Protocol on Water and Health

TRAINING PROGRAMS FOR SMALL WATER SUPPLY UTILITIES IN SWITZERLAND

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Structure of Swiss Water Supply Sector

Political System of the Swiss Confederation

Federalism
Principle of subsidiarity

Direct democracy
referendums,
bottom-up democracy)
Principle of Subsidiarity

Central authority should performing only those tasks which cannot be performed at a local level

Regarding Water:
Cantonal authorities delegate the task of water supply to their municipalities:

- high self-determination and self-responsibility of the (2400) municipalities
- fragmentation of the water sector;
  3000 (small) water supply utilities

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Water supply sector

→ Strongly fragmented sector
Strenghts of the Swiss Model

- well locally and publicly anchored because of (direct) democratic decisions
- decision makers / politicians are close to the people → high accountability
- large autarky
- less non-adjusted solutions
- utilities / municipalities are in good financial situation (deep level of debt)
- large supply safety / good quality
Weaknesses

• politicalization of corporate decisions:
  - long and complicated decision-making routes (consensus oriented)
  - long-term business vs short-term political interests

• lack of coordination
  → overcapacity; Economies of Scale cannot be used

• increasingly stringent requirements
  → lack of competence in smaller utilities
Approved rules of technology for practical work in the water sector based on the technical rules of SGWA

Certifying of products, companies, and individuals

Pool solutions (e.g., safety at work, insurance, quality assurance systems)

Communication and Networking

Research and development

and...
SGWA helps to meet the challenges in the water sector (2)

... Professional Education & Training
The Swiss Education System

Education and Training Programs of SGWA
Characteristics of the Swiss Education System

Vocational Education and Training (VET)

- 2/3 of all young people enrol in vocational education and training
- dual track approach: part-time classroom instruction at school with part-time apprenticeship at a host company
- Labor market focus (→ main reason for low youth unemployment)
- Federal VET diploma

Professional Education and Training (PET)

- After completing VET (for adults from age 25-...)
- Improving the knowledge and skills in a given field
- Federal PET diploma
Federal Diplomas of Higher Professional Education in the water sector

Water Supply Operator
(Brunnenmeister, Fontainier, Fontaniere)

Piping Network Mechanic
(Rohrnetzmonteur, Monteur de réseaux)

Developed and realized by Swiss Gas and Water Industry Association
Job-related continuing education and training in the water sector

«Caretaker»
(Wasserwart, Surveillant de réseau)

Piping Network mechanic assistant
(Rehrverleger)

... and around 15 other courses and seminars for different target groups (politicians, engineers, managers, professionals, specialists...)

SGWA Training program for small water supply utilities
Professional Education & Training in the water sector

- Caretaker
  - Federal Diploma of Vocational Education and Training e.g. sanitarian, mechanic, mason etc.
  - Compulsory Education
    - Water Supply Operator with Federal Diploma of Higher Education
    - Piping Network mechanic with Federal Diploma of Higher Education
      - Piping Network mechanic assistant

Why such a training program?
- the federal diploma (water supply operator) is too demanding for operators in small water suppliers (often part-timer)
  (too long, too high entry threshold)
- it exceeds the needs of small water suppliers
  → Hazard that operators in small water suppliers don’t have sufficient knowledge and experience at all

For whom is the training program suitable (target groups)?
- Operators in simple and small water suppliers (up to approx. 2500 inhabitants)
- Assistant of a water supply operator
- as preparation for further step in the professional development
- for piping network mechanic
The goals of the training programme

The caretaker

- knows the processes of the water supply
- knows the relevant technical rules and the legal requirements
- can operate and maintain a system under normal circumstances
- is able to understand and run the quality assurance system according to HACCP
- is able to recognize new hazards
- and knows when he has to contact the cantonal authorities, consulting engineer etc.
The concept

1. **Transfer of basic knowledge**
   - 3 days in classroom

2. **Case study / work in groups** (2 days)
   - Within 2 months the participants have to solve different tasks with practical relevance
   - Thematic area: Quality assurance system (W1002)
     e.g. identify risks, draw up instructions for the controlling of critical points, record and assess the results etc.
   - Coached by an expert

3. **Presentation of the results / test**
   (1 day, in classroom)
1. Introduction; 2 lessons

2. Legal requirements (foodstuffs act, water protection act); 2 lessons

3. Processes of water supply (catchment, treatment, storage, transport, distribution); 10 lessons

4. Inspection and maintenance; 4 lessons (taking water samples, desinfection, measures in case of contamination)

5. Safety at work; 2 lessons

6. Quality assurance system according HACCP; 8 lessons, case study W1002 – SGWA Recommendations for a simple quality assurance system for water supplies
The quality assurance system

Fig. 0: Procedure for the realisation of a simple QA system in a water supply company

<table>
<thead>
<tr>
<th>Step</th>
<th>Content</th>
<th>Help tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Describe the water supply organisation as well as the duties and technical expertise of the employees</td>
<td>&quot;Organisation of the WS&quot; and &quot;Job description&quot; forms, SGWA directive W11</td>
</tr>
<tr>
<td>2</td>
<td>Update or draw up the survey of the complete water supply</td>
<td>&quot;Basic data&quot; form</td>
</tr>
<tr>
<td>3</td>
<td>Look for possible hazards, evaluate them and list the critical points</td>
<td>&quot;Checklists for hazards&quot; and &quot;Elimination of a hazard&quot; forms, SGWA directives W1 to W10</td>
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<tr>
<td>4</td>
<td>Carry out one-off measures for the elimination or reduction of hazards</td>
<td>&quot;Elimination of hazards&quot; and &quot;Planned measures&quot; forms</td>
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<td>5</td>
<td>Update or draw up maintenance instructions</td>
<td>&quot;Maintenance instructions&quot; form</td>
</tr>
<tr>
<td>6</td>
<td>Draw up instructions for the controlling of critical points</td>
<td>&quot;Control point instructions&quot; form</td>
</tr>
<tr>
<td>7</td>
<td>Follow the instructions in daily work and record and assess the results</td>
<td>Example report</td>
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<td>8</td>
<td>Draw up an annual evaluation regarding water, installations, processes and organisation, and propose and implement improvements</td>
<td>&quot;Water supply&quot; self-check</td>
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<td>9</td>
<td>Have the fulfilment of the self-check-system confirmed by specialist third party assessment</td>
<td>SGWA audit and SGWA certificate</td>
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A success story

- **Successful participants:**
  - D-CH: 1115 participants in 47 courses (since 2004)
  - F-CH: 260 participants in 18 courses (since 2010)
- Over 90% of the participants are satisfied and recommend the training program

![Graph showing course recommendations](image)

- Cantonal **drinking water inspectorates** confirm a much higher professional competence in small water supply utilities
Challenges

• Implementation of the guide to good practice («Gute Verfahrenspraxis»)
  → should be approved by the Federal Food Safety and Veterinary Office by the end of 2016

• Teachers are also practitioners (engineers, technicians, chemists, operators...) in the water sector:
  → tend to frontal teaching

•  → continuous improvement of teaching methods is necessary

•  → SGWA offers appropriate seminars
Film Water Supply Operator
THANK YOU

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www.svgw.ch/bildung