



Workshop: Skills for **green** jobs

Subjects:

- Vocational Training Regulations and the Process behind them
- Environmental Technicians – 26 Years of Experiences in Germany

Speaker:

Name: Marion Krampe
Federal Institute for Vocational Education and Training
(BIBB)
Department 4: Regulation of Vocational Education and
Training
Section: 4.3 Industrial, Technical and Scientific Occupations



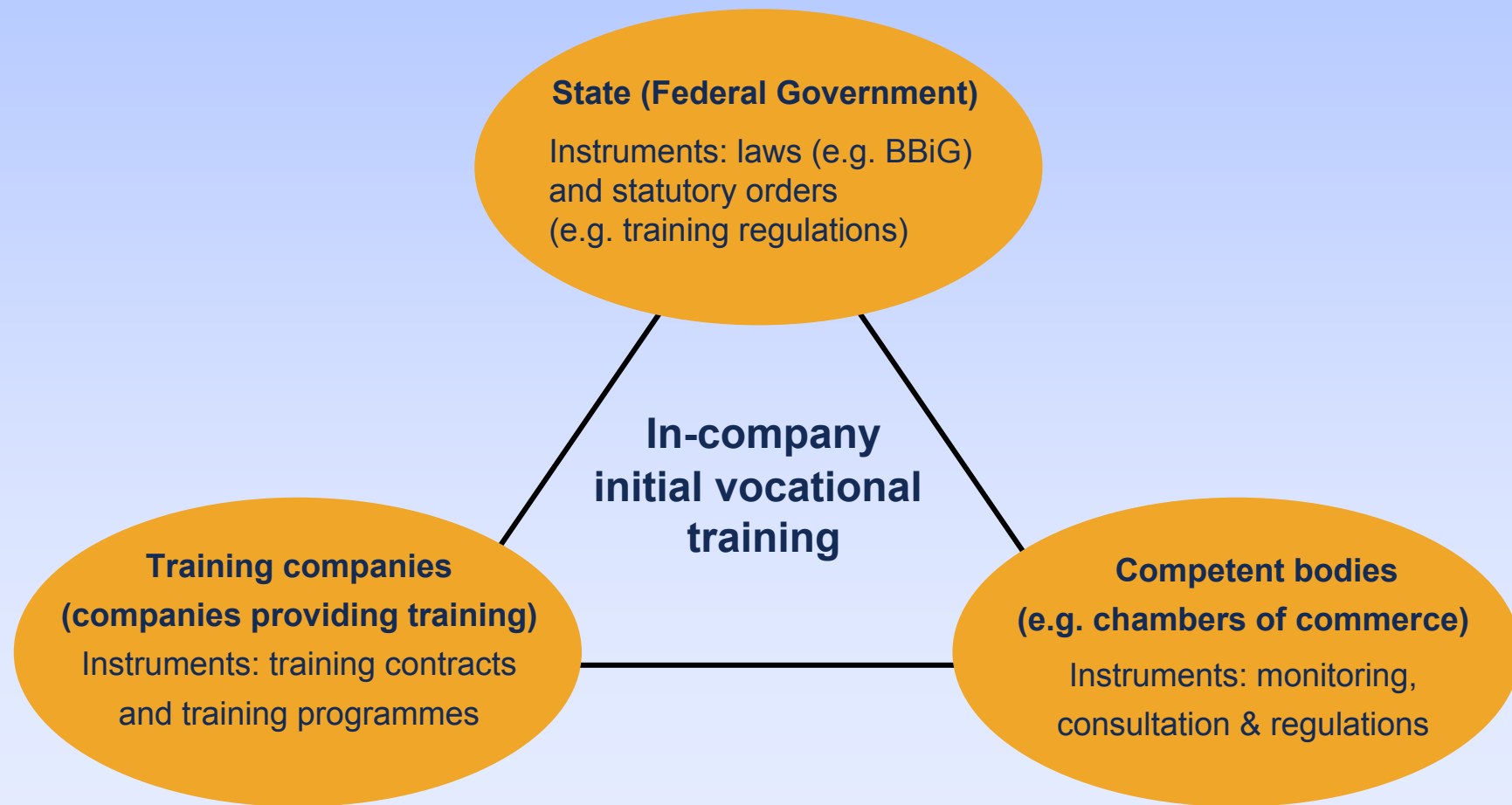
Vocational Training Regulations...

- ▶ **...the Framework for occupations learned in Germany's "dual" vocational training system**

**Most school leavers in Germany
(nearly 60 % of an age group)
start their vocational training with an
"apprenticeship".
In other words they embark on vocational
training in the "dual" vocational training system.**

Steering of in-company vocational education within the Dual System

according to the German Vocational Training Act (BBiG)



The German Dual System of VET

two venues
for learning

► company



3 – 4 days per week

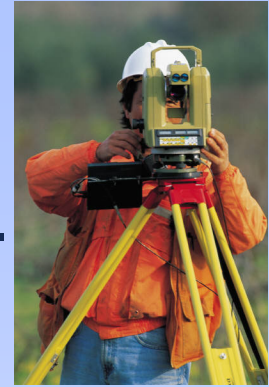
► part-time vocational school



1 – 2 days per week

State recognised training occupations in Germany

- ▶ There are training occupations for every sector (2010: 340 training occupations)
 - The training occupations are continuously updated. New occupations are created as required.
 - Training occupations show different degrees of specialisation.
 - Training occupations are differentiated in keeping with actual needs.
 - Training is centred on vocational competence.



Minimum content of a training regulation

- Designation of the training occupation
- Duration of training
(training generally lasts 3 – 3,5 years)
- Occupational field
- Type and structure of the training
- Timetable
- Environmental protection *
- List of skills and knowledge
(minimum vocational training requirements)



* Environmental protection

- ▶ Learning objectives that go beyond the standard „environmental protection“ instruction are taught together on an integrated basis with other subject matter.

New environmental occupations are an exception

“Philosophy”:

- broad-based skills
- no product-related skills

Advantage:

- high versatility
- better opportunities on the job



The Federal Institute for Vocational Education and Training...

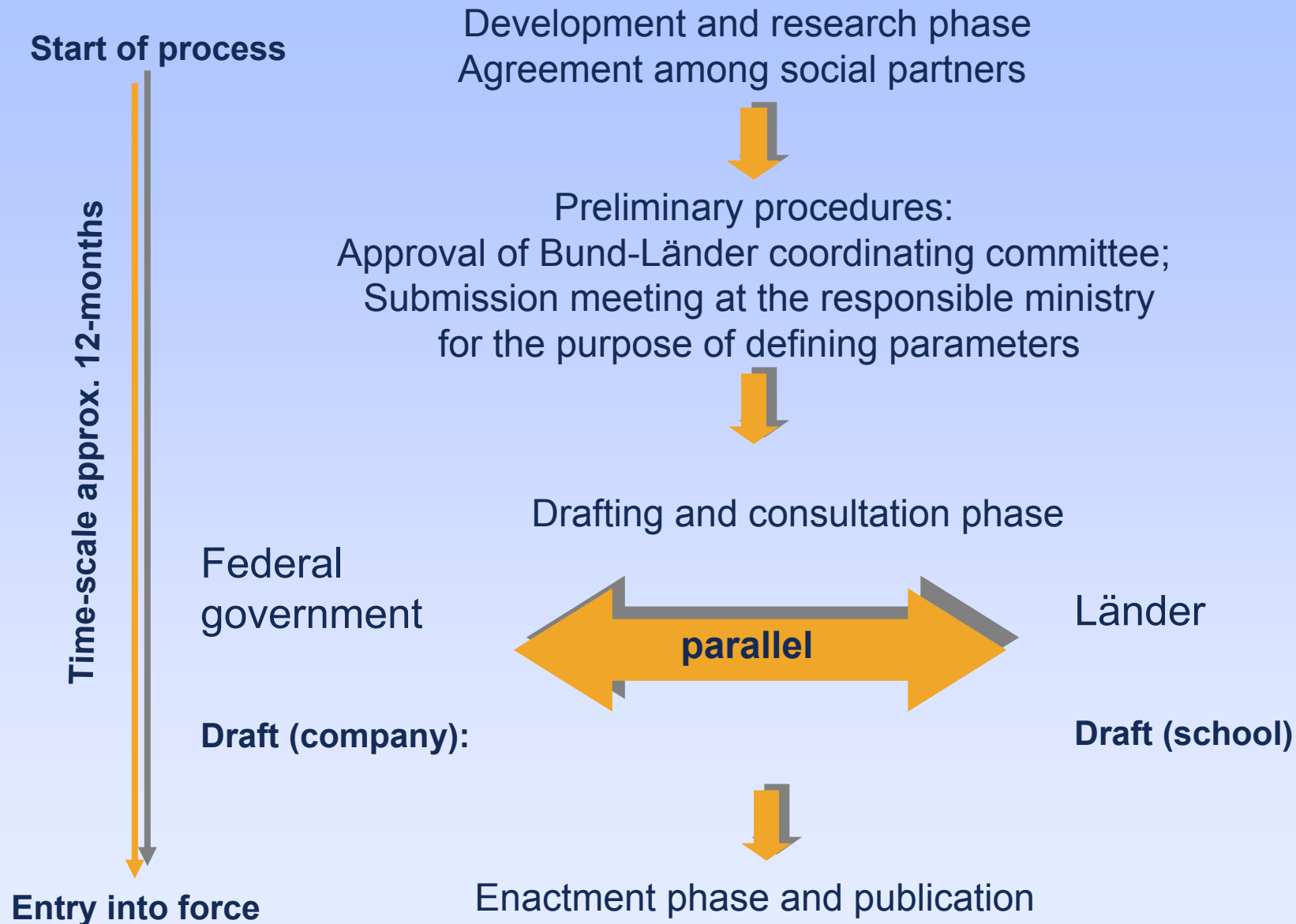
Bundesinstitut
für Berufsbildung **BiBB**

- Forschen
- Beraten
- Zukunft gestalten



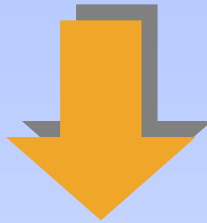
... “Incubator” for new training regulations
and platform for a dialogue between
employers and trade unions

Procedure for modernising training occupations



Drafting and consultation on training regulations

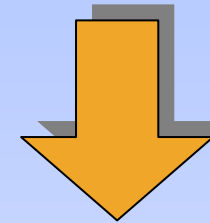
Company



Federal government sessions

**Draft
Training Regulation
Framework Training Plans
Training profiles**

Part-time vocational schools



Länder government sessions

**Draft

Framework curriculum**



Qualification in the Water and Waste sector Environmental Technicians



Environmental Technicians –

26 Years of Experiences in Germany



Environmental Technology Occupations



**Water supply
engineering
technician**



**Sewage
engineering
technician**



**Recycling and
waste
management
technician**

**Pipe, sewer and
industrial service
technician**



Water supply engineering technician

**Water supply engineering technicians
work in municipal and industrial water supply firms**



Sewage engineering technician

Sewage engineering technicians work in the area of drainage network as well as sewage and sewage sludge treatment in municipal and industrial treatment plants



Recycling and waste management technician

Recycling and waste management technicians work in disposal firms, utilisation and treatment facilities, such as, for example, glass and paper recycling, landfills, composting facilities, chemical-physical treatment plants



Pipe, sewer and industrial service technician

Pipe, sewer and industrial service technicians work in private, public and industrial areas and are employed in pipe and sewer service firms as well as industrial cleaning and maintenance firms



Environmental Technology Occupations

Four occupations



1 Order

Water supply
engineering
technician

Sewage
engineering
technician

Recycling and
waste
management
technician

Pipe, sewer and
industrial service
technician

Duration of traineeship: 3 years (36 months)

Venues for training: company and part-time vocational school

Common core skills: 15 months (65 weeks)

Same contents as regards vocational school instruction: 18 months

Intermediate examination: identical

Specialist skills

21 months
(91 weeks)

Specialist skills

21 months
(91 weeks)
by it

Deepening:
8 weeks

- drainage network
oder
- treatment plant

Specialist skills

21 months (91 weeks)
by it

specialist areas

30 weeks

- logistics, collection and
marketing
- waste utilisation and
treatment
- waste disposal and
treatment

Specialist skills

21 months
(91 weeks)
by it

specialist areas
32 weeks

- pipe and sewer service
- industrial service

Environmental Technology Occupations

common core skills

**Water supply
engineering
technician**

**Sewage
engineering
technician**

**Recycling and
waste
management
technician**

**Pipe, sewer and
industrial service
technician**

Position of the Occupational Training Profile

weeks/ 1.-15. months

- | | |
|--|--------------------|
| 1. Vocational training, employment and collective bargaining law | during |
| 2. Structure and organisation of the firm providing training | the whole |
| 3. Safety and health protection on the job | period |
| 4. Environmental protection | of training |
| 5. Operational processes, work organisation | 4 |
| 6. Information und documentation, quality assurance measures | 4 |
| 7. Environmental protection technology, ecological cycles and hygiene | 8 |
| 8. Fundamental principles of mechanical and process engineering, measurement technology, numerical control engineering and control technology | 19 |
| 9. Dealing with risks posed by electricity | 4 |
| 10. Application of scientific principles | 10 |
| 11. Materials, ancillary materials and dangerous materials, dangerous working substances; materials processing | 12 |
| 12. Storage, tools and equipment | 4 |



Water supply engineering technician

Specialist skills

Position of the Occupational Training Profile	weeks/16.- 36. months
13. Safety of persons and plants	2
14. Water management	2
15. Water winning	4
16. Water condition; water treatment	12
17. Promotion of drinking water, water storage and distribution of water	24
18. Water testing	9
19. Measurement technology, numerical control engineering and control technology	8
20. Electric plants of water supply	16
21. Documentation	4
22. Drinking water protection and installations for clients	4
23. Customer orientation	4
24. Legal requirements and technical regulations	2



Sewage engineering technician

Specialist skills

Position of the Occupational Training Profile	weeks/16.- 36. months
13. Safety regulations and operating instructions	2
14. Operation and maintenance of drainage systems	18
15. Monitoring of indirect discharger	3
16. Operation and maintenance of waste water treatment plants	20
17. Sewage sludge treatment and waste treatment from sewage systems	6
18. Sampling and investigation of waste water and sewage sludge	14
19. Documentation, quality management and environmental management	2
20. Electrical plants in the sewage technology	16
21. Legal requirements and technical regulations	2
22. Recess phase	8



Recycling and waste management technician

Specialist skills

Position of the Occupational Training Profile	weeks/16.- 36. month
13. Safety regulations and operating instructions	4
14. Customer orientation	4
15. Commercial orientation	4
16. Waste and waste reception	9
17. Waste disposal procedures	11
18. Operation and maintenance	8
19. Material flows, logistics and organization	7
20. Quality assurance measures	6
21. Information technology	4
22. Legal requirements and technical regulations	4
Specialist areas	30



Pipe, Sewer and industrial service technician

Specialist skills

Position of the Occupational Training Profile	weeks/16.- 36. month
13. Job preparation, protection and clearance of the work surrounding field	16
14. Respiratory protection, fire prevention and explosion prevention	12
15. Quality assurance measures, safety engineering and environmental protection	4
16. Disposal	4
17. Machines and devices to the cleaning	19
18. Legal requirements and technical regulations	4
19. Cleaning	16
20. Maintenance	16
Specialist areas	32



Further training profiles

Certified senior water specialist



**Water supply engineering
technician**

**Certified senior wastewater
specialist**



**Sewage engineering
technician**

**Certified senior specialist for
recycling, waste
management and public cleansing**



**Recycling and waste management
technician**

**Certified senior specialist for pipe,
sewer and industrial service**



**Pipe, sewer and industrial
service technician**



Environmental Technicians

Positive experiences

- good acceptance
- security of employment (often)
- apprentices like the work and diversity of activities
- all partners work(ed) together (social partners, competent bodies, trainers, teachers etc.)
- good public relation
- the beginning of a long discussion about environmental protection and vocational training
- a lot of other countries are interested
- good curricula

Negative experiences

often unknown

prejudices about the field



Thank you for your attention!

Contact: Marion Krampe

Tel.: 0049/(0)228/107- 2231

E-mail: krampe@bibb.de