Multiplier Events E1 Report of ORKON

Erasmus+ Project

Implementation of ECVET for Qualification Design in Drinking Water Treatment Plants and Sanitation for Pure Drinkable Water

"PURE-H2O"

TABLE OF CONTENTS

MULTIPLIER EVENT E1

PARTICIPANTS OF THE COURSE:

ORKON organised Multiplier Event E1 by 27 participants ;

The meeting took place in Ankara by ORKON on 15-16 August 2016 by 27 participants. It took place after the Transnational Meeting in Amsterdam. Most of the products of the Project were ready so this meeting is organised as a workshop, a detailed introduction of the Project and also the explanations of the products are done. It was a training for the participants of the meeting on the drinking water treatment plant subject and a discussion session took place at the meeting and exchange of experiences, knowhow and knowledge are shared. PURE-H2O Project is discussed in detail and all the products are introduced thoroughly, technical aspects are introduced and how to design a drinking water treatmnet plant is given. A very successful workshop preformed and it has been a good dissemination of the project. Participants were from the water sector, civil, environmental, electrical, mechanical, mining, geological engineers, architect, civil technicians, survey and mapping technicians, people from administration, tenders and managing departments.

NAME & PROFESSIONS LIST

1	Altan Dizdar	Engineer
2	Ertuğrul Dizdar	Engineer
3	Çağan Dizdar	Engineer
4	Cem Açıkkol	Architect
5	Sibel Doğankaya	Engineer
6	Ekin Akkaya	Engineer
7	Filiz Sarıaltun	Administration
8	Mayis Kurt	Engineer

9	Seçil Kocaer	Administration
10	Rasih Kormalı	Engineer
11	Yaşar Yıldırım	Technician
12	Aysun Bahadır	Technician
13	Ömer Tekpınar	Engineer
14	Cihan Saltık	Engineer
15	Behzat Göllü	Engineer
16	Feray Yoloğlu	Engineer
17	Ayşe Betül Demir	Engineer
18	Kadir Bahadır	Engineer
19	Can Karaşahin	Engineer
20	Enes Çetin	Technician
21	Serkan Dizdar	Technician
22	Mehtap Ataşoğlu	Engineer
23	Burak Koçak	Engineer
24	Hacer Akarsu	Engineer
25	Muammer Sonkaya	Engineer
26	Filiz Güldürü	Technician
27	Emre Kaan Koca	Technician

METHODOLOGY OF THE MULTIPLIER EVENT:

The books in English and in Turkish are distributed to the participants on the first day and the introduction of the project and the subject is done and accordingly it is required from the participants to look into the book for the discussion on the second day. The introductory materials are also distributed and web-site is introduced and asked them to point out their questions about the drinking water treatment plants. Then the courses took place on the 15th – 16th of August 2016. The methodology used in the course and the topics discussed were:

- The importance of constructing the drinking water treatment plants and the most recent techniques of the system is discussed,
- The usage of the products of PURE-H2O are shown and how to get the benefit from the project is explained,
- Sharing ideas on the most recent technology and scientific aspects took place,
- EQF (European Qualifications Framework) and ECVET principles are discussed in detail and usages of this system are shown and the benefits of the mobility of working all around Europe is explained,
- The professions' EQF's are shown to the participants and learning objectives of the training course are discussed,
- Training is given on the European Projects and the benefits are discussed and a short project preparation is shown,
- The economics of the systems are discussed and the differences between the existing systems are shown,
- The importance of sharing ideas and professions are explained by gathering at a European Project and the examples are shown,
- How to use e-learning modules are shown,
- Question and answer session took place.

A thorough introduction of the project PURE-H2O with its products and training modules have been taught to the participants and it is seen that a very useful set of training materials have been prepared for the sake of water sector and for the drinking water treatment plant. Participants got interested with the content of the project and also with the idea of performing a European Union project.

Some participants found e-learning modules very attractive and very useful for the self-learning and advised us to give this course to water workers at certain periods,

We required from the participants to work on the given material, afterwards it is understood that we made a comprehensive and understandable project as, as far as we saw most of the participants understood what is aimed to be given in the project.

Below questionnaire is distributed to the participants, and it is asked from them to answer the questions.

RESULTS OF THE COURSE:

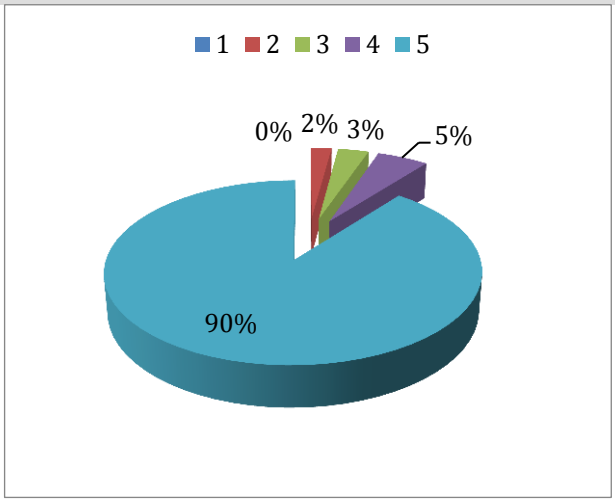
Evaluation questionnaire is distributed to the participants and following results are obtained from the participants :

PURE-H2O MULTIPLIER EVENT 1 QUESTIONNAIRE

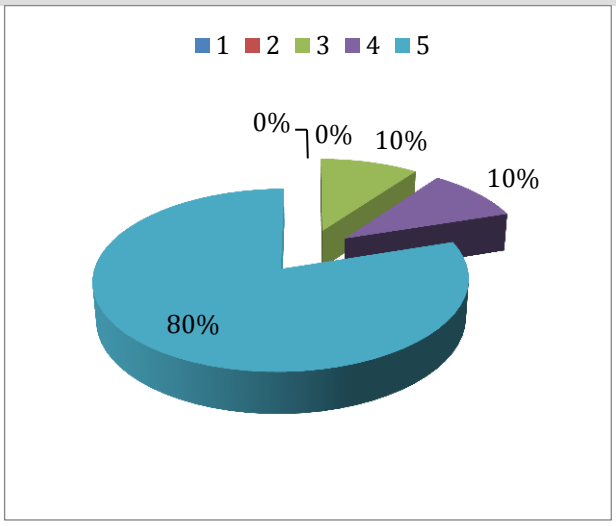
Evaluation scale:

1 – not at all satisfied/fully disagree; 2 – unsatisfied/disagree; 3 – partly satisfied/partly disagree; 4 – satisfied/agree; 5 – fully satisfied/fully agree

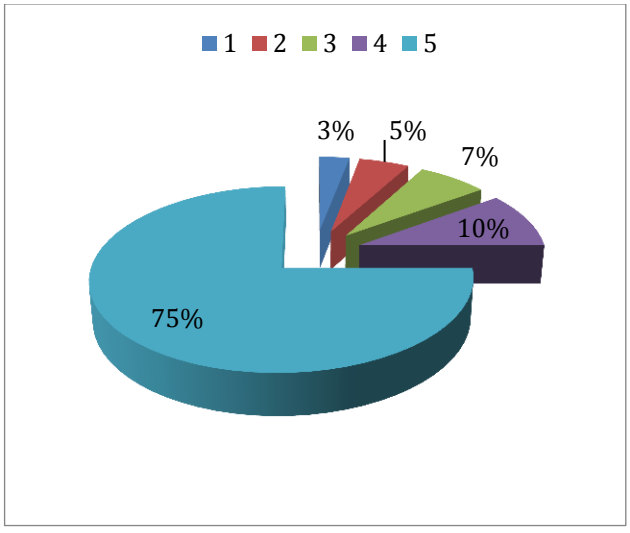
1. Organisation of the event



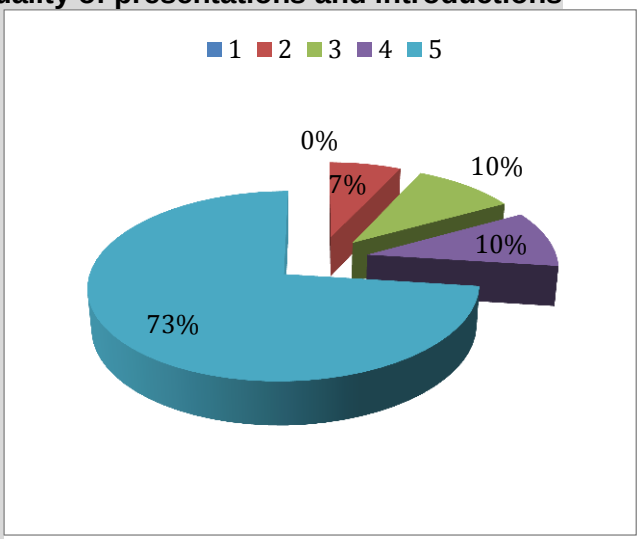
2. Venue



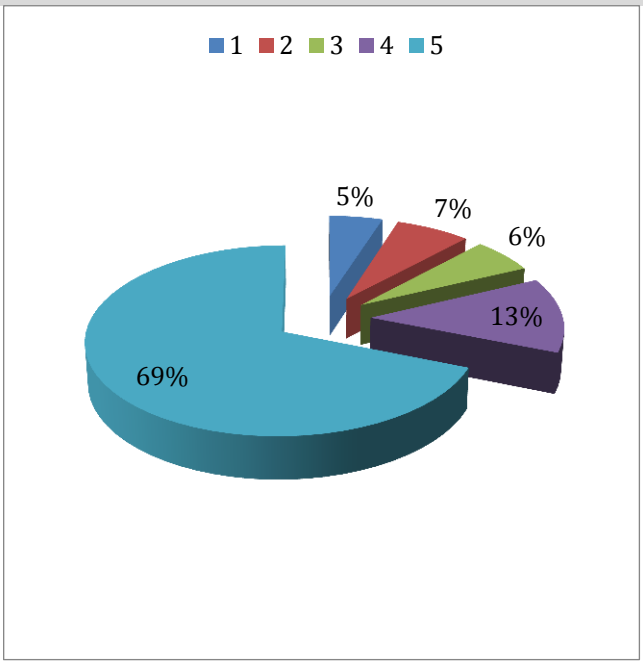
3. Quality of the material and products provided



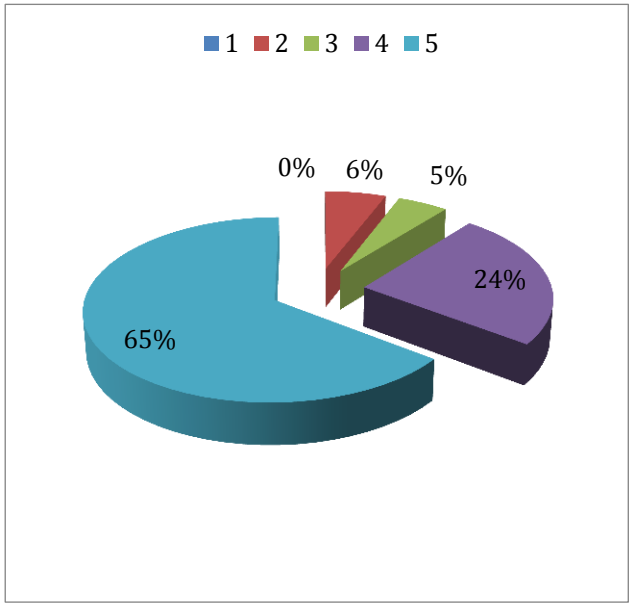
4. Quality of presentations and introductions



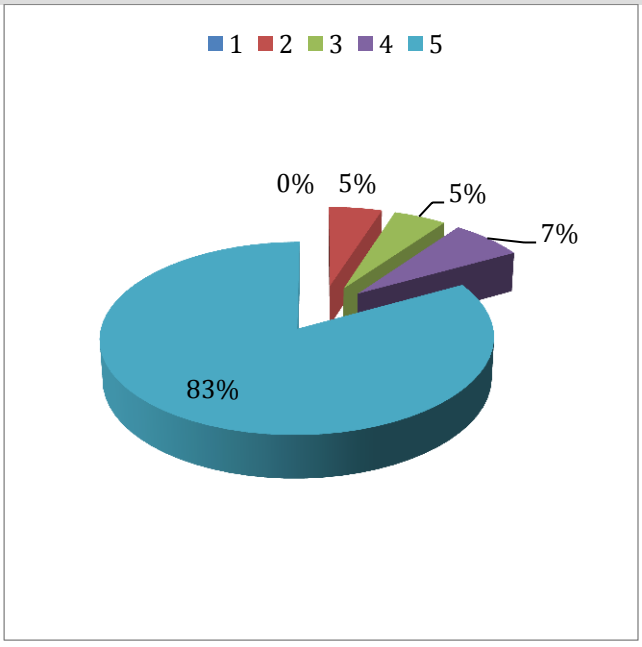
5. Usefulness of presentations to you



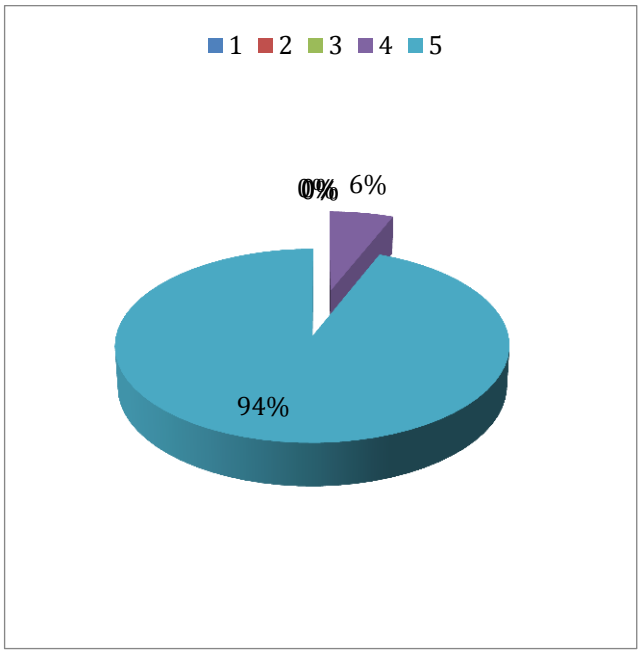
6. Clarity of answers and comprehensibility



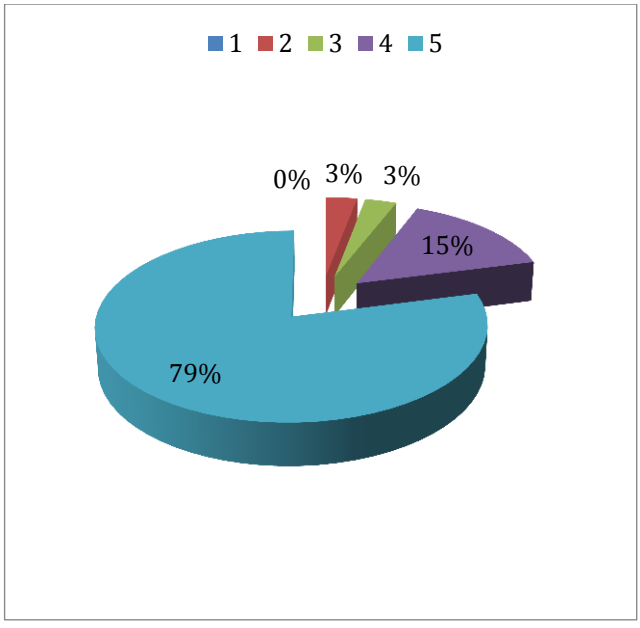
7. Quality of the discussions, questions and answers,



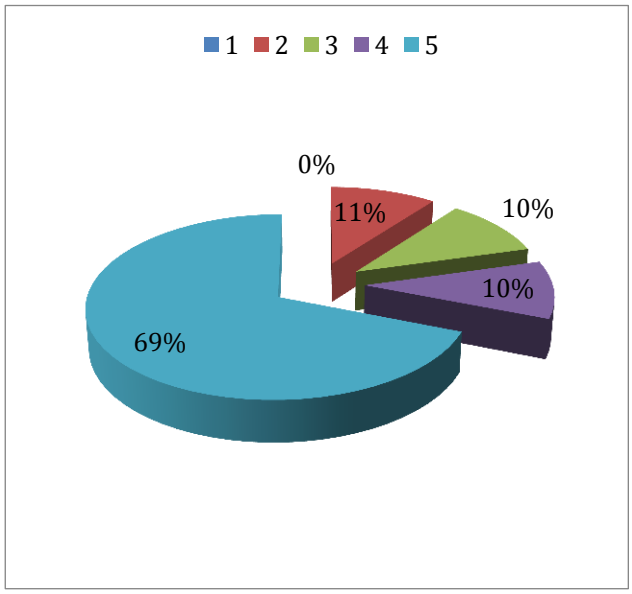
8. Dialogue between the participants



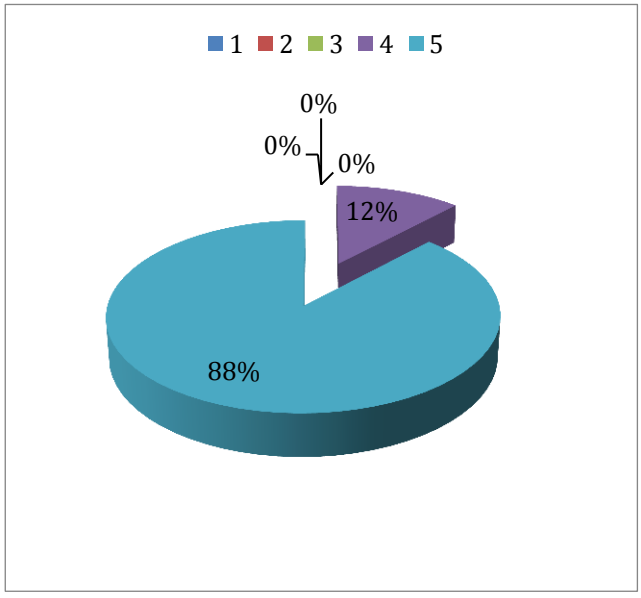
9. Competence areas are very well defined in PURE-H2O Project.



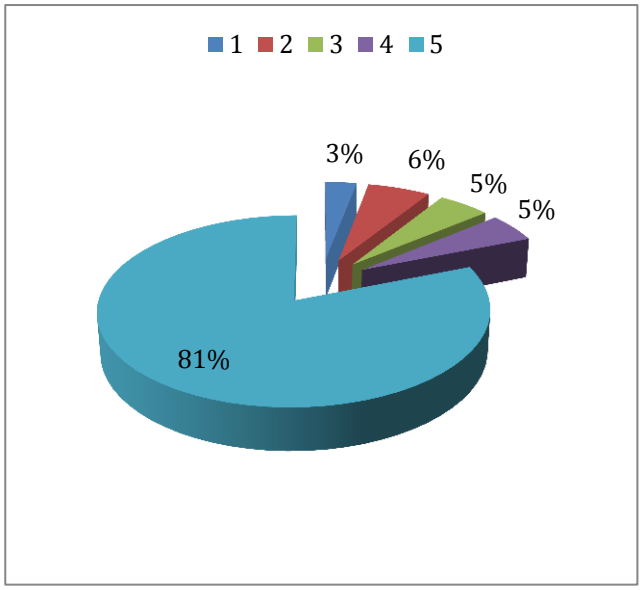
10. The steps of competence development are clearly described



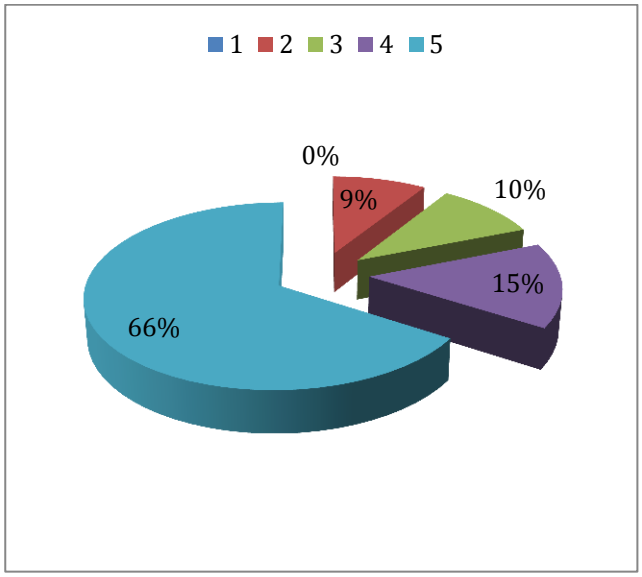
11. Competence areas are chosen suitable to PURE-H2O subject



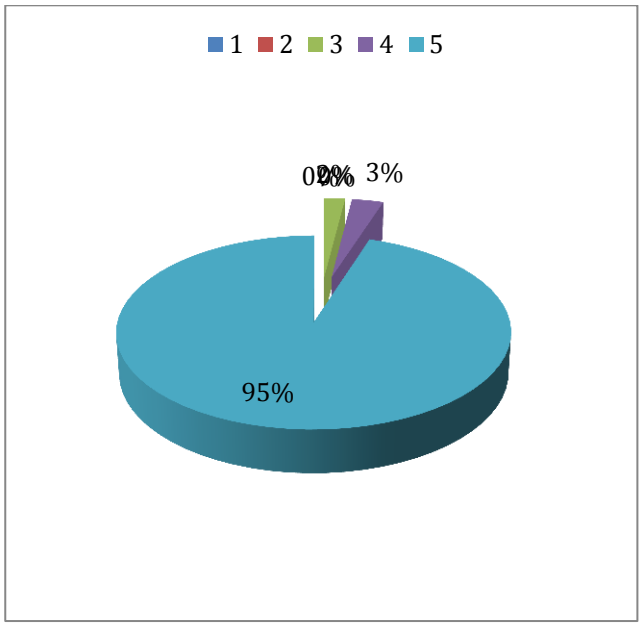
12. The scope of the course refers to my vocational interest.



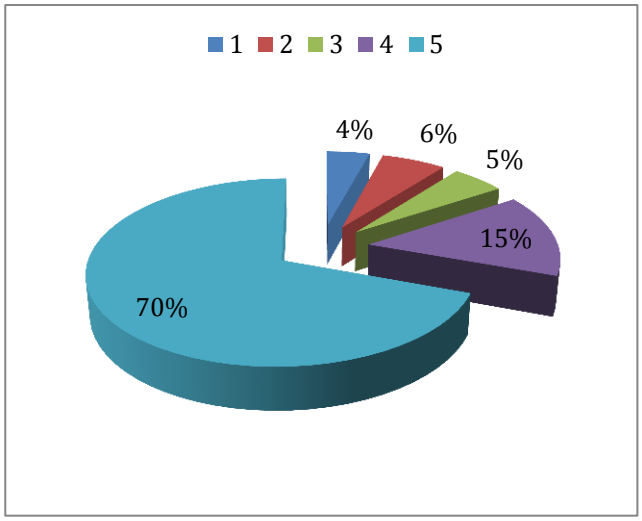
13. The exercises are clear and intuitive.



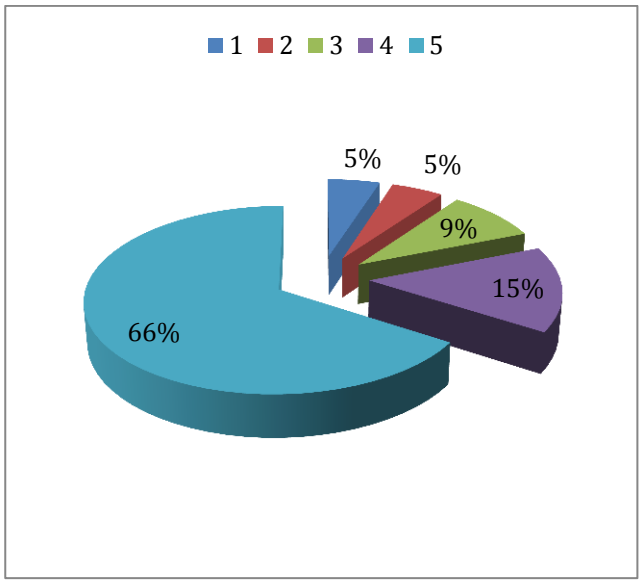
14. Photos and pictures in the book and web-site are well selected and relevant.



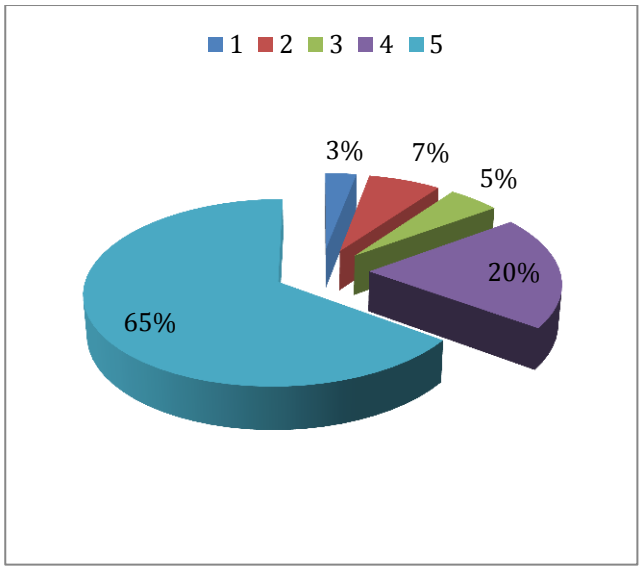
15. The outline of the project is user-friendly.



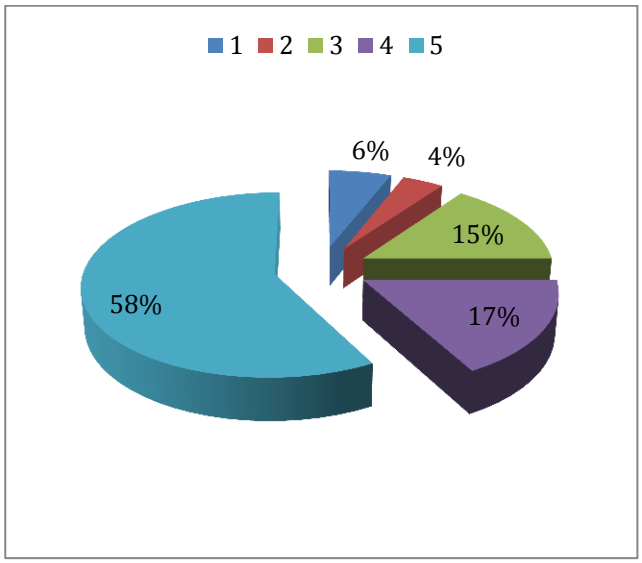
16. The content of the course is clear and understandable both for water trainers and trainees.



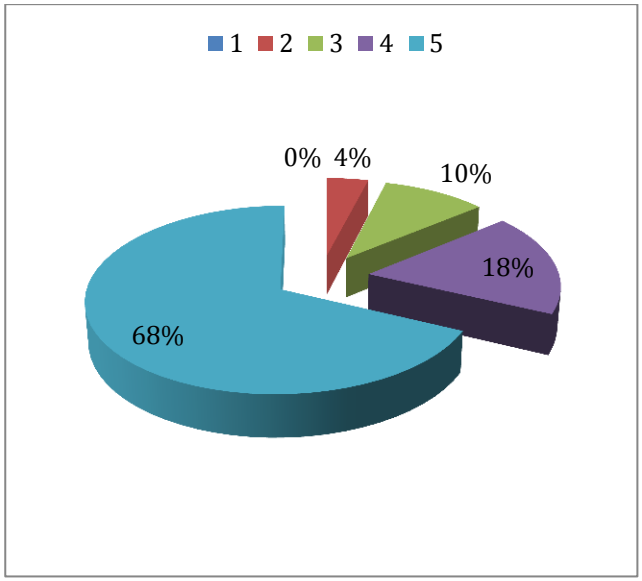
17. I am going to use the given knowledge in my practical work.



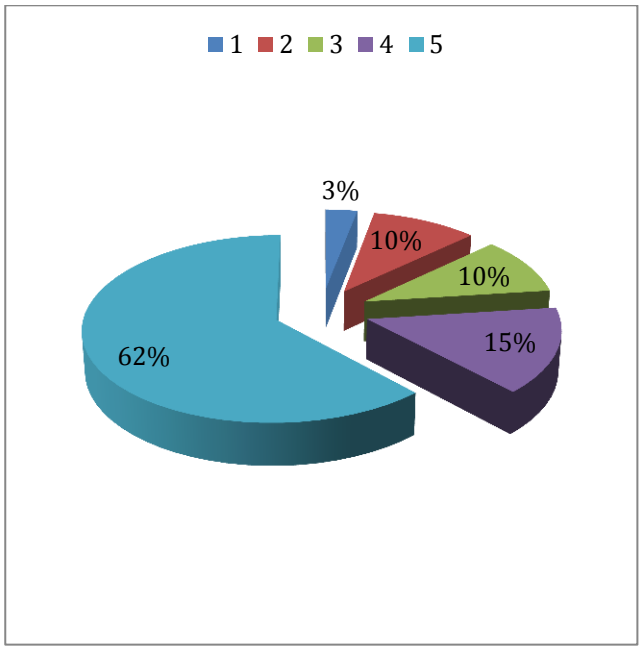
18. I understood what is EQF and ECVET and know the benefits of their principles.



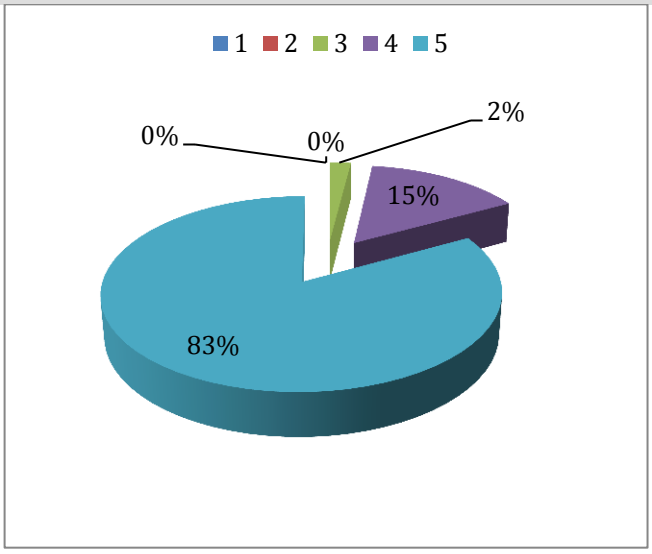
19. “Mobility is through EQF”, now I know the meaning.



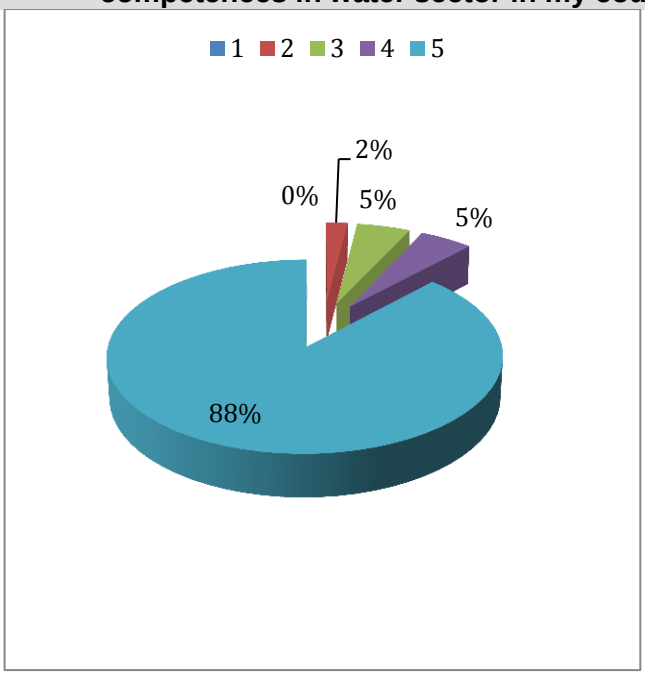
20. We design the projects in the way explained in PURE-H2O Project.



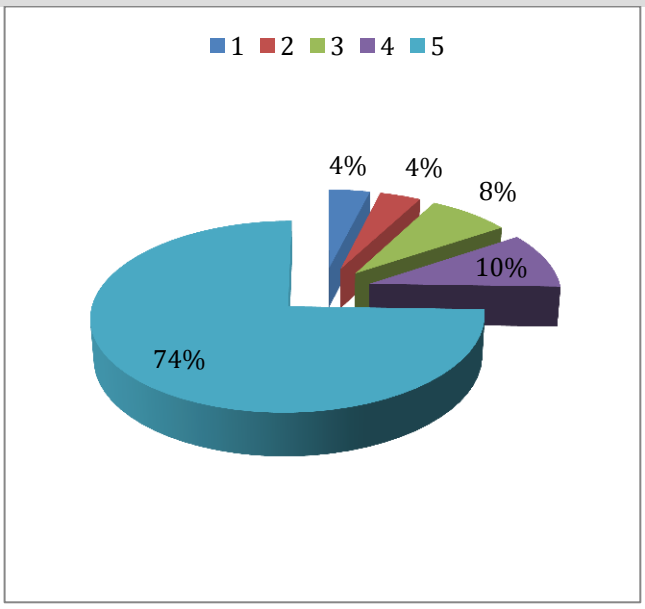
21. PURE-H2O Project shows necessary steps of competence development



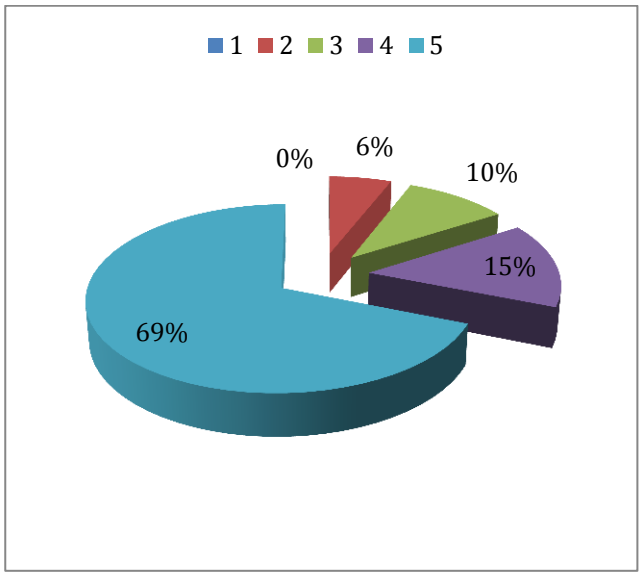
22. Overall, PURE-H2O project provides a satisfactory description of competences in water sector in my country



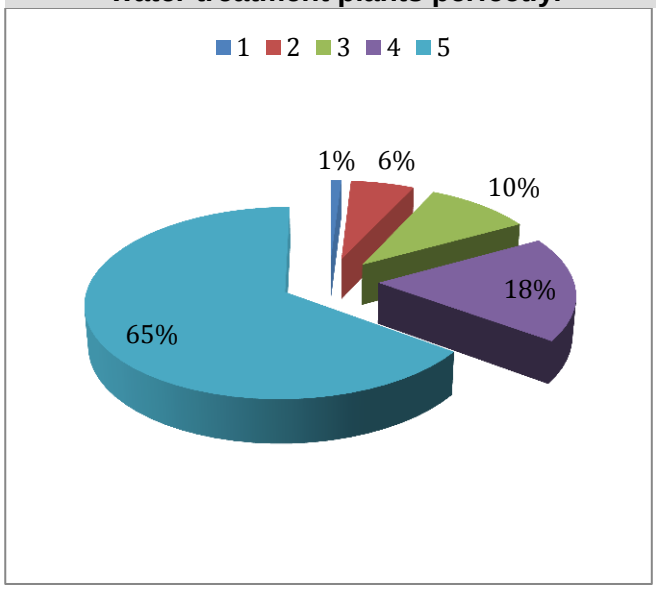
23. The Competences are not too complicated to understand



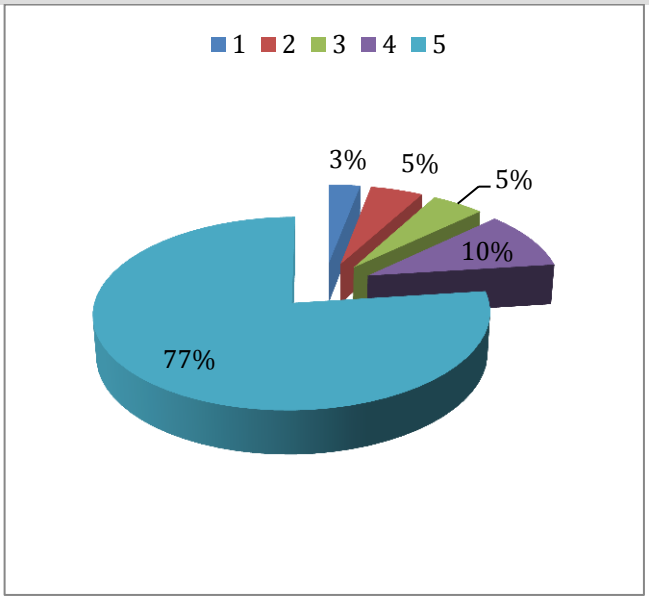
24. **PURE-H2O Project helps me define which competences we already offer to our trainees and which ones we may decide to offer in the future.**



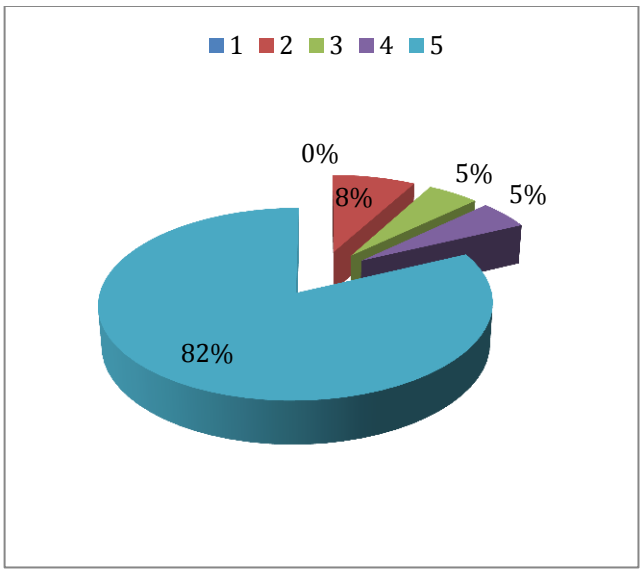
25. PURE-H2O Project is defining the information about the drinking water treatment plants perfectly.



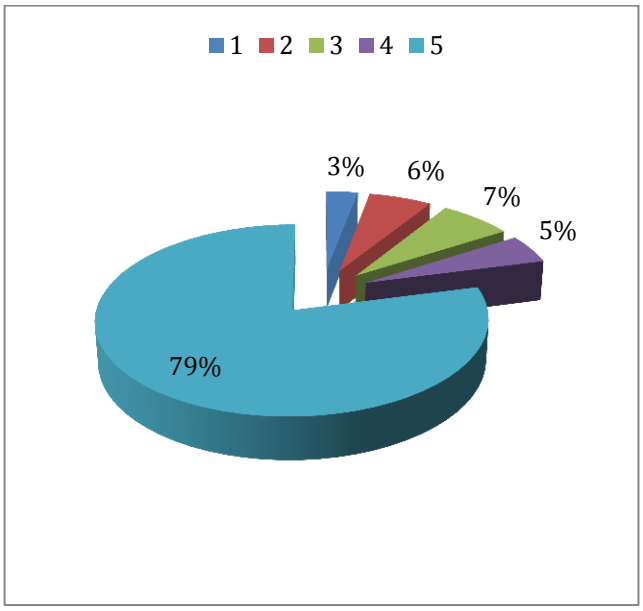
26. How do you estimate the training possibilities in the field of PURE-H2O project?



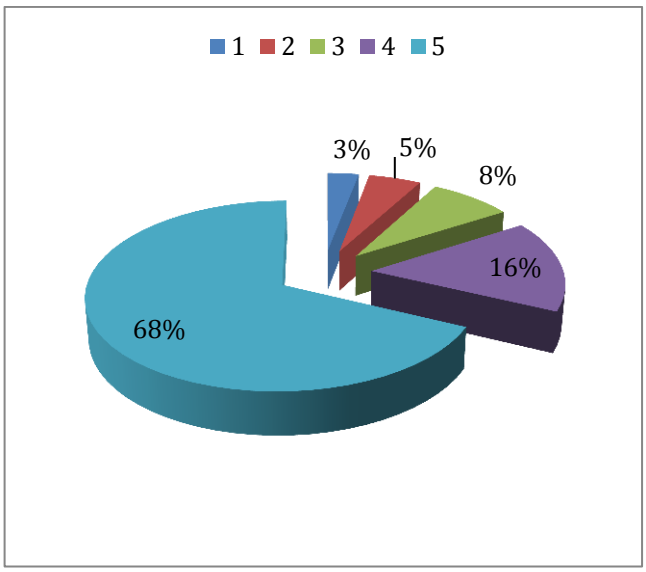
27. Are you satisfied with the provided Project documents (on-line and/or off-line)?



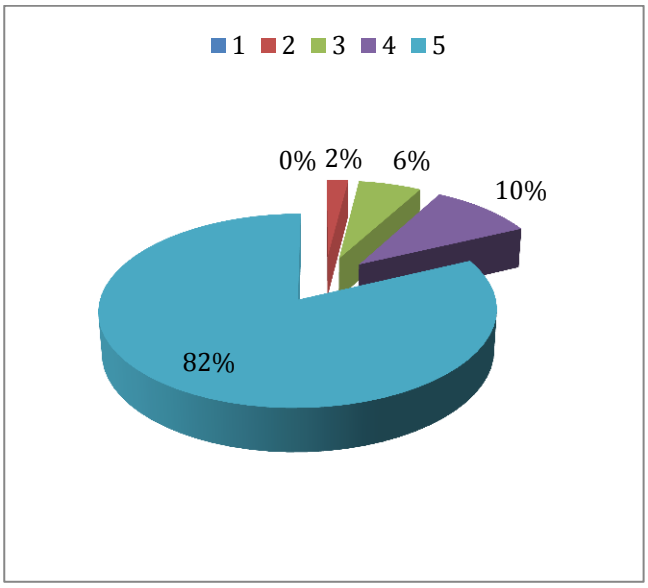
28. Do you think the PURE-H2O competence model could contribute to your job performance making it easier and more productive?



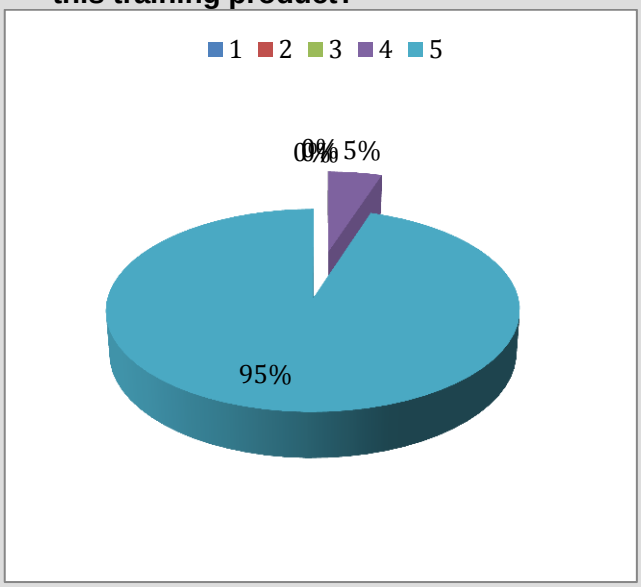
29. PURE-H2O Project helps me define which competences we already offer to our trainees and which ones we may decide to offer in the future.



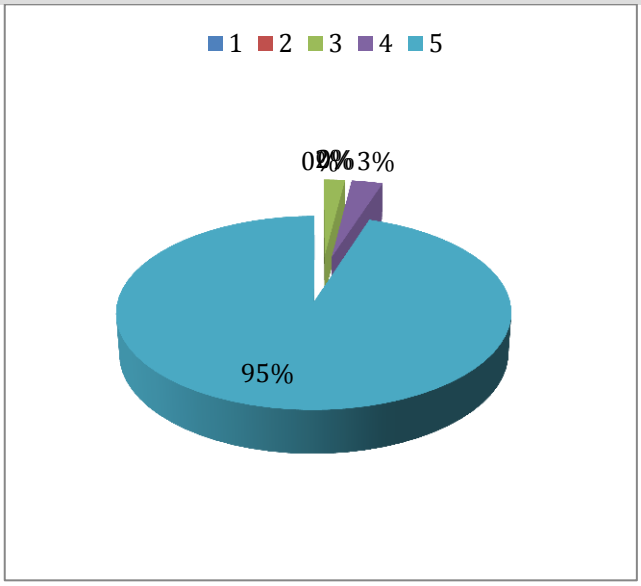
30. Web-site www.pure-h2o.org is designed very effectively and easy to find everything on it.



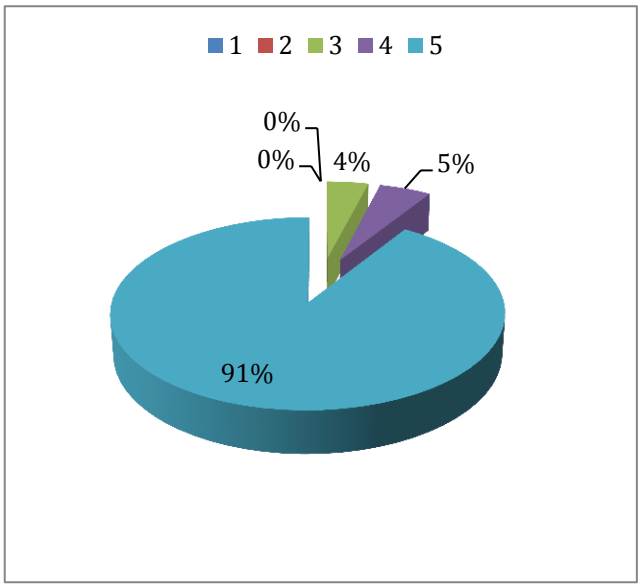
31. Do you need any pre-requisites (e.g. specific education, practical experience, etc.) to be able to use this training product?



32. I will advise PURE-H2O Project and its products to my colleagues to read and study on them !



33. On a scale of 1 (lowest) to 5 (highest), what is your overall rating of today's event?



34. What did you like the most about today's event?

Good project, good work, I liked the ambience at the meeting also,

These workshops must be repeated time to time, it is good for sharing the experiences, ideas,

I learned a lot of things, I have to work on them,

Next time, I would like to take part in EU projects also,

It was a well organised event, the place was good too,

Firstly, I thought it should be a time consuming meeting but afterwards I realized that I benefit a lot from the meeting,

The porducts are good and according to me they have to distributed around to spread the knowledge also to other people.

I will advise PURE-H2O project to my colleagues, it will be good for them to know about this project.

35. What did you like the least about today's event?

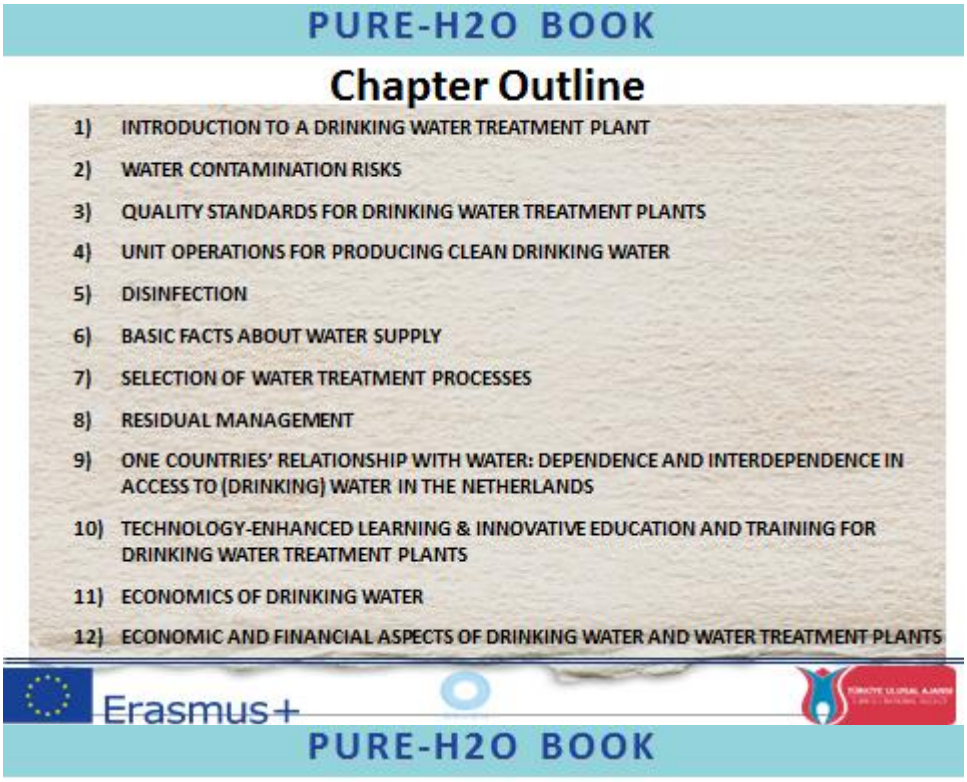
The presentation was too long, I prefer to study on my own,

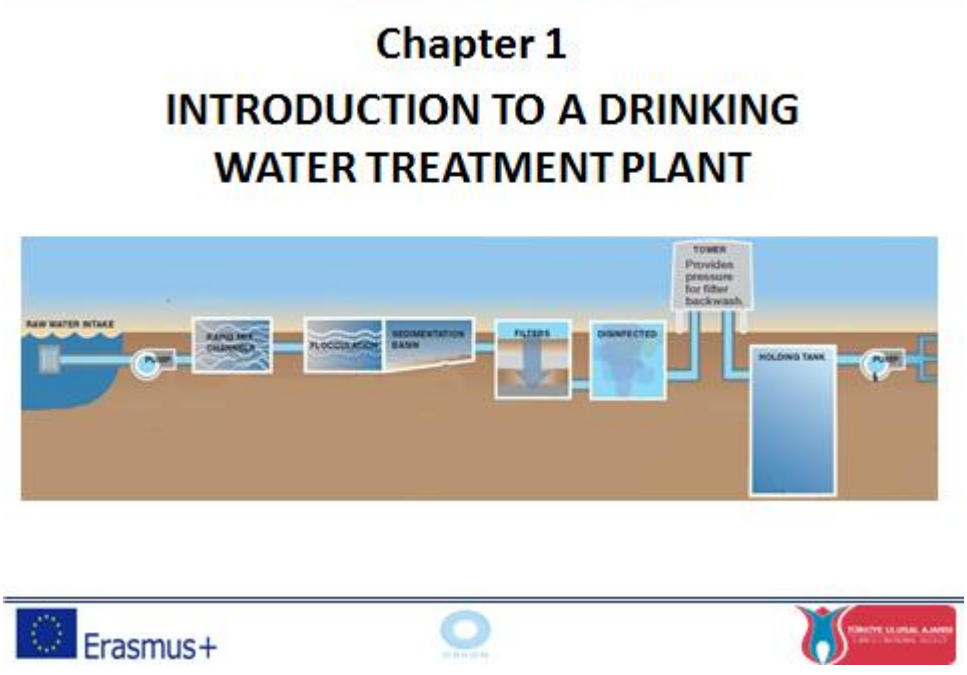
Irrelevant for me, I am not dealing with drinking water treatment plants,

There were too many questions asked, no need for that much of questions according to me.

PURE-H2O MULTIPLIER EVENT CONTENT :

INTRODUCTION OF PURE-H2O PROJECT IS PERFORMED FIRSTLY, THEN THE INTRODUCTION OF EU PROJECTS ARE DISCUSSED AFTERWARDS:

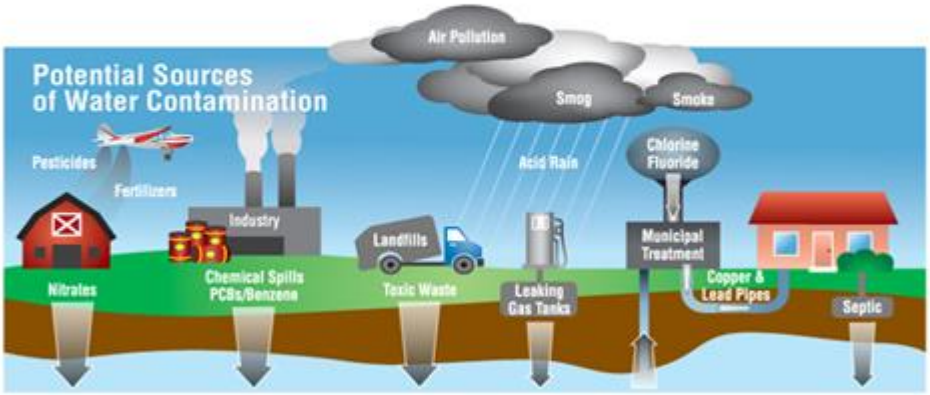




PURE-H2O BOOK

Chapter 2

WATER CONTAMINATION RISKS



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PURE-H2O BOOK

Chapter 3

QUALITY STANDARDS FOR DRINKING WATER TREATMENT PLANTS

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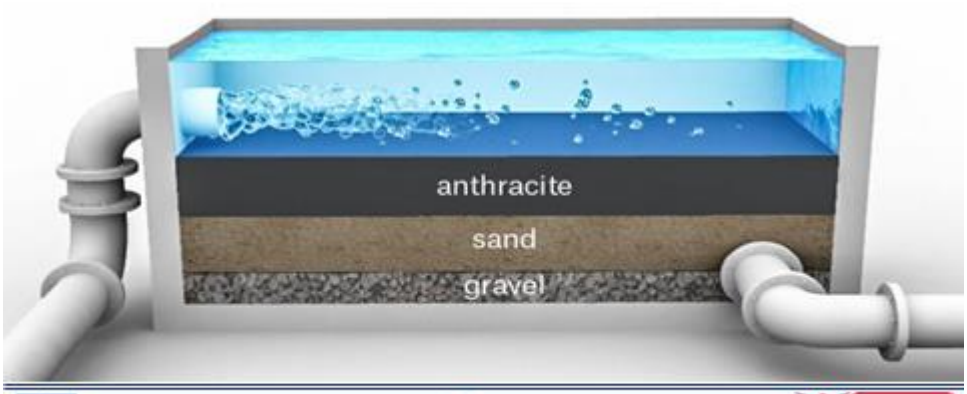
Chapter 4

UNIT OPERATIONS FOR PRODUCING CLEAN DRINKING WATER



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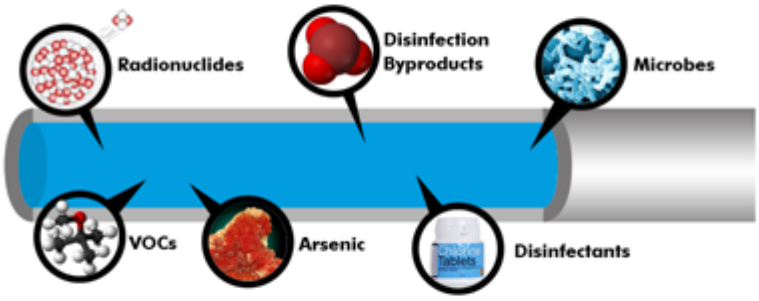
PURE-H2O BOOK

Chapter 5

DISINFECTION



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PURE-H2O BOOK

Chapter 6

BASIC FACTS ABOUT WATER SUPPLY

PURE-H2O BOOK

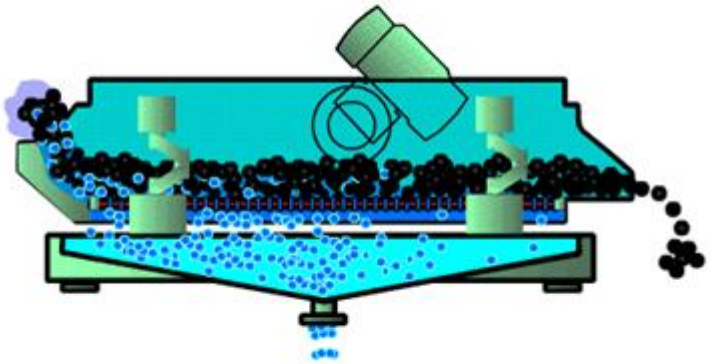
Chapter 7

SELECTION OF WATER TREATMENT PROCESSES

PURE-H2O BOOK

Chapter 8

RESIDUAL MANAGEMENT



PURE-H2O BOOK

Chapter 9

ONE COUNTRIES' RELATIONSHIP WITH WATER: DEPENDENCE AND INTERDEPENDENCE IN ACCESS TO (DRINKING) WATER IN THE NETHERLANDS

PURE-H2O BOOK

Chapter 10

TECHNOLOGY-ENHANCED LEARNING & INNOVATIVE EDUCATION AND TRAINING FOR DRINKING WATER TREATMENT PLANTS

coursera

edX

OPEN DISCOVERY SPACE

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Chapter 11

ECONOMICS OF DRINKING WATER

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ORKON

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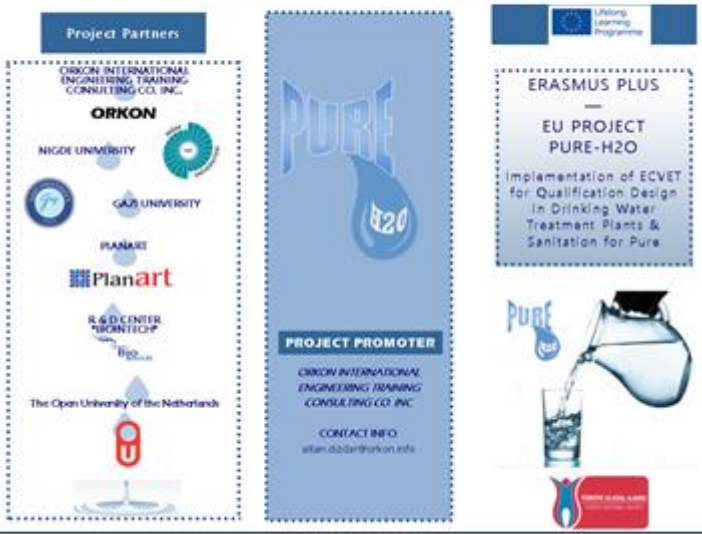
Chapter 12
ECONOMIC & FINANCIAL ASPECTS OF DRINKING WATER & WATER TREATMENT PLANTS

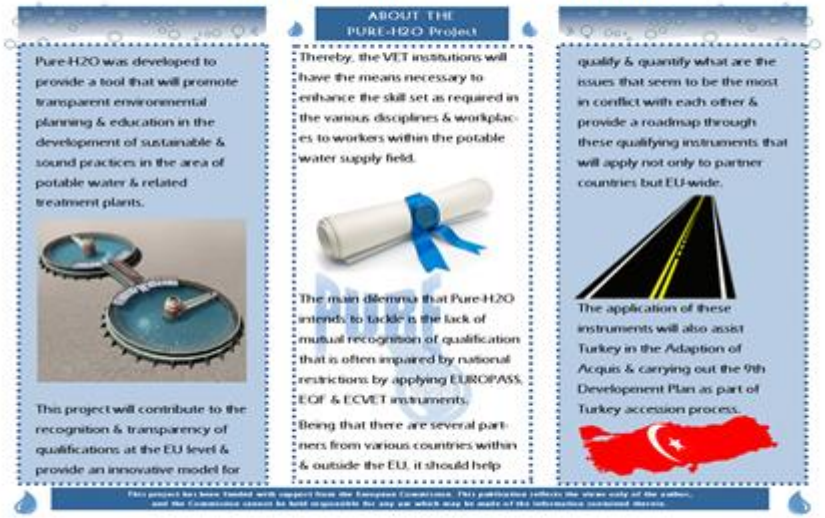
PURE-H2O TRANSLATIONS

Exterior of First Leaflet: English



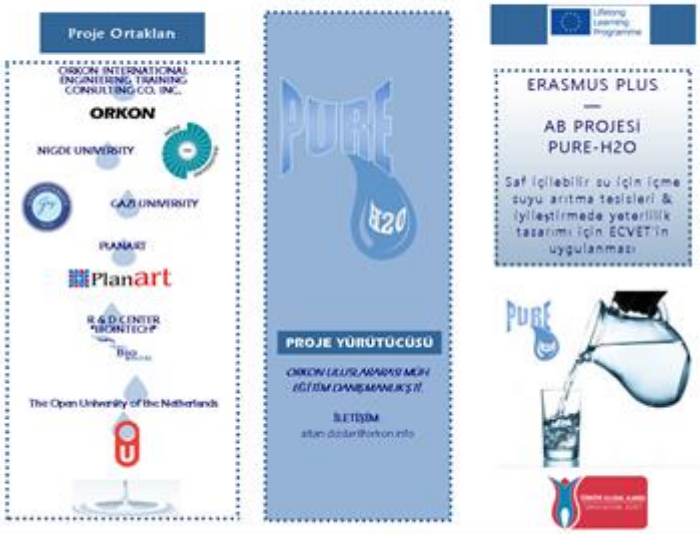
PURE-H2O TRANSLATIONS

Interior of First Leaflet: English



PURE-H2O TRANSLATIONS

Exterior of First Leaflet: Turkish

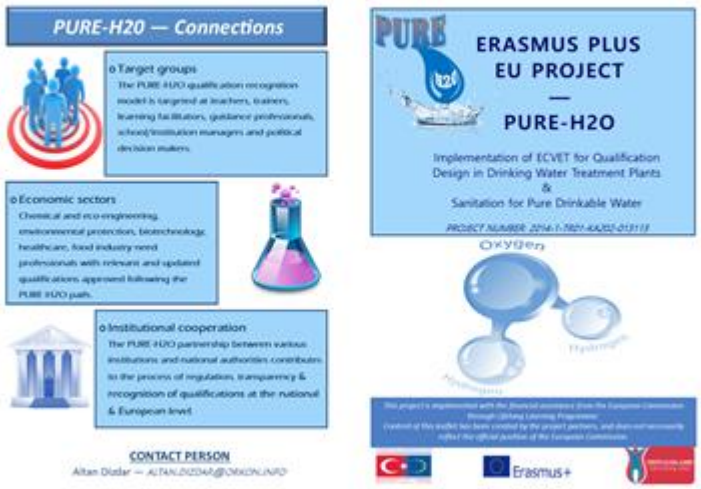


PURE-H2O TRANSLATIONS

Interior of First Leaflet: Turkish

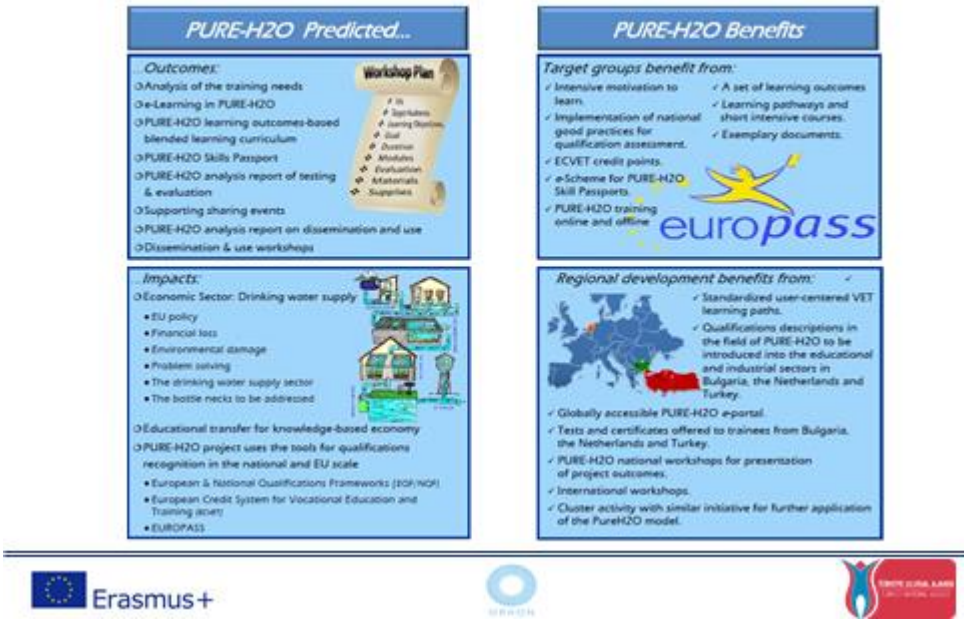
PURE-H2O TRANSLATIONS

Exterior of Second Leaflet: English



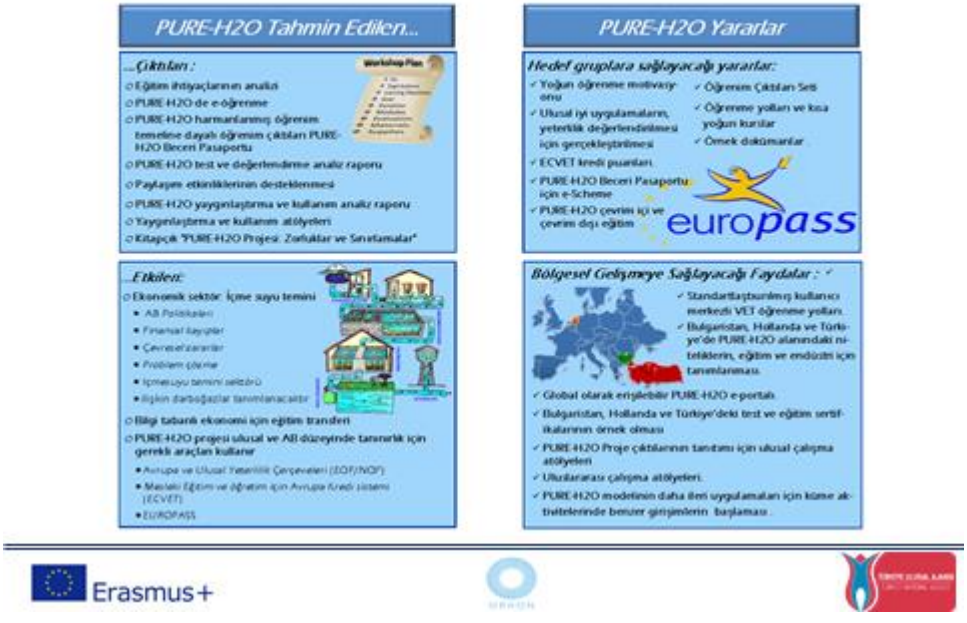
PURE-H2O TRANSLATIONS

Interior of Second Leaflet: English



PURE-H2O TRANSLATIONS

Interior View of Second Leaflet: Turkish

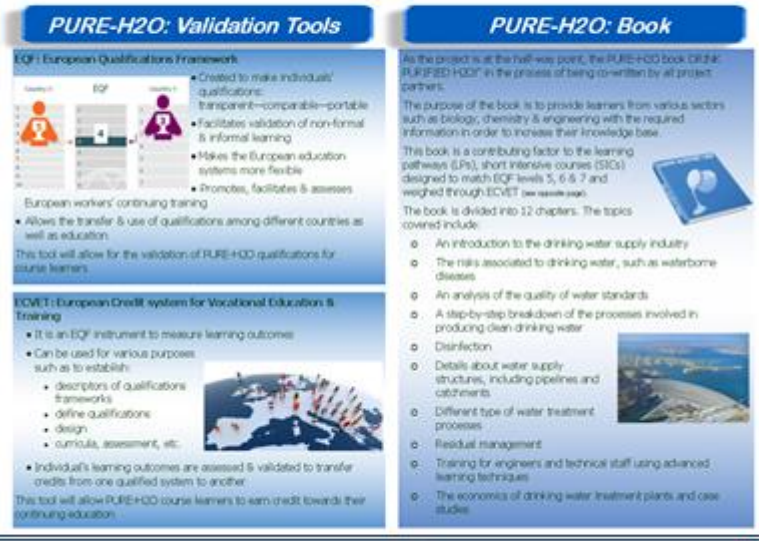


PURE-H2O TRANSLATIONS

Exterior of Second Leaflet: Turkish

PURE-H2O TRANSLATIONS

Interior of Third Leaflet: English



PURE-H2O TRANSLATIONS

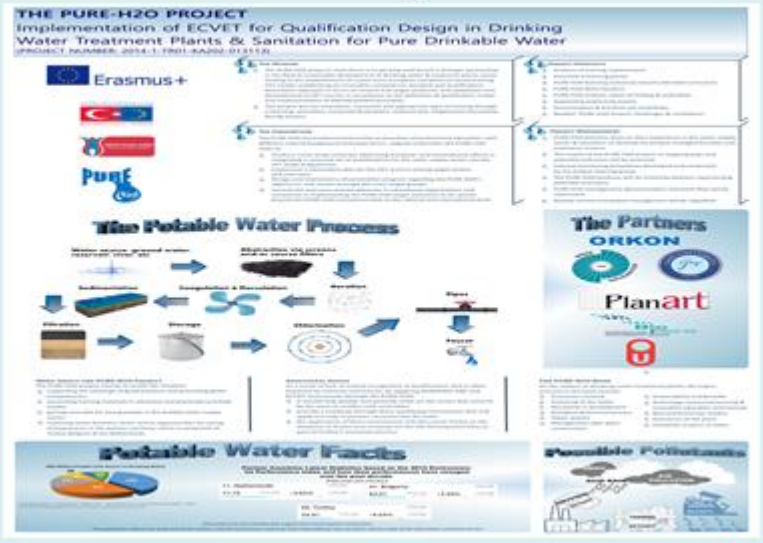
Exterior of Third Leaflet: Turkish

PURE-H2O TRANSLATIONS

Interior of Third Leaflet: Turkish

PURE-H2O TRANSLATIONS

Poster: English



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PURE-H2O TRANSLATIONS

Poster: Turkish

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PURE-H2O PROJECT ACTIVITIES

Project Activities: Intellectual Outputs

IO#	Output Title	Leading Organization
#1	Survey and Analysis Report on Drinking Water Supply Sector VET Requirements	ORKON
#2	PURE-H2O e-learning Portal	BIOINTECH
#3	Learning Outcomes Based Blended Learning Curriculum	BIOINTECH
#4	PURE-H2O Skills Passport	GAZI UNIVERSITY
#5	Analysis Report of Testing & Evaluation	OPEN UNIVERSITY OF THE NETHERLANDS
#6	Analysis Report on Dissemination & Use	ORKON
#7	Booklet "Pure H2O Project: Challenges & Limitations"	PLANART

PURE-H2O INTELLECTUAL OUTPUTS

INTELLECTUAL OUTPUT 1

Survey & Analysis Report:
Drinking Water Supply Sector VET Requirements
COORDINATOR: ORKON

National Reports will be prepared for Bulgaria (BIOINTECH), the Netherlands (OUNL) & Turkey (PLANART)

TOC of the National Reports:

- Introduction of water systems
- Background and needs analysis
- Ways of purification of water in the country
- Water treatment plants
- EU and national legislations
- Professions and technicians working in the sector
- Specification of target groups; end potential users of the project, & partner countries
- VET Requirements in the sector
- Analysis of learning outcomes, EQF levels

Erasmus+ ORKON

PURE-H2O INTELLECTUAL OUTPUTS

INTELLECTUAL OUTPUT 2

PURE-H2O e-Learning Portal

COORDINATOR: BIOINTECH

Erasmus+ BIOINTECH

PURE-H2O INTELLECTUAL OUTPUTS

PURE-H2O e-Learning Portal

- This result includes design, set up and functioning of PURE-H2O e-based system for project implementation.
- PURE-H2O qualifications e-platform providing a frame for establishment of an algorithm for competence development in Drinking water supply sector;
- Set up of descriptive table for certification units comprising the following parts: knowledge, skills, wider competence.
- The new type of b-learning structure will be based on ECVET crediting plan as well as arranged in learning pathways corresponding to different qualification levels (5, 6, 7) of EQF system.

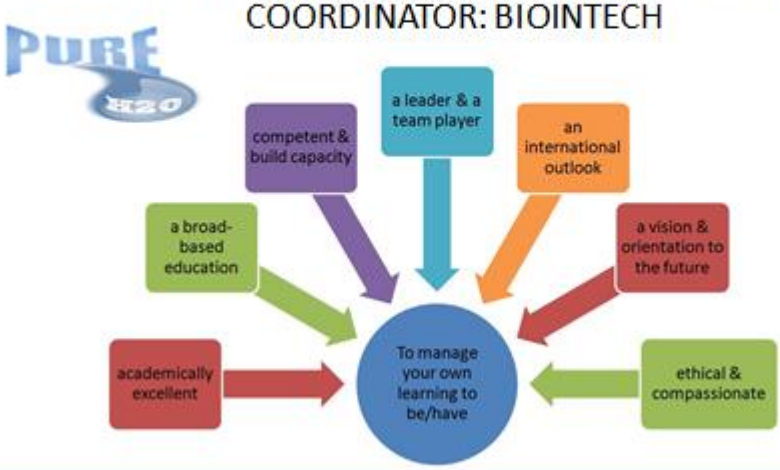
Erasmus+ BIOINTECH

PURE-H2O INTELLECTUAL OUTPUTS

INTELLECTUAL OUTPUT 3

Learning Outcomes-Based Blended Learning Curriculum

COORDINATOR: BIOINTECH



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PURE-H2O INTELLECTUAL OUTPUTS

INTELLECTUAL OUTPUT 3

Learning Outcomes-Based Blended Learning Curriculum

COORDINATOR: BIOINTECH

- The result comprises creation of blended learning program in water supply sector, comprising 12 courses concerning characteristic, operation , management and economics of Drinking Water Treatment Plants.
- The built comprehensive learning outcome based units are designed to give detailed view of knowledge, skills and wider competence required for the target groups. A certification process based on ECVET allocation will be set up.
- The knowledge will be available as Learning Pathways (LPs) and Short Intensive Courses (SICs) designed to match EQF levels 5, 6 and 7, and weighed through ECVET.
- The qualification description will be made in accordance to ISCO/ESCO system.

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PURE-H2O INTELLECTUAL OUTPUTS

INTELLECTUAL OUTPUT 4

PURE-H2O Skills Passport

COORDINATOR: GAZI UNIVERSITY

Erasmus+ GAZI UNIVERSITY

PURE-H2O INTELLECTUAL OUTPUTS

PURE-H2O Skills Passport

This result represents a general frame for gathering of documents certifying completed training and acquired competence/qualification in water supply sector. It will facilitate the mobility process and comprises the following:

- ❑ Currently existing Europass documents (e.g., CV, Certificate supplements, Diploma supplements, Europass mobility certificate, EU language certificate)
- ❑ Work experiences or traineeships certificates
- ❑ Non-formal education and training certificates (such as in-company training)

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PURE-H2O INTELLECTUAL OUTPUTS

PURE-H2O Skills Passport

- Informal learning certificates (e.g., from job experiences, leisure activities or volunteer work)
- All other relevant internationally recognized certificates

The system frame will be set up following the established common for the project criteria and procedures, and standard quality indicators.

Erasmus+ **GAZI UNIVERSITY**

PURE-H2O INTELLECTUAL OUTPUTS

INTELLECTUAL OUTPUT 4

Analysis Report of Testing & Evaluation

COORDINATOR: OPEN UNIVERSITY OF NETHERLANDS

Erasmus+ **OPEN UNIVERSITY OF NETHERLANDS**

PURE-H2O INTELLECTUAL OUTPUTS

Analysis Report of Testing & Evaluation

The evaluation of project results/outcomes will be conducted through testing/evaluation and tuning process. Evaluation & testing reports will be delivered which will include:

- ❑ Measures foreseen for the final tuning of the planned outcomes
- ❑ Evaluation Reports of meetings and activities-intellectual outputs
  - ❑ 4 meetings evaluation reports
- ❑ Testing reports of the multiplier events and intellectual outputs
  - ❑ 4 evaluation reports for each 6 months of the project
- ❑ Preparation of questionnaires for E1 (evaluation multiplier event) and E2 (workshop multiplier event)

Erasmus+ OPEN UNIVERSITY OF NETHERLANDS

PURE-H2O INTELLECTUAL OUTPUTS

INTELLECTAL OUTPUT 6

Analysis Report on Dissemination and Use

COORDINATOR: ORKON + GAZI UNIVERSITY

Erasmus+ ORKON

PURE-H2O INTELLECTUAL OUTPUTS

Analysis Report on Dissemination and Use

- Dissemination activities by each partner is required
- The partners will report their dissemination activities after their dissemination events
- Promotional materials are produced, either the English versions or the translated ones will be used for dissemination purposes

ORKON

PURE-H2O INTELLECTUAL OUTPUTS

INTELELCTUAL OUTPUT 7

Booklet "PURE-H2O Project: Challenges & Limitations"

COORDINATOR: PLANART

PLANART

PURE-H2O INTELLECTUAL OUTPUTS

BOOKLET
"PURE-H2O Project: Challenges & Limitations"

- The aim of this output is to evaluate the achievements compared to the project objectives and seek for successes and lessons learned of the PURE-H2O project.
- Assess the structure and level of VET education in the Drinking water supply sector
- Conduct document analysis on project activities and its quarterly reports and policy and legal documents related with strengthening the VET in the area

Erasmus+ **PLANART**

EUROPEAN UNION PROJECTS
PURE-H2O

- Erasmus + Project
- Subject: "**Implementation of ECVET for Qualification Design in Drinking Water Treatment Plants and Sanitation for Pure Drinkable Water**"
- Partnership: Turkey, Bulgaria, Germany
- www.pure-h2o.org

Erasmus+

Education and Culture
Leonardo da Vinci

ECO-MATRIX

- LLP-LdV Transfer of Innovation Project
- Subject: "Vocational Qualification Transfer System in Ecology"
- Partnership: Turkey, Bulgaria, Austria, Greece



Education and Culture
Leonardo da Vinci

EC-AQUA

- LLP-LdV Transfer of Innovation Project
- Subject: "Implementation of ECVET for qualification design in sanitation and water loss management
- Transfer of PROWAT Project coordinated by ERBIL
- www.pro-wat.com
- Partnership: Bulgaria, Turkey, France

SHANIME

- LLP-LdV Transfer of Innovation Project
- Subject: “Preventing Accidents in Construction – Health and Safety Multimedia Animated Learning”
- Partnership: Turkey, Poland, United Kingdom, Portugal

EARTHQUAKE

- LLP-LdV Transfer of Innovation Project
- Subject: “VET in Rapid Earthquake Damage Assessments of Buildings to Avoid the Demolishing”
- Partnership: Turkey, Italy, Austria, Greece

Education and Culture
Leonardo da Vinci

CARE-WASTE

- LLP-LdV Transfer of Innovation Project
- Subject: "Competence based e-learning in general and health care waste management for new skills development
- Transfer of WASTE-TRAIN Project coordinated by ERBIL
- www.waste-train.com
- Partnership: Greece, Bulgaria, Turkey, Norway


- **The aim of Erasmus+ programme is to promote:**
  - The innovation,
  - European dimension,
  - Transferability,
  - Quality with analysing and solving problems for the vocational training systems.
  - The adaptation of professional innovations in life-long learning training.

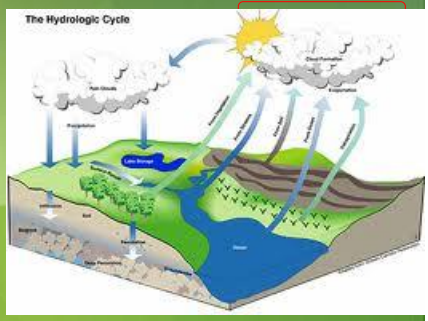
Advantages of a EUROPEAN UNION Project

- **You are working with different countries and cultures..**
- **This means that you and your organisation are aware about different cultures and also the European countries are getting knowledge about our culture..**
- **English language is becoming a more common language in your organisation.**

- **You are getting more practical with technical engineering glossary and design criterias in a project.**

Advantages of a EUROPEAN UNION Project

- **You see the existing systems and management in other European countries and in this way you have the chance to make a comparison of yourself with them..**
- **You become more aware of what is right and what is wrong...**
- **You, your partners, your country, your partners' countries, your project are getting very well-known in Europe and suddenly you might be called from a European organisation to introduce your project in their country..**



- **You are used to be innovative in all your other works and this brings development & technique to your works..**


Erasmus+
INTRODUCTION OF PURE–H2O PROJECT
PROJECT PURE–H2O
Implementation of ECVET for Qualification Design in Drinking Water Treatment Plants and Sanitation for Pure Drinkable Water
TÜRKİYE ULUSAL AJANSI
TURKISH NATIONAL AGENCY
ORKO
Planart


PURE-H2O ERASMUS+
KA2 STRATEGIC PARTNERSHIPS PROJECT
Name: "Implementation of ECVET for Qualification Design in Drinking Water Treatment Plants and Sanitation for Pure Drinkable Water"
Partnership: Turkey, Bulgaria, Germany
www.pure-h2o.org
Erasmus+


PURE-H2O
PURE-H2O was developed to provide a tool that will promote:
• transparent environmental planning & education
• in the development of sustainable & sound practices
• in the area of potable water & related treatment plants
Erasmus+
ORKON


PURE-H2O
This project will contribute to:
• the recognition & transparency of qualifications at the EU level
• provide an innovative model for competencies for the potable water sector
QUALIFIED
Erasmus+
ORKON

PURE-H2O

Thereby, the VET institutions will have the means necessary to:

- enhance the skill set as required in the various disciplines
- workplaces to workers within the potable water supply field

PURE-H2O

The main target groups are teachers, trainers, learning facilitators, guidance professionals, school/institution managers and political decision makers.

The Need for Drinking Water Treatment Plants

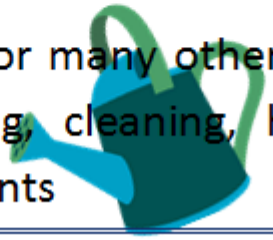
Removal of Harmful Substances

- Substances removed include suspended solids, bacteria, algae, viruses, fungi, minerals such as iron, manganese and sulfur, and other chemical pollutants such as fertilizers

The Need for Drinking Water Treatment Plants

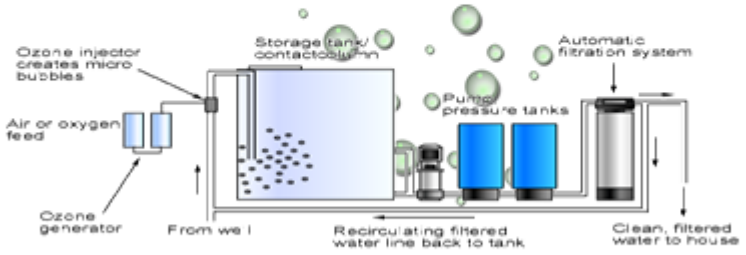
Ensuring Safe Drinking Water

- High quality, safe and sufficient drinking water is essential for our daily life, for drinking and food preparation
- We also use it for many other purposes, such as washing, cleaning, hygiene or watering our plants



Erasmus+ ORKON

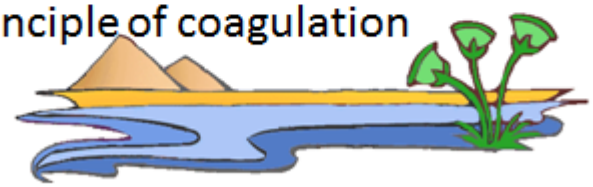
The Evaluation of Water Treatment Technology



Evolution of Water Treatment Technology

History of Drinking Water Treatment

- Greek and India writings recommended water treatment methods dating back to **2000 B.C.**
- **1500 B.C.**, the Egyptians first discovered the principle of coagulation



EUROPEAN DIRECTIVES & LEGISLATIONS

European Directives and Legislations

The Directive Overview

- The Drinking Water Directive *(Council Directive 98/83/EC)* focuses on the quality of water intended for human consumption
  - Its objective is to protect human health from any water contamination

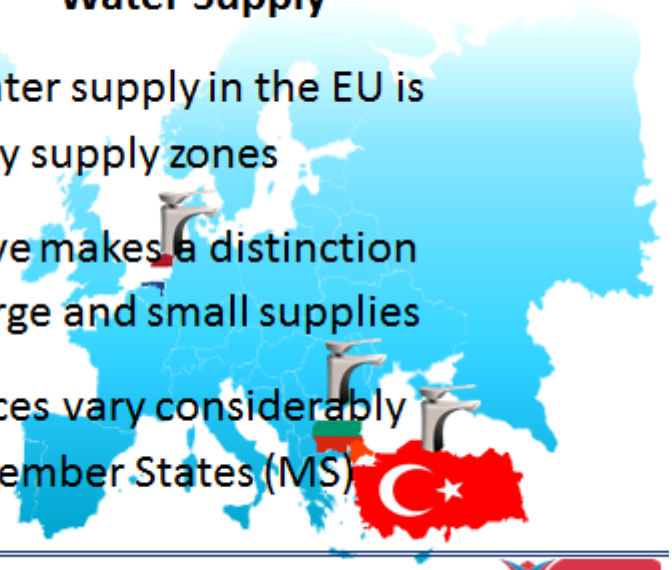
European Directives and Legislations

The Drinking Water Directive Applies to:

- Drinking water from tankers
- Drinking water in bottles or containers
- Water used in the food-processing industry, unless national authorities are satisfied regarding the quality of the water

European Directives and Legislations

Water Supply



- Drinking water supply in the EU is organised by supply zones
- The Directive makes a distinction between large and small supplies
- Water sources vary considerably between Member States (MS)

European Directives and Legislations

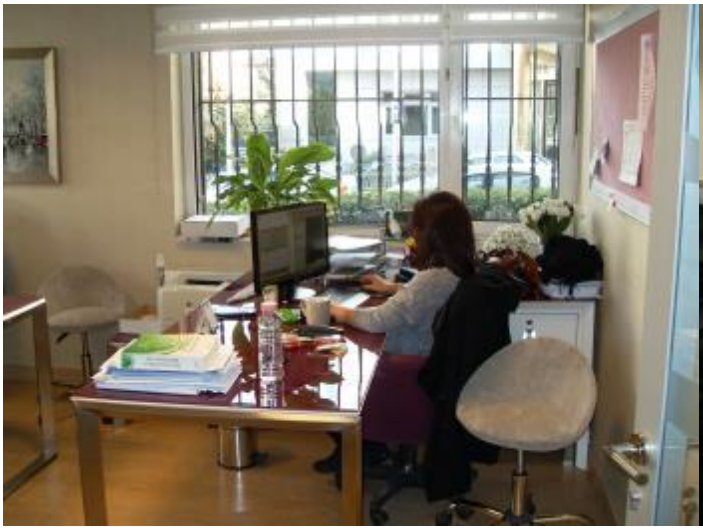
Drinking Water Quality

- The Drinking Water Directive sets out minimum water quality requirements
- For each of the parameters, the Directive sets maximum concentration values
- The Directive requires to do regular monitoring of the quality of water

Analysis Report on Dissemination and Use

FACEBOOK OF THE PROJECT
ERASMUS PLUS TR

SOME PHOTOS BELONGING TO THE PARTICIPANTS OF THE MULTIPLIER EVENT:















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