

BETTER SAFE THAN SORRY

Transfer-ability of lessons from success stories: A review of UK water safety plans implementation

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❖ Background

- WSP: definitions and goals
- Why the research?

❖ Objectives

❖ Methodology

❖ Results: Derived themes

- Drivers
- Management buy-in
- Challenges
- Transfer-ability

❖ Possible implications for WSP

○ Water safety Plans (WSP)

- A preventive comprehensive risk assessment and management approach to ensuring the safety of a drinking water supply from source to tap for public health protection

○ Goals

- Prevent contamination of source waters
- Treat source waters to remove or reduce contaminations to meet water quality targets
- Prevent recontamination during storage, distribution and handling of drinking water

○ Water safety Plans (WSP)

- Introduced in 2004 in international guidance documents
- Applied globally in mostly developed nations
- Developed largely for public utilities
- The level of implementation in developing countries and for small systems generally lags behind

○ Research Objectives

- Review WSP implementation in the UK to identify transferable lessons to public utilities in developing countries
 - Identification of UK water companies with successful WSP implementation records
 - Evaluation of drivers; opportunities / limitations to the uptake of WSP
 - Assessment of success factors / challenges faced in WSP implementation
 - Transfer-ability evaluation with Nigerian water utility context
 - Recommendation of transferable elements (if any)

○ Why UK Utilities?

- **United Kingdom is one of the early adopters of WSP**
- **Major actors in the UK water industry were involved in shaping the pathway to WSP introduction**
- **The UK water industry is involved in a lot of research**

● **This research is sponsored by the UK government through the Commonwealth Scholarship Commission, UK**

○ Method

- **Employed a qualitative research methodology**
 - Generally descriptive comparative case study
- **Data collection and analysis**
 - Literature review
 - Semi-structured interviews of key informants across utilities organisational structure
 - Observations through field visits to water companies

○ Data collection and analysis contd.

- 11 in person semi-structured interviews employing open ended questions between September – November 2013 with key informants across 7 UK companies
- Captured views of some other relevant agencies: regulatory agency /academic and research institutions (2) / donor agency (1) / independent industry professional consultants (2) / Nigerian context (7)
 - To review and confirm the relevance of critical data categories used during the analysis
- Generally, coding (initial open coding to selective coding as concept developed), and concept mapping

○ Key Themes

- Drivers
- Management buy-in
- Implementation barriers
- Success factors
- WSP Futures
- Transfer-ability



○ Management / Org Buy-in

- **Generally huge management support**

- Regulation-induced
- Existing positive working relationship (e.g. org WQ champions with mgt board)
- Continued increase in mgt buy-in through more visible output

- **Initial shaky org buy-in**

- Getting people to understand WSP/its benefits
- Workshops and regular meetings
- Regular visits to frontline staff

○ Implementation Barriers

● Regulation induced barriers

- Limited time for compliance
- Utility apprehension

- More work load/ complex reporting bureaucracy / huge paper work
- 'Tick box' exercise: utility support solely due to regulatory requirement

● People problem

- Introducing the philosophy
- Getting everybody to understand (buy-in)

○ Implementation Barriers

● Absence of WSP template/guidance

- How do you put WSP framework on existing mgt /operational structures?
- Individual company approach to implementation
 - Start up approach: steering group/independent consultant
 - RA approach: Public Health Impact, PHI vs. Economic Impact, EI (Economic risk / 5 x 5 matrix)

○ Derived Benefits

- **Systems efficiency**
 - Less failures
 - Reporting more near-misses than incidents
- **Common risk language**
- **WSP-driven investment program**
 - More sensible investments
- **Better understanding of systems, risks & control measures**
- **Discovery of many previously unidentified potential risks**
- **Knowledge capture: reporting & documentation**

○ Success Factors

- Existing risks and value process
- Quest to be the best or a leading company
- Full mgt/org buy-in
- People who understands what the issues are
- Keeping the RA fairly simple / straightforward
 - Use of common denominator for both customers /mgt (risks in £)
- Opportunity to learn from other companies
- Supportive regulators

○ WSP Futures

- Remove IT barriers to make WSP a useful tool
- Integrate WQ database with other types of risk database to have one spreadsheet for risks and impacts
- Make WSP truly dynamic and intelligent
 - Dynamic: living/continued process
 - Intelligent: systems talking to each other
- Feed risk management tool into asset mgt tool

Control Measures Report for Hazard Manganese

For : Bocking WTW (System Stage : Groundwater Treatment)

Report took 1.515 seconds to generate

Operational controls for Manganese:

Routine Activities

Storage Point Cleaning

Storage Point Inspections

Aeration

Rapid Gravity Filtration

Procedural Controls

PSW-POL 6.1 - Our Policy on Operation of Water Treatment Assets

PSW-POL 6.3 - Our Policy on Treatment of Water

AM-APL-PRO-(001-003) Asset Plan Procedures

PSW-POL 1.1 - Our Policy on Risk Assessment

Policies and standards for maintenance (POSMAINT)

PSW-POS 5.0 - Policies and Standards for Abstraction

PSW-POS 2.0 - Policies and Standards for Asset Design and Creation

PSW-POL 2.1 - Our Policy on Asset Creation

PSW-POL 6.2 - Our Policy on Maintenance of Water Treatment Assets

○ Lessons Learned

- Taking time with internal/external stakeholders
- Previous structure over complicate things. Simplify
 - Communication barriers – customer information/lab test results in different systems
- Ownership of WS planning
- Give WSP implementation enough time
- Communicate more & share information
 - Create opportunity to hear other's views on how to improve things
- WSP can not be done remotely or as desk study. Site inspection is critical

○ Transfer-ability

- Generally not
- Transfers across comparable context is feasible but across dissimilar scenario is debatable
- Major considerations:
 - Regulation/non-standardization
 - Privatization/govt. ownership of utilities
 - Action document / lack of it
 - Level of development
 - Expertise/ funding/ condition of infrastructures
 - WQ/WSP champions and sponsorship
 - Individual country cultures

○ Further Implications for WSP

- Regulation-induced barriers: a concern for WSP effectiveness
 - Company sanctions/prosecution for significant WQ failings (DWI report, 2012)
 - Company sanctions after nearly a decade of WSP engagement raises questions of:
 - Is good WSP in place?
 - Believe in WSP?

○ Way Forward

- **Good use of independent surveillance**
 - Such that gaps that seeps unnoticed through howbeit careful eyes may be spotted for necessary action
- **Externally-driven regulation / compliance**
 - Make WSP a critical investment / funding requirement

Thank you