



## **Protocol on Water and Health**

# **TRAINING PROGRAMS FOR SMALL WATER SUPPLY UTILITIES IN SWITZERLAND**

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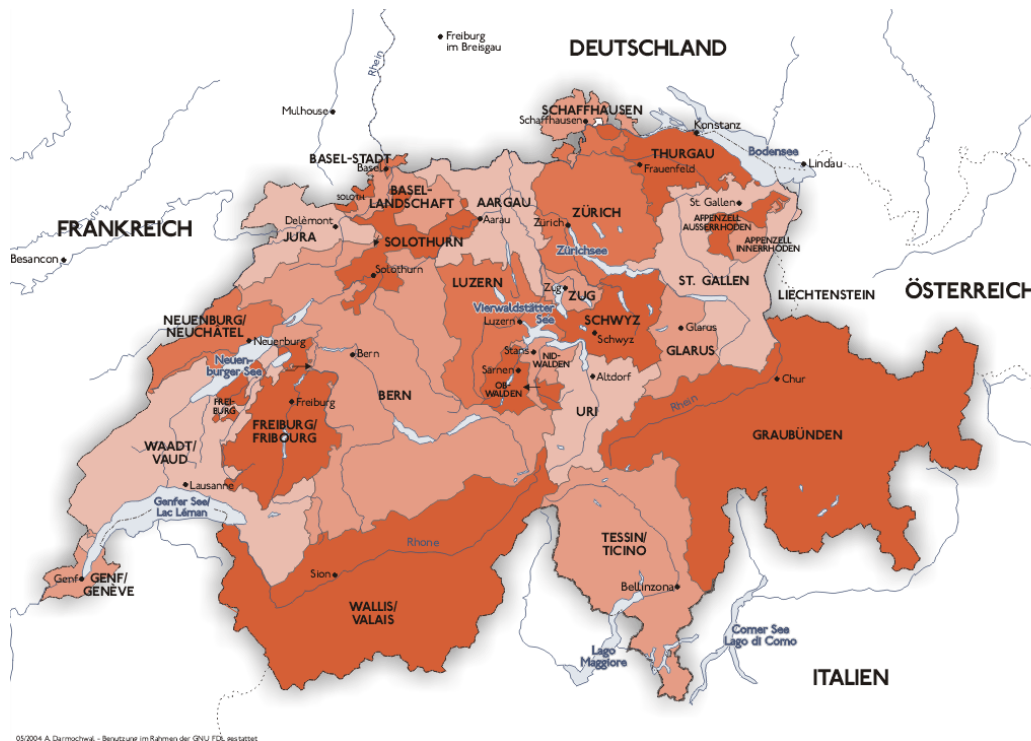
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# Contents

1. Structure of the Swiss water supply sector
2. Education and training in the Swiss water sector
  - The Swiss education system
  - Education and training in the water sector (SGWA program)
3. The «caretaker» training program
4. Summary: The tasks and responsibilities of a water supply operator (film)

# 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

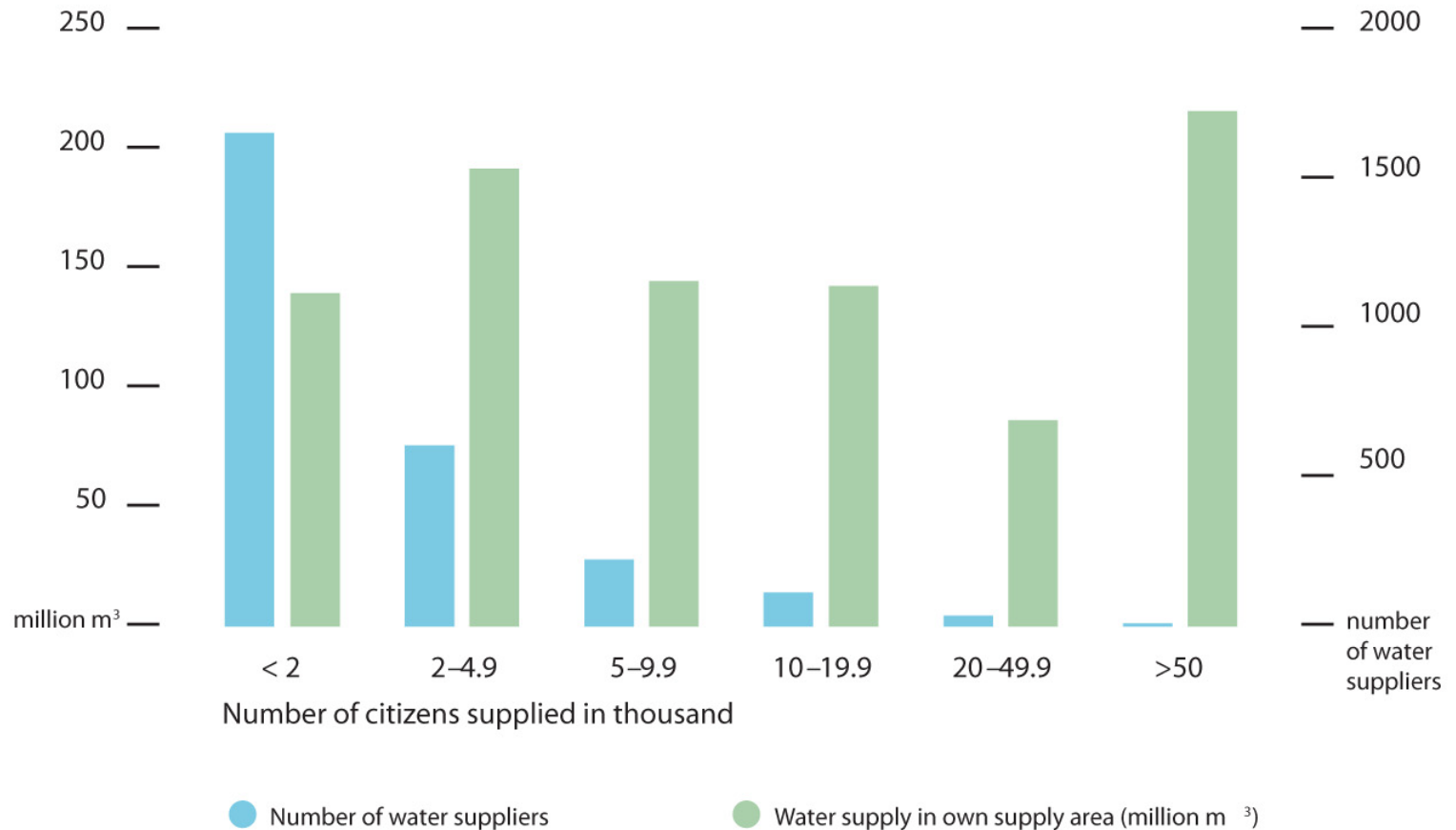
Central authority should performing only those tasks which cannot be performed at a local level

## 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

# Water supply sector



→ Strongly fragmented sector

# Strengths of the Swiss Model

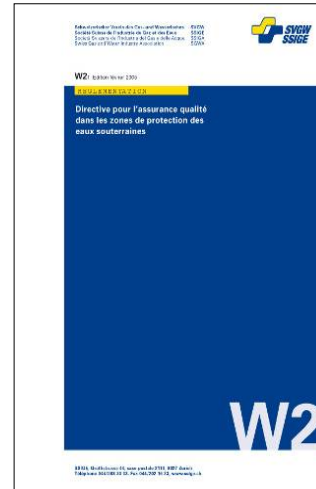
- well locally and publicly anchored because of (direct) democratic decisions
- decision makers / politicians are close to the people  
→ high accountability
- large autarky
- less non-adjusted solutions
- utilities / municipalities are in good financial situation (deep level of debt)
- large supply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

# SGWA helps to meet the challenges in the water sector

- Approved rules of technology the practical work in the water sector is 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...





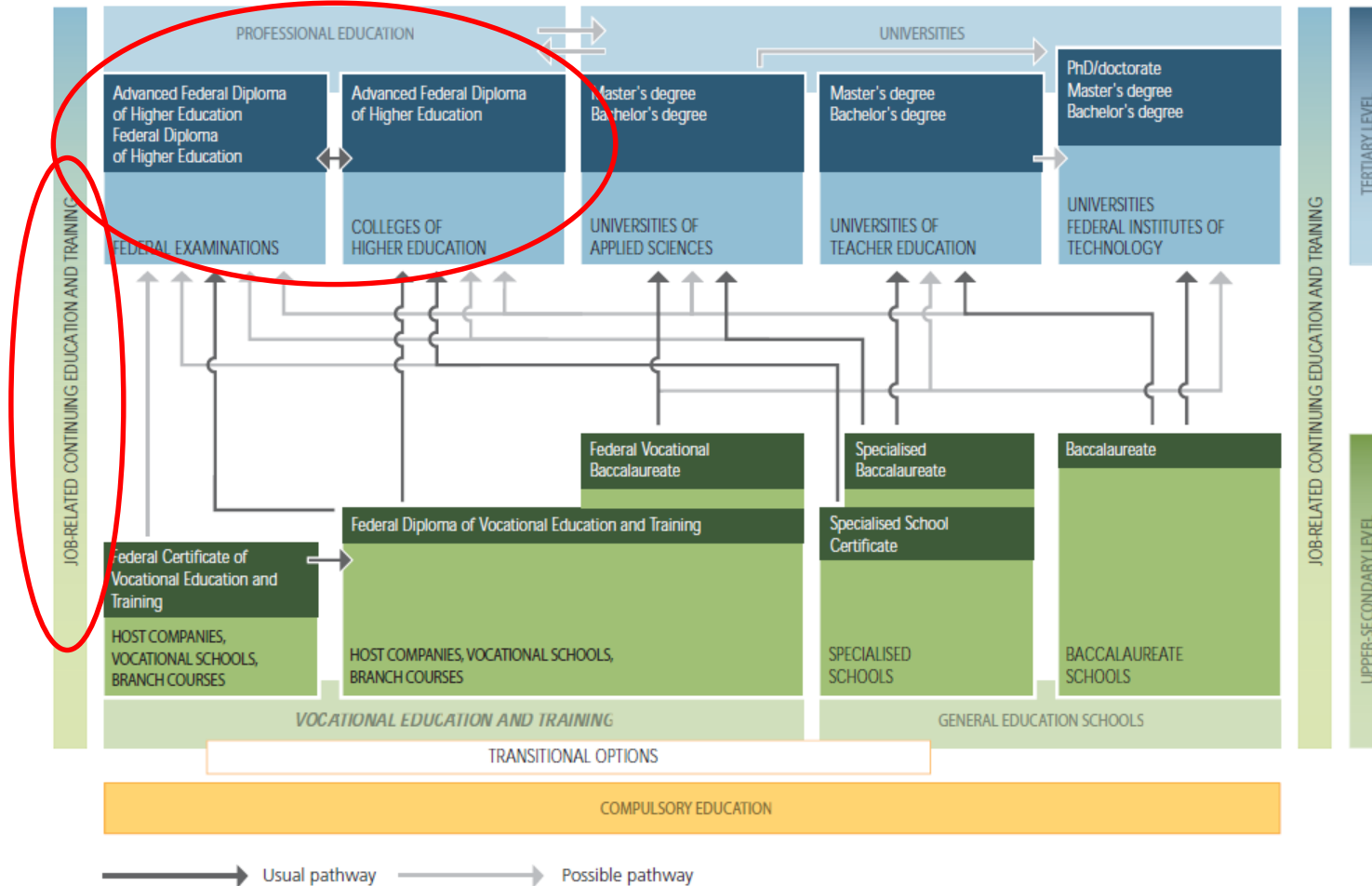
# SGWA helps to meet the challenges in the water sector (2)

## ... 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)

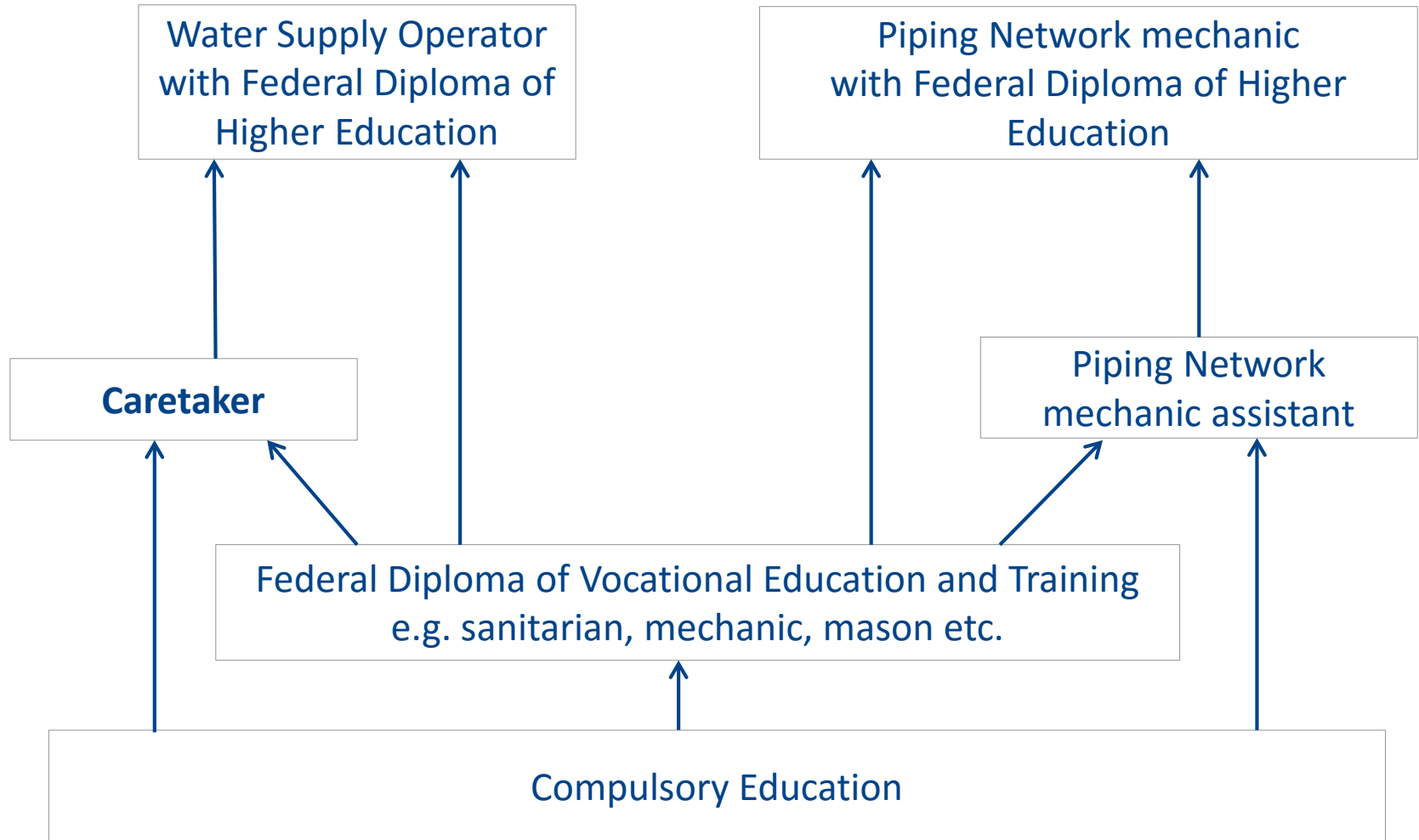


## Piping Network mechanic assistant

(Rohrverleger)

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

# Professional Education & Training in the water sector



# The «caretaker» training program (since 2004)

- **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 programm

## 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

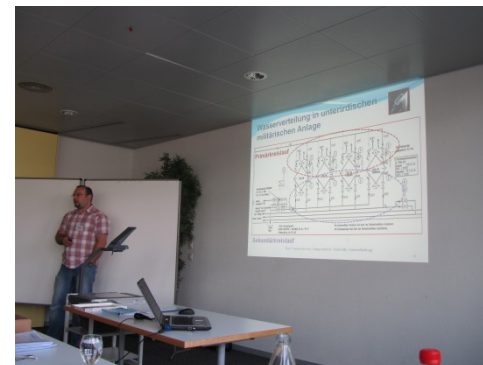
## 1. Transfer of basic knowledge

- 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)



# The curriculum (1)

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, disinfection, 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



Schweizerischer Verein des Gas- und Wasserfaches SVGW  
 Société Suisse de l'Industrie du Gaz et des Eaux SSIQE  
 Società Svizzera dell'Industria del Gas e delle Acque SSIQA  
 Swiss Gas and Water Industry Association SGWA



W 1002 e Edition July 2003

## REGULATION

### Recommendations

for a simple  
 quality assurance system  
 for water supplies (WQS)

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

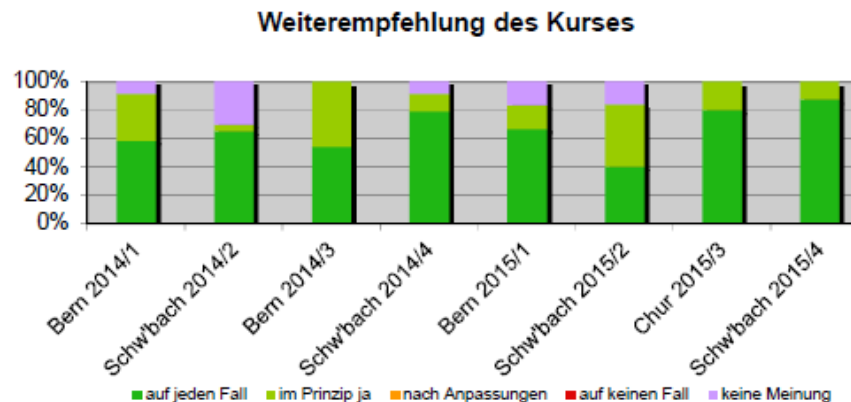
Fig. 0: Procedure for the realisation of a simple QA system in a water supply company

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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



- 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

# Summary

## Film Water Supply Operator

# THANK YOU

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[www.svgw.ch/bildung](http://www.svgw.ch/bildung)

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