



Sectoral Human Capital Study II (BBKLII)

Water and wastewater management and reclamation sector

Results from the 1st
edition of the study

About the study



Project name

Sectoral Human Capital Study II
Water and wastewater management
and reclamation sector



Study objective

To increase the knowledge about
the current and future demand for skills
in the water and wastewater management
and reclamation sector



Research dates

1st edition of the study

September 2020 – May 2021

including quantitative research

April – May 2021



About the sector

Water and wastewater management and reclamation sector covers



water abstraction,
treatment and supply



activities related to
reclamation and other
services related to
waste management



sewage disposal
and treatment

Water and wastewater management and reclamation sector



5 534
businesses



86 595
employees

(Statistics Poland data from 2020)

Key business processes

Water and wastewater management



» abstraction, treatment
and supply of water



» collection and
treatment of sewage

Reclamation



- » identification of an environmental problem and identification of its technological and economic solutions



- » remediation/reclamation

Key positions

Water and wastewater management

- » water technologist
- » water intake and treatment plant operator
- » automation technician
- » water and sewage system fitter
- » electrician
- » wastewater technologist

Reclamation

- » technologist/biotechnologist
- » environmental engineer
- » designer/architect
- » technical director/project manager



Balance of skills

Assessment of skills' mismatch

– result of the comparison of a given skill's importance for a given position, as assessed by employers, with the level of that skill, as assessed by employees working in that position



» **balanced skills**

assessed as relatively more important by employers and scoring relatively high in employees' self-assessment – most are present in the following positions: **water technologist, wastewater technologist, electrician, technologist/biotechnologist**



» **surplus skills**

assessed as relatively less important by employers while scoring relatively high in employees' self-assessment – most are present in the following positions: **automation technician, designer/architect**



» **scarce skills**

assessed as relatively more important by employers while scoring relatively low in employees' self-assessment – most are present in the following positions: **water and sewage system fitter, technologist/biotechnologist**



» **sufficient skills**

assessed as relatively less important by employers and scoring relatively low in employees' self-assessment – most are present in the following positions: **environmental engineer, electrician**

Competence gap

Competence gap is defined as a situation where certain skills are relatively more important for the employer while, in employer's opinion, being difficult to obtain

Largest competence gap is observed in positions connected with the reclamation sector



technologist/biotechnologist



designer/architect



technical director/project manager

Employers believe that positions whose importance

is most likely to grow in the future are those from the reclamation subsector



environmental engineer

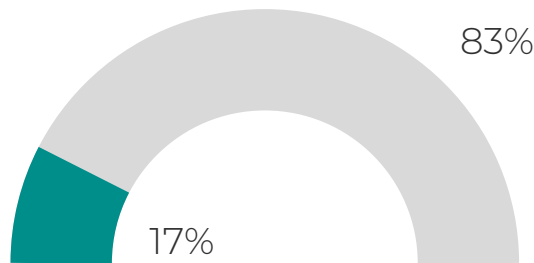


technologist/biotechnologist



technical director/project manager

Demand for employees



Every sixth employer (**17%**) was looking for employees in the last 12 months (May 2020 – May 2021)

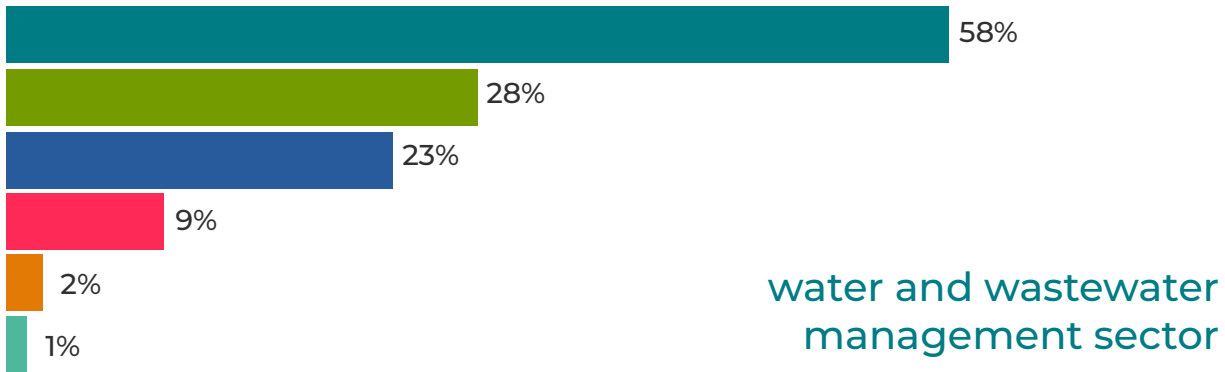
Almost a half (49%) of the employers who were looking for employees experienced recruitment difficulties, especially when looking for:

- » water and wastewater management sector: **water and sewage system fitters, electricians, water intake and treatment plant operators**
- » reclamation sector: **environmental engineers**

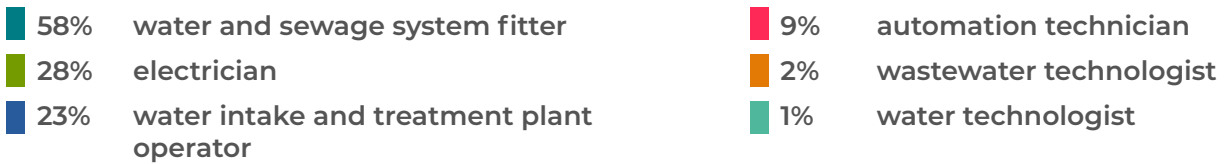
Reasons for recruitment difficulties

- » little interest in the job offer
- » candidates not meeting the expectations
- » employment conditions unacceptable for candidates who applied and met the expectations

Most demanded employees (May 2020 – May 2021)*

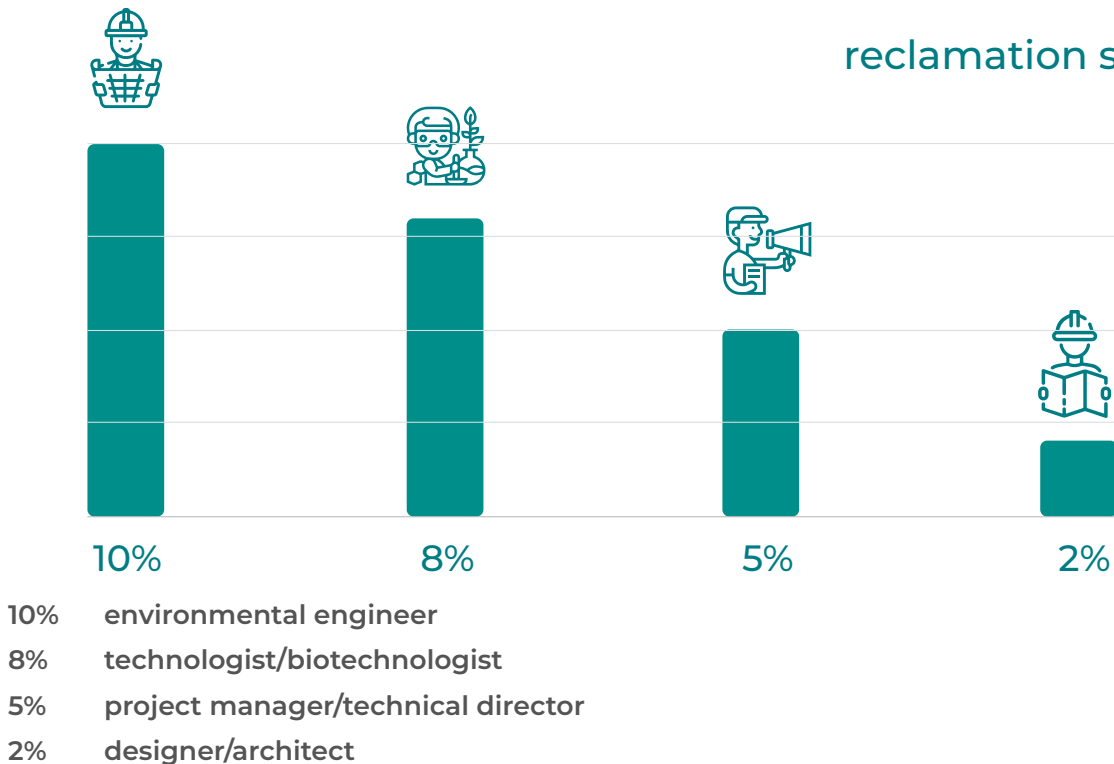


water and wastewater management sector



* Answers of employers who were looking for employees (n=139)

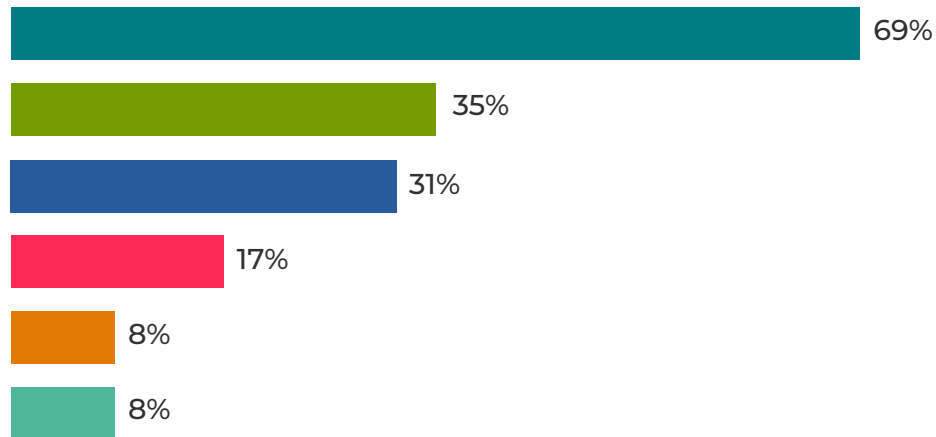
reclamation sector



Assessment of employees' skills

64% of companies assess the skills of their employees, with 32% assessing them systematically (once a year minimum)

Methods of employees' skills assessment*



-
- 69%** interview with supervisor
 - 35%** self-assessment of the accomplishment of goals set for oneself
 - 31%** obtaining information from employee's colleagues, superiors, subordinates, customers, etc.
 - 17%** descriptive assessment
 - 8%** employee tests
 - 8%** evaluation questionnaire
-

* Answers of employers who conduct employee skills assessment (n=490)

Skills that employees want to develop

Skills that employees in a given position want to develop	Water and wastewater management	Reclamation
general professional skills	12%	18%
knowledge of new technologies, programs, etc.	9%	14%
formal qualifications (e.g. electrical, fire protection, forklift operation)	11%	2%
soft skills (e.g. creativity, teamwork)	8%	13%
learning / improving the knowledge of a foreign language	4%	17%
design, construction, and repair of machines	5%	0%
analytical skills	1%	6%
other	2%	0%
I have sufficient skills, no need to improve	55%	38%


Methods of developing employees' skills in the workplace

Methods of developing employees' skills in the workplace in the last 12 months – answers of employers

instruction on operation of new equipment, machines, software

- » water and wastewater management: **45%**
- » reclamation: **63%**





internal courses and training, carried out by company employees

- » water and wastewater management: **32%**
- » reclamation: **43%**

direct observation of another employee's work

- » water and wastewater management: **28%**
- » reclamation: **41%**

job rotation

- » water and wastewater management: **25%**
- » reclamation: **34%**

courses and training provided by an external company

- » water and wastewater management: **19%**
- » reclamation: **30%**

e-learning courses

- » water and wastewater management: **19%**
- » reclamation: **21%**

coaching, mentoring

- » water and wastewater management: **17%**
- » reclamation: **26%**

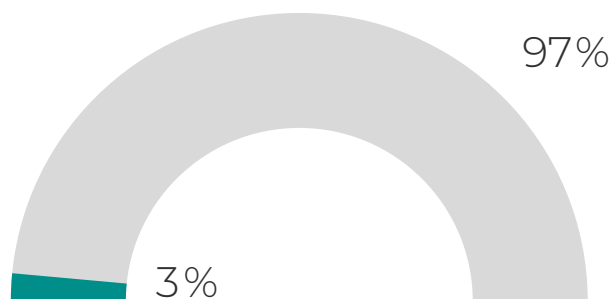
„open days” for teams, meetings of teams

- » water and wastewater management: **4%**
- » reclamation: **2%**

Demand for jobs in the sector – projections for the future

- » jobs connected with process and cost optimisation in the environmental context
- » jobs connected with the progressing computerisation of processes, use of modern information technologies, automation, and transition to remote process management
- » jobs connected with company and sector development, and jobs needed to ensure safety and crisis management
- » jobs related to development and improvement of human resources

3% of employers predict new positions may appear in the company in the next three years, while **97%** do not believe so



Penetration of jobs from other sectors

Sources of penetration

- » construction sector
- » information and communication technology sector
- » marketing communication sector

Areas of positions' penetration

- » life sciences
- » chemical sciences
- » technical sciences
- » social and economic sciences



Key challenges for the sector

Specialists – New technologies



- » Application of new technological solutions in the area of reclamation of contaminated and degraded soil and water will result in a large increase in demand for specialists with skills related to new technologies, including advanced skills in, among others, chemistry and biochemistry.

Adapting to new conditions



- » Companies active in the reclamation of contaminated and degraded land and water will need to implement new technologies and solutions to adapt to conditions arising from climate change and public policy guidelines.

Interdisciplinarity



- » The increasing interdisciplinarity of the sector and the complexity of technological processes will require cooperation of actors in interrelated fields: competence building through knowledge and know-how sharing, internal communication, implementation of joint projects, especially innovative projects.

Adapting to new conditions



- » Companies operating in the field of water and wastewater management will need to implement new technologies and solutions to adapt to the conditions resulting from climate change and public policy guidelines.

Integration




- » Actors in the water and wastewater management and reclamation sector will be integrating different products and services and offering comprehensive solutions for the water cycle, waste cycle, recycling and recovery.



Full survey results
are discussed in the study:

Sectoral Human Capital Study II
**Water and wastewater management
and reclamation sector**

Results from the first edition
of the survey (in Polish)

 [Branżowy Bilans Kapitału Ludzkiego II – branża
gospodarki wodno-ściekowej i rekultywacji –
PARP – Centrum Rozwoju MŚP](#)