

Stockholm 28.8.2017 16-17:30  
BMZ, BMUB, GIZ, DWA

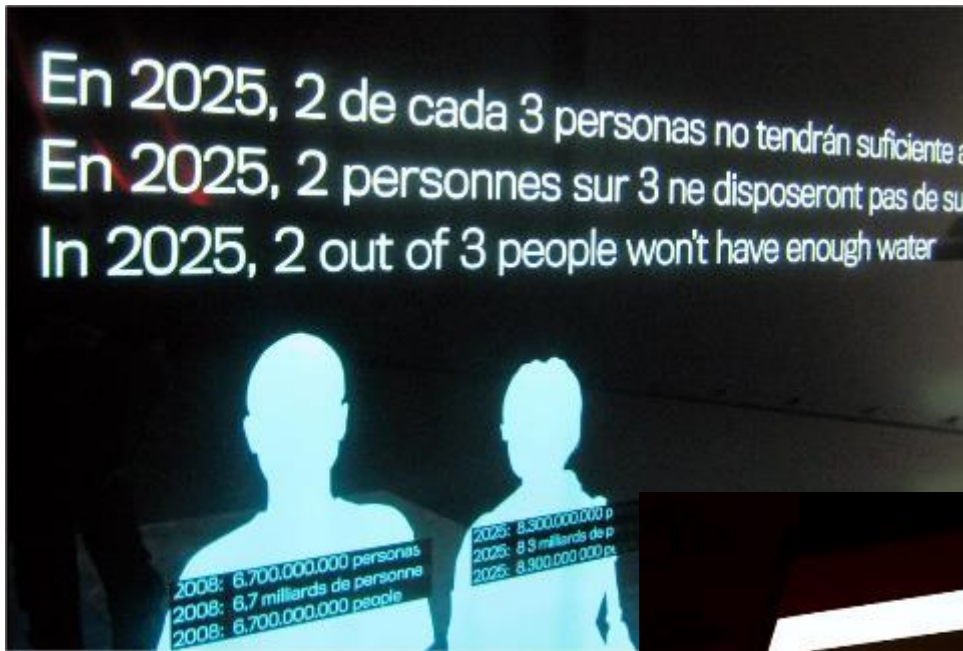
## Wastewater treatment needs skilled staff – German Approaches and Experiences



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# Global Challenges





# History WWTP in Cologne (Stammheim)

**1976**



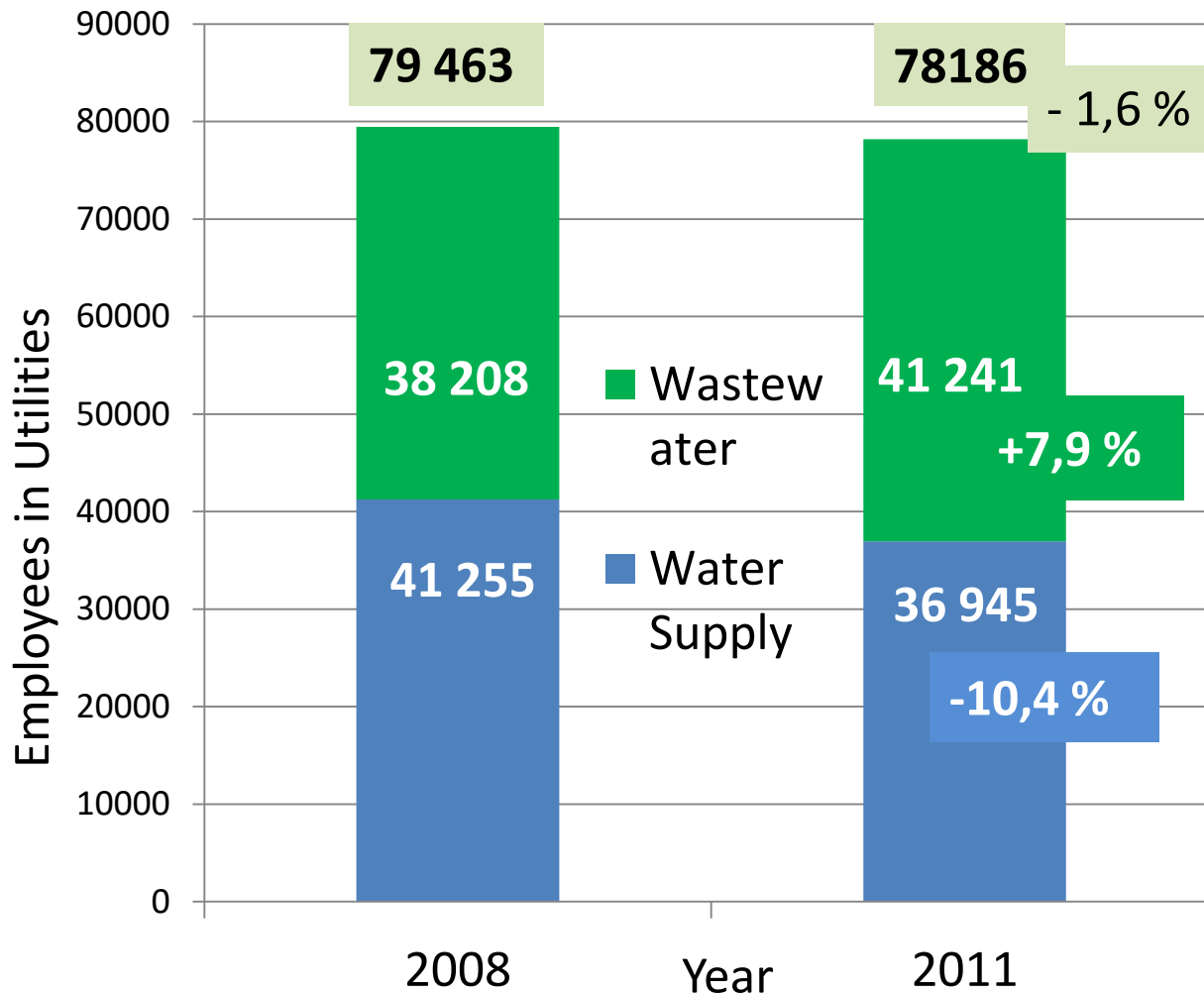
**2016**



**1953**



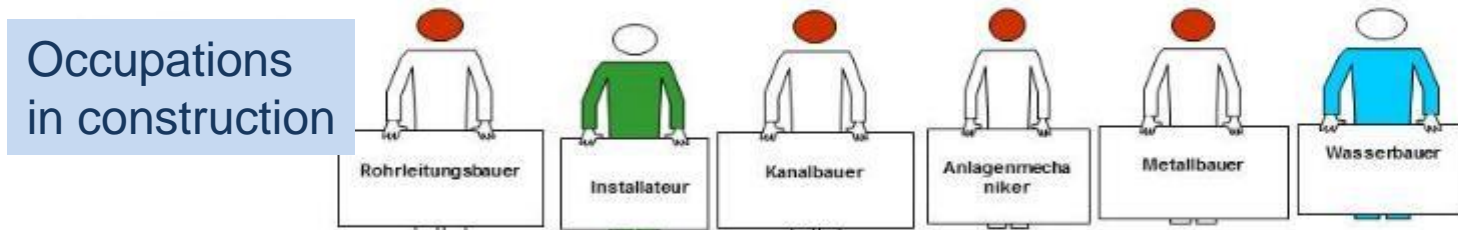
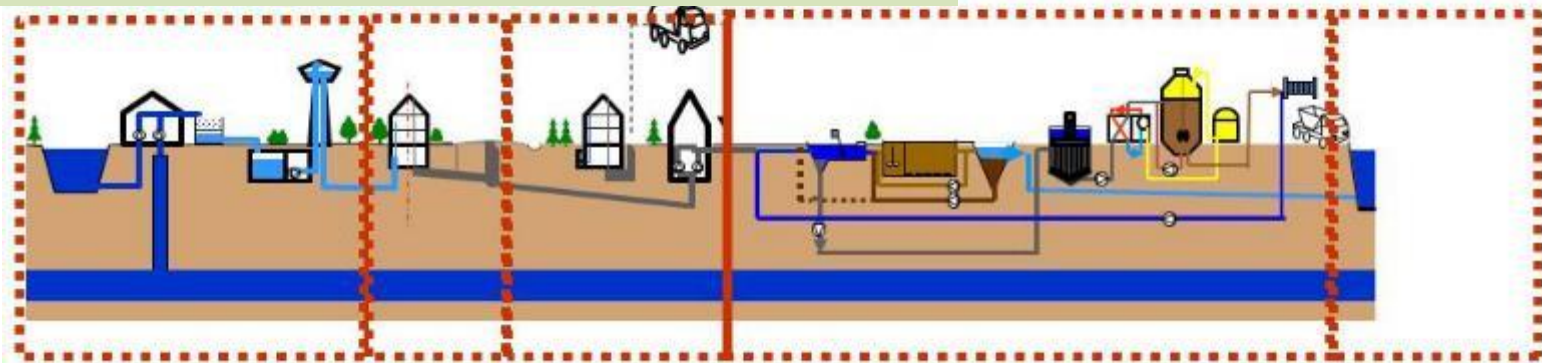
# Employees in German Water Utilities



Approx.  
20% University Qualification  
80% TVET - Technical  
Vocational and Educational  
Training Qualification

24% are female

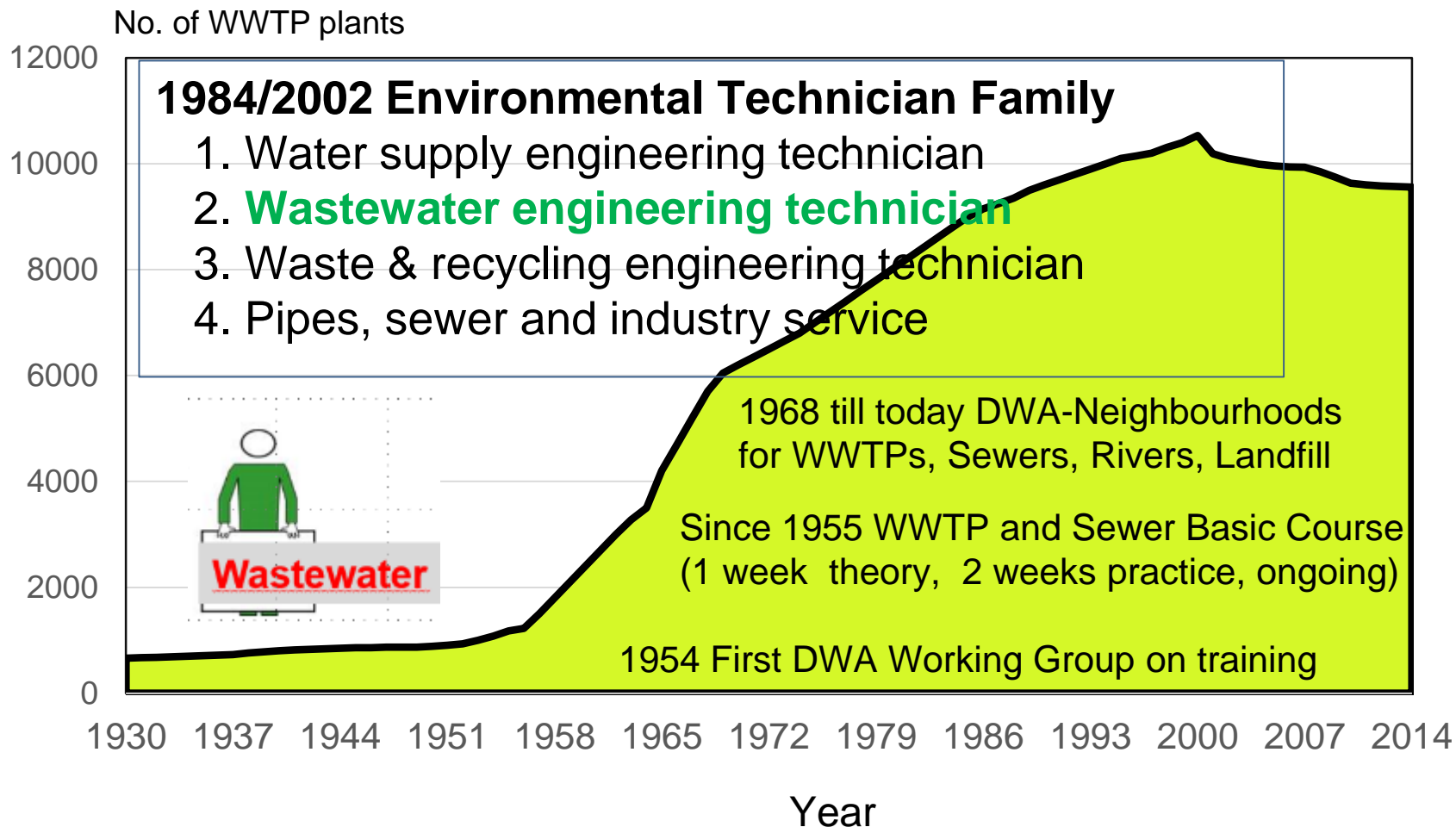
# Water Occupations in Germany - TVET



Water Supply and sanitation, Waste and Rivers



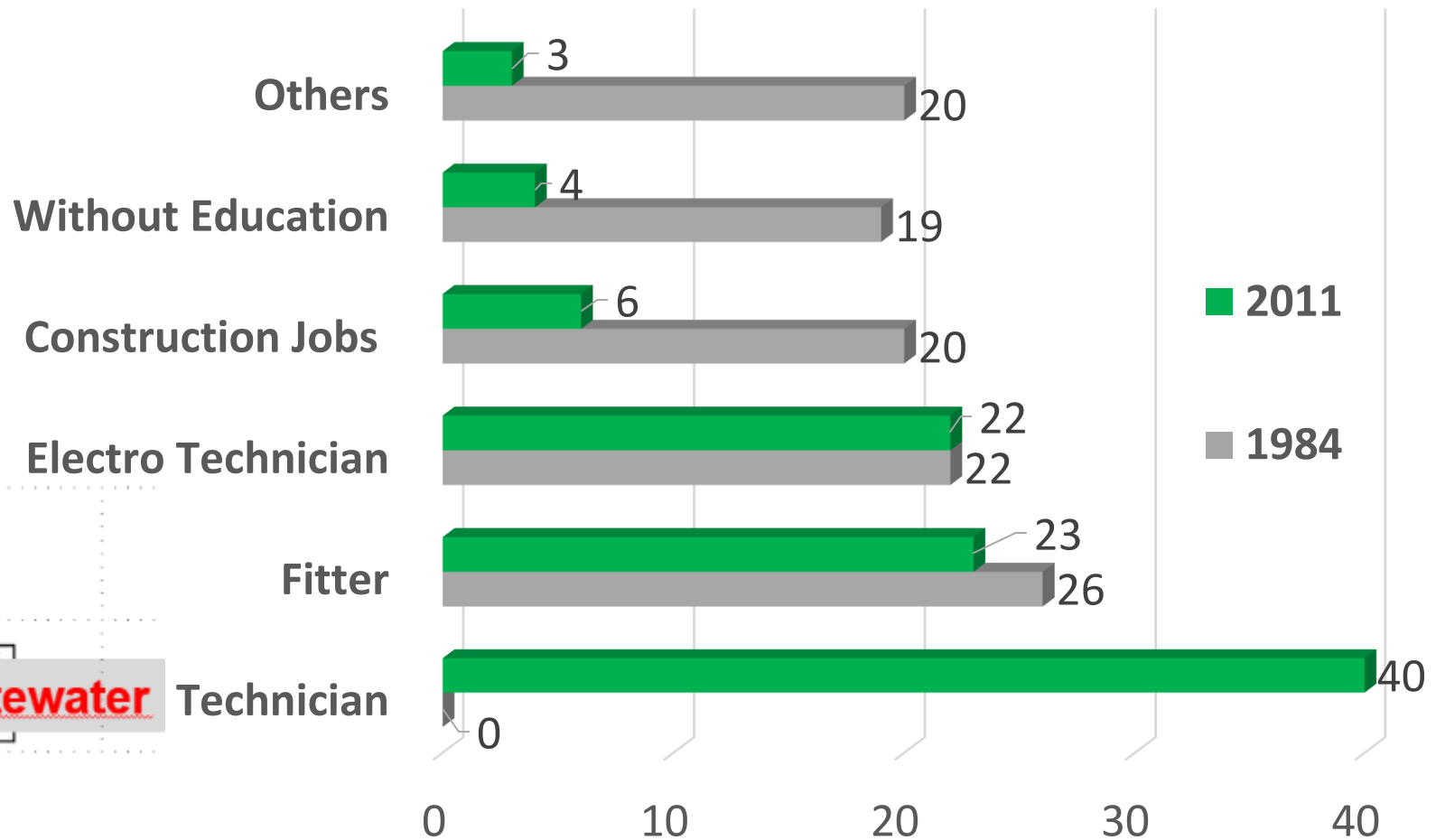
# Germany: Qualification & Construction of Wastewater Treatment Plants (WWTP)



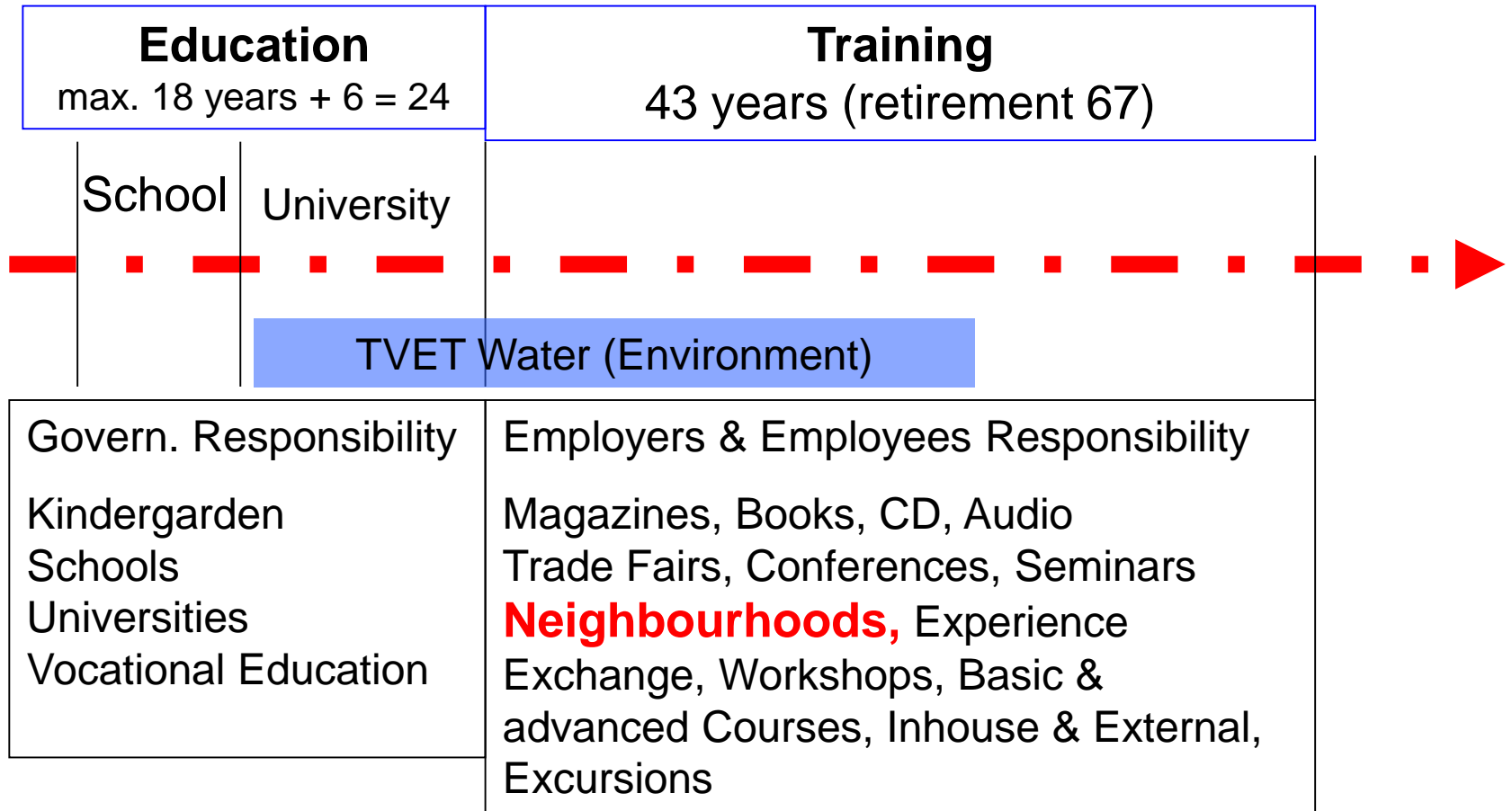
Source: Basic data from KA magazin, Nov. 2000 Page 183 Manfred Fischer, [www.dwa.de](http://www.dwa.de)  
New data added and graph created by Rüdiger Heidebrecht, DWA, 2014

# Change of Qualification

WWTP - Wastewater Treatment Plant  
Stuttgart-Mühlhausen, Germany



# From birth to death





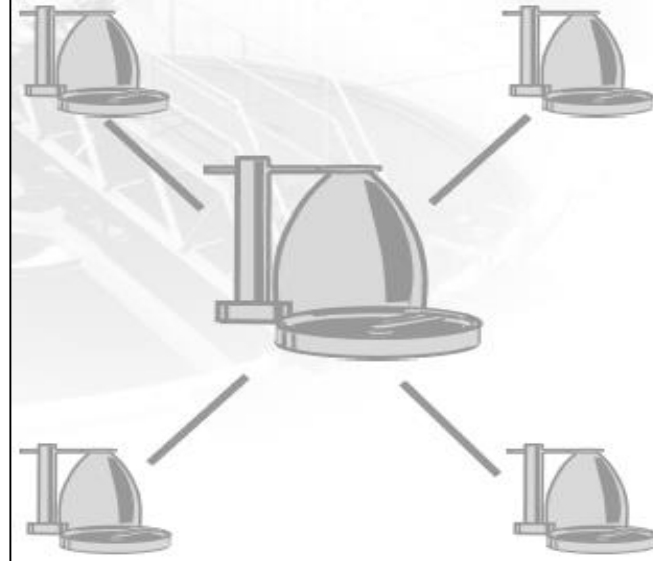
# Continuous Learning- Neighbourhood System since 1968

## A Good Neighbourhood

From the Sewer over the Wastewater Treatment Plant to the Water Bodies



## Sewage treatment plant neighbourhoods



**15.000 people per year  
in 330 groups**



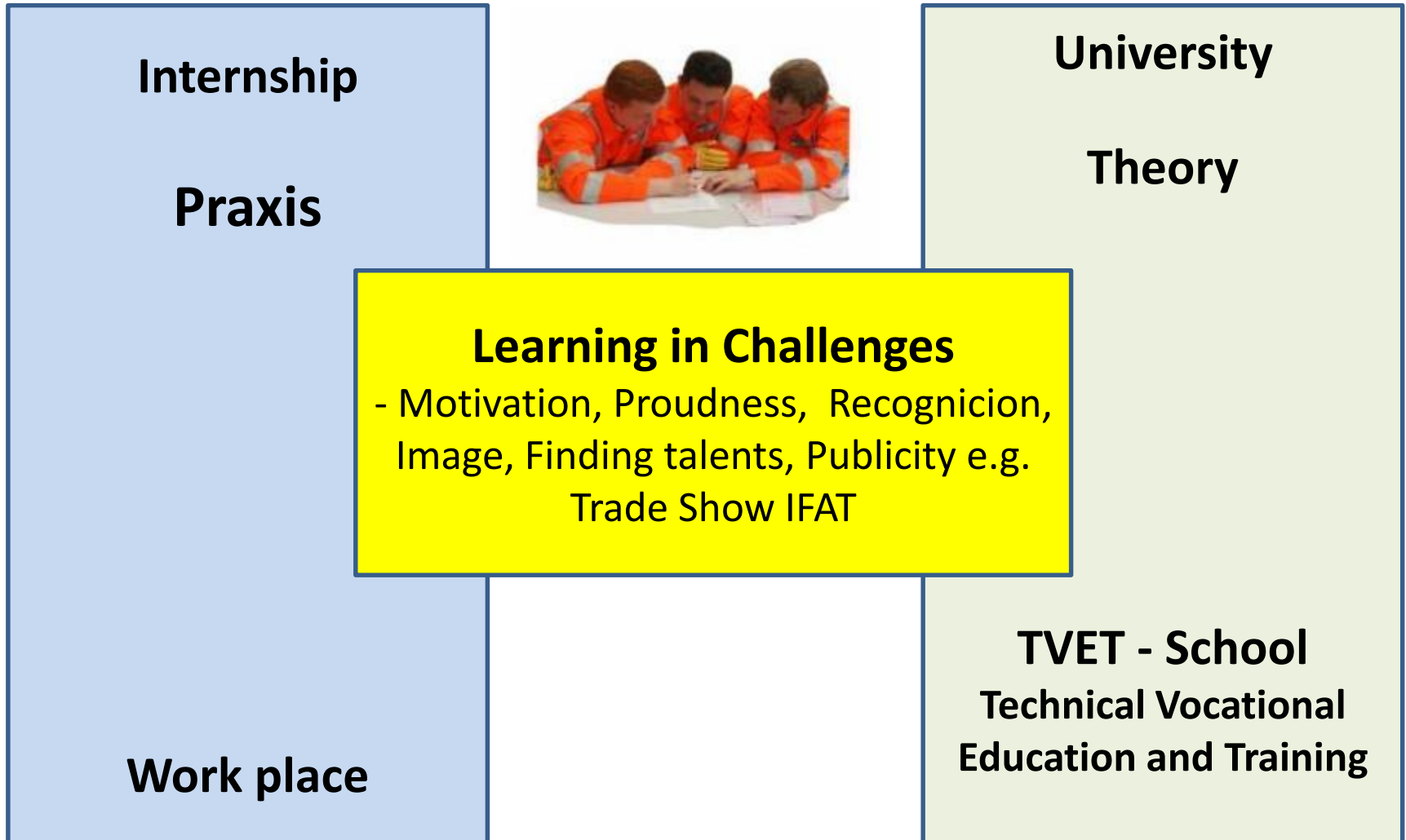
**PERFORMANCE COMPARISON OF  
GERMAN MUNICIPAL SEWAGE  
TREATMENT PLANTS 1998**

**ATV**

**KA-Betriebs-Info**  
Kommunales Abwasser, Abfall und Regen für die Wasserwirtschaft im Metropolenraum

**gewässer-info**

# Learning in Challenges



**Internship**

**Praxis**

**Work place**



**University**

**Theory**

**TVET - School**  
**Technical Vocational**  
**Education and Training**

## **Learning in Challenges**

- Motivation, Proudness, Recognition, Image, Finding talents, Publicity e.g. Trade Show IFAT



 **Nicht einschalten!**  
**Es wird gearbeitet!**  
Uff - Entfernen der Tafel nur durch



# 2012 Winner Sewer Professionals 1st Düsseldorf, 2nd Stuttgart, 3rd Vienna



## WORLD WATER SKILLS 2018 WATER SKILLS GERMANY 2018

Die Berufswettbewerbe auf der IFAT  
gehen in die 4. Runde!



**NEU**  
2 Teilnehmer  
pro Team!

Sei auch 2018 wieder dabei und informiere dich unter  
[de.dwa.de/berufswettbewerb.html](http://de.dwa.de/berufswettbewerb.html)

IFAT München 2018 · 14. – 18. Mai 2018



# WORLD UNIVERSITY CHALLENGE Munich 2016



# Learning in Challenges – Patronage/Partner



Since 2010 - BMUB – German Ministry for Environment....

Bavarian State Ministry for Environment, City of Munich, Trade Fair Munich (IFAT), Worldskills Germany, DWA and various companies

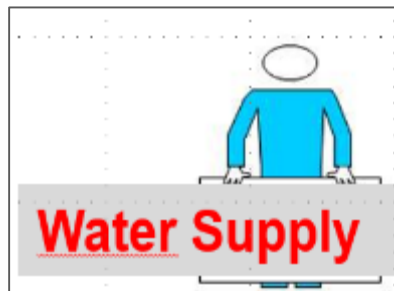


Since 2015 - DAAD

Trade Fair Munich (IFAT), DWA, Wilo Foundation, Universities and companies



# Worldskills – in more than 70 countries



**Younger than age 23**



## WorldSkills „Water Technology“

- 2013 **Leipzig** – Skill Presentation
- 2015 **Brasil** – Company Skill Presentation by FESTO



2017 **Abu Dhabi** 15.-18. 10 2017  
– We have 5 Countries

- 2019 **Kazan, Russia**  
– We need 12 countries
- 2021 **Shanghai, China**



## ToDos in Qualifying Wastewater Staff

- Create „Water Technology“ occupations in the countries for technicians and academic staff
- Install „Life long learning systems“ like Neighbourhoods
- Use the movement
  - WATER SKILLS powered by DWA & IFAT & .... supported by BMUB
  - UNIVERSITY CHALLENGE powered by DWA & IFAT & .... supported by DAAD
  - WORLDSKILLS „Water Technicians“ supported by 70 countries
- **No water investment without investment in staff qualification!**