



Presentation from
**2015 World Water
Week in Stockholm**

www.worldwaterweek.org

© The authors, all rights reserved

Are mobile phones useful for reporting regulated microbial water quality data?

an example of a

Mobile platform for water quality data management in Senegal



Emily Kumpel - Aquaya Institute
25 August 2015

Not very often.

Service National de l'Hygiène (SNH), Senegal

- Regulatory requirements to monitor water quality
- Consistently met testing goals
- Data management challenges:
 - Data from 13 sub-brigades
 - Differing formats
 - Few computers/internet
 - Paper-based historical records
- Can mobile phones address these challenges?

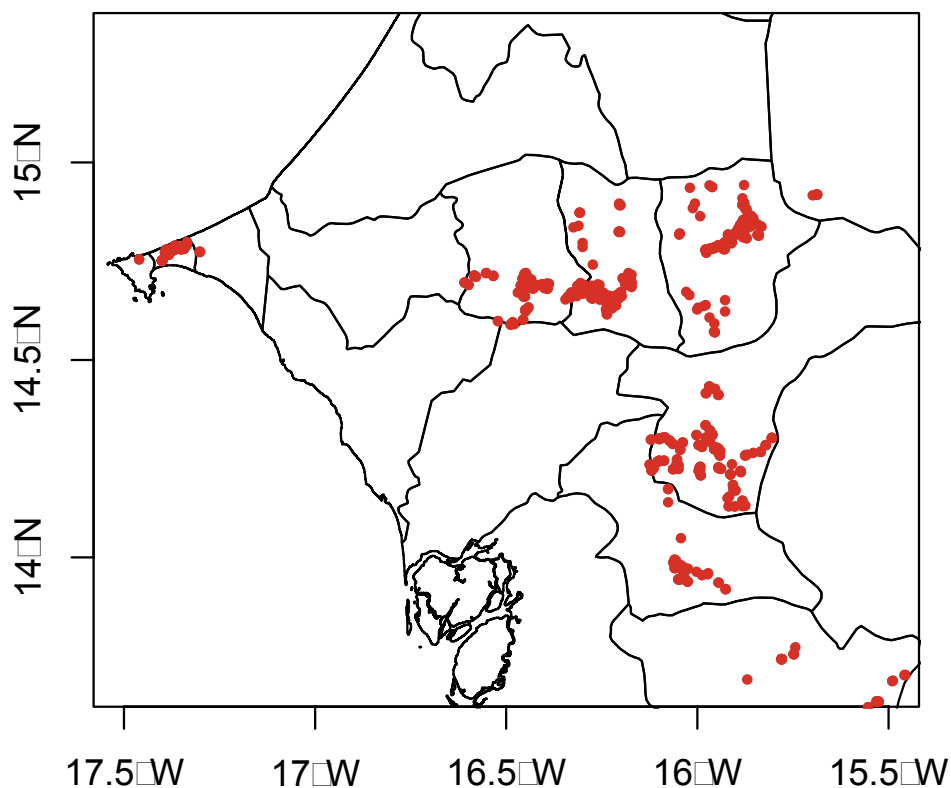


Workflow



Results

Tested locations in Senegal



- Improved consistency of reporting and ease of transmission

however

- Benefits limited by infrequent water testing (few days/month)

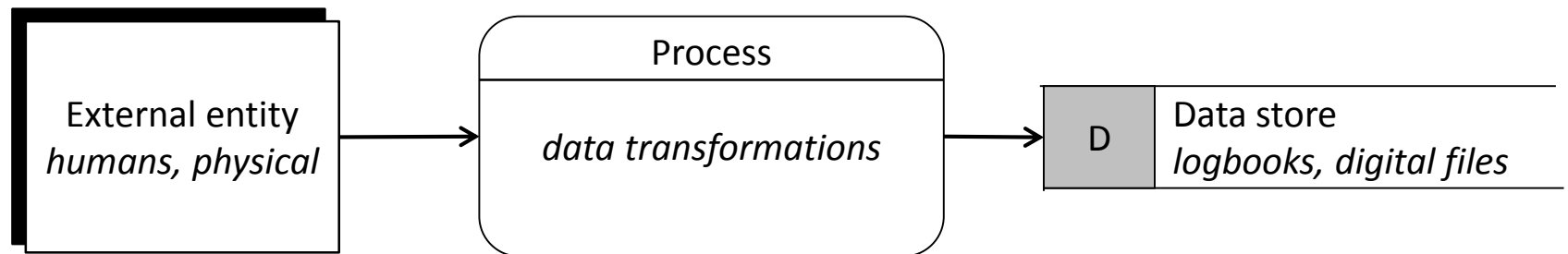


Are mobile phones *always* useful for reporting regulatory water quality testing?

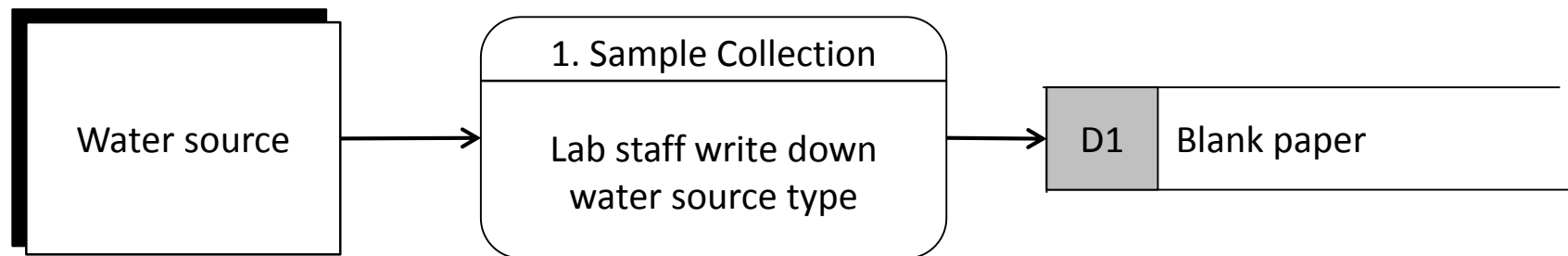
- Perception that all field-based data collection activities will benefit from use of mobile phones
 - However, impacts are context-dependent
- How representative is SNH of other regulated testing institutions?



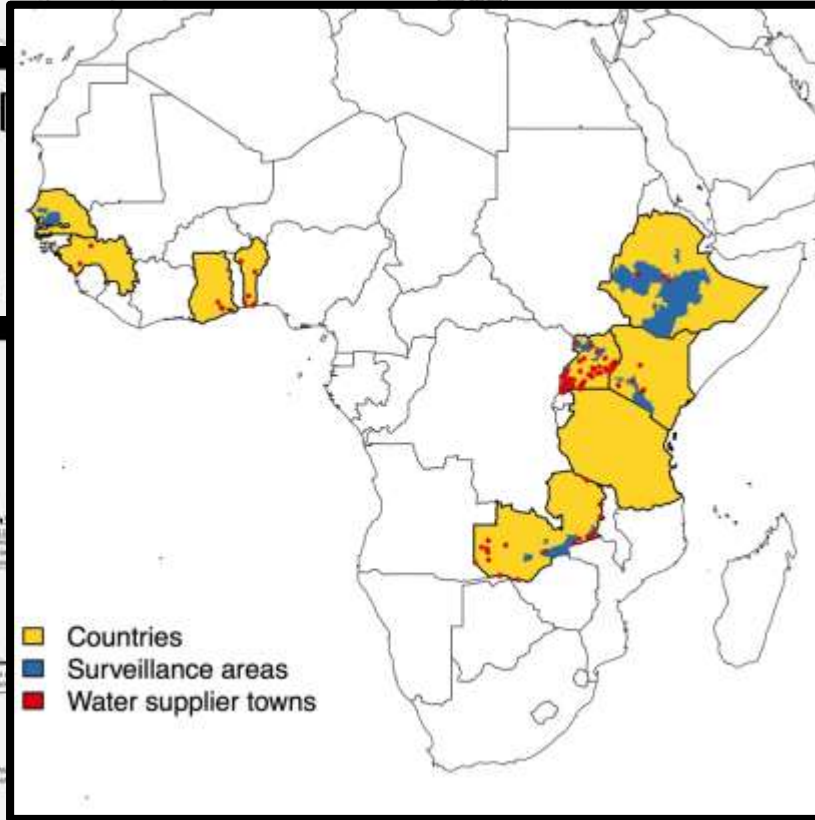
Mapped information flows among 26 water suppliers and public health agencies across six African countries



Example:



Mapped information flows among 26 water suppliers and public health agencies across six African countries



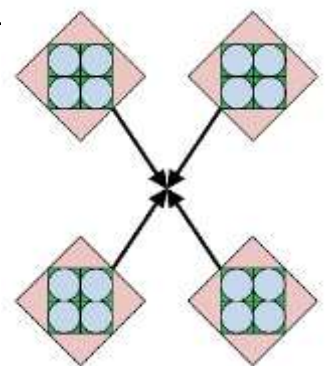
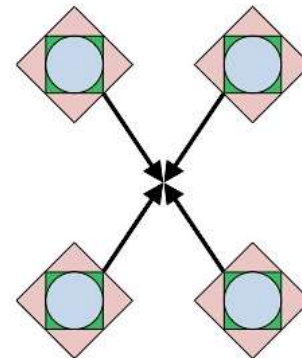
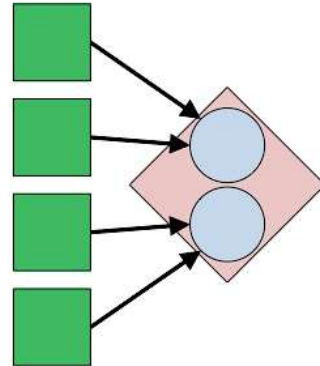
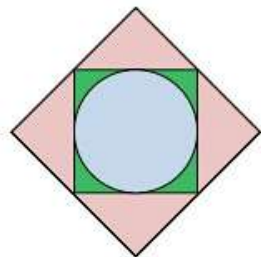
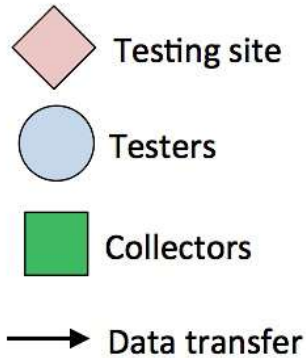
Key finding

Across all institutions, microbial testing was performed at an office or laboratory, not at the water source.

This promotes computer-based data entry.

Typologies based on program structure

	A	B	C	D
# testing locations	1	1	>1	>1
# collectors/testers	Variable	>2 collectors, fewer testers	1-2 collectors/testers	>2 collectors, >2 testers
Diagram	Same	Diff	Diff	Same
# institutions	12	4	7	3



Key finding: Mobile phones likely most useful among Type D institutions, who test in many remote labs



Conclusion



Were mobile phones useful for SNH?

- Yes, but cost-effectiveness could be improved by integrating multiple data collection activities

Are mobile phones useful for reporting regulated microbial water quality data?

- Almost all regulatory microbial testing in labs/offices
- Mobile phones best for Type D institutions with many remote testing sites



Thank you to:

Aquaya: Rachel Peletz, Ranjiv Khush, Annette Fay, Mateyo Bonham, Joyce Kisiangani, Eunice Kariuki, Jenna Scalmanini, Lola Aleru, Zarah Rahman

SNH: Demba Baldé, the SNH water quality department, the 306 health agents in Kaolack, Diourbel and Dakar

Dimagi: Sarah Sagan

**BILL & MELINDA
GATES foundation**



Download the app on the CommCare Exchange

www.commcarehq.org/exchange

Find out more:
aquaya.org



Paper coming soon:

Kumpel, E., Peletz, R., Bonham, M., Fay, A., Cock-Esteb, A., & Khush, R. (2015). "When are mobile phones useful for water quality data collection? An analysis of data flows and ICT applications among regulated monitoring institutions in sub-Saharan Africa." *International Journal of Environmental Research and Public Health*



aquaya