

Quality Management System Implementation in the National Hydrological Services

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QMS Working Group Tasks

- Produce a QMS Case Study for their respective country so that other NHSs can learn from these examples and adopt/adapt the QMS documentation.
- Develop and circulate a questionnaire to assess the state of QMS development in NHSs.
- Produce a short report on the state of QMS implementation globally based on the responses received from NHSs.
- Develop an easy to follow QMS checklist that describes the key steps required to implement an ISO 9001 QMS and the steps required to obtain ISO 9001 certification.
- Provide recommendations to CHy on how to further advance QMS implementation across NHSs.
- Finally, ensure that these reports and supporting QMS documentation is available through the CHy website.

Case Studies

- Yuzyk, T. R., Thomson, C., Cantin, J-F., (2016). *Case Study on the Development of **Canada's** National Hydrological Service's Quality Management System. (ISO certified)*
- Kubat, J., (2016). *Case Study on Quality Management System (QMS) in the **Czech** Hydrological Service. (ISO certified)*
- Fenwick, J., (2016). *Case Study Development of a Quality Management System for the Hydrological Service of the National Water and Atmospheric Research Ltd. (**New Zealand**) (ISO certified)*
- Lipscomb, S., (2016) *A Case Study on the Quality Management System for the **United States** Geological Survey's National Streamgaging Program. (Formal Internal QMS)*

State of QMS Implementation in NHSs

- Short questionnaire developed and sent to 124 NHSs.
 1. Status of QMS and ISO 9001 certification in your NHS?
 2. If your NHS is not certified, what are the reasons why?
 3. Language of your QMS documentation?
 4. Are your QMS documents available for distribution?
 5. Should your organization not have a formal QMS in place, would you be interested in advice or assistance from CHy to establish a QMS?
 6. For organizations with a QMS in place, would you be interested in advice or assistance from CHy to adopt the ISO framework or become ISO compliant?
 7. If your organization is ISO 9001 certified, would you be interested in providing advice or assistance to a WMO member country interested in becoming ISO certified?
- Given 2 months in total to respond, after one extension.
- Received 44 responses or a 35% response rate.

State of QMS Implementation in NHSs

WMO Regional Association	Total Responses	No Formal QMS in place	Formal Internal QMS in place	ISO 9001 certified
RA 1	8	6	1	1
RA 2	4	1	3	0
RA 3	3	1	2	0
RA 4	7	3	3	1
RA 5	6	4	1	1
RA 6	16	1	10	5
Total	44	16	20	8

- 36% (16) of NHSs have no formal QMS in place.
- 46% (20) have some type of formal QMS for their water quantity (hydrometric) monitoring program.
- 18% (8) have an ISO compliant QMS.
- Based on this limited survey:
 - The most advanced RA in terms of QMS development would appear to be RA 6.
 - It also would appear that RA 1 and RA 5 are the least advanced in regards to QMS development.

State of QMS Implementation in the NHSs

- Prioritization of reasons given for not pursuing an ISO 9001 QMS:
 - Do not have the knowledge/expertise to put into place (14).
 - Do not have the resources nor consider it is cost-effective to put into place (10).
 - Do not consider it necessary for their programme (6).
 - Have not given it any consideration (4).

- With regards to sharing NHS's QMS documentation:
 - 41% (18) checked it was not available for distribution.
 - 20% (9) were open to sharing.
 - 39% (17) did not respond to the question.

- Questionnaire did not specifically address reasons for not sharing.

State of QMS Implementation in the NHSs

- 6 NHSs that are presently ISO 9001 certified have indicated that they are prepared to provide advice or assistance to a NHS that is interested in adopting the ISO 9001 QMS framework:
 - Mauritius NHS (RA 1)
 - Canada NHS (RA 4)
 - New Zealand NHS (RA 5)
 - Czech Republic NHS (RA 6)
 - Hungary NHS (RA 6)
 - Republic of Serbia NHS (RA 6)
- Other countries with formal QMSs in place are prepared to provide advice and assistance (*e.g.*, U.S.) .

State of QMS Implementation in the NHSs

- 55% (24) of NHSs that responded said they would be open to advice or assistance from CHy in helping them establish a QMS for their organization.
- In terms of implementing an ISO 9001 QMS, some 32% (14) would be interested if they could get advice or assistance from CHy.

ISO 9001 QMS Checklist

- The supporting document contains the 12 key steps required to implement an ISO 9001 QMS.
- Another 4 steps are identified if the NHS wants to become ISO certified.

Recommendations on Advancing QMS Implementation

1. It may be worthwhile to provide an orientation/training session on QMS development at the next Session of CHy, to be held in December 2016, to more effectively engage the NHSs in this priority.
2. Identifying one NHS to champion QMS in each RA may help to build momentum and be cost-effective if any travel is involved. Building upon the NHSs that have indicated that they are prepared to provide advice and assistance on development of QMS could be the first step.
3. It may prove more effective to structure advancing QMS along other common UN languages, such as French, Spanish, etc., so that the communications and sharing of documents will be more meaningful. Undertaking additional case studies and compiling QMS documentation in these other major languages to supplement the work that has been done by CHy to date will certainly help advance QMS development globally.
4. NHSs that have a mature QMS in place should be encouraged to provide opportunities to allow other NHSs to participate in one of their internal reviews/audits to observe and learn firsthand what is involved in QMS implementation.

Access to QMS Reports and Documentation

- CHy Website - Quality Management Framework

<http://www.wmo.int/pages/prog/hwrrp/qmf-h/index.php>