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# Water and Environment Support

in the ENI Southern Neighbourhood region



## RW-3-REG

### Regional training on Water Demand Management

<i><b>Version</b></i>	<i><b>Document Title</b></i>	<i><b>Authors</b></i>	<i><b>Review and Clearance</b></i>
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## WATER AND ENVIRONMENT SUPPORT IN THE ENI SOUTHERN NEIGHBOURHOOD REGION

The "Water and Environment Support (WES) in the ENI Neighbourhood South Region" project is a regional technical support project funded by the European Neighbourhood Instrument (ENI South). WES aims to protect the natural resources in the Mediterranean context and to improve the management of scarce water resources in the region. WES mainly aims to solve the problems linked to pollution prevention and the rational use of water. WES builds on previous similar regional projects funded by the European Union (Horizon 2020 CB/MEP, SWIM I and II, SWIM-Horizon 2020 SM) striving to create a supportive environment and increase the capacity of all stakeholders in the partner countries (PCs). The WES Partner Countries are Algeria, Egypt, Israel, Jordan, Lebanon, Libya, Morocco, Palestine, Syria, and Tunisia. However, to ensure the coherence and effectiveness of EU funding or to promote regional cooperation, the eligibility of specific actions can be extended to neighbouring countries in the Southern Neighbourhood region.

As part of the WES project workplan for the second year (2020-2021), related to the Regional Activities, a regional training on Water Demand Management (WDM) (RW-3-REG) as well as a regional Peer-to-Peer (P2P) Exchange (RW-3-P2P) are organised. The training on WDM has been completed; a total of five plenary virtual sessions were carried out between 20.01.2022 and 17.02.2022. The P2P Exchange activity was kicked off after the training sessions (29.03.2022) and will last until December 2022.

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## ABBREVIATIONS

<b>ABBREVIATION</b>	<b>Meaning</b>
<i>CB/MEP</i>	Capacity Building/Mediterranean Environment Programme
<i>ENI</i>	European Neighbourhood Instrument
<i>EU</i>	European Union
<i>EC</i>	European Commission
<i>IFI</i>	International Financing Institution
<i>NGO</i>	Non-Governmental Organisation
<i>NKE</i>	Non-Key Expert
<i>PCs</i>	Partner Countries
<i>P2P</i>	Peer-to-Peer
<i>SWIM</i>	Sustainable Water Integrated Management
<i>SWIM-Horizon2020 SM</i>	Sustainable Water Integrated Management – Support Mechanism Project
<i>TM</i>	Training Module
<i>TOR</i>	Terms of Reference
<i>UNEP-MAP</i>	United Nations Environment Program - Mediterranean Action Plan
<i>UfM</i>	Union for the Mediterranean
<i>WDM</i>	Water Demand Management
<i>WCE</i>	Water Conservation and Efficiency
<i>WES</i>	Water and Environment Support

# 1 Background information and objectives

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## 1.1 BACKGROUND INFORMATION

Water Demand Management (WDM) as a policy and strategic option for water resources management have gained prominence with the occurrence of the paradigm shift from water resources development to Integrated Water Resources Management (IWRM). Therefore, it is imperative to locate demand management within the context of IWRM to fully appreciate the contribution WDM can make towards sustainable water resources management.

The scope of WDM includes the entire water supply chain - from the point of groundwater abstraction or surface water intake to the point of usage (customer's tap). This includes, among others, all levels of distribution management and customer's demand management. At the end user point, WDM includes all type of consumers: agricultural, domestic/residential, touristic, industrial, as well as institutional users.

Since water use efficiency in the distribution network (e.g., Non-Revenue Water management) and in the agricultural sector would be the subject of other regional trainings within the framework of the WES project, this training on WDM focused on the customers' demand management targeting mainly management of water demands in the non-agricultural sector, namely in the domestic/residential, touristic, and industrial uses.

Among other things, the training zoomed into the different tools that are used to manage water demands including economic tools (pricing, quotas, subsidies, taxation) as instruments that greatly help to reduce indoor and outdoor water use by increasing indoor and outdoor water efficiency. Public awareness and mobilisation campaigns, as a valuable tool to make clear to people the importance and the potential of WDM, were addressed.

The regional training gathered planners, managers, business developers, decision makers, academics/experts and stakeholders involved in the selection, development, and implementation of WDM and Water Conservation and Efficiency (WCE) measures as part of plans and programmes aiming to safeguard groundwater and surface water in the Partner Countries (PCs).

## 1.2 OBJECTIVES

The main objective of the specific regional training RW-3-REG was to build the capacity of the PCs on WDM to influence the water demand and usage of water to meet any of the following objectives and/or combination of them: economic efficiency, social development, social equity, environmental protection, sustainability of water supply and services, and political acceptability.

## 2 METHODOLOGY & STRUCTURE OF THE REGIONAL TRAINING

### 2.1 METHODOLOGY

The training was divided into five modules of 3.5 to 4 hours each, held between January 2022 and February 2022 (see more details in Section 2.2):

- Training module 1 (TM1) on Jan 20: Understanding water demand
- Training module 2 (TM2) on Jan 26: Water demand forecasting
- Training module 3 (TM3) on Feb 03: Best practice WDM measures
- Training module 4 (TM4) on Feb 10: Implementing WDM (Part I)
- Training module 5 (TM5) on Feb 17: Implementing WDM (Part II)

For each of these training modules, the following methodology was applied:

- Participants received an email invitation to the online meeting (on Zoom).
- Training modules were facilitated by Ramboll experts, using a tailor-made slide deck and engaging exercises on Mentimeter and with a Kahoot quiz.
- TM1, TM2 and TM3 included one part in plenary, and one part in breakout rooms where participants got to exchange their views and to complete a Kahoot quiz. As for TM4 and TM5, there were no breakout rooms, but they still included a Kahoot quiz, performed in plenary.
- For TM3, TM4 and TM5, case studies on WDM good practices were presented:
  - WDM interventions implemented in Thames Water (UK) - Andrew Tucker (TM3).
  - Stakeholder management relating to WRM/WDM (UK) - Thomas Barden (TM4).
  - Instituting water demand management in Jordan - Seta Tutundjian (TM4).
  - The “Every Drop Counts” campaign in Jordan - Maha Dergham (TM5).
  - The WES Demo project ProGIRE (Morocco) - Abdelhamid Fanzi (TM5).
  - Pilot questionnaire on water use and attitudes to water efficiency (UK) - Matthew Bullock (TM5).
- Following each training module, the slide deck as presented and updated with outputs from the Mentimeter exercises were sent to all participants by email.

Ramboll did co-develop the Training Concept Note in close collaboration with the WES Key Water Expert, Ms. Suzan Taha (based in Amman, Jordan). Given that Zoom was used for the online meeting, and that Ramboll introduced Mentimeter and Kahoot for engaging exercises, a memo with instructions has been developed for the participants. Finally, as per Terms of Reference, a Google Form evaluation questionnaire was shared by email with all training participants after completion of TM5. Annex 6.1 provides a full list of all deliverables. Each deliverable is provided as a separate PDF document.

## 2.2 STRUCTURE OF THE REGIONAL TRAINING

The regional training was divided in five modules, as follows:

- **TM1 – Understanding water demand**
  - Contextualization of water scarcity and its Environmental, Legislative, Social, and Economic (ELSE) impacts
  - ELSE Impacts of extreme events and COVID-19
  - Water demand for the residential sector
    - (Smart) metering?
    - Tourism/commercial sector
    - Metered consumption?
  - Water demand for the industrial sector
    - Metered consumption?
  - Overview of WDM
    - Risks/Constraints
    - Costs/Benefits
    - Examples of Measures
- **TM2 – Water demand forecasting**
  - Residential water demand
    - No. of residents
      - Nationals
      - Expatriates
    - Per capita water consumption
  - Tourism/commercial/industrial
    - Historic water consumption
    - Bulk customer water demand estimates for sector development
      - Applications for new connections?
  - Forecasting Methods & Best Practices
  - Including WDM in water demand forecasting
  - Water demand forecasting in the ENI South
- **TM3 – Best practice water conservation and efficiency (WCE) measures**
  - Best Practice WDM – Case study Southeast Queensland
    - Improved water accounting
    - Water efficiency measures
      - Indoor
      - Outdoor

- Financial measures
  - Policy and regulatory measures
  - Media campaigns, awareness-raising, and communication
- Example of the Water Efficient Labelling Scheme in Australia
- Case study “WDM interventions implemented in Thames Water” by Andrew Tucker (UK)
- **TM4 – Implementing water demand management and water conservation and efficiency measures (Part I)**
  - Tariff Structure Design
    - Economic Tools
  - Water security and efficiency planning
    - GDP and water security
    - Visual water
    - Influencing factors
  - Presentation “Stakeholder management relating to WRM/WDM” by Thomas Barden (UK)
  - Presentation “Instituting water demand management in Jordan” by Seta Tutundjian (Bulgaria)
  - Benchmarking practices
    - The European Benchmarking cooperation
    - Case Study - “Orange County USA”
- **TM5 – Implementing water demand management and water conservation and efficiency measures (Part II)**
  - Socio-cultural considerations in awareness raising
    - The four dimensions of water culture (affective, cognitive, conative, active)
    - The importance of national and local context
  - Case Study “Every Drop Counts” - Maha Dergham (Jordan)
  - Case Study “WES Demo project ProGIRE” - Abdelhamid Fanzi (Morocco)
  - Case study “Pilot questionnaire on water use and attitudes to water efficiency” – Matthew Bullock (UK)



### 3 REGIONAL TRAINING RESULTS

No. of presentations on examples/case studies	>10 examples including 6 case studies presented by guest speakers
No. of international speakers from the Region	3 guest speakers (Jordan, Morocco)
No. of international speakers from the EU	4 facilitators (France, Germany, Netherlands, Romania), 1 guest speaker (Bulgaria)
No. of international speakers from non-EU countries	2 guest speakers (United Kingdom) and 1 facilitator (Australia)
No. of training-oriented presentations (on concepts, methodologies, etc.)	5 slide decks
No. of interactive/participatory activities (open discussions, brainstorming sessions)	10
No. of participants	64 (excluding guest speakers and facilitators): Albania (2), Algeria (5), Egypt (5), Germany (3), Israel (7), Italy (1), Jordan (7), Lebanon (5), Morocco, (12), Palestine (8), Tunisia (7), UAE (2)

## 4 EVALUATION OF THE REGIONAL TRAINING

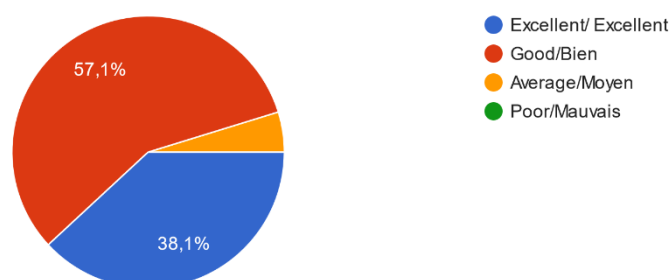
A set of 11 criteria; A1-A11 (See table below) were assessed by the participants, using a qualitative description ranging between “Excellent” to “Poor”.

**TABLE 4-1: ORGANISATIONAL, ADMINISTRATIVE AND PLANNING ISSUES**

A. ORGANISATIONAL, ADMINISTRATIVE AND PLANNING ISSUES BEFORE AND DURING THE EVENT		EXCELLENT	GOOD	AVERAGE	POOR	Total Replies	Average Score (max = 4)
<b>A1</b>	Appropriate handling of invitations, visa support, information sharing and smoothing obstacles	8	12	1	0	<b>21</b>	3.33
<b>A2</b>	Efficient logistics: accommodation, transportation, location of venue and interpretation	9	10	2	0	<b>21</b>	3.33
<b>A3</b>	Provision of support (if requested) for participants’ preparation for the event	12	7	2	0	<b>21</b>	3.48
<b>A4</b>	Efficient and effective follow-up of preparations and progress towards the event	9	9	3	0	<b>21</b>	3.29
<b>A5</b>	Planning for the event: selection and design of methodology, programme/daily agenda, and work rules	6	14	1	0	<b>21</b>	3.24
<b>A6</b>	Smooth flow of programme, efficient handling of emerging needs and attentiveness to participants concerns	6	13	2	0	<b>21</b>	3.19
<b>A7</b>	Presentations correspond and contribute to the planned objectives and are conducive to enhanced shared understanding and participation on addressed topics	8	11	2	0	<b>21</b>	3.29
<b>A8</b>	Clarity, coverage and sufficiency of concepts, objectives, anticipated outputs	6	11	3	0	<b>20</b>	3.15
<b>A9</b>	Usefulness of the distributed material	10	6	4	0	<b>20</b>	3.30
<b>A10</b>	Efficiency and effectiveness of the facilitation	8	9	4	0	<b>21</b>	3.19
<b>A11</b>	Overall rating of the event	5	14	2	0	<b>21</b>	3.14

**Figure 4-1: Handling of the invitations (A.1)**

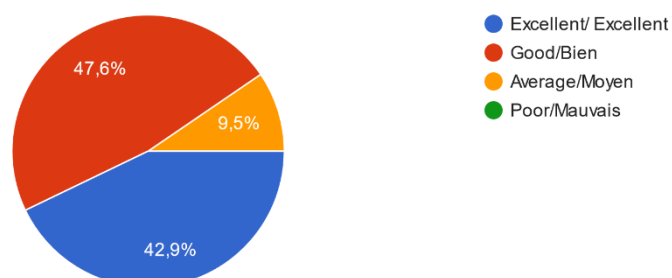
A.1. Appropriate handling of invitations, information sharing and addressing emerging difficulties/Gestion appropriée des invitations, diff... informations et aide à la résolution des difficultés  
21 απαντήσεις



**Figure 4-2: Efficient logistics (A.2)**

A.2. Efficient logistics: user-friendly online platform and interpretation / Efficacité de la logistique: plateforme en ligne facile à utiliser, qualité d'interprétation

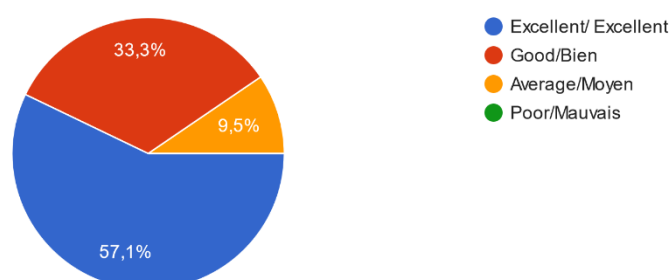
21 απαντήσεις



**Figure 4-3: Provision of support (A.3)**

A.3. Provision of support (if requested) for participants' preparation for the event / Assistance fournie (si elle a été demandée) pour le travail préparatoire des participants pour l'évènement

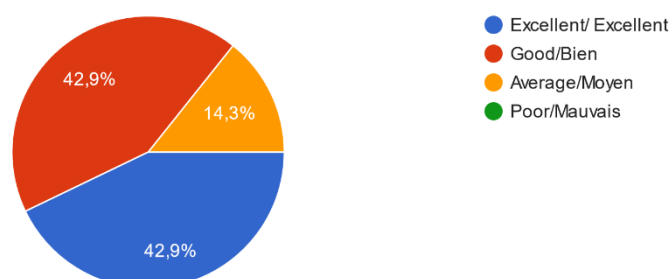
21 απαντήσεις



**Figure 4-4: Follow up (A.4)**

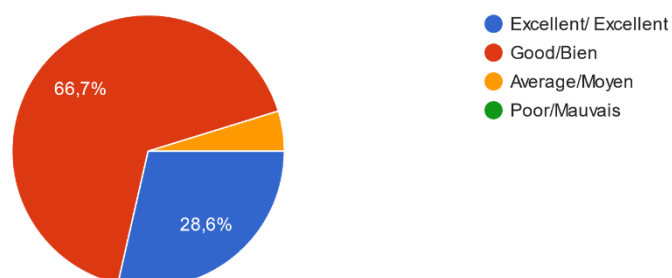
A.4. Efficient and effective follow-up of preparations and progress towards the event / Suivi efficace de la préparation et des progrès accomplis pour la tenue de l'évènement

21 απαντήσεις



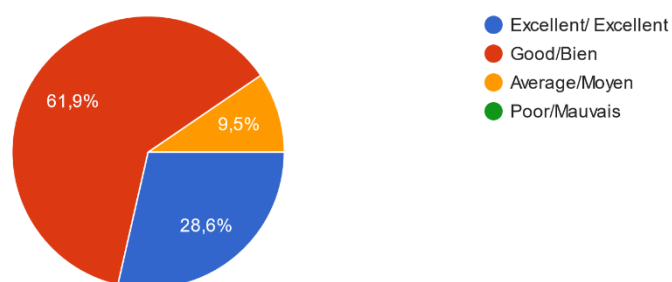
**Figure 4-5: Planning (A.5)**

A.5. Planning for the event: selection and design of methodology, programme/daily agenda and work rules / Planification de l'évènement: choix et ...ogie, programme/ ordre du jour et règles de travail  
21 απαντήσεις



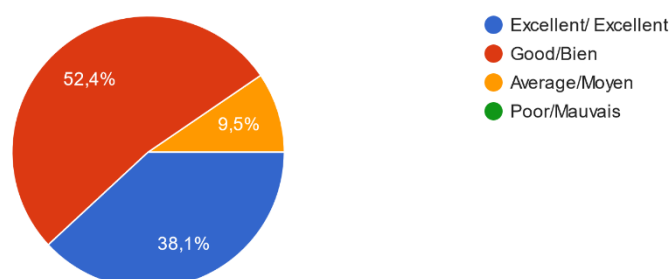
**Figure 4-6: Flow of programme (A.6)**

A.6. Smooth flow of programme, efficient handling of emerging needs and attentiveness to participants concerns / Bon déroulement du progra...e des besoins émergents et aide aux participants  
21 απαντήσεις



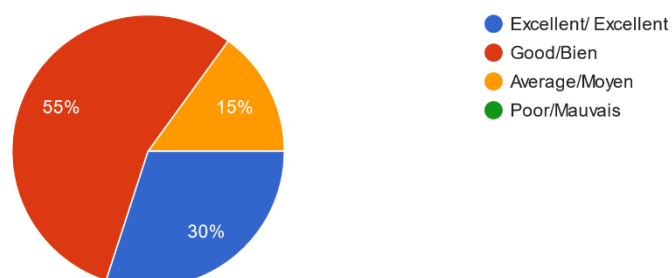
**Figure 4-7: Evaluation of presentations (A.7)**

A.7. Presentations correspond and contribute to the planned objectives and are conducive to enhanced shared understanding and participation o...tuelle et la participation aux questions abordées  
21 απαντήσεις



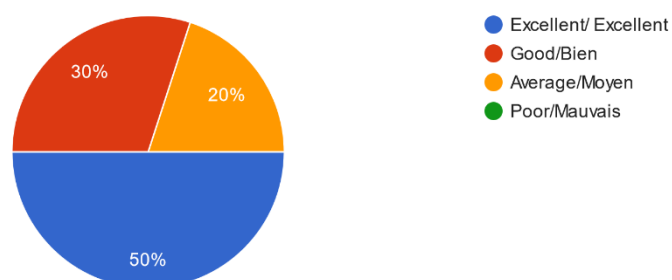
**Figure 4-8: Clarity (A.8)**

A.8. Clarity, coverage and sufficiency of concepts, objectives, anticipated outputs and outcomes /  
Clarté, couverture et suffisance des notions, des objectifs, des produits et des résultats attendus  
20 απαντήσεις



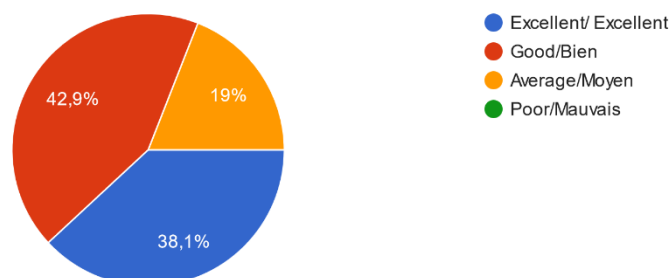
**Figure 4-9: Usefulness of distributed material (A.9)**

A.9. The materials distributed were helpful / Les matériels distribués ont été utiles  
20 απαντήσεις



**Figure 4-10: Efficiency and effectiveness of facilitation (A.10)**

A.10. Efficient and Effective Facilitation / Modération efficace  
21 απαντήσεις



## 5 CONCLUSIONS AND RECOMMENDATIONS

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### 5.1 CONCLUSIONS

The regional training provided knowledge and insights to the participants on the following topics:

- Challenges related to water demand in the South Mediterranean region.
- Potential impacts of increasing water demand and projected water scarcity in the region.
- Orders of magnitude of current and projected water demands for industry, tourism, and domestic/residential use in the region.
- Best practices for water demand forecasting.
- Best practices for WDM interventions, including economic measures, labelling, tariffication, and awareness-raising.

The training provided an opportunity to exchange experiences and knowledge on WDM among 64 participants from 12 countries. Training modules included a wide variety of examples and case studies presented by guest speakers, as well as online roundtables and interactive exercises.

The training also revealed important factors, barriers and enablers influencing WDM in the South Mediterranean. These include technological factors such as metering systems, governance factors, factors related to data accessibility and quality, regulatory barriers, etc.

Following this training, the Peer-To-Peer exchange will be a key activity to ensure knowledge diffusion throughout participating countries, and to produce tangible outputs from training learnings.

### 5.2 RECOMMENDATIONS

Based on lessons learnt from the training programme, the following recommendations can be made to strengthen capacities for effective WDM in the South Mediterranean:

- The Peer-to-Peer (P2P) exchange activity should focus on the topics that are deemed most relevant by participants from partner countries.
- P2P working groups should aim to produce tangible and impactful outputs that can inform decision-making for WDM in the South Mediterranean.
- An online platform for information and knowledge sharing among training participants and P2P peers should be created and maintained.
- For each of the barriers to WDM identified during the training, it would be valuable to reflect on the enablers that can help overcome those barriers, and what set-up and resources would then be needed.
- Case studies are highly valuable, and even more when some thinking is made to see how they can be adapted to another context.

Ramboll discussed during the early stage of the Training Concept Note co-development to have one training module per week instead of the initially requested tight programme with all five training modules in maximum three weeks. After some discussion, the schedule of one training module per week has been mutually agreed. This proved to be very successful as it allowed for tailoring the slide deck for a next training module based on the discussions and feedback in (a) previous training module(s). Ramboll appreciated this flexibility as it enables delivering a training programme that meets the participants expectations and training needs. We recommend allowing the experts to decide the optimal schedule of training modules for any future training programme.

Initially, the idea was to have breakout room sessions during each training module. The first three training modules allowed for such breakout room sessions and created an opportunity to have interactive discussions in a smaller group. Based on the experience in TM3, with the first case study presentation, it has been mutually agreed with the WES Water Key Expert to organise the TM4 and TM5 as plenary sessions as these training modules included various case study presentations also. We recommend not to standardise breakout room sessions during each training module but use them as a work form if interactive discussions in smaller groups are expected to deliver added value.

## 6 ANNEXES


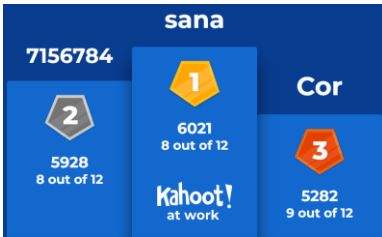

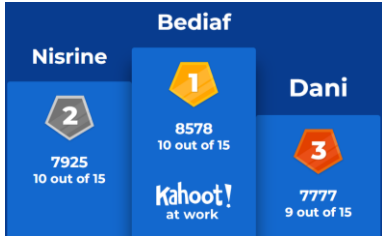
### 6.1 LIST OF DELIVERABLES

Key deliverables
<b>Project management deliverables</b>
Annex 6.1.1 Training Concept Note
Annex 6.1.2 Instructions on Zoom, Kahoot and Mentimeter
Annex 6.1.21 Post-training test
<b>TM1 - Understanding water demand</b>
Annex 6.1.3 Detailed agenda
Annex 6.1.4 Slide deck updated with outputs of exercises (incl. Mentimeter)
Annex 6.1.5 Kahoot quiz questions and correct answers
<b>TM2 - Water demand forecasting</b>
Annex 6.1.6 Detailed agenda
Annex 6.1.7 Slide deck updated with outputs of exercises (incl. Mentimeter)
Annex 6.1.8 Kahoot quiz questions and correct answers
Annex 6.1.9 Mentimeter results
<b>TM3 - Best practices for WCE</b>
Annex 6.1.10 Detailed agenda
Annex 6.1.11 Slide deck updated with outputs of exercises (incl. Mentimeter)
Annex 6.1.12 Kahoot quiz questions and correct answers
<b>TM4 - Implementing WDM and WCE (I)</b>
Annex 6.1.13 Detailed agenda
Annex 6.1.14 Slide deck updated with outputs of exercises (incl. Mentimeter)
Annex 6.1.15 Kahoot quiz questions and correct answers
Annex 6.1.16 Memo with additional information on benchmarking
<b>TM5 - Implementing WDM and WCE (II)</b>
Annex 6.1.17 Detailed agenda
Annex 6.1.18 Slide deck updated with outputs of exercises (incl. Mentimeter)
Annex 6.1.19 Kahoot quiz questions and correct answers
Annex 6.1.20 Memo with additional information on nudges

Each of these annexes/deliverables is provided as a separate Pdf document.



## 6.2 ASSESSMENT OF THE KAHOOT QUIZES

Training module	Number of players	Success rate	Podium screenshot
TM1	28	23%	
TM2	28	41%	
TM3	28	32%	
TM4	23	39%	
TM5	26	32%	