

Supplemental Materials

I. WSP Questionnaire

II Reasons for implementing a WSP / ISO 22000 certification

What were the reasons for implementing a WSP / ISO 22000 certification in your company?

What were your expectations?

Why did you opt for an ISO 22000 certification rather than for a non-certified WSP (or vice versa)?

I Basic information

1. Country	
2. Company	
3. Name of survey respondent	
4. E-mail address	
5. Telephone number	
7. Position within organization	
8. Role in WSP / ISO 22000 implementation	
9. Is the company ISO 9001 certified?	

III Extent of WSP / ISO 22000 implementation in your company

1. How many production and distribution units are covered by your WSP?

- ☐ Production units (from ground water): (representing % of water production)
- ☐ Production units (from surface water): (representing % of water production)
- ☐ Production units (from mix of ground + surface water): (representing % of water production)
- ☐ Distribution units: (representing % of water distribution)

Please specify the proportion of water purchase, if any: %

2. Which of them are certified according to the ISO 22000 standard?

- ☐ Production units (from ground water): (representing % of water production)
- ☐ Production units (from surface water): (representing % of water production)
- ☐ Production units (from mix of ground + surface water): (representing % of water production)
- ☐ Distribution units: (representing % of water distribution)

<p>3. How many people are served by these systems?</p> <p><input type="checkbox"/> WSP:</p> <p><input type="checkbox"/> ISO 22000:</p>
<p>4. What is the daily volume of water supplied by these systems?</p> <p><input type="checkbox"/> WSP:</p> <p><input type="checkbox"/> ISO 22000:</p>
<p>5. What is the total length of distribution network covered by the WSP / ISO certification?</p> <p><input type="checkbox"/> WSP:</p> <p><input type="checkbox"/> ISO 22000:</p>
<p>6. Please describe briefly the systems covered by the WSP / ISO 22000 certification (e.g. main treatment steps at the treatment plants, presence of re-chlorination in distribution system...)</p>

<p>IV Time and costs *</p>
<p>1. What was the necessary length of time to implement your WSP / ISO 22000 system?</p> <p><input type="checkbox"/> Date of initiation of implementation:</p> <p><input type="checkbox"/> Date of end of implementation (= date of certification in the case of ISO 22000):</p>
<p>2. At what amount do you estimate the expenses to implement your WSP / ISO 22000 system?</p> <p><input type="checkbox"/> Personnel (in equivalent man-days or man-months)</p> <ul style="list-style-type: none"> - Senior Managers: - Engineers / Project Manager: - Operators: - Other (please specify): <p><input type="checkbox"/> Education / training (in €):</p> <p><input type="checkbox"/> Consultancy (in €):</p> <p><input type="checkbox"/> Investments (in €):</p> <p><input type="checkbox"/> Certification audits (in €):</p> <p><input type="checkbox"/> Other (please specify):</p>
<p>3. At what amount do you estimate the expenses to update and maintain your WSP / ISO 22000 system annually?</p> <p><input type="checkbox"/> Personnel (in equivalent man-days or man-months / year)</p> <ul style="list-style-type: none"> - Senior Managers: - Engineers / Project Manager: - Operators: - Other (please specify): <p><input type="checkbox"/> Education / training (in € / year):</p> <p><input type="checkbox"/> Consultancy (in € / year):</p> <p><input type="checkbox"/> Investments (in € / year):</p> <p><input type="checkbox"/> Certification audits (in € / year):</p>

☐ Other (please specify):

* Please differentiate 1st implementation and subsequent developments / extension

What benefits have resulted from WSP / ISO 22000 implementation? (please tick all that apply – if possible, by using the following code: 1 = Major benefit, 2 = Other benefits)

Risk control

- ☐ New and/or non-regulated hazards identified and addressed
- ☐ Better knowledge of activities in the watershed and/or catchment area
- ☐ Surveillance of pollution sources in the catchment area
- ☐ Improved water quality (e.g. compliance with regulations)
- ☐ Improved water quantity
- ☐ Improved water service continuity
- ☐ Other (please specify):

Operational

- ☐ Improved control of production and distribution processes
- ☐ Better reactivity and management of alarms
- ☐ Reduction in the number and severity of incidents in production / distribution
- ☐ Process optimization / improvement of infrastructure
- ☐ Improved procedures for management of water production / distribution
- ☐ Improved application of procedures / good practices
- ☐ Increased awareness, knowledge, understanding / implication of personnel
- ☐ Improved record keeping and data collection
- ☐ Better targeting / prioritization of investments
- ☐ Other (please specify):

Image / Communication

- ☐ Improved image of professionalism / high level of service
- ☐ Decrease in customers complaints
- ☐ Increased confidence of municipalities, public, health agencies
- ☐ Opportunity for external communication through:
 - ☐ Website ☐ News bulletin ☐ Invoices sent to clients
 - ☐ Articles in periodicals / newspapers ☐ Articles in professional journals
 - ☐ National / Regional award
- ☐ Other (please specify):

Relations with stakeholders

- ☐ Strengthened relation with health agency / regulator
- ☐ Improved communication and collaboration with the public / municipalities
- ☐ Increased collaboration with river basin agency
- ☐ Increased collaboration / communication with stakeholders in catchment area
(agriculture, industry, environment protection associations...)
- ☐ Other (please specify):

Competitive advantage

New contracts: ☐ Contract gained thanks to WSP / ISO 22000

- Contract duration (years):

- Total turnover (€):

Existing contracts:

☐ Contract renewed thanks to WSP / ISO 22000

- Contract duration (years):

- Total turnover (€):

☐ Contract secured thanks to WSP / ISO 22000

☐ Cost reduction

- Which costs?

- How much (€/year)?

☐ Other (please specify):

☐ **Other benefits** (please specify):

V Benefits of WSP / ISO 22000 implementation	Comments / Examples
Any negative outcome observed?	
Which indicators / metrics would you recommend to assess the benefits of WSPs / ISO 22000 certifications within Suez Environment?	

VI Challenges to WSP / ISO 22000 implementation	Comments / Examples
What challenges have been encountered during the implementation of WSPs / ISO 22000 certification? (please tick all that apply – if possible, by using the following code: 1 = Major challenge, 2 = Other challenges)	
<div> <input type="checkbox"/> Lack of enforcement of WSPs </div> <div> <input type="checkbox"/> Lack of senior management support </div> <div> <input type="checkbox"/> Lack of access to supporting activities (e.g. education, training, technical support, consultancy) </div> <div> <input type="checkbox"/> Lack of guidance materials </div> <div> <input type="checkbox"/> Lack of financial support </div> <div> <input type="checkbox"/> Limited staff (time) to develop and implement WSPs </div> <div> <input type="checkbox"/> Limited qualification of staff to develop, implement and / or evaluate WSPs </div> <div> <input type="checkbox"/> Difficulty in understanding the requirements of the ISO 22000 standard </div> <div> <input type="checkbox"/> Difficulty in fixing the limits / level of detail of the hazard assessment </div> <div> <input type="checkbox"/> Reluctance of personnel to changes </div> <div> <input type="checkbox"/> Lack of implication of sub-contractors </div> <div> <input type="checkbox"/> Lack of implication of suppliers (chemicals, materials, water purchase...) </div> <div> <input type="checkbox"/> Lack of adequate equipment </div> <div> <input type="checkbox"/> Limited access to chemicals, materials approved for contact with water or food </div> <div> <input type="checkbox"/> Lack of water resources / environmental protection policies </div> <div> <input type="checkbox"/> Lack of information on pollution of water resources </div> <div> <input type="checkbox"/> Lack of laboratories with capacity to analyse non-regulated pollutants or pathogens </div> <div> <input type="checkbox"/> Other (please specify): </div>	

VII Conditions for success	Comments / Examples
According to you, what are the necessary conditions for a successful implementation of an efficient WSP / ISO 22000 system? (please tick all that apply – if possible, by using the following code: 1 = Major condition, 2 = Other conditions)	
<input type="checkbox"/> Implication and support from senior management <input type="checkbox"/> Project manager specially dedicated to this task <input type="checkbox"/> Financial means <input type="checkbox"/> Access to supporting activities <div style="margin-left: 40px;"> <input type="checkbox"/> Education, training <input type="checkbox"/> Consultancy <input type="checkbox"/> Technical support <input type="checkbox"/> Guidance material </div> <input type="checkbox"/> Cooperation with health agency <input type="checkbox"/> Involvement of client (municipality) in WSP development <input type="checkbox"/> Development of a site-specific hazard analysis <input type="checkbox"/> Thorough, comprehensive and exhaustive hazard assessment of all treatment and distribution steps <input type="checkbox"/> Participation of all staff in system development <input type="checkbox"/> Development of a system based on staff experience <input type="checkbox"/> Development of a system perceived as simple, useful, applicable to day-to-day management of operations <input type="checkbox"/> Understanding the implications of good practices for consumers' health by staff <input type="checkbox"/> Internal audits <input type="checkbox"/> Regular inspections / audits by third parties <input type="checkbox"/> Other (please specify):	

VIII Future needs	Comments / Examples
<p>According to you, what would be important to facilitate and reduce the costs for a larger deployment of WSPs / ISO 22000 within Suez Environment? (please tick all that apply – if possible, by using the following code: 1 = Major need, 2 = Other needs)</p> <p> <input type="checkbox"/> Guideline document <input type="checkbox"/> Database of hazards and control measures <input type="checkbox"/> Education / training programme <input type="checkbox"/> Common pool of internal auditors shared between BUs <input type="checkbox"/> Responses to Frequently Asked Questions from auditors <input type="checkbox"/> Other (please specify): </p>	

IX Additional information
<p>Please include any additional information you would like to communicate with respect to WSPs / ISO 22000 that was not covered by the questions above.</p>

Supplemental Materials II: Testing drivers of WSP Phase I personnel time invested and duration of implementation, bivariate relationships graphical figures

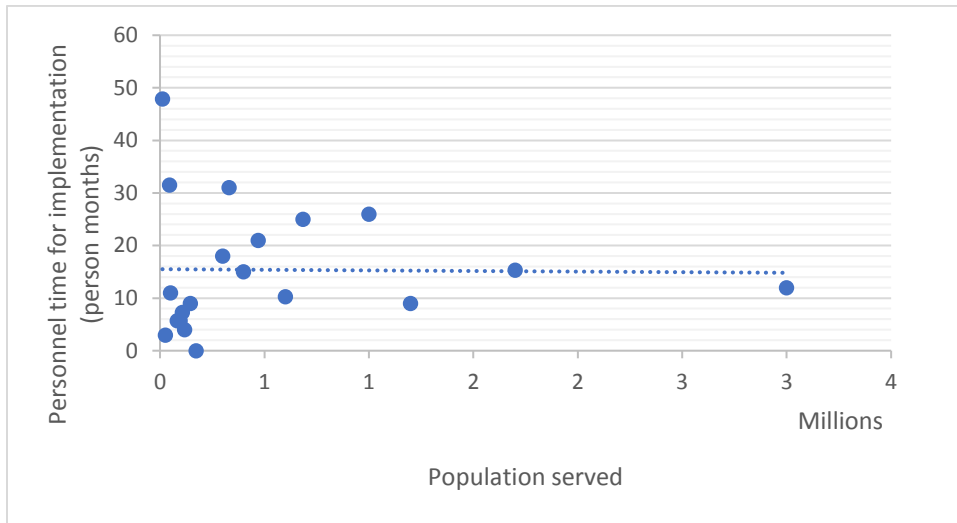


Figure A: Water Safety Plans phase I person months input and population served

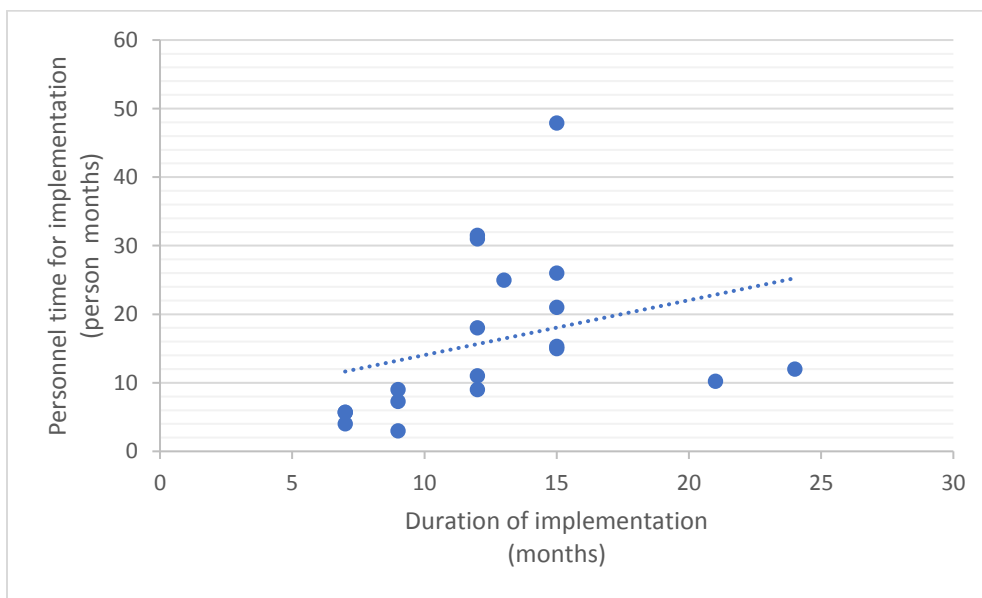


Figure B: Water Safety Plans phase I person months input and time for implementation

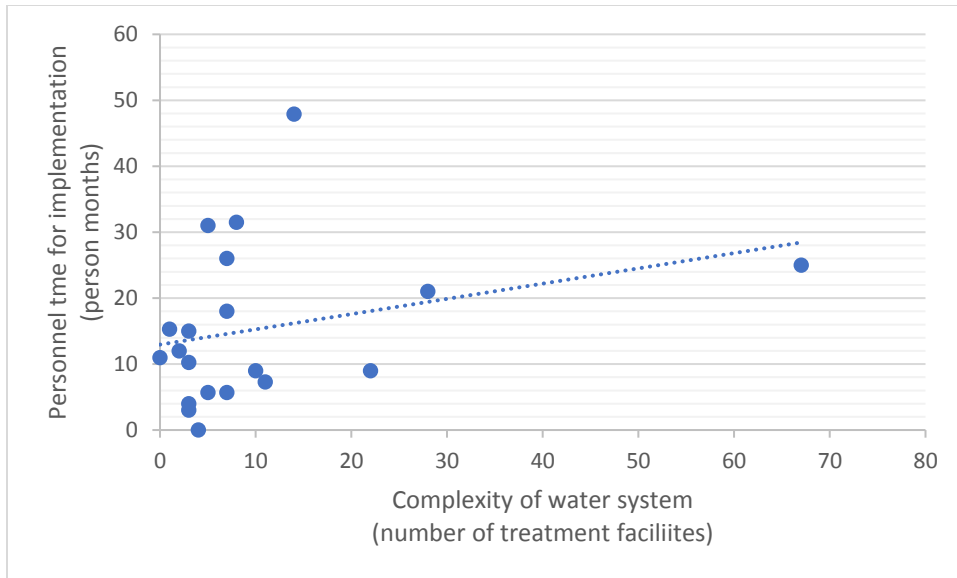
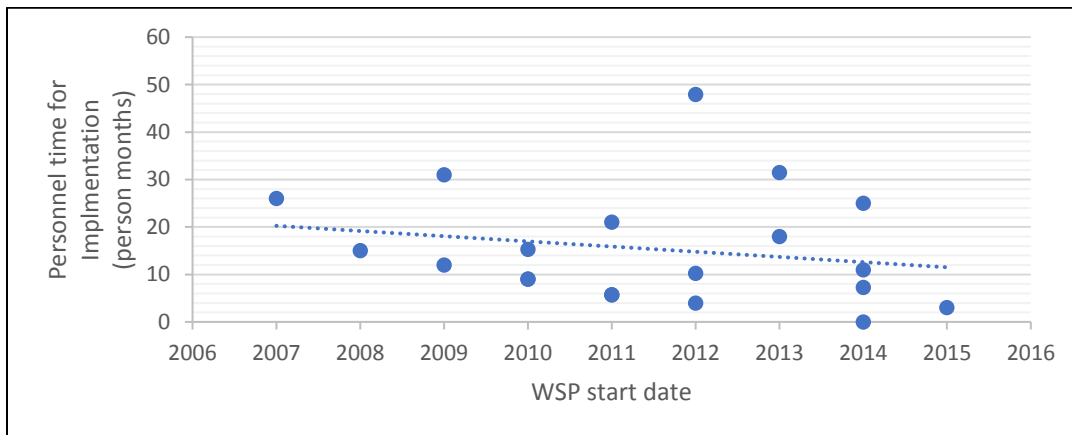


Figure C: Water Safety Plan phase I person months input and complexity of water system



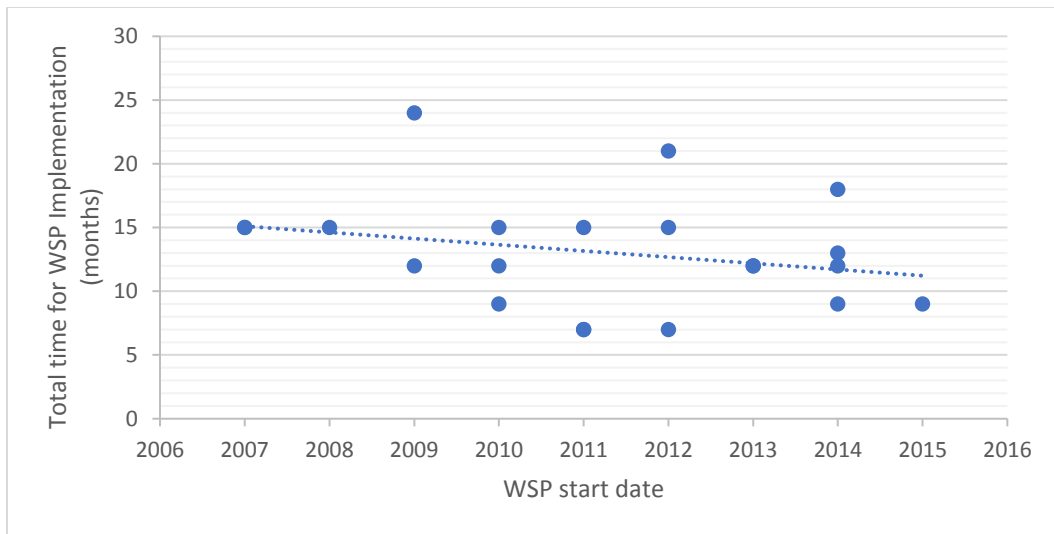


Figure E: Months required for Water Safety Plan and start date