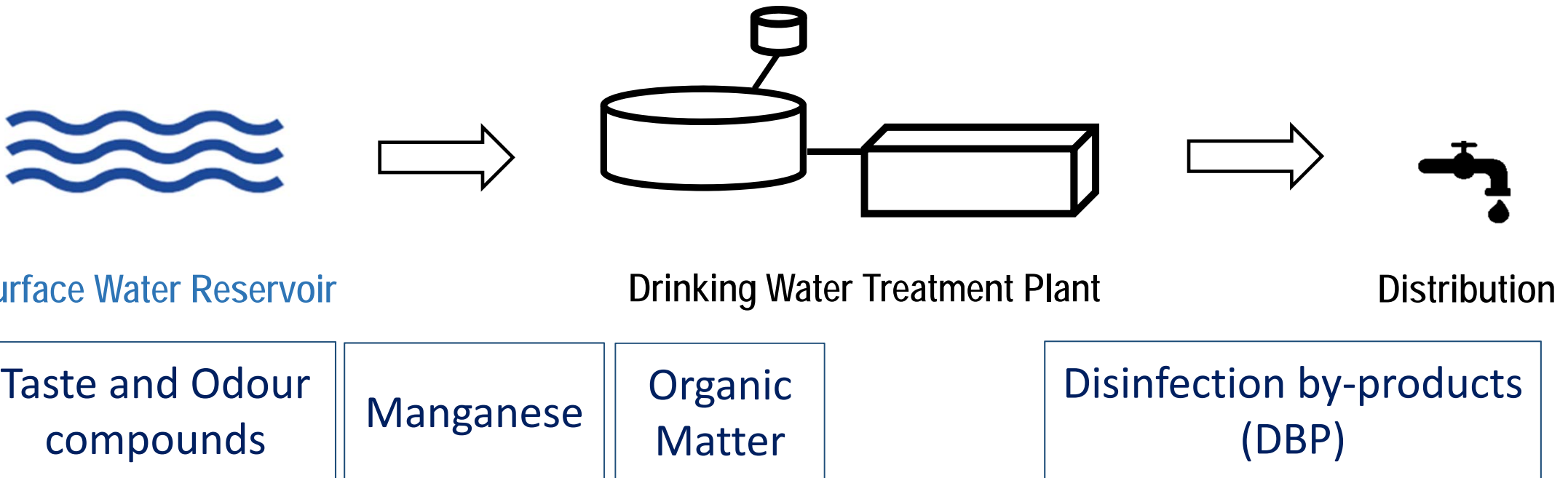


Transforming drinking water treatment: Rethinking the application of biological treatment

Katrin Doederer

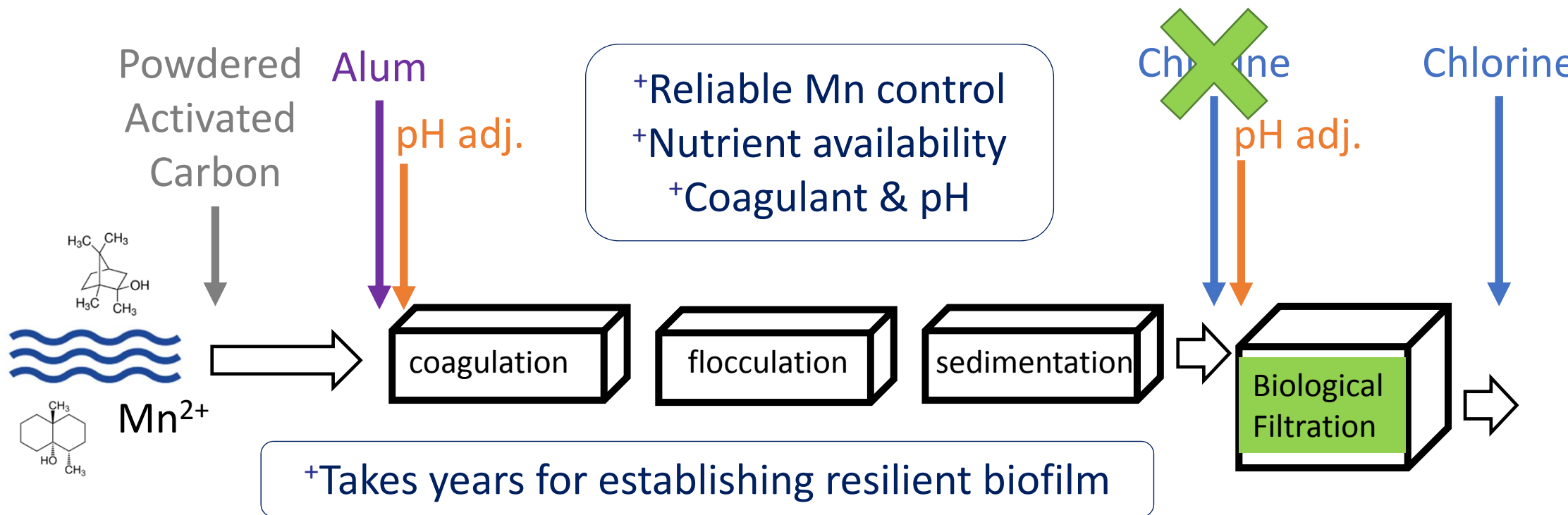
Research Fellow | THE UNIVERSITY OF QUEENSLAND

Role of collaboration



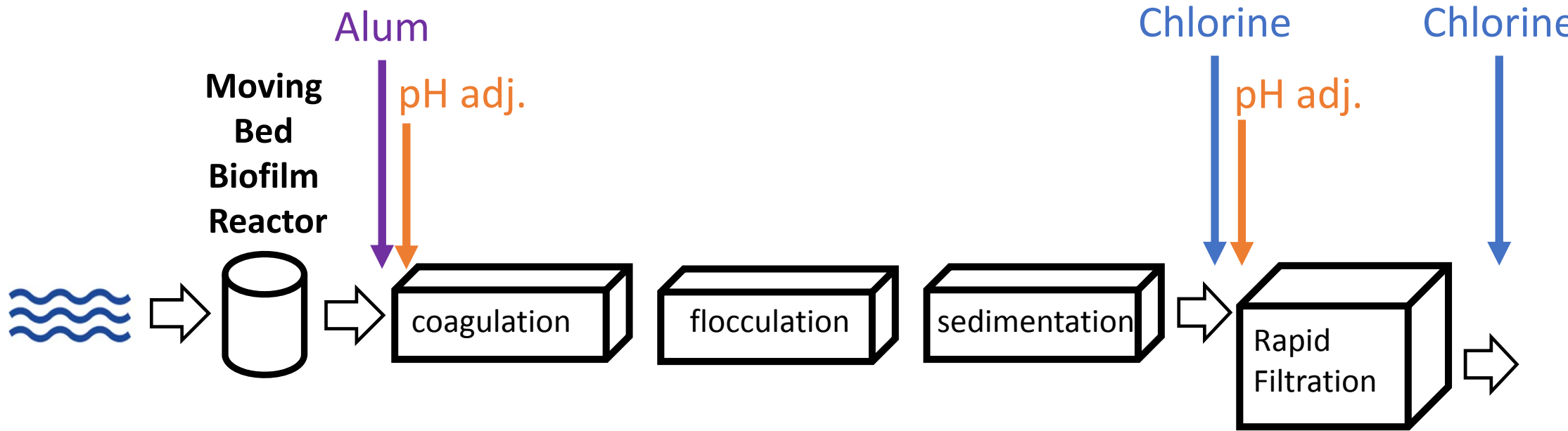
Biological treatment – the silver bullet? YES*

*for an established and mature biofilm⁺



Biological treatment – rethinking the *BUT*

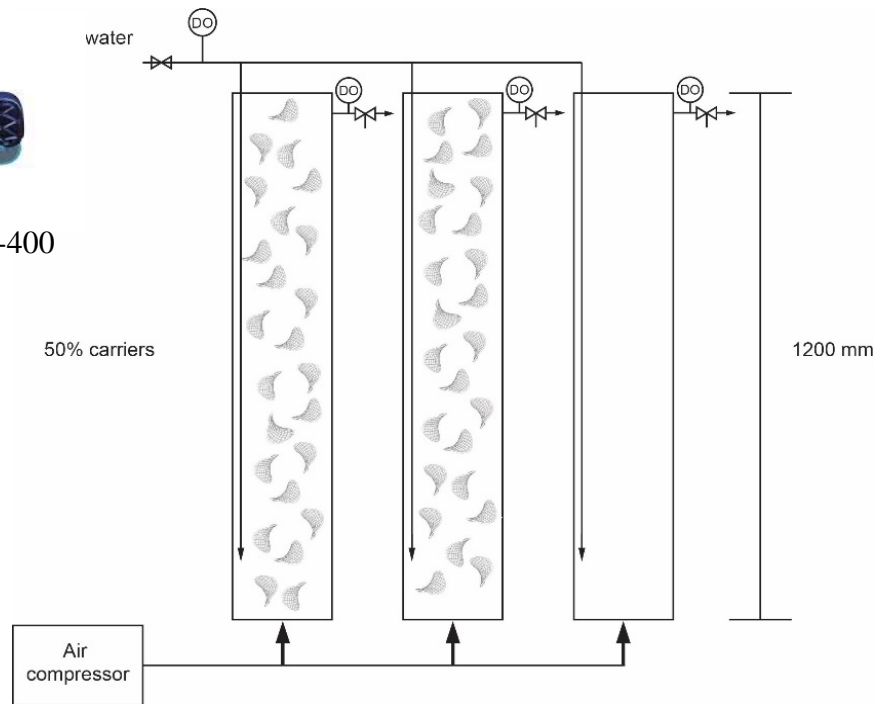
What if we can place it at the front end?



MBBR pilot trial at a drinking water treatment plant

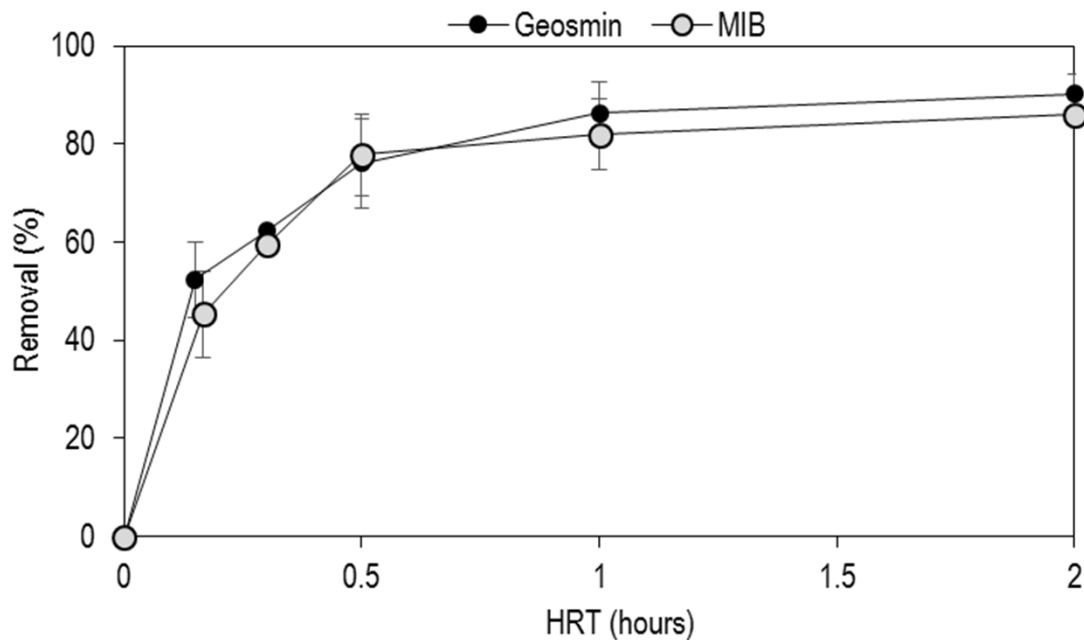


AnoxKaldnes™ Z-400



MIB and geosmin spiked at 100 ng/L
4 HRTs equilibration time before sampling

T&O compound removal achieved



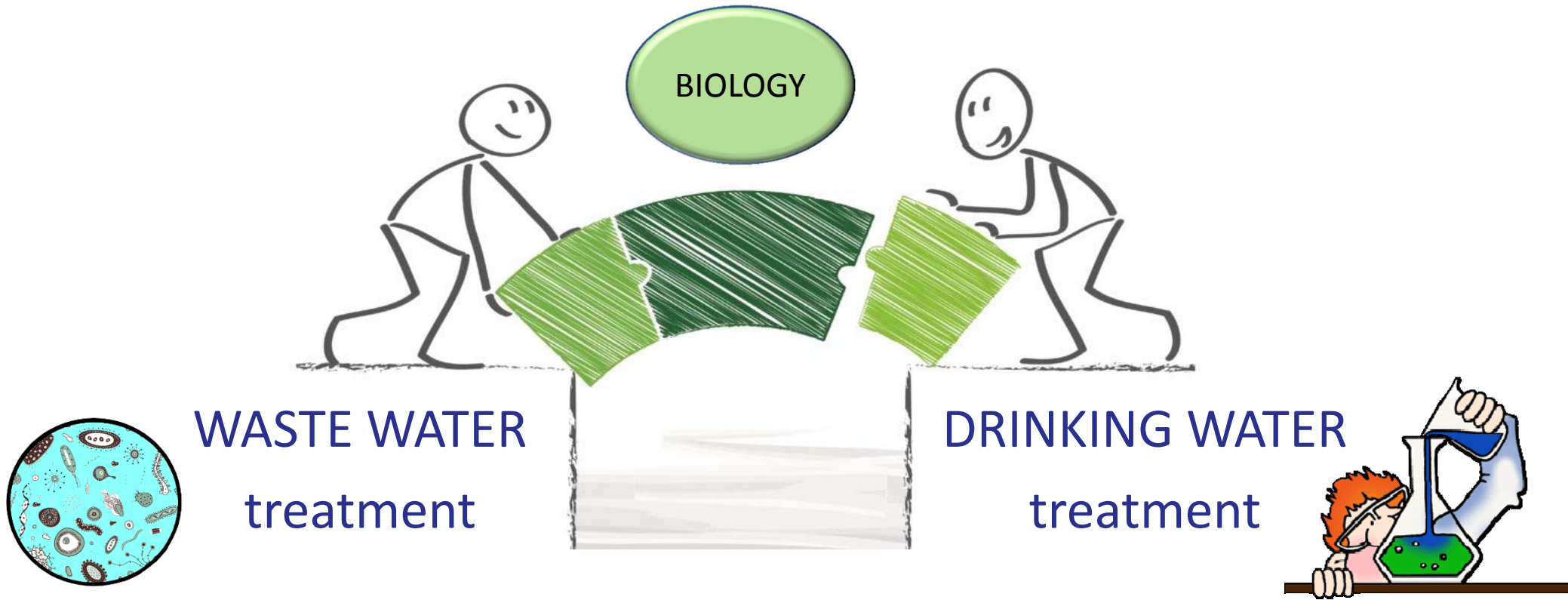
- 3.5 months acclimation period
- >80% removal of MIB & geosmin
- Biological degradation major removal mechanism
- > 60% MIB & geosmin removals at HRT of 15 min

“Effective removal of MIB and geosmin using MBBR for drinking water treatment” Water Research (2019) 149



Research Impact

Greater confidence in biological treatment in the drinking water context





How findings are implemented

by further research in the broader potential of the approach

- Additional pilot-trials
- Greater understanding of the biology
- Downstream benefits – organics removal
- Chemical and labour savings



Acknowledgements

Funding



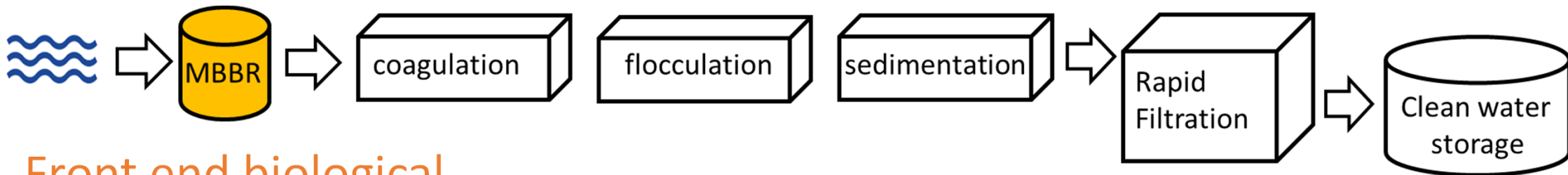
Carriers



Everyone involved...

Next Thinking

What would be a new technique or technology that would be a game-changer in this area?



Front end biological
treatment

- MBBR -