



LABORATÓRIO NACIONAL
DE ENGENHARIA CIVIL

MARCLAIMED: COMPORTA COP – COMMUNITY OF PRACTICE

Workshop 3: December 5th, 2025



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Report for WP3 of MARCLAIMED project – *Integrated
Decision Support Tool for Reliable and Affordable Application
of Manage Aquifer Recharge with Alternative Water Resources
in River Basin and Drought Management Plans*

Lisbon February 2026

R&D BUILDINGS

REPORT 71/2026 – DED/NUT

Title

MARCLAIMED: COMPORTA COP – COMMUNITY OF PRACTICE

Workshop 3: December 5th, 2025

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Report 71/2026

File no 0804/1101/2368701

MARCLAIMED: COMPORTA CoP – COMMUNITY OF PRACTICE

Workshop 3: December 5th, 2025

Abstract

MARCLAIMED – *Integrated Decision Support Tool for Reliable and Affordable Application of Managed Aquifer Recharge with Alternative Water Resources in River Basin and Drought Management Plans* – is an EU Research project (2024-2027), led by CETAQUA (Spain) and engaging 12 partners, including LNEC. MARCLAIMED promotes CoP – Community of Practice in each of its 3 Demo sites. This Report presents the organisation and the results of the Comporta CoP 3rd Workshop hosted at LNEC on December 5th, 2025.

Keywords: MARCLAIMED Comporta CoP – Community of Practice / Managed Aquifer Recharge (MAR) / Alternative Water Resources (AWR)

MARCLAIMED: COMPORTA CoP – COMUNIDADE DE PRÁTICA

Oficina 3: 5 dezembro 2025

Resumo

MARCLAIMED – *Integrated Decision Support Tool for Reliable and Affordable Application of Managed Aquifer Recharge with Alternative Water Resources in River Basin and Drought Management Plans* – é um projeto Europeu (2024-2027), liderado pela CETAQUA (Espanha) que envolve 12 parceiros, entre os quais o LNEC. O projeto MARCLAIMED promove CoP – Comunidades de Prática em cada um dos seus Estudos de Caso. O presente relatório apresenta a organização e os resultados da 3^a Oficina da CoP da Comporta (Portugal) que teve lugar no LNEC a 5 de dezembro de 2025.

Palavras-chave: MARCLAIMED Comporta CoP – Comunidade de Prática / Gestão de Recarga de Aquíferos (MAR) / Recursos Hídricos Alternativos (AWR)

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List of acronyms

AdP VALOR	Public Water Management Agency for Innovation
AgdA, AdP	Public Water Management Agency for Alentejo
AEA	Agriculture Economic Agents
APA – ARH do Alentejo	Portuguese Environmental Agency – Alentejo Regional Agency
AWR	Alternative Water Resources
CAP	Portuguese Farmers Confederation
CETAQUA	Barcelona Water Technology Centre
COTR	Portuguese Competence Centre for Irrigation
CoP	Community of Practice
EGM	Easy Global Market SAS
LNEC	National Laboratory of Civil Engineering
LNEG	National Laboratory of Energy and Geology
MAR	Management of Aquifer Recharge
MARCLAIMED	Integrated Decision Support Tool for Reliable and Affordable Application of Manage Aquifer Recharge with Alternative Water Resources in River Basin and Drought Management Plans
PPA	Portuguese Water Partnership
PP	Project Partners
WEA	Water Economic Agents

1 | Introduction to MARCLAIMED

MARCLAIMED – *Integrated Decision Support Tool for Reliable and Affordable Application of Managed Aquifer Recharge with Alternative Water Resources in River Basin and Drought Management Plans* – is an EU Research project (GA 101136799; 2024-2027), led by CETAQUA (Spain) and engaging 12 partners, including LNEC.

MARCLAIMED aims to harmonise Managed Aquifer Recharge (MAR) and Alternative Water Resources (AWR) practices within EU regulatory structures to address the complexities and challenges of ensuring long-term water sustainability. The project is organised in three demo sites: (1) Llobregat-Barcelona-Spain focuses on treated wastewater for aquifer recharge; (2) Comporta-Portugal focuses on wastewater for irrigation; and (3) Wadden Region-Netherlands focuses on agricultural water reuse. The project encourages a behavioural transition, promoting greater awareness and trust in Managed Aquifer Recharge (MAR) and Alternative Water Resources (AWR) technologies and seeks to bolster social acceptance, awareness, trust, and reliability in alternative water resource sustainability systems. MARCLAIMED main goal is to improve not only MAR and AWR efficiency but also their cost-effectiveness, and it is strongly committed to engaging a broad spectrum of stakeholders, including decision-makers, public and private water sectors. Further information is available at <https://marclaimed.eu/>.

MARCLAIMED is organised into seven Work Packages:

- Work Package 1 – Operational efficiency and economic sustainability in short, medium, and long-term perspectives (leader: CETAQUA);
- Work Package 2 – MARCLAIMED IDST: Integrated Decision Support Tool for MAR recommendations and early warning alert system (leader: EGM);
- Work Package 3 – Co-creation of AWR strategies: social actions and EU regulatory Framework (Leader: University of Salamanca);
- Work Package 4 – CoPs-based implementation and validation at the demo sites (Leader: LNEC);
- Work Package 5 – Business model, exploitation, replication, and transferability (Leader: Acacia Water BV);
- Work Package 6 – Dissemination, Communication, and the Climate4Water cluster (Leader: Water Europe);
- Work Package 7 – Project Coordination and Management (Leader: CETAQUA).

To pursue its goals and ambitions, several workshops are scheduled to activate and facilitate a broad CoP – Community of Practice between stakeholders in each demo site. The Comporta-Portugal demo site CoP engages several stakeholders:

- Public Water Management Agency for Innovation (AdP VALOR);
- Public Water Management Agency for Alentejo (AgdA, Agd);

- Portuguese Environmental Agency – Alentejo Regional Agency (APA – ARH do Alentejo);
- Alcácer do Sal Municipality;
- Portuguese Farmers Confederation (CAP);
- Portuguese Competence Centre for Irrigation (COTR);
- National Laboratory of Civil Engineering (LNEC);
- National Laboratory of Energy and Geology (LNEG);
- Portuguese Water Partnership (PPA);
- Rios e Aquíferos, Lda.

The Comporta CoP had its first workshop on February 13th, 2025, *in situ*, to explore the stakeholders' perceptions about aquifer recharge with reclaimed water; to assess and prioritise ideas in terms of risks/benefits and time horizon; and to identify the highest risks and benefits, lines of action and barriers regarding co-produced ideas and solutions development ¹.

LNEC hosted the second Comporta CoP workshop on June 16th, 2025, (i) to share and detail the main purposes and expected outputs of MARCLAIMED Tools (MARVIS, PREDMAR, MARAISER, OASIS FLOW, MARINSURE, RECOVER); (ii) to collect feedback and suggestions for further development and test the Tools' robustness regarding the CoP's main concerns and ambitions; and (iii) to update MARCLAIMED Comporta's developments in terms of activities and preliminary results ².

LNEC hosted the third Comporta CoP workshop on December 5th, 2025, where the main organisation and results are presented in this report.

¹ Results from WS#1 of Comporta CoP have been reported in LNEC Report 272/25.

² Results from WS#2 of Comporta CoP have been reported in LNEC Report 327/25.

2 | Comporta Community of Practice: Organization of the 3rd workshop

2.1 Synopsis

Location: Salão Nobre LNEC, Portugal

Date: December 5th, 2025

No. of participants: 11 (6 Women; 5 Men) – AgdA=2; AdP Valor=2, CAP=1; LNEC=5; IMDEA=1)

Organizations: AgdA, AdP Valor, CAP, LNEC, IMDEA

MARCLAIMED Comporta CoP 3rd Meeting Main Goals:

- To explore Barriers and Solution for AWR/MAR regarding Trust and Acceptance.
- Develop a roadmap of quick ideas (that can involve everyone) to implement during the project.

2.2 Agenda

The agenda of the Comporta CoP Workshop #3 is presented in Table 2.1.

Table 2.1 – Comporta CoP WS#3 – Agenda

14:30 – 14:45	Welcome, Wrap-up WS2 and introduction to the workshop
14:45 – 16:00	Assessing Barriers to AWR/MAR
	• 4 Mentimeter interactions
	• Analysis and discussion • Identification of barriers to trust and acceptance for each Persona (Citizens, End users-Land Owner, Researchers, Operators, Administration and Industry)
16:00 – 16:15	Coffee break
16:15 – 17:00	Ideation of Solutions to overcome barriers
	Roadmap and Commitment to make it happen
17:00 – 17:20	MARCLAIMED <i>so far</i> ...
17:20 – 17:30	Next Steps & Evaluation

2.3 Storyboard development and Tools for Barriers Assessment and Solutions Ideation

In Comporta, we have built a Barriers Assessment tool (based on the MARCLAIMED provided Questionnaire) with 40 items organised into four Clusters (see Tables 2.2 and 2.3).

Table 2.2 – Barriers Assessment Tool (Cluster 1 & 2)

Cluster 1	Governance
#1	Excessively long times that transformations can take due to the pace of their diffusion and differences in the perception of their innovation
#2	Effects of cascading failures resulting from poorly designed transformative policies
#3	Opposition to the transformations accompanied by violent acts (<i>i.e.</i> , damage to equipment)
#4	Difficulties in estimating the impacts of new solutions and their financial, environmental, and resource costs for other sectors
#5	Difficulties in engaging and involving actors who are not dominant or do not benefit directly (financially or politically) in the discussion and definition of water policies
#6	Difficulties in building agreements and commitments between groups and interest communities due to the power of their structures and trust (or distrust) relationships
#7	Nonexistence or underdevelopment of interoperable systems that allow networked operation of large infrastructures to carry out adaptive transformations
#8	Difficulties in involving factors that are not part of individuals' life experience/education in decision-making processes
#9	Opposition to changes resulting from innovative solutions based on perceptions of worsening inequalities
#10	Lack of people's involvement in debates about transformative solutions due to disbelief in the relevance of their opinion
Cluster 2	Private / Public
#11	Prevalence of individual satisfaction in the choice between viable solutions
#12	Resistance from those who feel threatened in their gains within established systems in response to the introduction of changes
#13	Advantage of non-compliance with the law resulting from a trade-off between costs and gains
#14	Perception of privacy threat by innovative solutions that use digital tools
#15	Hiring private companies for 'data analytics' with risks of losing control over public data and transferring advantages to the private sector
#16	Difficulty in implementing climate change adaptation or mitigation solutions due to the prevalence of perceptions of negative impacts at the local level
#17	Opposition to transformations and innovative solutions due to perceived risks of environmental degradation and water quality (<i>i.e.</i> , contamination)
#18	Unavailability of advanced technologies on the market to carry out adaptive transformations
#19	Existence of 'entrenched myths' that hinder the search for or acceptance of new evidence
#20	Difficulty in stepping out of 'comfort zones' through critical thinking

Table 2.3 – Barriers Assessment Tool (Cluster 3 & 4)

Cluster 3	Decision
#21	Significant transition costs associated with the lack of evidence (<i>i.e.</i> , with research, information, negotiation) when adopting innovation
#22	Impact of loss on assets and previous investments due to transformations
#23	Negative impact of transformations in other sectors (side effects) and on its viability structure
#24	Pressure from vested interests on public policy solutions (notion of 'expanded state')
#25	Disengagement of the public sector in supporting innovation due to the existence of 'grey areas' in the definition of accountability and responsibility
#26	Prevalence of short-term return options in public policy decision-making, compared to medium- and long-term returns (<i>i.e.</i> , beyond electoral cycles)
#27	Difficulties for institutions/organizations in adopting transformative solutions and changes unless triggered by shocks and/or crises that require rapid responses
#28	Definition of public policies and decision-making is largely dependent on 'established beliefs' among their electorates/clients
#29	Limited budgets that force choices between investments in structural sectors for society (<i>i.e.</i> , health, education) or corporative current management and investments in innovative solutions in other sectors
#30	Adoption of standards of promises and very high expectations of success in public policy measures or business management that limit the adoption of measures that still carry associated risks or uncertainties
Cluster 4	Knowledge
#31	Inequalities and asymmetries in access to information by different stakeholders
#32	Biased filters and simplification in production and information management processes (given their proliferation, complexity, ambiguity, or levels of uncertainty)
#33	The role of misinformation in consolidating distrust in innovative solutions
#34	Weak implementation of “ex-post” evaluations of public policy measures and their actual effectiveness, maintaining areas of uncertainty to be resolved
#35	Persistence of uncertainties arising from an avalanche of data, models, and scenario construction in decision support and in the assessment of public policy performance
#36	Difficulty in validating the performance of transformational policies solely with local direct measurements or when the information is not comparable
#37	Human difficulty in processing the profusion of available information in order to support rational decisions
#38	Pressure to 'think fast' (as opposed to 'think slow') with negative impacts on rational decision-making
#39	Greater sensitivity to how information is presented than to its content
#40	Greater sensitivity to “repeated information” than to the need to assess its validity

During the CoP 3rd Workshop, we used a Mentimeter multiple-choice query for each cluster, inviting participants to assess each item according to *“How relevant can the following barriers (which may limit or hinder the adoption of transformative solutions) be to decision-making about AWR/MAR”*. To score the items, participants should consider their own activity/experience and the Comporta site ecosystem. Participants used a 1 (not relevant) to 4 (very relevant) scale to express their opinion. They also indicated their gender – (i) male; (ii) female; (iii) other – and their stakeholders’ group of affiliation – (i) Project Partner – case study team; (ii) Project Partner – research team; (iii) Project Partner – decision-maker; (iv) Research Community; (v) Administration – Regulators; (vi) Administration – other policy decision makers; (vii) Economic actors – Water operators; (viii) Economic actors – Agriculture and Food Industry operators; (ix) Economic actors – Others; (x) Civil Society.

The results of such assessment are presented in section “3.1 – Barriers assessment by Participants”.

Furthermore, we asked participants to put themselves into the shoes of the Personas that they have built in the 2nd Workshop – (a) Population; (b) End users – Land Owner (new); (c) Researchers; (d) Operators; (e) Administration; (f) Industry – and to choose, in each cluster, the two most relevant barriers that could interfere in trust and acceptance of AWR/MAR for each of those Personas ³.

The results of such assessment are present in section “3.2 – Barriers assessment regarding Personas” and section “3.3 – Personas’ Clusters Ecosystem”.

Based on the eight most relevant barriers that could interfere with trust and acceptance of AWR/MAR for each Persona, participants elected two of those barriers, worked on solutions to address them during the MARCLAIMED project and to built a solution roadmap (to make it happen). As a final workshop result, four ideas were co-produced.

Participants were organised in three groups and were invited to ideate solutions by drafting proposals using the provided “And if...” template (see Figure 2.1), including:

- a) A name for the idea;
- b) The barrier(s) to be addressed;
- c) How the idea could be developed (how it should work; details to make it happen);
- d) The expected add-value for making it happen;
- e) Who could benefit and be engaged when it happens (end-users);
- f) Who should promote and organize it (promoters);
- g) What kind of resources would be needed;
- h) When should it happen;
- i) What could accelerate it;
- j) What could make it difficult;
- k) Milestones to accomplish and make sure it shall happen;
- l) Immediate next steps (how to start to make it happen).

³ There were three groups that worked in two Personas each.

 And if ... Ficha de Ideias   			
(Nome da ideia)		(Para ultrapassar que Barreiras / Desafio)	
 (Desenvolvimento da ideia O quê? Como? (Detalhes para fazer acontecer)		 (Destinatários) Para quem?	 (Valor Acrescentado Indicador de impacto)
 (Promotores) Quem Com quem?	 (Recursos necessários para fazer acontecer)	 (Aceleradores)	 (Travões)
 (Quando?)	 (Milestones)	 (Próximos Passos Imediatos)	 (Observações Complementares)

Figure 2.1 – Template for Solution Ideation

The co-produced ideas are presented in section “3.4 – Solutions ideation” and the final commitment to make them happen in section “3.5 – An actionable roadmap and commitment”.

A brief state of the art of MARCLAIMED developments so far was also shared with participants using a PowerPoint presentation. In this workshop, the Comporta MARCLAIMED Barometer was not applied due to time constraints.

The workshop ended with an evaluation of the CoP workshop. The results are presented in chapter “4 – Evaluation of 3rd CoP Workshop”.

3 | Comporta Community of Practice: Results of the 3rd workshop

3.1 Barriers assessment by Participants

Table 3.1 shows the results (ordered from most relevant to least relevant) of “*How relevant can be the following barriers (which may limit or hinder the adoption of transformative solutions) to decision-making about AWR/MAR*”, taking into account participants' own activity/experience and Comporta site ecosystem.

Table 3.1 – Barriers assessment by Participants (ordered by Mean)

Cluster	#	Barriers	Weighted average	(scale)			
				1	2	3	4
Private/Public	17	Opposition to transformations and innovative solutions due to perceived risks of environmental degradation and water quality (i.e., contamination)	3,88	0	0	1	7
Decision	29	Limited budgets that force choices between investments in structural sectors for society (i.e., health, education) or corporative current management and investments in innovative solutions in other sectors	3,78	0	0	2	7
Private/Public	19	Existence of 'entrenched myths' that hinder the search for or acceptance of new evidence	3,63	1	0	0	7
Decision	25	Disengagement of the public sector in supporting innovation due to the existence of 'grey areas' in the definition of accountability and responsibility	3,56	0	1	2	6
Decision	27	Difficulties for institutions/organizations in adopting transformative solutions and changes unless triggered by shocks and/or crises that require rapid responses	3,56	0	1	2	6
Private/Public	12	Resistance from those who feel threatened in their gains within established systems in response to the introduction of changes	3,38	0	2	1	5
Private/Public	16	Difficulty in implementing climate change adaptation or mitigation solutions due to the prevalence of perceptions of negative impacts at the local level	3,38	1	0	2	5
Governance	1	Excessively long times that transformations can take due to the pace of their diffusion and differences in the perception of their innovation	3,33	0	0	6	3
Governance	2	Effects of cascading failures resulting from poorly designed transformative policies	3,33	0	0	6	3
Decision	21	Significant transition costs associated with the lack of evidence (i.e., with research, information, negotiation) when adopting innovation	3,33	1	1	1	6
Knowledge	33	The role of misinformation in consolidating distrust in innovative solutions	3,33	1	1	1	6
Private/Public	20	Difficulty in stepping out of 'comfort zones' through critical thinking	3,25	0	1	4	3
Knowledge	32	Biased filters and simplification in production and information management processes (given their proliferation, complexity, ambiguity, or levels of uncertainty)	3,25	0	1	4	3
Knowledge	35	Persistence of uncertainties arising from an avalanche of data, models, and scenario construction in decision support and in the assessment of public policy performance	3,22	0	1	5	3
Knowledge	36	Difficulty in validating the performance of transformational policies solely with local direct measurements or when the information is not comparable	3,13	0	1	5	2
Decision	26	Prevalence of short-term return options in public policy decision-making, compared to medium- and long-term returns (i.e., beyond electoral cycles)	3,11	0	1	6	2

Table 3.1 – Barriers assessment by Participants (ordered by Mean) (cont.)

Governance	6	Difficulties in building agreements and commitments between groups and interest communities due to the power of their structures and trust (or distrust) relationships	3	1	1	4	3
Governance	10	Lack of people's involvement in debates about transformative solutions due to disbelief in the relevance of their opinion	3	1	1	4	3
Private/Public	18	Unavailability of advanced technologies on the market to carry out adaptive transformations	3	0	2	4	2
Decision	23	Negative impact of transformations in other sectors (side effects) and on its viability structure	3	0	2	4	2
Governance	4	Difficulties in estimating the impacts of new solutions and their financial, environmental, and resource costs for other sectors	2,89	0	3	4	2
Governance	7	Nonexistence or underdevelopment of interoperable systems that allow networked operation of large infrastructures to carry out adaptive transformations	2,89	0	3	4	2
Governance	9	Opposition to changes resulting from innovative solutions based on perceptions of worsening inequalities	2,89	1	2	3	3
Decision	28	Definition of public policies and decision-making largely dependent on 'established beliefs' among their electorates/clients	2,89	1	0	7	1
Knowledge	34	Weak implementation of "ex-post" evaluations of public policy measures and their actual effectiveness, maintaining areas of uncertainty to be resolved	2,89	2	0	4	3
Private/Public	11	Prevalence of individual satisfactions in the choice between viable solutions	2,88	1	1	4	2
Governance	5	Difficulties in engaging and involving actors who are not dominant or do not benefit directly (financially or politically) in the discussion and not definition of water policies	2,78	1	1	6	1
Knowledge	31	Inequalities and asymmetries in access to information by different stakeholders	2,78	2	1	3	3
Knowledge	38	Pressure to 'think fast' (as opposed to 'think slow') with negative impacts on rational decision-making	2,78	1	1	6	1
Knowledge	39	Greater sensitivity to how information is presented than to its content	2,78	0	3	5	1
Governance	8	Difficulties in involving factors that are not part of individuals' life experience/education in decision-making processes	2,67	0	4	4	1
Decision	24	Pressure from vested interests on public policy solutions (notion of 'expanded state')	2,67	1	2	5	1
Decision	30	Adoption of standards of promises and very high expectations of success in public policy measures or business management that limit the adoption of measures that still carry associated risks or uncertainties	2,67	1	2	5	1
Knowledge	37	Human difficulty in processing the profusion of available information in order to support rational decisions	2,67	2	1	4	2
Decision	22	Impact of loss on assets and previous investments due to transformations	2,56	0	6	1	2
Knowledge	40	Greater sensitivity to "repeated information" than to the need to assess its validity	2,56	2	2	3	2
Private/Public	14	Perception of privacy threat by innovative solutions that use digital tools	2,5	3	1	1	3
Governance	3	Opposition to the transformations accompanied by violent acts (i.e., damage to equipment)	2,44	2	2	4	1
Private/Public	15	Hiring private companies for 'data analytics' with risks of losing control over public data and transferring advantages to the private sector	2,38	1	3	4	0
Private/Public	13	Advantage of non-compliance with the law resulting from a trade-off between costs and gains	2,29	2	1	4	0

3.1.1 Global Approach

In a general way, these results indicate that:

1. *All Items/barriers received scores of “relevance”, even with participants expressing different perceptions about them, expressed on the weighted average*
 - a. All items collected “relevant scores” from the participants.
 - b. Four items presented only “relevant” or “very relevant scores” (**#1, #2, #17, #29**).
 - c. Most items collect scores on both sides of the scale.
 - d. Only three items presented a mean value under the scale mean breakeven (2,5) (**#3, #13, #15**).
2. *The four clusters were presented throughout the ordered list, intermingled with one another (see Table 3.2), despite exhibiting different trends*

Table 3.2 – Incidence of Item clusters along the ordered outputs

(mean)	Governance	Public/Private	Decision	Knowledge
Higher than 3,5		2	3	
3 to 3,5	4	4	3	4
2,5 to 3	5	2	4	6
Lower than 2,5	1	2		

- a. Top 5 collected items come from the Decision and Private/Public cluster (see Table 3.3).

Table 3.3 – Top 5 Barriers scoring

Cluster	#	Barriers	Weighted average
Private/Public	17	Opposition to transformations and innovative solutions due to perceived risks of environmental degradation and water quality (i.e., contamination)	3,88
Decision	29	Limited budgets that force choices between investments in structural sectors for society (i.e., health, education) or corporative current management and investments in innovative solutions in other sectors	3,78
Private/Public	19	Existence of 'entrenched myths' that hinder the search for or acceptance of new evidence	3,63
Decision	25	Disengagement of the public sector in supporting innovation due to the existence of 'grey areas' in the definition of accountability and responsibility	3,56
Decision	27	Difficulties for institutions/organizations in adopting transformative solutions and changes unless triggered by shocks and/or crises that require rapid responses	3,56

- b. Less scored items come from Governance and from the Private/Public cluster (see Table 3.4).

Table 3.4 – Less Scored items under the scale mean breakeven

Cluster	#	Barriers	Weighted average
Governance	3	Opposition to the transformations accompanied by violent acts (i.e., damage to equipment)	2,44
Private/Public	15	Hiring private companies for 'data analytics' with risks of losing control over public data and transferring advantages to the private sector	2,38
Private/Public	13	Advantage of non-compliance with the law resulting from a trade-off between costs and gains	2,29

- c. Public/Private barriers are all represented along the scored outputs, assuming the pool position at the top and the bottom of the table (see Table 3.5).
- d. Decision barriers tend to be mainly represented in the higher-scoring positions (see Table 3.6).
- e. Governance and Knowledge barriers tend to be mainly represented in the lower-scoring outputs (see Tables 3.7 and 3.8).

Table 3.5 – Results for Public/Private Items ordered by relevance

#	Barriers	Weighted average
17	Opposition to transformations and innovative solutions due to perceived risks of environmental degradation and water quality (i.e., contamination)	3,88
19	Existence of 'entrenched myths' that hinder the search for or acceptance of new evidence	3,63
12	Resistance from those who feel threatened in their gains within established systems in response to the introduction of changes	3,38
16	Difficulty in implementing climate change adaptation or mitigation solutions due to the prevalence of perceptions of negative impacts at the local level	3,38
20	Difficulty in stepping out of 'comfort zones' through critical thinking	3,25
18	Unavailability of advanced technologies on the market to carry out adaptive transformations	3
11	Prevalence of individual satisfactions in the choice between viable solutions	2,88
14	Perception of privacy threat by innovative solutions that use digital tools	2,5
15	Hiring private companies for 'data analytics' with risks of losing control over public data and transferring advantages to the private sector	2,38
13	Advantage of non-compliance with the law resulting from a trade-off between costs and gains	2,29

Table 3.6 – Results for Decision Items ordered by relevance

#	Barriers	Weighted average
29	Limited budgets that force choices between investments in structural sectors for society (i.e., health, education) or corporative current management and investments in innovative solutions in other sectors	3,78
25	Disengagement of the public sector in supporting innovation due to the existence of 'grey areas' in the definition of accountability and responsibility	3,56
27	Difficulties for institutions/organizations in adopting transformative solutions and changes unless triggered by shocks and/or crises that require rapid responses	3,56
21	Significant transition costs associated with the lack of evidence (i.e., with research, information, negotiation) when adopting innovation	3,33
26	Prevalence of short-term return options in public policy decision-making, compared to medium- and long-term returns (i.e., beyond electoral cycles)	3,11
23	Negative impact of transformations in other sectors (side effects) and on its viability structure	3
28	Definition of public policies and decision-making largely dependent on 'established beliefs' among their electorates/clients	2,89
24	Pressure from vested interests on public policy solutions (notion of 'expanded state')	2,67
30	Adoption of standards of promises and very high expectations of success in public policy measures or business management that limit the adoption of measures that still carry associated risks or uncertainties	2,67
22	Impact of loss on assets and previous investments due to transformations	2,56

Table 3.7 – Results for Governance Items ordered by relevance

#	Barriers	Weighted average
1	Excessively long times that transformations can take due to the pace of their diffusion and differences in the perception of their innovation	3,33
2	Effects of cascading failures resulting from poorly designed transformative policies	3,33
6	Difficulties in building agreements and commitments between groups and interest communities due to the power of their structures and trust (or distrust) relationships	3
10	Lack of people's involvement in debates about transformative solutions due to disbelief in the relevance of their opinion	3
4	Difficulties in estimating the impacts of new solutions and their financial, environmental, and resource costs for other sectors	2,89
7	Nonexistence or underdevelopment of interoperable systems that allow networked operation of large infrastructures to carry out adaptive transformations	2,89
9	Opposition to changes resulting from innovative solutions based on perceptions of worsening inequalities	2,89
5	Difficulties in engaging and involving actors who are not dominant or do not benefit directly (financially or politically) in the discussion and not definition of water policies	2,78
8	Difficulties in involving factors that are not part of individuals' life experience/education in decision-making processes	2,67
3	Opposition to the transformations accompanied by violent acts (i.e., damage to equipment)	2,44

Table 3.8 – Results for Knowledge Items ordered by relevance

#	Barriers	Weighted average
33	The role of misinformation in consolidating distrust in innovative solutions	3,33
32	Biased filters and simplification in production and information management processes (given their proliferation, complexity, ambiguity, or levels of uncertainty)	3,25
35	Persistence of uncertainties arising from an avalanche of data, models, and scenario construction in decision support and in the assessment of public policy performance	3,22
36	Difficulty in validating the performance of transformational policies solely with local direct measurements or when the information is not comparable	3,13
34	Weak implementation of "ex-post" evaluations of public policy measures and their actual effectiveness, maintaining areas of uncertainty to be resolved	2,89
31	Inequalities and asymmetries in access to information by different stakeholders	2,78
38	Pressure to 'think fast' (as opposed to 'think slow') with negative impacts on rational decision-making	2,78
39	Greater sensitivity to how information is presented than to its content	2,78
37	Human difficulty in processing the profusion of available information in order to support rational decisions	2,67
40	Greater sensitivity to "repeated information" than to the need to assess its validity	2,56

3. *Barriers revealed different elasticity⁴ by receiving scores both at the bottom and at the top of the scale (more elastic ones) or presenting more consensus trends in their relevance assessment (less elastic ones)*

- More “elastic” barriers are present both in the top and bottom of the table and in all clusters (see Table 3.9).
- Less elastic barriers also come from the different clusters but are mainly represented in the highest positions, with the exception of item **#22** (see Table 3.10).

⁴ This elasticity analysis is very conditional as the number of participants in the pool is very small (N=9) and not all items received scores from all participants. This analysis was based on how and how many participants used each score.

Table 3.9 – More elastic barriers

Cluster	#	Barriers	Weighted average	(Scores)			
				1	2	3	4
Private/Public	19	Existence of 'entrenched myths' that hinder the search for or acceptance of new evidence	3,63	1	0	0	7
Private/Public	16	Difficulty in implementing climate change adaptation or mitigation solutions due to the prevalence of perceptions of negative impacts at the local level	3,38	1	0	2	5
Decision	21	Significant transition costs associated with the lack of evidence (i.e., with research, information, negotiation) when adopting innovation	3,33	1	1	1	6
Knowledge	33	The role of misinformation in consolidating distrust in innovative solutions	3,33	1	1	1	6
Governance	6	Difficulties in building agreements and commitments between groups and interest communities due to the power of their structures and trust (or distrust) relationships	3	1	1	4	3
Governance	10	Lack of people's involvement in debates about transformative solutions due to disbelief in the relevance of their opinion	3	1	1	4	3
Governance	9	Opposition to changes resulting from innovative solutions based on perceptions of worsening inequalities	2,89	1	2	3	3
Decision	28	Definition of public policies and decision-making largely dependent on 'established beliefs' among their electorates/clients	2,89	1	0	7	1
Knowledge	34	Weak implementation of "ex-post" evaluations of public policy measures and their actual effectiveness, maintaining areas of uncertainty to be resolved	2,89	2	0	4	3
Private/Public	11	Prevalence of individual satisfactions in the choice between viable solutions	2,88	1	1	4	2
Governance	5	Difficulties in engaging and involving actors who are not dominant or do not benefit directly (financially or politically) in the discussion and not definition of water policies	2,78	1	1	6	1
Knowledge	31	Inequalities and asymmetries in access to information by different stakeholders	2,78	2	1	3	3
Knowledge	38	Pressure to 'think fast' (as opposed to 'think slow') with negative impacts on rational decision-making	2,78	1	1	6	1
Decision	24	Pressure from vested interests on public policy solutions (notion of 'expanded state')	2,67	1	2	5	1
Decision	30	Adoption of standards of promises and very high expectations of success in public policy measures or business management that limit the adoption of measures that still carry associated risks or uncertainties	2,67	1	2	5	1
Knowledge	37	Human difficulty in processing the profusion of available information in order to support rational decisions	2,67	2	1	4	2
Knowledge	40	Greater sensitivity to "repeated information" than to the need to assess its validity	2,56	2	2	3	2
Private/Public	14	Perception of privacy threat by innovative solutions that use digital tools	2,5	3	1	1	3
Governance	3	Opposition to the transformations accompanied by violent acts (i.e., damage to equipment)	2,44	2	2	4	1

Table 3.10 – Less elastic barriers

Cluster	#	Barriers	Weighted average	(Scores)			
				1	2	3	4
Private/Public	17	Opposition to transformations and innovative solutions due to perceived risks of environmental degradation and water quality (i.e., contamination)	3,88	0	0	1	7
Decision	29	Limited budgets that force choices between investments in structural sectors for society (i.e., health, education) or corporative current management and investments in innovative solutions in other sectors	3,78	0	0	2	7
Governance	1	Excessively long times that transformations can take due to the pace of their diffusion and differences in the perception of their innovation	3,33	0	0	6	3
Governance	2	Effects of cascading failures resulting from poorly designed transformative policies	3,33	0	0	6	3
Decision	25	Disengagement of the public sector in supporting innovation due to the existence of 'grey areas' in the definition of accountability and responsibility	3,56	0	1	2	6
Decision	27	Difficulties for institutions/organizations in adopting transformative solutions and changes unless triggered by shocks and/or crises that require rapid responses	3,56	0	1	2	6
Private/Public	20	Difficulty in stepping out of 'comfort zones' through critical thinking	3,25	0	1	4	3
Knowledge	32	Biased filters and simplification in production and information management processes (given their proliferation, complexity, ambiguity, or levels of uncertainty)	3,25	0	1	4	3
Knowledge	35	Persistence of uncertainties arising from an avalanche of data, models, and scenario construction in decision support and in the assessment of public policy performance	3,22	0	1	5	3
Knowledge	36	Difficulty in validating the performance of transformational policies solely with local direct measurements or when the information is not comparable	3,13	0	1	5	2
Decision	26	Prevalence of short-term return options in public policy decision-making, compared to medium- and long-term returns (i.e., beyond electoral cycles)	3,11	0	1	6	2
Decision	22	Impact of loss on assets and previous investments due to transformations	2,56	0	6	1	2

3.1.2 Trends by Stakeholder's Affiliation

Outcomes for the different groups of the stakeholders' affiliation don't allow stable conclusions as the number of participants (N=9) is very little and unbalanced between affiliations: (i) 4 are project partners from the research team; (ii) 2 are project partners from the case study team, (iii) 2 are economic actors from water industry and services; and (iv) 1 represents an economic actor from the agriculture sector.

Anyway, Table 3.11 to Table 3.14 presents the distribution of scores by clusters and stakeholders' affiliation: **PP** – Project Partners ⁵; **WEA** – Water Economic Actor; **AEA** – Agriculture Economic Actor.

⁵ It was not possible to split the categories "Project team – Research team" from "Project team – Case study team" as one participant from the research team did not keep consistency in its affiliation in all clusters.

Table 3.11 – Governance Barriers Scores by Stakeholders' Affiliation

#	Governance	Weighted average	(Scores)												
			1			2			3			4			
			(Participants Affiliation)												
			PP	WEA	AEA	PP	WEA	AEA	PP	WEA	AEA	PP	WEA	AEA	
1	Excessively long times that transformations can take due to the pace of their diffusion and differences in the perception of their innovation	3,33							3	2	1	3			
2	Effects of cascading failures resulting from poorly designed transformative policies	3,33							5		1	1	2		
3	Opposition to the transformations accompanied by violent acts (i.e., damage to equipment)	2,44	1	1		1	1		4						1
4	Difficulties in estimating the impacts of new solutions and their financial, environmental, and resource costs for other sectors	2,89				2		1	2	2		2			
5	Difficulties in engaging and involving actors who are not dominant or do not benefit directly (financially or politically) in the discussion andnot definition of water policies	2,78		1				1	5	1		1			
6	Difficulties in building agreements and commitments between groups and interest communities due to the power of their structures and trust (or distrust) relationships	3	1					1	2	2		3			
7	Nonexistence or underdevelopment of interoperable systems that allow networked operation of large infrastructures to carry out adaptive transformations	2,89				3			1	2	1	2			
8	Difficulties in involving factors that are not part of individuals' life experience/education in decision-making processes	2,67				3	1		2	1	1	1			
9	Opposition to changes resulting from innovative solutions based on perceptions of worsening inequalities	2,89		1		2			2	1		4			1
10	Lack of people's involvement in debates about transformative solutions due to disbelief in the relevance of their opinion	3		1				1	3	1		3			

Legend: **PP** – Project Partners; **WEA** – Water Economic Agents; **AEA** – Agriculture Economic Agents

Table 3.12 – Private/Public Barriers Scores by Stakeholders' Affiliation

#	Private/Public	Weighted average	(Scores)													
			1			2			3			4				
			(Stakeholders Affiliation)													
			PP	WEA	AEA	PP	WEA	AEA	PP	WEA	AEA	PP	WEA	AEA		
11	Prevalence of individual satisfactions in the choice between viable solutions	2,88	1				1			3			1	1	1	
12	Resistance from those who feel threatened in their gains within established systems in response to the introduction of changes	3,38				2				1				2	2	1
13	Advantage of non-compliance with the law resulting from a trade-off between costs and gains	2,29		2		1				3			1			
14	Perception of privacy threat by innovative solutions that use digital tools	2,5	2	1			1			1				2		1
15	Hiring private companies for 'data analytics' with risks of losing control over public data and transferring advantages to the private sector	2,38	1			2		1		2	2					
16	Difficulty in implementing climate change adaptation or mitigation solutions due to the prevalence of perceptions of negative impacts at the local level	3,38		1						1	1			4		1
17	Opposition to transformations and innovative solutions due to perceived risks of environmental degradation and water quality (i.e., contamination)	3,88								1				4	2	1
18	Unavailability of advanced technologies on the market to carry out adaptive transformations	3				1	1			3			1	1	1	
19	Existence of 'entrenched myths' that hinder the search for or acceptance of new evidence	3,63	1											4	2	1
20	Difficulty in stepping out of 'comfort zones' through critical thinking	3,25				1				1	2		1	3		

Legend: **PP** – Project Partners; **WEA** – Water Economic Agents; **AEA** – Agriculture Economic Agents

Table 3.13 – Decision Barriers Scores by Stakeholders' Affiliation

#	Decision	Weighted average	(Scores)												
			1			2			3			4			
			(Stakeholders Affiliation)												
			PP	WEA	AEA	PP	WEA	AEA	PP	WEA	AEA	PP	WEA	AEA	
21	Significant transition costs associated with the lack of evidence (i.e., with research, information, negotiation) when adopting innovation	3,33	1			1			1				3	2	1
22	Impact of loss on assets and previous investments due to transformations	2,56				4	1	1		1			2		
23	Negative impact of transformations in other sectors (side effects) and on its viability structure	3				2			3	1				1	1
24	Pressure from vested interests on public policy solutions (notion of 'expanded state')	2,67		1			1	1	5				1		
25	Disengagement of the public sector in supporting innovation due to the existence of 'grey areas' in the definition of accountability and responsibility	3,56					1		1		1		5	1	
26	Prevalence of short-term return options in public policy decision-making, compared to medium- and long-term returns (i.e., beyond electoral cycles)	3,11				1			3	2	1		2		
27	Difficulties for institutions/organizations in adopting transformative solutions and changes unless triggered by shocks and/or crises that require rapid responses	3,56				1					1	1	5	1	
28	Definition of public policies and decision-making largely dependent on 'established beliefs' among their electorates/clients	2,89		1					5	1	1		1		
29	Limited budgets that force choices between investments in structural sectors for society (i.e., health, education) or corporative current management and investments in innovative solutions in other sectors	3,78							2				4	2	1
30	Adoption of standards of promises and very high expectations of success in public policy measures or business management that limit the adoption of measures that still carry associated risks or uncertainties	2,67		1		2			4		1			1	

Legend: **PP** – Project Partners; **WEA** – Water Economic Agents; **AEA** – Agriculture Economic Agents

Table 3.14 – Knowledge Barriers Scores by Stakeholders' Affiliation

#	Knowledge	Weighted average	(Scores)											
			1			2			3			4		
			(Stakeholders Affiliation)											
			PP	WEA	AEA	PP	WEA	AEA	PP	WEA	AEA	PP	WEA	AEA
31	Inequalities and asymmetries in access to information by different stakeholders	2,78	1	1		1			2		1	2	1	
32	Biased filters and simplification in production and information management processes (given their proliferation, complexity, ambiguity, or levels of uncertainty)	3,25				1			3	1		1	1	1
33	The role of misinformation in consolidating distrust in innovative solutions	3,33		1		1			1			4	1	1
34	Weak implementation of "ex-post" evaluations of public policy measures and their actual effectiveness, maintaining areas of uncertainty to be resolved	2,89	1	1					2	1	1	3		
35	Persistence of uncertainties arising from an avalanche of data, models, and scenario construction in decision support and in the assessment of public policy performance	3,22				1			3	1	1	2	1	
36	Difficulty in validating the performance of transformational policies solely with local direct measurements or when the information is not comparable	3,13				1			3	1	1	1	1	
37	Human difficulty in processing the profusion of available information in order to support rational decisions	2,67	1	1		1			3	1		1		1
38	Pressure to 'think fast' (as opposed to 'think slow') with negative impacts on rational decision-making	2,78	1					1	4	2		1		
39	Greater sensitivity to how information is presented than to its content	2,78				2	1		3	1	1	1		
40	Greater sensitivity to "repeated information" than to the need to assess its validity	2,56		2		1		1	3			2		

Legend: **PP** – Project Partners; **WEA** – Water Economic Agents; **AEA** – Agriculture Economic Agents

Even if results cannot be conclusive, some hypothesis can be designed to be tested in further developments ⁶.

The following categories (simplified in Figure 3) have been used in the comparative analysis to describe assessment trends: (i) mainly very relevant; (ii) mainly relevant; (iii) balancing but mainly relevant; (iv) balancing between relevant and not relevant; (v) balancing but mainly less relevant; and (vi) not relevant.

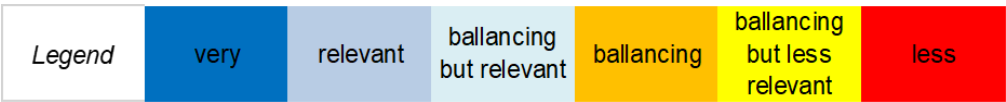


Figure 3.1 – Simplified categories used in trend comparative analysis

Scores as “Relevant” with different intensity by Stakeholders’ Affiliation

Table 3.15 presents selected items from the different clusters that stakeholders across affiliations largely agreed were relevant or very relevant.

However, several barriers showed stronger or more consistent emphasis depending on stakeholders’ affiliations, with project partners (PP) aligning more with institutional (#1, #17, #27, #29) and behavioural constraints (#19, #20), while water – (WEA) and agricultural – (AEA) stakeholders aligning more with environmental risk (#2, #17), resource limitations (#29), and short-term policy (#19, #27) pressures. Other barriers revealed more heterogeneous scoring patterns across stakeholder groups, reflecting differing perspectives on uncertainty, information processing, and the conditions required to enable transformative change (#32, #35, #36).

⁶ The gap in perception may highlight potential challenges for collaborative policymaking, as misalignment on what constitutes a “relevant” barrier may hinder effective dialogue, shared problem framing, and the development of integrated cross-sectoral solutions.

Table 3.15 – Scores as “Relevant” with different intensity by Stakeholders’ Affiliation

Relevant with different intensity			1234 (stakeholders affiliation)				1234 (stakeholders affiliation)				1234 (stakeholders affiliation)				PP	WEA	AEA
#	Barriers	Weighted average	PP				WEA				AEA						
1	Excessively long times that transformations can take due to the pace of their diffusion and differences in the perception of their innovation	3,33			3	3			2				1				
2	Effects of cascading failures resulting from poorly designed transformative policies	3,33			5	1				2			1		relevant	very	relevant
17	Opposition to transformations and innovative solutions due to perceived risks of environmental degradation and water quality (i.e., contamination)	3,88			1	4				2				1	relevant	very	very
19	Existence of 'entrenched myths' that hinder the search for or acceptance of new evidence	3,63	1			4				2				1		very	very
20	Difficulty in stepping out of 'comfort zones' through critical thinking	3,25		1	1	3			2				1			relevant	relevant
26	Prevalence of short-term return options in public policy decision-making, compared to medium- and long-term returns (i.e., beyond electoral cycles)	3,11		1	3	2			2				1			relevant	relevant
27	Difficulties for institutions/organizations in adopting transformative solutions and changes unless triggered by shocks and/or crises that require rapid responses	3,56		1		5			1	1			1			relevant	relevant
29	Limited budgets that force choices between investments in structural sectors for society (i.e., health, education) or corporative current management and investments in innovative solutions in other sectors	3,78			2	4				2				1	relevant	very	very
32	Biased filters and simplification in production and information management processes (given their proliferation, complexity, ambiguity, or levels of uncertainty)	3,25		1	3	1			1	1				1		relevant	very
35	Persistence of uncertainties arising from an avalanche of data, models, and scenario construction in decision support and in the assessment of public policy performance	3,22		1	3	2			1	1			1			relevant	relevant
36	Difficulty in validating the performance of transformational policies solely with local direct measurements or when the information is not comparable	3,13		1	3	1			1	1			1			relevant	relevant

Legend: **PP** – Project Partners; **WEA** – Water Economic Agents; **AEA** – Agriculture Economic Agents

Project Partners Divergence with other Stakeholders

Table 3.16 presents items from the different clusters, where Project Partners participants appear to show different score distributions or trends regarding economic actors.

Regarding these barriers, Project Partners seem:

- (i) *To be more divergent in “decision” barriers (#21, #23, #24).*

Perceptions of these barriers varied by stakeholder affiliation, with project partners (PP) actors showing more balanced views on transition costs and side effects, while water (WEA) and agriculture (AEA) stakeholders more consistently rated these barriers as relevant or very relevant. In contrast, pressure from vested interests was perceived as more relevant by Project Partners (PP) actors than by water (WEA) and agriculture (AEA) stakeholders, who generally assigned it lower importance.

- (ii) *To be more split in relevance recognition regarding operational and pressures from ecosystem factors (#7, #12 besides #23, #24 previously mentioned).*

Differences related to stakeholder affiliation were also observed, with Project Partners (PP) actors showing more balanced assessments regarding the absence or underdevelopment of interoperable systems, while water (WEA) and agriculture (AEA) stakeholders consistently attributed relevance to this barrier. Similarly, resistance from actors who feel threatened in their gains within established systems was considered very relevant by WEA and AEA, whereas PP exhibited a more balanced distribution of assessments.

- (iii) *To enhance more relevance to information and knowledge developments (#10, #40) or pressures coming from an “expanded state” (#24 previously mentioned).*

Stakeholder affiliation also seems to influence perceptions of social and cognitive barriers, with Project Partners (PP) actors showing greater consensus in attributing relevance to the lack of public involvement and relevance of scepticism about the value of individual opinions, while water (WEA) stakeholders were more divided, and AEC generally rated this barrier as less relevant. Similarly, PP actors tended to assign greater importance to sensitivity to repeated information over its validity, whereas WEA and AEA stakeholders considered this factor less relevant.

Table 3.16 – Project Partners' divergence with other Stakeholders

PP's Divergence		Weighted average	(scores)				(scores)				(scores)				PP	WEA	AEA
			1	2	3	4	1	2	3	4	1	2	3	4			
#	Barriers		(stakeholders affiliation)				(stakeholders affiliation)				(stakeholders affiliation)						
			PP				WEA				AEA						
7	Nonexistence or underdevelopment of interoperable systems that allow networked operation of large infrastructures to carry out adaptive transformations	2,89		3	1	2			2			1				relevant	relevant
10	Lack of people's involvement in debates about transformative solutions due to disbelief in the relevance of their opinion	3			3	3	1		1		1				relevant		less
12	Resistance from those who feel threatened in their gains within established systems in response to the introduction of changes	3,38		2	1	2				2				1		very	very
21	Significant transition costs associated with the lack of evidence (i.e., with research, information, negotiation) when adopting innovation	3,33	1	1	1	3				2				1		very	very
23	Negative impact of transformations in other sectors (side effects) and on its viability structure	3		2	3				1	1				1		relevant	very
24	Pressure from vested interests on public policy solutions (notion of 'expanded state')	2,67			5	1	1	1			1				relevant	less	less
40	Greater sensitivity to "repeated information" than to the need to assess its validity	2,56		1	3	2	2				1					less	less

Legend: **PP** – Project Partners; **WEA** – Water Economic Agents; **AEA** – Agriculture Economic Agents

Water Economic Agents Divergence with other Stakeholders

Table 3.17 presents some items coming from different clusters – but mainly from the private/public and decision clusters – where Water Economic Agents participants seem to present a different distribution of scores or trends regarding others.

- (i) *Water Economic Agents seem to tend to attribute different relevance when compared to others (#3, #13, #14, #15)*

Perceptions of governance- and security-related barriers varied across stakeholder groups, with water (WEA) actors generally rating violent opposition to transformations, legal non-compliance driven by cost-benefit trade-offs, and privacy concerns related to digital tools as less relevant, while Project Partners (PP) actors and AEA tended to attribute higher relevance to these issues. In contrast, WEA stakeholders viewed the transfer of advantages to the private sector through the outsourcing of data analytics as more relevant, whereas PP actors and AEA generally considered it less relevant.

- (ii) *Water Economic Actors also seem to be more balance regarding a set of barriers that the other tend to consider relevant/more relevant (#9, #11, #16, #18, #25, #28, #30, #33, #34, #39) or less relevant (#22)*

Across a wide range of social, economic, and policy-related barriers, water stakeholders (WEA) generally displayed more balanced assessments, whereas project partners (PP) actors and AEA more frequently rated these barriers as relevant or very relevant. These differences were particularly evident for issues related to inequality, local negative impacts, misinformation, policy beliefs, technological availability, and uncertainty in decision-making and evaluation processes.

Agriculture Economic Actor Divergence with other Stakeholders

Table 3.18 presents some items coming from the governance and knowledge clusters – where Agriculture Economic Agent seems to present a different trend compared to the others⁷.

- (i) *Agriculture Economic Actor scored barriers as less relevant than the others (#4, #5, #6, #38).*

These barriers relate mainly to systemic and process-oriented challenges, such as assessing cross-sectoral impacts of new solutions, engaging non-dominant or indirectly benefiting actors, building trust-based agreements among interest groups, and managing time pressure in decision-making. While AEA downplays the importance of these issues, water (WEA) and project partners (PP) actors tend to consider them more significant.

⁷ These scores attribute may be even more idiosyncratic, as corresponds to a single participant.

Table 3.17 – Water Economic Agents divergence with other Stakeholders

WEA Divergence			Weighted average	(scores)				(scores)				(scores)				PP	WEA	AEA
				(stakeholders affiliation)				(stakeholders affiliation)				(stakeholders affiliation)						
				1	2	3	4	1	2	3	4	1	2	3	4			
#	Barriers		PP				WEA				AEA							
3	Opposition to the transformations accompanied by violent acts (i.e., damage to equipment)	2,44	1	1	4	0	1	1						1		less	very	
9	Opposition to changes resulting from innovative solutions based on perceptions of worsening inequalities	2,89		2	2	4	1		1					1			very	
11	Prevalence of individual satisfactions in the choice between viable solutions	2,88	1		3	1		1		1			1				relevant	
13	Advantage of non-compliance with the law resulting from a trade-off between costs and gains	2,29		1	3		2						1			less	relevant	
14	Perception of privacy threat by innovative solutions that use digital tools	2,5	2		1	2	1	1						1		less	very	
15	Hiring private companies for 'data analytics' with risks of losing control over public data and transferring advantages to the private sector	2,38	1	2	2				2			1				relevant	less	
16	Difficulty in implementing climate change adaptation or mitigation solutions due to the prevalence of perceptions of negative impacts at the local level	3,38			1	4	1		1					1	relevant		very	
18	Unavailability of advanced technologies on the market to carry out adaptive transformations	3		1	3	1		1		1			1				relevant	
22	Impact of loss on assets and previous investments due to transformations	2,56		4		2		1	1			1					less	
25	Disengagement of the public sector in supporting innovation due to the existence of 'grey areas' in the definition of accountability and responsibility	3,56			1	5		1		1			1		relevant		relevant	
28	Definition of public policies and decision-making largely dependent on 'established beliefs' among their electorates/clients	2,89			5	1	1		1				1		relevant		relevant	
30	Adoption of standards of promises and very high expectations of success in public policy measures or business management that limit the adoption of measures that still carry associated risks or uncertainties	2,67		2	4		1			1			1				relevant	
33	The role of misinformation in consolidating distrust in innovative solutions	3,33		1	1	4	1			1				1			very	
34	Weak implementation of "ex-post" evaluations of public policy measures and their actual effectiveness, maintaining areas of uncertainty to be resolved	2,89	1		2	3	1		1				1				relevant	
39	Greater sensitivity to how information is presented than to its content	2,78		2	3	1		1	1				1				relevant	

Legend: **PP** – Project Partners; **WEA** – Water Economic Agents; **AEA** – Agriculture Economic Agents

Table 3.18 – Agriculture Economic Agents divergence with other Stakeholders

AEA Divergence		Weighted average	(scores) (stakeholders affiliation)				(scores) (stakeholders affiliation)				(scores) (stakeholders affiliation)				PP	WEA	AEA
			1	2	3	4	1	2	3	4	1	2	3	4			
#	Barriers		PP				WEA				AEA						
4	Difficulties in estimating the impacts of new solutions and their financial, environmental, and resource costs for other sectors	2,89		2	2	2			2		1					relevant	less
5	Difficulties in engaging and involving actors who are not dominant or do not benefit directly (financially or politically) in the discussion andnot definition of water policies	2,78			5	1	1		1		1				relevant		less
6	Difficulties in building agreements and commitments between groups and interest communities due to the power of their structures and trust (or distrust) relationships	3	1		2	3			2		1					relevant	less
8	Difficulties in involving factors that are not part of individuals' life experience/education in decision-making processes	2,67		3	2	1		1	1				1				relevant
31	Inequalities and asymmetries in access to information by different stakeholders	2,78	1	1	2	2	1			1			1				relevant
37	Human difficulty in processing the profusion of available information in order to support rational decisions	2,67	1	1	3	1	1		1					1			very
38	Pressure to 'think fast' (as opposed to 'think slow') with negative impacts on rational decision-making	2,78	1		4	1			2		1					relevant	less

Legend: **PP** – Project Partners; **WEA** – Water Economic Agents; **AEA** – Agriculture Economic Agents

- (ii) *Agriculture Economic Actor scored barriers as most relevant, while the others were more balanced (#8, #31, #37).*

Agricultural Economic Actors (AEA) place greater emphasis than other stakeholder groups on cognitive and informational barriers affecting decision-making. In particular, AEA identify difficulties in integrating knowledge beyond individuals' personal experience or education, inequalities in access to information, and the human limits in processing large volumes of information as especially relevant constraints. In contrast, Water Economic Actors (WEA) and Project Partners (PP) exhibit more balanced, divided views on these issues, suggesting less consensus about their importance.

3.1.3 Trends by Gender Affiliation

In the CoP WS#3 and in the Mentimeter exercise, 4 men and 5 women participated. The number of participants (N=9) doesn't allow for the conclusion of trends, even though some notes can be highlighted to develop further hypotheses. We used the same categories as in Stakeholders affiliation (see Figure 3.1) to describe assessment trends: (i) mainly very relevant; (ii) mainly relevant; (iii) balancing but mainly relevant; (iv) balancing between relevant and not relevant; (v) balancing but mainly less relevant; and (vi) not relevant.

Only two barriers have collected similar gender score trends

Table 3.19 presents the two barriers that collected similar gender score trends.

- *(#1) Excessively long times that transformations can take*
- *(#34) Weak implementation of "ex-post" evaluations of public policy measures, maintaining areas of uncertainty to be resolved*

Eight barriers, even scored as "Relevant" by both genders, present different intensity trends

Table 3.20 presents barriers that both genders scored as "relevant" or "very relevant", even with different trends in their intensity.

The main insight is that gender differences emerge in how barriers to policy design and implementation are perceived, particularly regarding risk, uncertainty, and systemic vulnerability.

Women tend to rate several barriers as "very relevant" more often than men, especially those related to cascading policy failures (#2), environmental and water-quality risks (#17), resistance to transformative change (#27), budget constraints (#29), and persistent uncertainty (#35). This may suggest a stronger sensitivity among women to interconnected risks, long-term consequences, and structural limitations that can undermine effective policy outcomes.

Table 3.19 – Similar Score trends by Gender

#	Barriers	Weighted average	(scores)				(scores)				Male	Female	
			1	2	3	4	1	2	3	4			
			Male				Female						
Governance	1	Excessively long times that transformations can take due to the pace of their diffusion and differences in the perception of their innovation	3,33			3	1			3	2	relevant	relevant
Knowledge	34	Weak implementation of "ex-post" evaluations of public policy measures and their actual effectiveness, maintaining areas of uncertainty to be resolved	2,89	1		2	1	1		2	2		

Table 3.20 – Scores as “Relevant” with different intensity by Gender

#	Barriers	Weighted average	(scores)				(scores)				Male	Female
			1	2	3	4	1	2	3	4		
			Male				Female					
Governance	2	Effects of cascading failures resulting from poorly designed transformative policies	3,33			4			2	3	relevant	very
Private/Public	16	Difficulty in implementing climate change adaptation or mitigation solutions due to the prevalence of perceptions of negative impacts at the local level	3,38			1	2	1	1	3	relevant	
Private/Public	17	Opposition to transformations and innovative solutions due to perceived risks of environmental degradation and water quality (i.e., contamination)	3,88			1	2			5	relevant	very
Decision	27	Difficulties for institutions/organizations in adopting transformative solutions and changes unless triggered by shocks and/or crises that require rapid responses	3,56		1		3		2	3		very
Decision	28	Definition of public policies and decision-making largely dependent on 'established beliefs' among their electorates/clients	2,89				4	1	3	1	very	
Decision	29	Limited budgets that force choices between investments in structural sectors for society (i.e., health, education) or corporative current management and investments in innovative solutions in other sectors	3,78			2	2			5	relevant	very
Knowledge	35	Persistence of uncertainties arising from an avalanche of data, models, and scenario construction in decision support and in the assessment of public policy performance	3,22		1	3			2	3		very
Knowledge	36	Difficulty in validating the performance of transformational policies solely with local direct measurements or when the information is not comparable	3,13		1	2			3	2		relevant

At the same time, women show more balanced views than men on barriers linked to local-level perceptions (#16) and the influence of established beliefs on policymaking (#28), indicating a nuanced assessment rather than a uniform elevation of relevance.

Conversely, men appear more cautious or reluctant to score as “very relevant” the difficulty of validating the performance of transformational policies (#36), pointing to a greater emphasis on measurable outcomes or proof before assigning high relevance.

Overall, these differences highlight distinct risk perceptions and evaluative approaches between genders, which may influence how challenges are prioritised and addressed in policy and decision-making processes.

Even with similar trends other nine items collected different gender scores’ intensity

Table 3.21 presents other items from all thematic clusters where gender trends seem to be similar, even with different intensities, suggesting two main insights regarding how barriers to transformation may be perceived across genders.

First, women show a tendency to rate certain barriers as “very relevant” more frequently. These include obstacles related to social conflict and resistance to change, such as violent opposition to transformations (#3), difficulties in building agreements and trust among stakeholder groups (#6), resistance from those who feel threatened by change (#12), and the influence of misinformation (#33). Women also emphasise structural and contextual challenges, including limited availability of advanced technologies (#18) and the pressure for rapid decision-making that undermines careful, rational processes (#38).

Second, women appear to attribute greater importance than men to a specific set of barriers connected to economic and informational impacts. In particular, they are more likely to view as relevant the potential loss of assets and prior investments caused by transformations (#22), the negative side effects that changes in one sector may generate in others (#23), and existing inequalities in access to information among stakeholders (#31).

Together, these findings indicate that while perceptions are broadly similar across genders, women tend to express stronger concern about social, economic, and informational risks associated with transformative process

Table 3.21 – Other Gender Score intensities differences

			(scores)				(scores)					
			1	2	3	4	1	2	3	4		
#	Barriers	Weighted average	Male				Female				Male	Female
Governance	3	Opposition to the transformations accompanied by violent acts (i.e., damage to equipment)	2,44	1	1	2		1	1	2	1	
Governance	6	Difficulties in building agreements and commitments between groups and interest communities due to the power of their structures and trust (or distrust) relationships	3	1		2	1		1	2	2	
Private/Public	12	Resistance from those who feel threatened in their gains within established systems in response to the introduction of changes	3,38		1		2		1	1	3	
Private/Public	18	Unavailability of advanced technologies on the market to carry out adaptive transformations	3		1	2			1	2	2	
Decision	22	Impact of loss on assets and previous investments due to transformations	2,56		3		1		3	1	1	
Decision	23	Negative impact of transformations in other sectors (side effects) and on its viability structure	3		1	2			1	2	2	
Knowledge	31	Inequalities and asymmetries in access to information by different stakeholders	2,78	1	1		2	1		3	1	
Knowledge	33	The role of misinformation in consolidating distrust in innovative solutions	3,33		1	1	2	1			4	
Knowledge	38	Pressure to 'think fast' (as opposed to 'think slow') with negative impacts on rational decision-making	2,78	1		3			1	3	1	

However, more than half of the barriers' set collected different gender score trends

Table 3.22 presents barriers that collected different gender score trends, revealing possible several gender-related patterns in the perception of barriers to transformation.

First, meaningful differences in scoring trends between men and women are observed across multiple thematic areas. In the governance, private/public, and decision-making clusters, half or more of the items show divergent evaluations according to gender affiliation, with similar but less pronounced variations also appearing in the knowledge cluster. This indicates that perceptions of obstacles are not uniform and that gender may play a role in how different dimensions of transformation are assessed.

Second, women tend to rate a wide range of barriers as more relevant than men, particularly those linked to uncertainty, information management, and institutional decision-making. These include difficulties in estimating cross-sectoral impacts of new solutions (#4), lack of interoperable systems (#7), challenges in incorporating unfamiliar factors into decisions (#8), and cognitive or cultural constraints such as entrenched myths (#19) and resistance to critical thinking (#20).

Women also emphasise structural concerns such as short-termism in public policy (#26), biased information filters (#32), the overwhelming volume of available data (#37), and high transition costs (#21) when evidence is insufficient. Together, these tendencies suggest that women adopt a cautious and systemic perspective on the complexities and risks involved in transformative processes.

Third, for another set of items – mainly related to participation, inequality, and public-sector engagement – women display more balanced scoring patterns, whereas men are more likely to consider these barriers as relevant. These include difficulties in involving non-dominant actors (#5), perceptions of increasing inequalities (#9), public disengagement from policy debates (#10), and ambiguity in public-sector responsibility for innovation (#11, #25).

Finally, men tend to attribute greater relevance to barriers associated with legal compliance (#13), privacy concerns (#14), vested interests in policymaking (#24), and susceptibility to repeated information (#40) than women do. Overall, the findings point to distinct gendered perspectives: women generally place greater emphasis on informational, cognitive, and systemic risks, while men more frequently highlight issues related to power dynamics, regulation, and external pressures.

Table 3.22 – Different Gender Score trends

			(scores)				(scores)					
			1	2	3	4	1	2	3	4		
#	Barriers	Weighted average	Male				Female				Male	Female
Governance	4	Difficulties in estimating the impacts of new solutions and their financial, environmental, and resource costs for other sectors		2	2			1	2	2		
Governance	5	Difficulties in engaging and involving actors who are not dominant or do not benefit directly (financially or politically) in the discussion andnot definition of water policies				4	1	1	2	1	very	
Governance	7	Nonexistence or underdevelopment of interoperable systems that allow networked operation of large infrastructures to carry out adaptive transformations		3	1				3	2	less	relevant
Governance	8	Difficulties in involving factors that are not part of individuals' life experience/education in decision-making processes		3	1			1	3	1	less	
Governance	9	Opposition to changes resulting from innovative solutions based on perceptions of worsening inequalities		1	2	1	1	1	1	2		
Governance	10	Lack of people's involvement in debates about transformative solutions due to disbelief in the relevance of their opinion			3	1	1	1	2	1	relevant	
Private/Public	11	Prevalence of individual satisfactions in the choice between viable solutions			2	1	1	1	2	1	relevant	
Private/Public	13	Advantage of non-compliance with the law resulting from a trade-off between costs and gains			3		2	1	2		relevant	less
Private/Public	14	Perception of privacy threat by innovative solutions that use digital tools	1		1	1	2	1		2		less
Private/Public	15	Hiring private companies for 'data analytics' with risks of losing control over public data and transferring advantages to the private sector	1	1	1			2	3		less	
Private/Public	19	Existence of 'entrenched myths' that hinder the search for or acceptance of new evidence	1			2				5		very
Private/Public	20	Difficulty in stepping out of 'comfort zones' through critical thinking		1	1	1			3	2		relevant
Decision	21	Significant transition costs associated with the lack of evidence (i.e., with research, information, negotiation) when adopting innovation	1	1	1	1				5		very
Decision	24	Pressure from vested interests on public policy solutions (notion of 'expanded state')			4		1	2	1	1	relevant	less
Decision	25	Disengagement of the public sector in supporting innovation due to the existence of 'grey areas' in the definition of accountability and responsibility			1	3		1	1	3	relevant	
Decision	26	Prevalence of short-term return options in public policy decision-making, compared to medium- and long-term returns (i.e., beyond electoral cycles)		1	2	1			4	1		relevant
Decision	30	Adoption of standards of promises and very high expectations of success in public policy measures or business management that limit the adoption of measures that still carry associated risks or uncertainties		2	2		1		3	1		
Knowledge	32	Biased filters and simplification in production and information management processes (given their proliferation, complexity, ambiguity, or levels of uncertainty)		2		2			2	3		very
Knowledge	37	Human difficulty in processing the profusion of available information in order to support rational decisions	1	1	2		1		2	2		
Knowledge	39	Greater sensitivity to how information is presented than to its content		2	2			1	3	1		
Knowledge	40	Greater sensitivity to "repeated information" than to the need to assess its validity		1	3		2	1		2		less

3.2 Barriers assessment regarding Personas

Participants on Comporta CoP WS#3 were also asked:

- a) To choose the two most relevant barriers that could be relevant to trust and acceptance in each cluster for six Personas, and then
- b) To choose from this pre-selection, those that could be considered in the top of relevance to be addressed with immediate and medium-term solutions (Top2).

Table 3.23 shows the ordered items by intensity of choices for the Personas, complemented by weighted average in Participants assessment, indication for the different types of Personas, selection to Persona Top 2, selection to the solution ideation exercise, and stakeholders and gender scores' trends.

This exercise, even based on perceptions, was of most relevance as it:

- a) Helped participants to focus on different “shoes” and profiles of concerns; and
- b) Shows a different perspective (another hierarchy) in ordering the relevance of the barriers (confirming some but highlighting others).

Table 3.23 – Barrier's choice ordered by intensity of choices for the Personas

Cluster	#	Barriers	Weighted average	Citizens	Beneficiaries	Research	Operators	Administration	Industry	N Personas	For Ideas	PP	WEA	AEA	Male	Female
Private/Public	17	Opposition to transformations and innovative solutions due to perceived risks of environmental degradation and water quality (i.e., contamination)	3,88	Top 2			Top 2			4	#2	relevant	very	very	relevant	very
Governance	1	Excessively long times that transformations can take due to the pace of their diffusion and differences in the perception of their innovation	3,33							3		very	relevant	relevant	relevant	relevant
Governance	7	Nonexistence or underdevelopment of interoperable systems that allow networked operation of large infrastructures to carry out adaptive transformations	2,89							3			relevant	relevant	less	relevant
Knowledge	31	Inequalities and asymmetries in access to information by different stakeholders	2,78		Top 2				Top 2	3	#1 #3 #4			relevant		
Governance	10	Lack of people's involvement in debates about transformative solutions due to disbelief in the relevance of their opinion	3			Top 2				2	#2	relevant		less	relevant	
Private/Public	18	Unavailability of advanced technologies on the market to carry out adaptive transformations	3							2				relevant		
Decision	24	Pressure from vested interests on public policy solutions (notion of 'expanded state')	2,67							2		relevant	less	less	relevant	less
Decision	28	Definition of public policies and decision-making largely dependent on 'established beliefs' among their electorates/clients	2,89					Top 2		2		relevant		relevant	very	
Decision	29	Limited budgets that force choices between investments in structural sectors for society (i.e., health, education) or corporative current management and investments in innovative solutions in other sectors	3,78							2		relevant	very	very	relevant	very
Knowledge	33	The role of misinformation in consolidating distrust in innovative solutions	3,33							2				very		
Knowledge	35	Persistence of uncertainties arising from an avalanche of data, models, and scenario construction in decision support and in the assessment of public policy performance	3,22							2			relevant	relevant		very

Legend: **PP** – Project Partners; **WEA** – Water Economic Agents; **AEA** – Agriculture Economic Agents

Table 3.23 – Barrier's choice ordered by intensity of choices for the Personas (cont.)

Cluster	#	Barriers	Weighted average	Citizens	Beneficiaries	Research	Operators	Administration	Industry	N Personas	For Ideas	PP	WEA	AEA	Male	Female
Governance	2	Effects of cascading failures resulting from poorly designed transformative policies	3,33							1		relevant	very	relevant	relevant	very
Governance	4	Difficulties in estimating the impacts of new solutions and their financial, environmental, and resource costs for other sectors	2,89							1			relevant	less		
Governance	6	Difficulties in building agreements and commitments between groups and interest communities due to the power of their structures and trust (or distrust) relationships	3							1			relevant	less		
Private/Public	12	Resistance from those who feel threatened in their gains within established systems in response to the introduction of changes	3,38							1			very	very		
Private/Public	13	Advantage of non-compliance with the law resulting from a trade-off between costs and gains	2,29							1			less	relevant	relevant	less
Private/Public	14	Perception of privacy threat by innovative solutions that use digital tools	2,5							1			less	very		less
Private/Public	16	Difficulty in implementing climate change adaptation or mitigation solutions due to the prevalence of perceptions of negative impacts at the local level	3,38				Top 2			1	#2	relevant		very	relevant	
Private/Public	19	Existence of 'entrenched myths' that hinder the search for or acceptance of new evidence	3,63							1			very	very		very
Private/Public	20	Difficulty in stepping out of 'comfort zones' through critical thinking	3,25							1			relevant	relevant		relevant
Decision	21	Significant transition costs associated with the lack of evidence (i.e., with research, information, negotiation) when adopting innovation	3,33							1			very	very		very
Decision	22	Impact of loss on assets and previous investments due to transformations	2,56							1				less		
Decision	23	Negative impact of transformations in other sectors (side effects) and on its viability structure	3							1			relevant	very		
Decision	27	Difficulties for institutions/organizations in adopting transformative solutions and changes unless triggered by shocks and/or crises that require rapid responses	3,56						Top 2	1			relevant	relevant		very
Decision	30	Adoption of standards of promises and very high expectations of success in public policy measures or business management that limit the adoption of measures that still carry associated risks or uncertainties	2,67							1				relevant		
Knowledge	32	Biased filters and simplification in production and information management processes (given their proliferation, complexity, ambiguity, or levels of uncertainty)	3,25							1	#4		relevant	very		very
Knowledge	37	Human difficulty in processing the profusion of available information in order to support rational decisions	2,67						Top 2	1	#3			very		
Knowledge	38	Pressure to 'think fast' (as opposed to 'think slow') with negative impacts on rational decision-making	2,78							1			relevant	less		
Knowledge	39	Greater sensitivity to how information is presented than to its content	2,78							1				relevant		
Knowledge	40	Greater sensitivity to "repeated information" than to the need to assess its validity	2,56							1			less	less		less

Legend: PP – Project Partners; WEA – Water Economic Agents; AEA – Agriculture Economic Agents

Table 3.23 – Barrier's choice ordered by intensity of choices for the Personas (cont.)

Cluster	#	Barriers	Weighted average	Citizens	Beneficiaries	Research	Operators	Administration	Industry	N Personas	For Ideas	PP	WEA	AEA	Male	Female
Governance	3	Opposition to the transformations accompanied by violent acts (i.e., damage to equipment)	2,44							0			less	very		
Governance	5	Difficulties in engaging and involving actors who are not dominant or do not benefit directly (financially or politically) in the discussion and not definition of water policies	2,78							0		relevant		less	very	
Governance	8	Difficulties in involving factors that are not part of individuals' life experience/education in decision-making processes	2,67							0				relevant	less	
Governance	9	Opposition to changes resulting from innovative solutions based on perceptions of worsening inequalities	2,89							0				very		
Private/Public	11	Prevalence of individual satisfactions in the choice between viable solutions	2,88							0				relevant	relevant	
Private/Public	15	Hiring private companies for 'data analytics' with risks of losing control over public data and transferring advantages to the private sector	2,38							0			relevant	less	less	
Decision	25	Disengagement of the public sector in supporting innovation due to the existence of 'grey areas' in the definition of accountability and responsibility	3,56							0		relevant		relevant	relevant	
Decision	26	Prevalence of short-term return options in public policy decision-making, compared to medium- and long-term returns (i.e., beyond electoral cycles)	3,11							0			relevant	relevant		relevant
Knowledge	34	Weak implementation of "ex-post" evaluations of public policy measures and their actual effectiveness, maintaining areas of uncertainty to be resolved	2,89							0				relevant		
Knowledge	36	Difficulty in validating the performance of transformational policies solely with local direct measurements or when the information is not comparable	3,13							0			relevant	relevant		relevant

Legend: **PP** – Project Partners; **WEA** – Water Economic Agents; **AEA** – Agriculture Economic Agents

Identification of barriers for 3 or more Personas

Table 3.24 identifies the most shared barriers among the Personas, mainly highlighting governance issues.

- i. Two Barriers that also share the pool position in Participants' Mentimeter Assessment:
 - **(#17)** *Opposition to transformations and innovative solutions due to perceived risks of environmental degradation and water quality (i.e., contamination) ($\bar{x} = 3.88$).*
The most "consensual" one, both in the Participants' and Personas' assessment, elected twice to the Top 2 and selected to the solution ideation process, even though not appointed for the Researchers.
 - **(#1)** *Excessively long times that transformations can take due to the pace of their diffusion and differences in the perception of their innovation ($\bar{x} = 3.33$).*
Sharing relevance consensus both in Participants' and Personas' assessment, even only chosen by half of Personas, not elected to the Top 2 and not selected to the solution ideation process (as a more structural and difficult to solve).
- ii. Two Barriers that were not in the pool position in the participants' Mentimeter Assessment and seemed to be more sectoral
 - **(#31)** *Inequalities and asymmetries in access to information by different stakeholders ($\bar{x} = 2.78$)*
Most revealing split scores in the Participants' Mentimeter Assessment, occupying the middle bottom of the ranking, although it collects choices for three Personas (*Operators*, *Industry* and *Endusers*), has been selected twice as a Top 2 and selected by the three groups for the solution ideation process.
 - **(#7)** *Nonexistence or underdevelopment of interoperable systems that allow networked operation of large infrastructures to carry out adaptive transformations ($\bar{x} = 2.89$)*
Most relevant to economic agents in the Participants' Mentimeter Assessment, occupying the middle bottom of the ranking, although it collects choices for three Personas (*Operators*, *Industry* and *Administration*), not elected to the Top 2 and not selected to the solution ideation process (as it is more difficult to solve).

Table 3.24 – Barrier's choice for 3 or more Personas

#	Choices	Weighted average	Citizens	Beneficiaries	Research	Operators	Administration	Industry	N Personas	For Ideas	PP	WEA	AEA	Male	Female
17	Opposition to transformations and innovative solutions due to perceived risks of environmental degradation and water quality (i.e., contamination)	3,88	Top 2			Top 2			4	#2	relevant	very	very	relevant	very
1	Excessively long times that transformations can take due to the pace of their diffusion and differences in the perception of their innovation	3,33							3		very	relevant	relevant	relevant	relevant
7	Nonexistence or underdevelopment of interoperable systems that allow networked operation of large infrastructures to carry out adaptive transformations	2,89							3			relevant	relevant	less	relevant
31	Inequalities and asymmetries in access to information by different stakeholders	2,78		Top 2				Top 2	3	#1 #3 #4			relevant		

Legend: **PP** – Project Partners; **WEA** – Water Economic Agents; **AEA** – Agriculture Economic Agents

Identification of barriers for at least 2 Personas

Table 3.25 identifies shared barriers across at least two Personas, revealing different alliances of concerns among them and highlighting mainly decision and knowledge issues.

- i. Two Barriers that shared consensus of relevance and occupy top positions in the Participants' Mentimeter Assessment

Among the barriers identified, limited budgets emerged as a particularly critical constraint, forcing difficult trade-offs between investments in essential societal sectors and the adoption of innovative solutions in other domains (**#29** | $\bar{x} = 3.78$). In addition, the persistence of uncertainty (driven by the growing volume of data, models, and scenarios used in decision-making) was highlighted as a significant challenge, complicating both policy evaluation and the effective use of decision-support tools (**#35** | $\bar{x} = 3.22$).

Both collected choices for two Personas: **#29** by Operators and Industry, and **#35** by Researchers and Administration. Nevertheless, neither barrier was ranked among the Top 2 priorities, nor were they included in the solution ideation process. This outcome suggests that, despite their acknowledged importance, participants perceived them as more structural in nature and therefore more complex and difficult to address through short-term or targeted interventions.

- ii. Five barriers that achieved moderate relevance scores for Personas but failed to generate a clear consensus among participants in the Mentimeter assessment.

These barriers display varying patterns of stakeholders and Personas support and prioritisation.

Barrier **#10** ($\bar{x} = 3.00$) – concerning the lack of public involvement in debates due to disbelief in the value of individual opinions – received divergent evaluations across stakeholders. However, it was considered relevant for Researchers and Citizens, ranked among the Top 2 by Researchers, and ultimately included in the solution ideation process, indicating that engagement-related issues are particularly salient for certain Personas.

The remaining four barriers, while recognised as relevant by specific groups, were not prioritised for further development (not carried forward to ideation).

Barrier **#18** ($\bar{x} = 3.00$) – related to the unavailability of advanced technologies – showed relatively balanced scoring – especially among water and environmental actors (WEA) – and was deemed important by Researchers and Industry Personas. Similarly, barrier **#24** ($\bar{x} = 2.67$) – addressing pressure from vested interests on public policy – was viewed as less relevant by economic agents but important to Beneficiaries and Administration Personas. Barrier **#28** ($\bar{x} = 2.89$) – focused on the influence of established beliefs on policymaking – gained strong support from Citizens and Administration Personas and was even ranked Top 2 by the latter. Finally, barrier **#33** ($\bar{x} = 3.33$) – concerning misinformation and distrust in innovation – produced differing trends across stakeholders but was recognised by Citizens and Administration Personas.

Table 3.25 – Barrier's choice for at least 2 Personas

#	Choices	Weighted average	Citizens	Beneficiaries	Research	Operators	Administration	Industry	N Personas	For Ideas	PP	WEA	AEA	Male	Female
10	Lack of people's involvement in debates about transformative solutions due to disbelief in the relevance of their opinion	3			Top 2				2	#2	relevant		less	relevant	
18	Unavailability of advanced technologies on the market to carry out adaptive transformations	3							2				relevant		
24	Pressure from vested interests on public policy solutions (notion of 'expanded state')	2,67							2		relevant	less	less	relevant	less
28	Definition of public policies and decision-making largely dependent on 'established beliefs' among their electorates/clients	2,89					Top 2		2		relevant		relevant	very	
29	Limited budgets that force choices between investments in structural sectors for society (i.e., health, education) or corporative current management and investments in innovative solutions in other sectors	3,78							2		relevant	very	very	relevant	very
33	The role of misinformation in consolidating distrust in innovative solutions	3,33							2				very		
35	Persistence of uncertainties arising from an avalanche of data, models, and scenario construction in decision support and in the assessment of public policy performance	3,22							2			relevant	relevant		very

Legend: **PP** – Project Partners; **WEA** – Water Economic Agents; **AEA** – Agriculture Economic Agents

Identification of barriers for at least 1 Persona

Table 3.26 presents the 19 items that were pre-selected as relevant for one Persona. Among them, there are four that deserve to be highlighted as they were selected to the Top 2 or/and selected to the solution ideation process, regarding the *Operators* and *Industry* Personas.

i. Operators

Two barriers show distinct but complementary patterns in how they are perceived and prioritised. Barrier **#16** ($\bar{x} = 3.38$) – concerning the difficulty of implementing climate change adaptation or mitigation measures due to perceived negative local impacts – generated different scoring trends among stakeholder groups. Despite these variations, it was clearly recognised as relevant to Operators Persona, ranked among the Top 2 priorities, and ultimately included in the solution ideation process.

In contrast, barrier **#32** ($\bar{x} = 3.25$) – related to biased filters and simplification in information management processes – produced more consistent scoring trends across stakeholder groups, although with varying degrees of intensity. Like barrier **#16**, it was considered relevant to Operators Persona and was incorporated into the solution ideation phase.

ii. Industry

Barrier **#27** ($\bar{x} = 3.56$) – which refers to the difficulty institutions face in adopting transformative changes without the stimulus of crises or external shocks – received relatively consistent scores across stakeholder groups, although with varying intensities. It was considered particularly relevant to Industry Persona and was even selected as one of the Top 2 priorities. However, despite this high ranking, it was ultimately not included in the solution ideation phase. This suggests that participants may have viewed the barrier as too systemic and deeply embedded in organisational behaviour to be effectively addressed through the available collaborative mechanisms.

In contrast, barrier **#37** ($\bar{x} = 2.67$) – related to the human difficulty in processing large amounts of information for rational decision-making – generated more divergent evaluations among stakeholders. Even so, it was also identified as relevant to Industry Persona, ranked within the Top 2 priorities, and successfully advanced to the solution ideation process. The different trajectory of this barrier indicates that, although it involves complex cognitive and informational challenges, stakeholders perceived it as more amenable to practical interventions than barrier **#27**. Together, these results demonstrate that inclusion in the ideation process depends not only on perceived relevance but also on the extent to which a barrier is viewed as solvable within the initiative's scope.

Table 3.26 – Barrier's choice for at least 1 Persona

#	Choices	Weighted average	Citizens	Beneficiaries	Research	Operators	Administration	Industry	N Personas	For Ideas	PP	WEA	AEA	Male	Female
2	Effects of cascading failures resulting from poorly designed transformative policies	3,33							1		relevant	very	relevant	relevant	very
4	Difficulties in estimating the impacts of new solutions and their financial, environmental, and resource costs for other sectors	2,89							1			relevant	less		
6	Difficulties in building agreements and commitments between groups and interest communities due to the power of their structures and trust (or distrust) relationships	3							1			relevant	less		
12	Resistance from those who feel threatened in their gains within established systems in response to the introduction of changes	3,38							1			very	very		
13	Advantage of non-compliance with the law resulting from a trade-off between costs and gains	2,29							1			less	relevant	relevant	less
14	Perception of privacy threat by innovative solutions that use digital tools	2,5							1			less	very		less
16	Difficulty in implementing climate change adaptation or mitigation solutions due to the prevalence of perceptions of negative impacts at the local level	3,38				Top 2			1	#2	relevant		very	relevant	
19	Existence of 'entrenched myths' that hinder the search for or acceptance of new evidence	3,63							1			very	very		very
20	Difficulty in stepping out of 'comfort zones' through critical thinking	3,25							1			relevant	relevant		relevant
21	Significant transition costs associated with the lack of evidence (i.e., with research, information, negotiation) when adopting innovation	3,33							1			very	very		very
22	Impact of loss on assets and previous investments due to transformations	2,56							1				less		
23	Negative impact of transformations in other sectors (side effects) and on its viability structure	3							1			relevant	very		
27	Difficulties for institutions/organizations in adopting transformative solutions and changes unless triggered by shocks and/or crises that require rapid responses	3,56						Top 2	1			relevant	relevant		very
30	Adoption of standards of promises and very high expectations of success in public policy measures or business management that limit the adoption of measures that still carry associated risks or uncertainties	2,67							1				relevant		
32	Biased filters and simplification in production and information management processes (given their proliferation, complexity, ambiguity, or levels of uncertainty)	3,25							1	#4		relevant	very		very
37	Human difficulty in processing the profusion of available information in order to support rational decisions	2,67						Top 2	1	#3			very		
38	Pressure to 'think fast' (as opposed to 'think slow') with negative impacts on rational decision-making	2,78							1			relevant	less		
39	Greater sensitivity to how information is presented than to its content	2,78							1				relevant		
40	Greater sensitivity to "repeated information" than to the need to assess its validity	2,56							1			less	less		less

Legend: **PP** – Project Partners; **WEA** – Water Economic Agents; **AEA** – Agriculture Economic Agents

3.3 Personas' Clusters Ecosystem

This exercise also helps to identify “*alliances of concern*” among the Personas, highlighting which issues are considered important by some groups but less significant by others. In doing so, it reveals areas where a particular Persona may feel more isolated or perceive that their priorities are not fully shared.

The process can also show which Personas occupy a more central or connected position, based on the number of concerns they share with others, and which ones appear more peripheral by identifying items that few or no other groups recognised as relevant.

Table 3.27 shows the number of barriers each Persona supports by itself (standalone) and the intensity of shared barriers with other Personas.

Table 3.27 – Personas Alliances Incidence

<i>Personas Alliances Incidences</i>	Citizens	Beneficiaries	Research	Operators	Administration	Industry	(number of interactions)	ration of shared items / alone items
Citizens	3	1	1	1	3	0	6	2,0
Beneficiaries	1	3	0	2	2	1	6	2,0
Research	1	0	5	0	1	1	3	0,6
Operators	1	2	0	3	2	3	8	2,7
Administration	3	2	1	2	1	1	9	9,0
Industry	0	1	1	3	1	4	6	1,5
(total)	9	9	8	11	10	10		
(% of alone items/total of items)	33%	33%	63%	27%	10%	40%		

Figure 3.2 reveals hypothesis to understand this ecosystem of interconnections (eventual potential alliances) and some key barriers to consider for further development, both in its sectorial and cross-sectoral relevance.

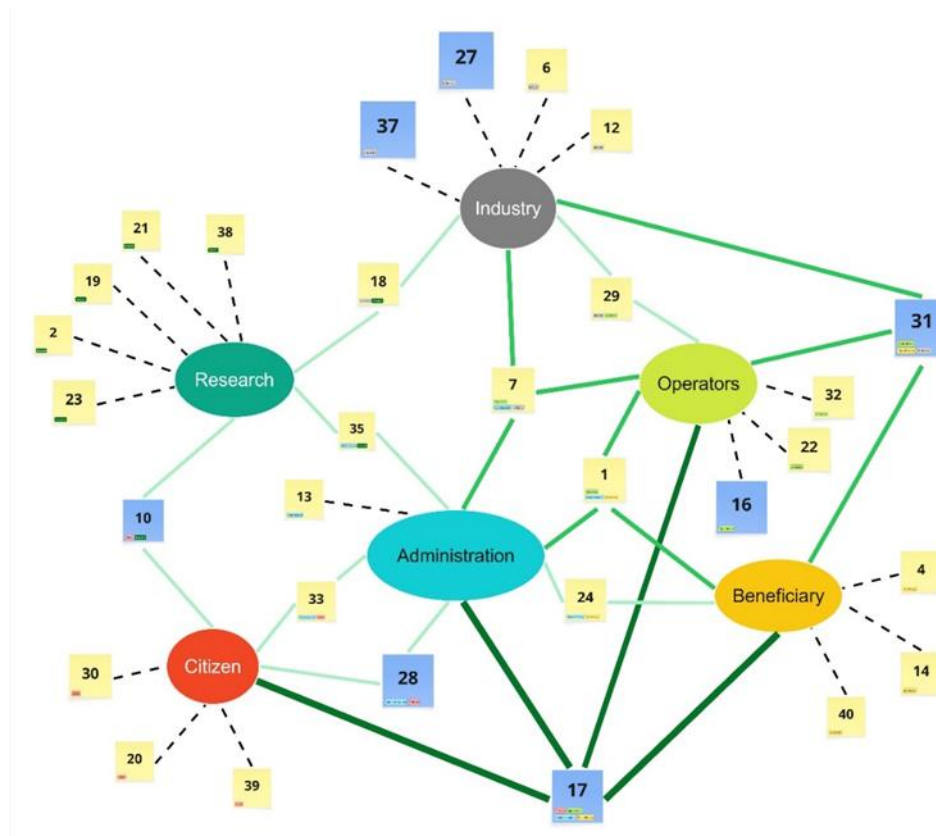


Figure 3.2 – Cluster of concerns between Personas

Overall, these findings illustrate how each Persona faces unique cognitive, structural, and operational challenges while displaying a variety in degrees of connectivity. This underscores the importance of tailored strategies that consider both individual perspectives and systemic interdependencies in promoting innovation, risk management, and informed decision-making.

We can notice that:

- (i) **Researchers** is the Persona that presents the highest number of standalone items (5) and that shares less relevant concerns with the others (only 3 with 3 other Personas) – one with *Citizens*, *Administration* and *Industry*, but missing Beneficiaries and Operators.

Items for which the *Research* Persona *stands alone* – despite most of them receiving relatively high scores in the Participants' Assessment – highlight several structural and cognitive challenges affecting decision-making and innovation. These include the effects of cascading failures triggered by poorly designed transformative policies (**#2**; $\bar{x} = 3.33$), the persistence of entrenched myths that hinder the search for or acceptance of new evidence (**#19**; $\bar{x} = 3.63$), and the significant transition costs arising from evidence gaps related to research, information, and negotiation when adopting innovation (**#21**; $\bar{x} = 3.33$). Additionally, the negative side effects of transformations in other sectors on sectoral viability structures (**#23**; $\bar{x} = 3.00$), as well as the growing pressure to “think fast” rather than “think slow” (**#38**; $\bar{x} = 2.78$), were identified as factors that undermine rational and reflective decision-making.

- (ii) **Administration** is the Persona that presents only an item standalone and is expected to play a significant role in connectivity and dialogues with the other Personas, sharing a significant number of concerns (9) with *all the other Personas* – but mainly with Citizens (3), Beneficiaries (2) and Operators (2)

The item for which the Administration Persona stands alone – and which also received the lowest score in the Participants' Assessment – concerns the perceived advantage of non-compliance with the law, arising from a trade-off between associated costs and expected gains (**#13**; $\bar{x} = 2.29$).

- (iii) **Citizens** present 3 items standalone but beside the strong connection with the *Administration* (3), connect with *Beneficiaries*, *Research* and *Operators* in a lighter way (1)

The items in which the *Citizens* Persona *stands alone* include three aspects identified in the lower-middle range of the Participants' Assessment. These relate to difficulties in stepping outside comfort zones through critical thinking (**#20**; $\bar{x} = 3.25$), high expectations of success that limit the adoption of risk-bearing public policy or business measures (**#30**; $\bar{x} = 2.67$), and greater sensitivity to the presentation of information than to its content (**#39**; $\bar{x} = 2.78$).

- (iv) **Beneficiaries** present 3 items standalone but connect in a medium way with *Administration* (2) and *Operators* (2), and in a lighter way with *Citizens* and *Industry* (1)

The *Beneficiaries* Persona *stands alone* in three lower-ranked items of the Participants' Assessment, highlighting difficulties in estimating the cross-sectoral impacts and costs of new solutions (**#4**; $\bar{x} = 2.89$), perceived privacy threats posed by digital-based innovations (**#14**; $\bar{x} = 2.50$), and greater sensitivity to repeated information than to the need to assess its validity (**#40**; $\bar{x} = 2.56$).

- (v) **Operators** present 3 items standalone (one elected as Top 2) but present stronger connections with *Industry* (3), medium with *Beneficiaries* (2) and *Administration* (2), and lighter with *Citizens* (1)

The *Operators* Persona *stands alone* in three items mainly from the middle top Participants' Assessment, including difficulties in implementing climate change adaptation or mitigation solutions due to prevailing perceptions of negative local impacts (**#16**; $\bar{x} = 3.38$), concerns about losses of assets and prior investments resulting from transformations (**#22**; $\bar{x} = 2.56$), and the influence of biased filters and oversimplification in production and information management processes under conditions of complexity and uncertainty (**#32**; $\bar{x} = 3.25$).

- (vi) **Industry** present 4 items standalone (two elected as Top 2), shares a stronger connection with the *Operators* (3) but connects in a lighter way with *Beneficiaries* (1), *Research* (1) and *Administration* (1)

The *Industry* Persona *stands alone* in four items of the Participants' Assessment mostly well ranked, reflecting difficulties in building agreements and commitments among groups due to structural power and trust issues (**#6**; $\bar{x} = 3.00$), resistance from those threatened in their gains within established systems (**#12**; $\bar{x} = 3.38$), challenges for institutions in adopting transformative solutions without shocks or crises

that demand rapid responses (**#27**; $\bar{x} = 3.56$), and human limitations in processing abundant information to support rational decision-making (**#37**; $\bar{x} = 2.67$).

3.3.1 Selected Top Barriers for further development

Former Figure 3.2 allowed to notice for further development of the *Top 4 cross-sectorial barriers* – **#17**, **#31**, **#7**, **#1** – that may contribute to the overall trust and confidence system functioning mainly as they seem to be relevant for most all of the Personas (except for Researcher).

Considering also the *Top 2 items selected for Personas* we can also figure out an even more robust set of **Top 9** barriers – **#17**, **#31**, **#10**, **#28**, **#16**, **#27**, **#37**, **#7**, **#1** – for further development, both in its substantial meaning and in the role they may play for Personas' ecosystem (see Figure 3.3 and Table 3.28).

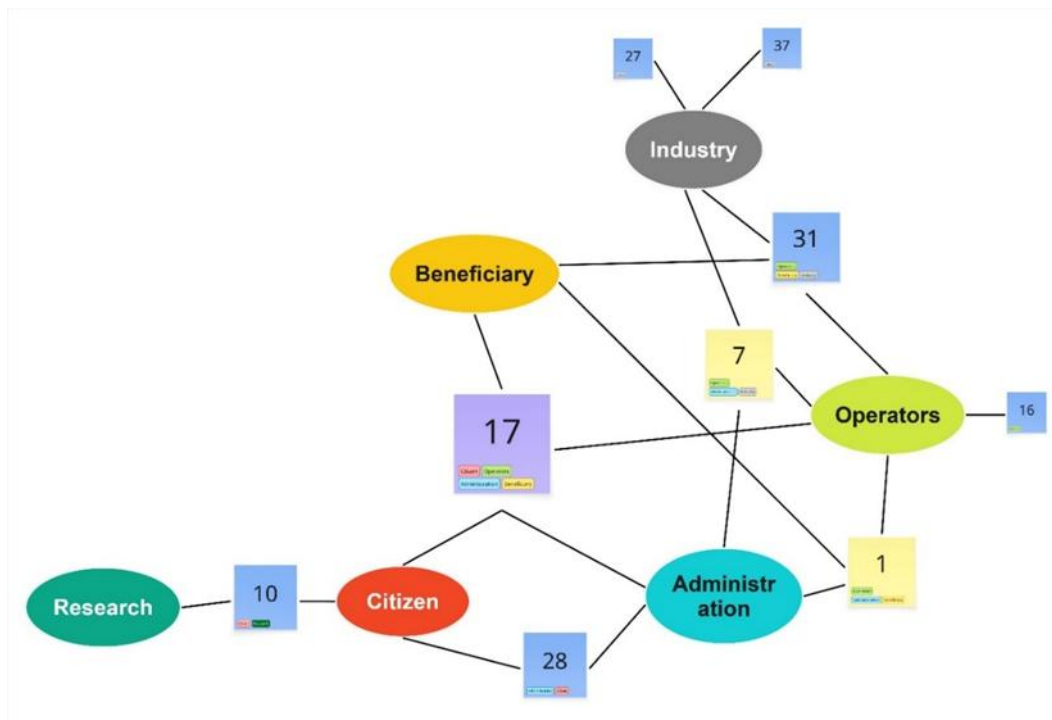


Figure 3.3 – Top 2 Barriers chosen for the Personas

Table 3.28 – Selected Top 9 Barriers for further development

#	Choices	Weighted average	Citizens	Beneficiaries	Research	Operators	Administration	Industry	N Personas	For Ideas	PP	WEA	AEA	Male	Female
17	Opposition to transformations and innovative solutions due to perceived risks of environmental degradation and water quality (i.e., contamination)	3,88	Top 2			Top 2			4	#2	relevant	very	very	relevant	very
31	Inequalities and asymmetries in access to information by different stakeholders	2,78		Top 2				Top 2	3	#1 #3 #4			relevant		
10	Lack of people's involvement in debates about transformative solutions due to disbelief in the relevance of their opinion	3			Top 2				2	#2	relevant		less	relevant	
28	Definition of public policies and decision-making largely dependent on 'established beliefs' among their electorates/clients	2,89					Top 2		2		relevant		relevant	very	
16	Difficulty in implementing climate change adaptation or mitigation solutions due to the prevalence of perceptions of negative impacts at the local level	3,38				Top 2			1	#2	relevant		very	relevant	
27	Difficulties for institutions/organizations in adopting transformative solutions and changes unless triggered by shocks and/or crises that require rapid responses	3,56						Top 2	1			relevant	relevant		very
37	Human difficulty in processing the profusion of available information in order to support rational decisions	2,67						Top 2	1	#3			very		
1	Excessively long times that transformations can take due to the pace of their diffusion and differences in the perception of their innovation	3,33							3		very	relevant	relevant	relevant	relevant
7	Nonexistence or underdevelopment of interoperable systems that allow networked operation of large infrastructures to carry out adaptive transformations	2,89							3			relevant	relevant	less	relevant

Legend: **PP** – Project Partners; **WEA** – Water Economic Agents; **AEA** – Agriculture Economic Agents

The analysis of barriers prioritised across the Top 4 and Top 2 selections highlights both widely shared concerns and more specific priorities linked to particular Personas.

The most widely recognised barrier is **#17**, reflecting opposition to transformations due to perceived environmental and water quality risks, jointly prioritised by *Operators*, *Administration*, *Beneficiaries*, and *Citizens*. This convergence points to a strong cross-sector sensitivity to potential local impacts of change.

Another key shared concern is barrier **#31**, addressing inequalities and asymmetries in access to information, highlighted by *Operators*, *Industry*, and *Beneficiaries*. Together, these findings underscore that both environmental risk perceptions and equitable access to information are fundamental conditions for enabling effective transformation.

Beyond these broadly shared priorities, the Top 2 selections reveal focused alignments between specific groups. *Citizens* and *Researchers* converge on barrier **#10**, which reflects insufficient public involvement due to the perceived irrelevance of individual opinions, while *Citizens* and *Administration* share concern over barrier **#28**, relating to the influence of established beliefs on policymaking.

Other barriers are prioritised by individual Personas: *Operators* emphasise **#16**, capturing local resistance to climate-related measures, whereas *Industry* highlights **#27** and **#37**, reflecting institutional reluctance to change without external shocks and difficulties in processing large volumes of information for rational decision-making.

Two additional barriers initially in the Top 4 – **#7** (lack of interoperable systems) and **#1** (long timeframes required for transformations) – enter the Top 2 through shared prioritisation by three Personas, emphasising systemic and operational constraints.

Overall, these barriers point to two central, interrelated dimensions.

i. Temporal challenges

The first concerns *temporal challenges*, reflected in the slow pace of transformations (**#1**) and the difficulty of adopting strategic, long-term decisions absent crisis-driven urgency (**#27**). This echoed in Workshop 3 discussions, where participants noted tensions between urgent needs and long-term planning, procedures and bureaucracy, innovation and business-as-usual, and project timelines versus implementation realities.

ii. Information, communication and stakeholder engagement

The second dimension relates to *information, communication and stakeholder engagement* across the transformation cycle. Challenges here include production (**#10**), access (**#31**), and management/interoperability of systems (**#7**), human capacity to process complex information (**#37**), and the ways information is perceived and translated into action (**#16**, **#17**, **#28**).

Together, these findings illustrate that fostering trust, confidence, and collective action requires long-term, interconnected approaches that go beyond simple information dissemination. Effective transformation depends on strategies integrating participation, transparency, mutual understanding, and the practical capacities of diverse stakeholders.

In summary, stakeholders perceive transformative change as constrained not only by technical or operational factors but also by deeper temporal, cognitive, and relational dynamics. Addressing these interconnected challenges demands coordinated strategies that combine improved information systems, inclusive governance, and mechanisms capable of bridging short-term pressures with long-term objectives.

3.4 Solutions ideation

MARCLAIMED Comporta CoP WS#3 participants were asked to choose barriers to address and to ideate solutions (immediate ones) that could be feasible, implemented and tested during the project's long term. There were three Working groups that produced 4 ideas (see Figure 3.4 to Figure 3.8).

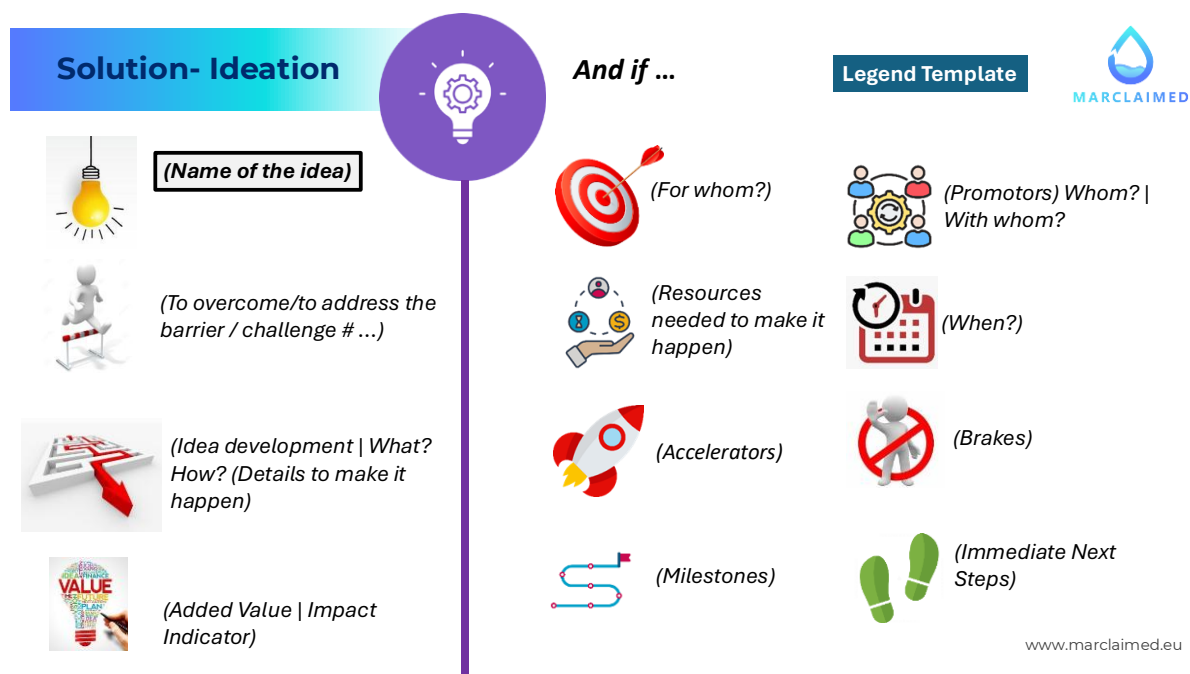


Figure 3.4 – Template for Solution Ideation

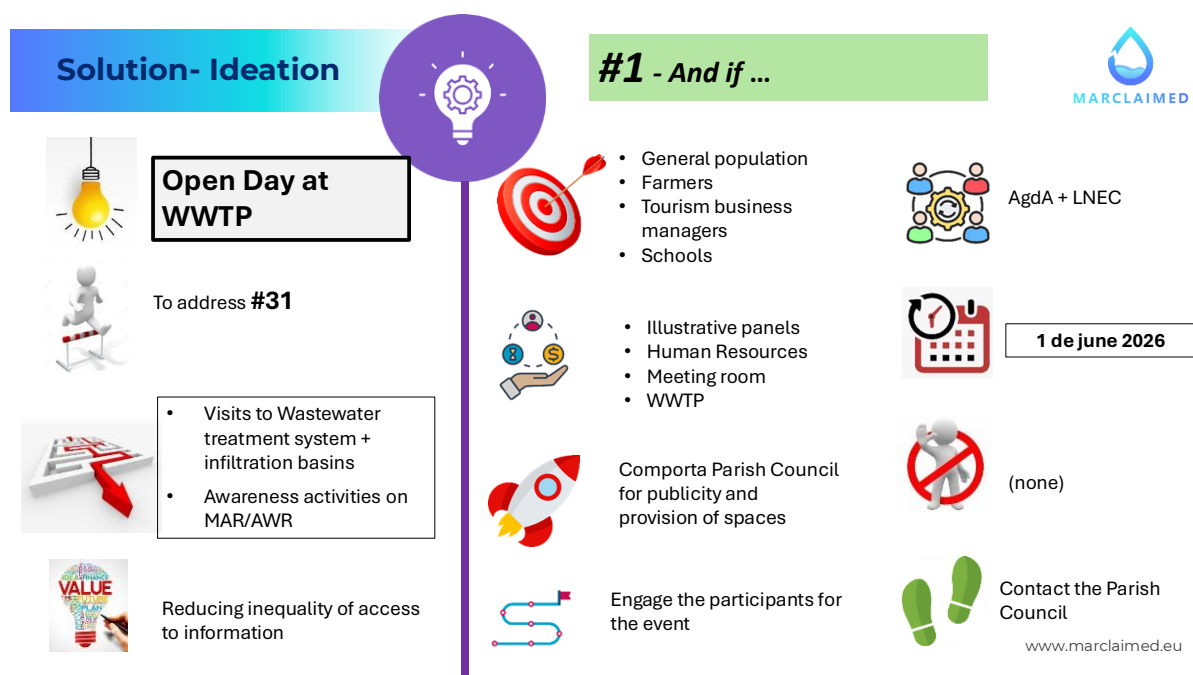


Figure 3.5 – Solution #1 Ideation

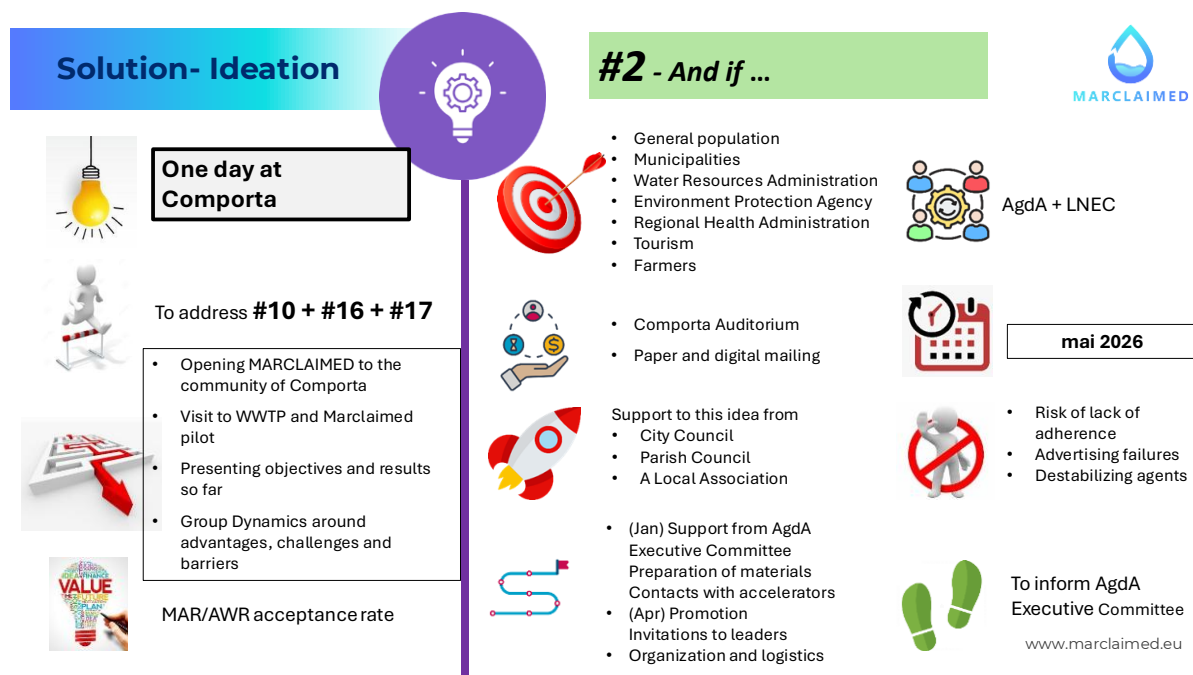


Figure 3.6 – Solution #2 Ideation

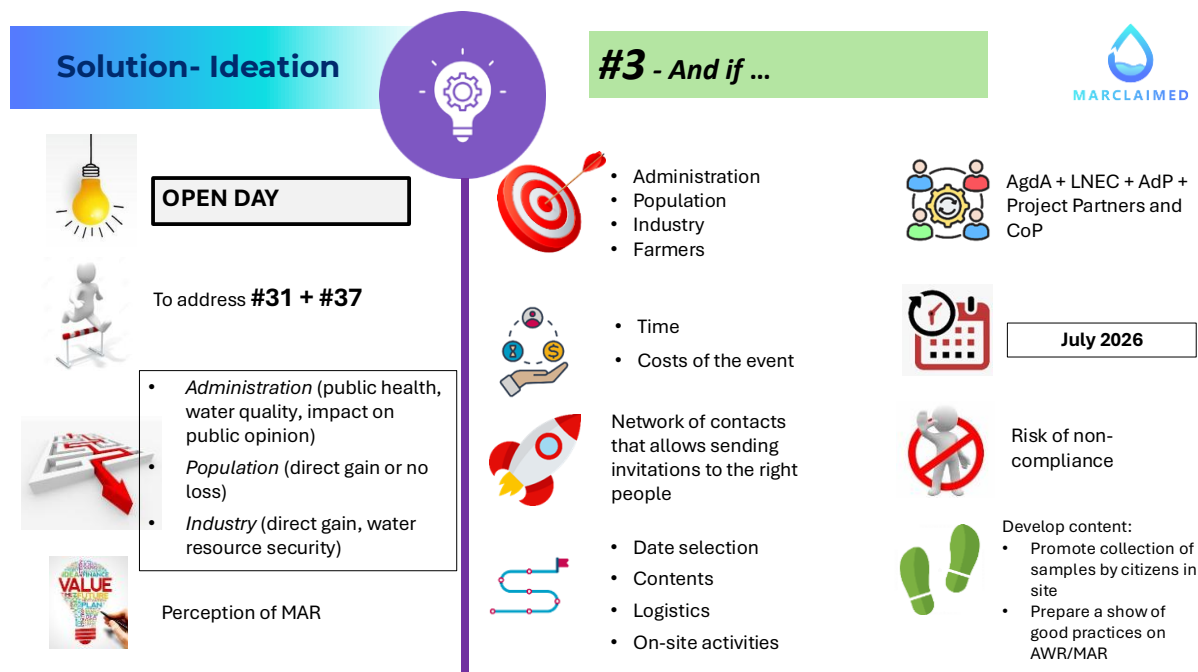


Figure 3.7 – Solution #3 Ideation

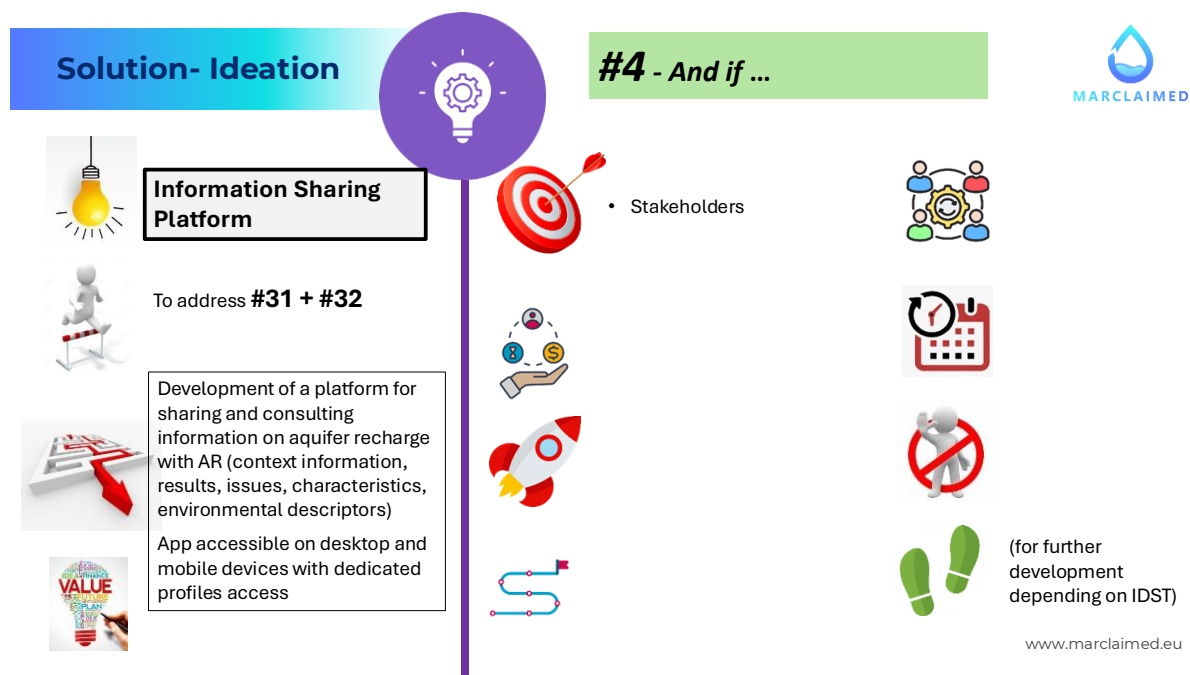


Figure 3.8 – Solution #4 Ideation

The co-produced ideas were quite similar in their main purpose: taking advantage of MARCLAIMED progress, getting out of its frontiers to enhance enlarged awareness, perception, trust and acceptance near general community and relevant decision maker stakeholders.

3.5 An actionable roadmap and commitment

During the WS #3, participants agreed that:

1. Ideas **#1**, **#2** and **#3** were quite similar in their purpose.
2. It was feasible to merge them into a single action and to make it happen.
3. The participants were enthusiastic and engaged to ensure support from their organisations in making it happen.
4. Should reinforce awareness among absent CoP members about the action to promote in 2026 and to mobilise them to the co-organisation and participation (while sending the return of WS#3 co-productions for all).
5. LNEC + AgdA – should promote a working group to stabilise the idea, the date, the content, and the organisation of a Day in Comporta / Open Day (based on the different suggestions, January 2026).

4 | Evaluation of 3rd CoP Workshop

The Comporta CoP WS#3 was very positively evaluated (4,5 on a 1 to 5 scale) and detailed parameters were most of all very well scored (above the middle of the scale), except *“I believe that all relevant stakeholders were present at the workshop”* (see Table 4.1).

Table 4.1 – Comporta WS#3 Evaluation

Global Evaluation of Comporta CoP WS#3	
Date	2025-12-05
Type	scale (1-5)
Question	MARCLAIMED Comporta - WS#3 Evaluation
Question	Global Evaluation
N° of Respondents	8
Choices	Mean
My Global Assessment of WS#2 of the CoP MARCLKAIM Comporta is ...	4,5

WS#3 - Logistics and engagement with STH	
Date	2025-12-05
Type	scale (1-5)
Question	MARCLAIMED Comporta - WS#3 Evaluation
Question	Logistics and relation with STK
N° of Respondents	8
Choices	Mean
The venue was suitable for the purpose of the meeting	5
The meeting had the right duration in time	4,5
During the meeting, I improved or made new connections for my professional network	3,88
The presentations and speakers were clear and understandable	4,75
During the meeting, I felt confident to express myself spontaneously	4,75
I believe that other people communicated openly with me	4,88

WS#3 - Awareness & Perceptions	
Date	2025-12-05
Type	scale (1-5)
Question	MARCLAIMED Comporta - WS#3 Evaluation
Question	Awareness & Perceptions
N° of Respondents	8
Choices	Mean
I believe that all relevant stakeholders were present at the meeting	2,25
I had enough opportunities to contribute to the debate	4,75
The differences and (potential) conflicts between us were addressed constructively	4,13
All ideas/perspectives were included and respected during the discussion	4,38
I think that the right topics were discussed during the meeting	4,25
I have a better understanding of the stakeholders' perspective	3,88
The way the debate was facilitated and moderated supported the objectives of the meeting	4,75

WS#3 - Results & Conclusions	
Date	2025-12-05
Type	scale (1-5)
Question	MARCLAIMED Comporta - WS#3 Evaluation
Question	Results & Conclusions
N° of Respondents	8
Choices	Mean
There was enough time to reflect on our experience	3,88
I believe that clear conclusions were drawn at the end of the meeting	4,38
I think clear actions were formulated to improve the solutions	4,5
The meeting inspired me to take follow-up actions in my own organization	3,88
Participating in the meeting increased my knowledge about the various solutions	3,63
The outcomes of the meeting met my expectations	3,88
I am aware of my own role in the project and how each of us can contribute to its objectives	4,13

Participants contributed to a word cloud and gave comments/testimonies about the session (see Figure 4.1). In these contributions, participants used positive words to describe the meeting's atmosphere and expressed regret over the absence of relevant CoP stakeholders, although some absences were justified.



Figure 4.1 – Evaluation Word Cloud and Testimonies

All the information used and co-produced during the Comporta CoP WS#3 was shared with all participants after the workshop (See Annexe 1).

5 | Final remarks

MARCLAIMED Comporta CoP is part of an ongoing infrastructure for knowledge exchange between relevant stakeholders. WS#3 enabled progress in stakeholders' networking and insightful debates around MARCLAIMED progresses so far, mainly in debating barriers to trust and confidence around AWR/MAR.

The different exercises allowed testing the set of forty barriers according to CoP participants experience and six stakeholders Personas profiles. Some hypothesis for further development have been design regarding stakeholders' affiliation and gender concerns. Also the results of Comporta WS#3 help a step forward to understand which kind of barriers should be deeply explored to enhance trust and confidence on AWR/MAR and to address governance challenges. Temporal, cognitive and relational dynamics have highlighted that interconnected challenges demands coordinated strategies that combine improved information systems (and not only results dissemination), inclusive governance (narrowing stakeholders frameworks of concerns and relative positions), and mechanisms capable of bridging short-term pressures with long-term objectives (beyond technical or operational factors).

A joint CoP action will be promoted during 2026, and the next Comporta CoP workshop (WS#4) will be held in 2026 spring to explore the IDST MARCLAIMED Tool.

Lisbon, LNEC, February 2026

APPROVED

The Head of the Urban and
Territorial Studies Unit

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Maria João Freitas
Assistant Researcher with Habilitation

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ANNEXES

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ANNEX I

Comporta CoP WS#3 support and co-productions feedback to participants

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Barreiras & Soluções

Confiança & Aceitabilidade



MARCLAIMED

Workshop #3 com a Comunidade Prática da Comporta

5 de dezembro de 2025



LNEC
LABORATÓRIO NACIONAL
DE ENGENHARIA CIVIL



Funded by
the European Union



ÁGUAS PÚBLICAS
do ALENTEJO
Grupo Águas de Portugal

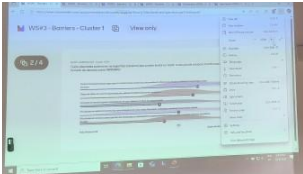
Memória WS#3 – 5 dez 25

11 participantes (6 M; 5 H)

(AGdA, AdP Valor, CAP, LNEC, IMDEA)



MARCLAIMED



Objetivos do MARCLAIMED

Objetivo principal

Integrar a Gestão de Recarga de Aquíferos (MAR) com recursos hídricos alternativos (AWR) nos PGRH e de seca como medida estrutural para fornecer sistemas com maior capacidade de adaptação e resiliência às alterações climáticas.

Resultados esperados (3 pilares)



EFICIÊNCIA OPERACIONAL

- Desenvolver ferramentas digitais para o controlo de qualidade, previsão de recursos disponíveis, gestão de risco, estimativa da pegada hídrica, valor económico da segurança hídrica e novos modelos tarifários.



PERCEÇÃO SOCIAL E LEGISLAÇÃO

- Obtenha uma melhor compreensão da resposta social à utilização de AWR em sistemas MAR
- Fornecer uma base para colmatar lacunas no quadro regulamentar da UE.



SUSTENTABILIDADE ECONÓMICA

- MARCLAIMED IDST



MARCLAIMED



Objetivo do workshop de hoje

- ★ Explorar Barreiras e Soluções para AWR/MAR & Confiança e Aceitabilidade.
- ★ Roteiro de ideias expeditas (que possa envolver todos) a implementar ainda durante o projeto



Parceiros: 13 **Montante:** 3.731.820,0 € **Duração:** 02/2024-01/2027

www.marclaimed.eu

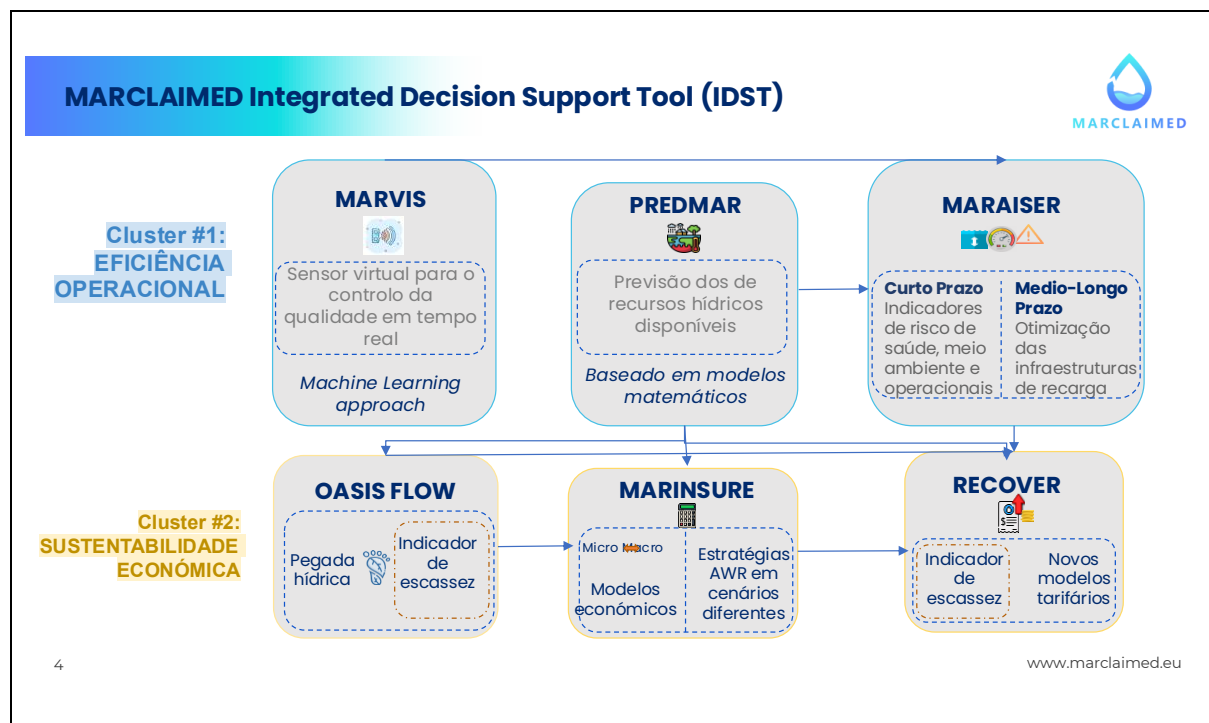
Agenda



MARCLAIMED

14:30 - 14:45	Boas Vindas e Introdução à Sessão
14:45 - 16:00	Barreiras a AWR/MAR e à Confiança & Aceitabilidade das Personas - Mentimeter (4 iterações) - Análise e discussão coletiva de resultados - Personas (<i>keep going</i>)
16:00 - 16:15	Pausa para café
16:15 - 17:00	Ideação de Soluções e de um Roteiro para implementar no imediato - Fichas de Ideias - Roteiro & Compromissos para fazer acontecer
17:00 - 17:20	MARCLAIMED COMPORTA So far...
17:20 - 17:30	Barómetro, Avaliação da Sessão e Encerramento

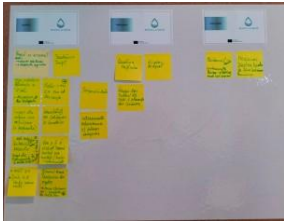
www.marclaimed.eu



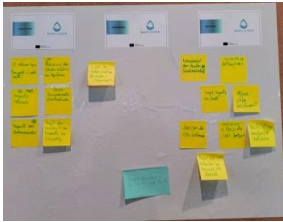
Memória WS#2 – 16 jun 25



Tools



**MARVIS
PREDMAR
MARAISER**



**OASIS FLOW
MARINSURE
RECOVER**

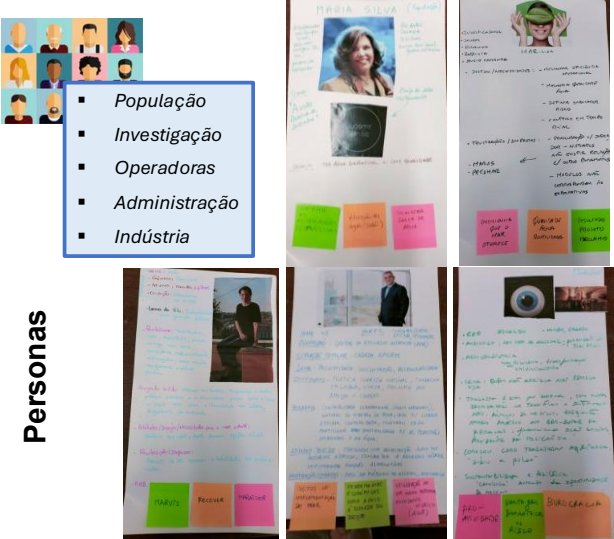
Questões , Preocupações, Vantagens
Recomendações (20)

16 participantes (APA, AgdA, CAP, LNEC, LNEG)



- População
- Investigação
- Operadoras
- Administração
- Indústria

Personas



Barreiras a AWR/Mar + Confiança & Aceitabilidade (Personas)





Funded by
the European Union

64

LNEC - Proc. 0804/1101/2368701

Barreiras AWR/MAR



Cluster #1 - Governança



<https://www.menti.com/alvy1kksxs1>
Code:6956 5391

- A minha atividade enquadra-se no seguinte grupo de stakeholders (ver hipóteses)
 - Quão relevantes podem ser as seguintes barreiras (que podem limitar ou travar a adoção de soluções transformadoras) à tomada de decisão sobre AWR/MAR – 2 slides
 - Pertença de género (1 slide)
- **Para cada um de vós e para a atividade relativamente à Comporta!**

<https://www.mentimeter.com/app/presentation/alwvpthtyhpgqxs78xov1j768su9wtf/edit?source=share-modal>

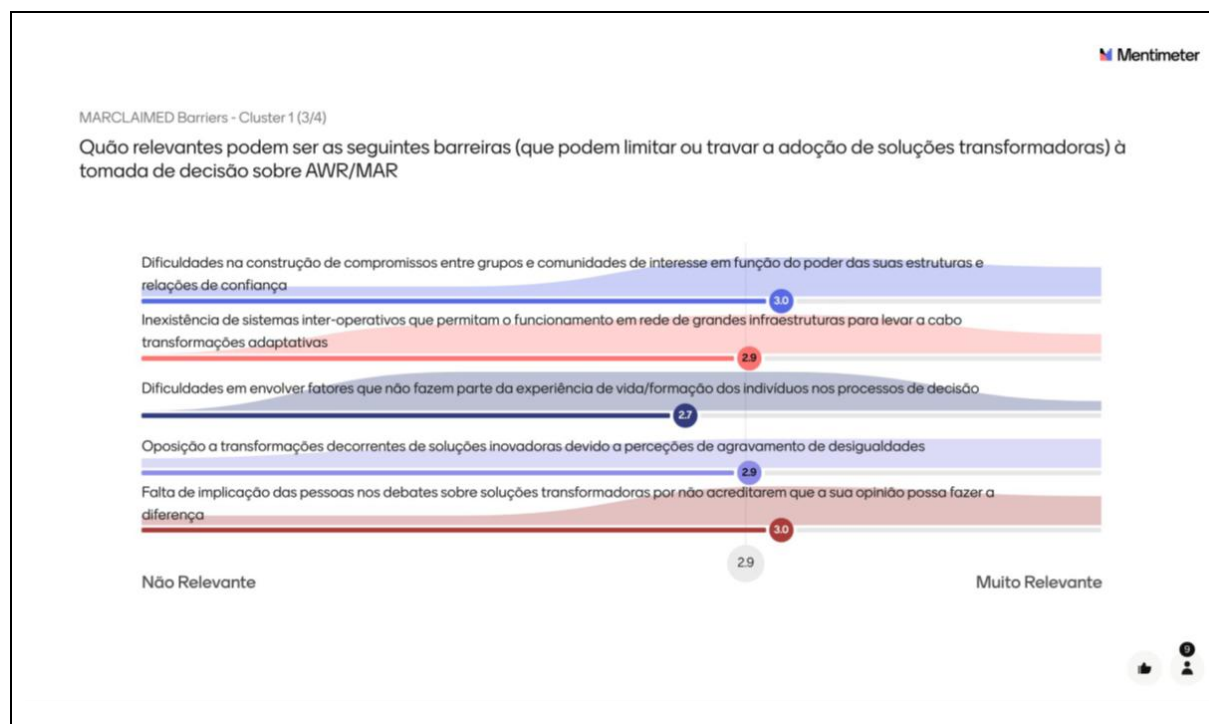
www.marclaimed.eu

Mentimeter

MARCLAIMED Barriers - Cluster 1 (2/4)

Quão relevantes podem ser as seguintes barreiras (que podem limitar ou travar a adoção de soluções transformadoras) à tomada de decisão sobre AWR/MAR





Barreiras Confiança & Aceitabilidade

Cluster #1 - Governança



- Quais destas barreiras podem ser muito relevantes **para a construção da confiança e aceitabilidade** da AWR/MAR?
- **Escolhem até 2 destas barreiras para cada Persona** (e sinalizam na folha da mesa)

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Barreiras Confiança & Aceitabilidade

Cluster #1 - Governança



#1 - Tempos demasiadamente longos que as transformações podem levar decorrentes do ritmo da sua difusão e diferenças na percepção da sua inovação

#7 - Inexistência de sistemas inter-operativos que permitam o funcionamento em rede de grandes infraestruturas para levar a cabo transformações adaptativas

#10 - Falta de implicação das pessoas nos debates sobre soluções transformadoras por não acreditarem que a sua opinião possa fazer a diferença

#2 - Efeitos de falhas em cascata decorrentes de políticas transformadoras mal concebidas

#4 - Dificuldades em estimar impactes das novas soluções e dos seus custos financeiros, ambientais e de recursos para outros setores

#6 - Dificuldades na construção de compromissos entre grupos e comunidades de interesse em função do poder das suas estruturas e relações de confiança



Barreiras AWR/MAR

Cluster #2 – Relação Privado / Público

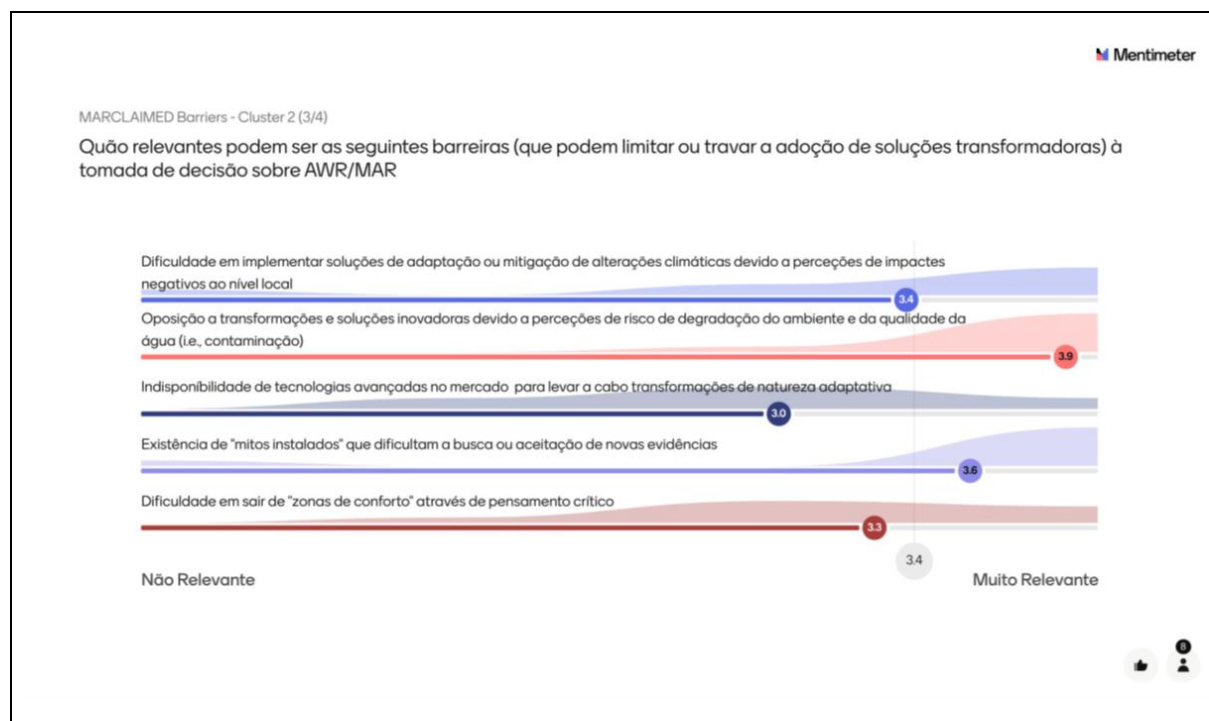
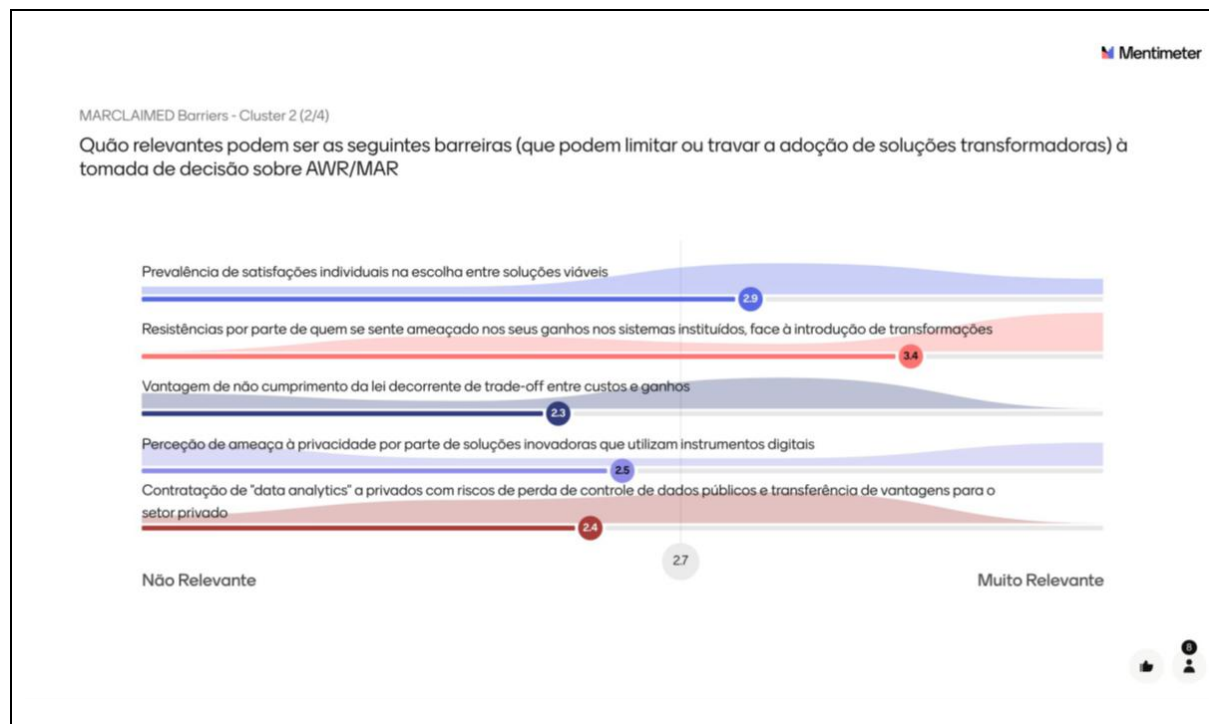


<https://www.menti.com/alfm15srfui>
Code:2368 6834

- A minha atividade enquadra-se no seguinte grupo de stakeholders (ver hipóteses)
- Quão relevantes podem ser as seguintes barreiras (que podem limitar ou travar a adoção de soluções transformadoras) à tomada de decisão sobre AWR/MAR – 2 slides
- Pertença de género (1 slide)
- **Para cada um de vós e para a atividade relativamente à Comporta!**

<https://www.mentimeter.com/app/presentation/al2do73cm5dr1a444wnccdrjy95tgnb/edit?source=share-modal>

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Barreiras Confiança & Aceitabilidade



Cluster #2 – Relação Privado / Público



- Quais destas barreiras podem ser muito relevantes **para a construção da confiança e aceitabilidade** da AWR/MAR?

- **Escolhem até 2 destas barreiras para cada Persona** (e sinalizam na folha da mesa)

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Barreiras Confiança & Aceitabilidade

Cluster #2 – Relação Privado / Público



#17 - Oposição a transformações e soluções inovadoras devido a percepções de risco de degradação do ambiente e da qualidade da água (i.e., contaminação)

#18 - Indisponibilidade de tecnologias avançadas no mercado para levar a cabo transformações de natureza adaptativa

#12 - Resistências por parte de quem se sente ameaçado nos seus ganhos nos sistemas instituídos, face à introdução de transformações

#13 - Vantagem de não cumprimento da lei decorrente de trade-off entre custos e ganhos

#14 - Percepção de ameaça à privacidade por parte de soluções inovadoras que utilizam instrumentos digitais

#16 - Dificuldade em implementar soluções de adaptação ou mitigação de alterações climáticas devido a percepções de impactos negativos ao nível local

#19 - Existência de "mitos instalados" que dificultam a busca ou aceitação de novas evidências

#20 - Dificuldade em sair de "zonas de conforto" através de pensamento crítico



Barreiras AWR/MAR



Cluster #3 – Decisões



<https://www.menti.com/alde5cb6zarc>
Code: 5775 4432

- A minha atividade enquadra-se no seguinte grupo de stakeholders (ver hipóteses)
- Quão relevantes podem ser as seguintes barreiras (que podem limitar ou travar a adoção de soluções transformadoras) à tomada de decisão sobre AWR/MAR – 2 slides
- Pertença de género (1 slide)
- **Para cada um de vós e para a atividade relativamente à Comporta!**

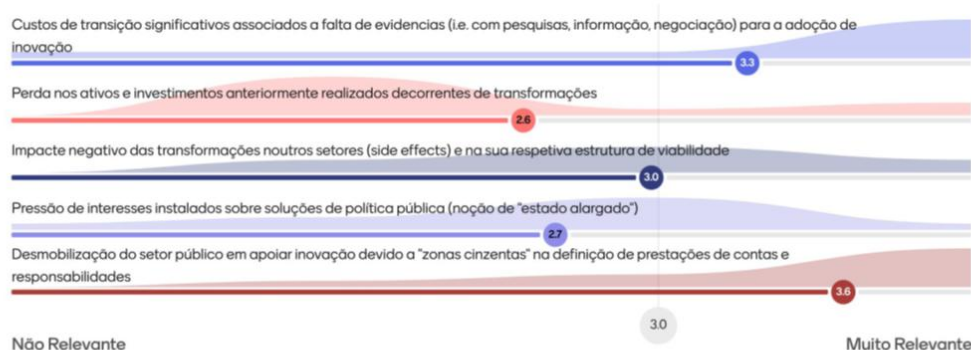
<https://www.mentimeter.com/app/presentation/alt52tiyj456ib66wym4gykavc8qmy73/edit?source=share-modal>

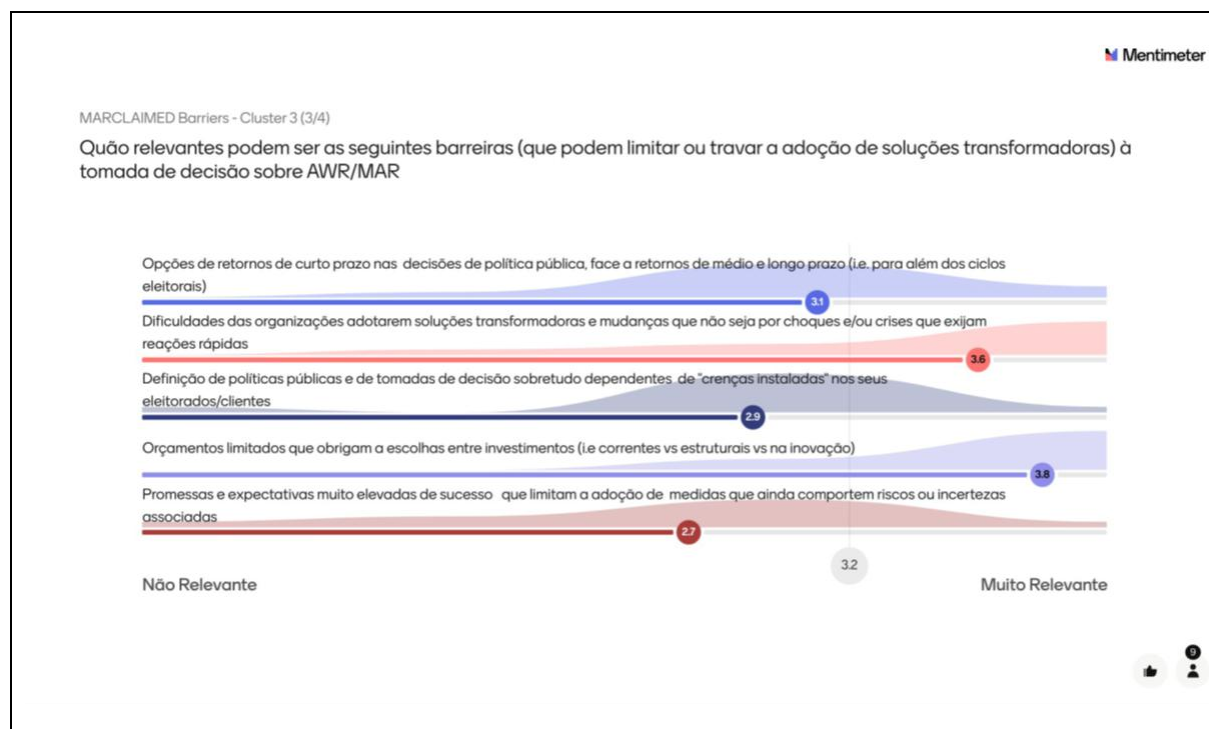
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MARCLAIMED Barriers - Cluster 3 (2/4)

Quão relevantes podem ser as seguintes barreiras (que podem limitar ou travar a adoção de soluções transformadoras) à tomada de decisão sobre AWR/MAR





Barreiras Confiança & Aceitabilidade

Cluster #3 – Decisões

- Quais destas barreiras podem ser muito relevantes **para a construção da confiança e aceitabilidade** da AWR/MAR?
- **Escolhem até 2 destas barreiras para cada Persona** (e sinalizam na folha da mesa)

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Barreiras Confiança & Aceitabilidade

#24 - Pressão de interesses instalados sobre soluções de política pública (noção de "estado alargado")

#28 - Definição de políticas públicas e de tomadas de decisão sobretudo dependentes de "crenças instaladas" nos seus eleitorados/clientes

#29 - Orçamentos limitados que obrigam a escolhas entre investimentos (i.e. correntes vs estruturais vs na inovação)

#21 - Custos de transição significativos associados a falta de evidências (i.e. com pesquisas, informação, negociação) para a adoção de inovação

#22 - Perda nos ativos e investimentos anteriormente realizados decorrentes de transformações

#23 - Impacte negativo das transformações noutros setores (side effects) e na sua respetiva estrutura de viabilidade

#27 - Dificuldades das organizações adotarem soluções transformadoras e mudanças que não seja por choques e/ou crises que exijam reações rápidas

#30 - Promessas e expectativas muito elevadas de sucesso que limitam a adoção de medidas que ainda comportem riscos ou incertezas associadas

Cluster #3 – Decisões

The icons are arranged in a grid. The first column shows groups of people (Beneficiários, Cidadãos). The second column shows a person standing in a field (Beneficiários, Cidadãos). The third column shows a microscope (Investigação). The fourth column shows a hand holding a plant (Operadoras). The fifth column shows a building (Administração). The sixth column shows a city skyline (Indústria). The seventh column shows a person holding a plant (Operadoras). The eighth column shows a person holding a plant (Operadoras). The ninth column shows a person holding a plant (Operadoras). The tenth column shows a person holding a plant (Operadoras). The eleventh column shows a person holding a plant (Operadoras). The twelfth column shows a person holding a plant (Operadoras). The thirteenth column shows a person holding a plant (Operadoras). The fourteenth column shows a person holding a plant (Operadoras). The fifteenth column shows a person holding a plant (Operadoras). The sixteenth column shows a person holding a plant (Operadoras). The seventeenth column shows a person holding a plant (Operadoras). The eighteenth column shows a person holding a plant (Operadoras). The nineteenth column shows a person holding a plant (Operadoras). The twentieth column shows a person holding a plant (Operadoras).

Barreiras AWR/MAR

Cluster #4 – Informação & Conhecimento

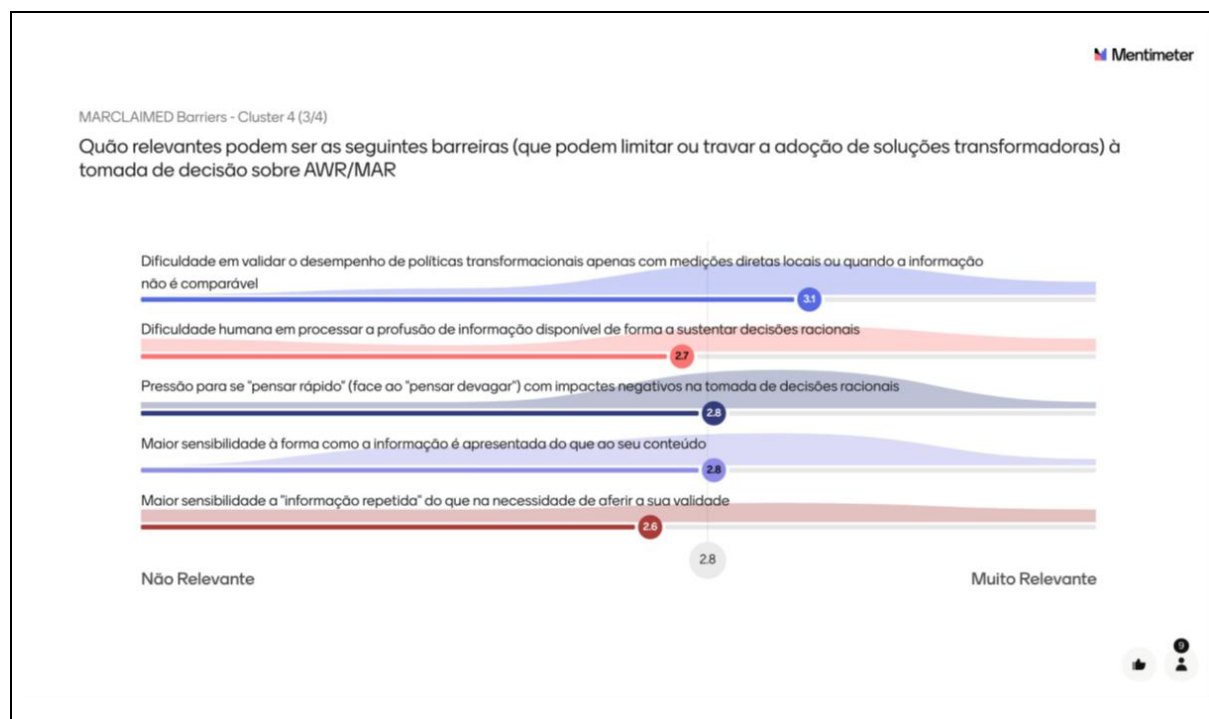
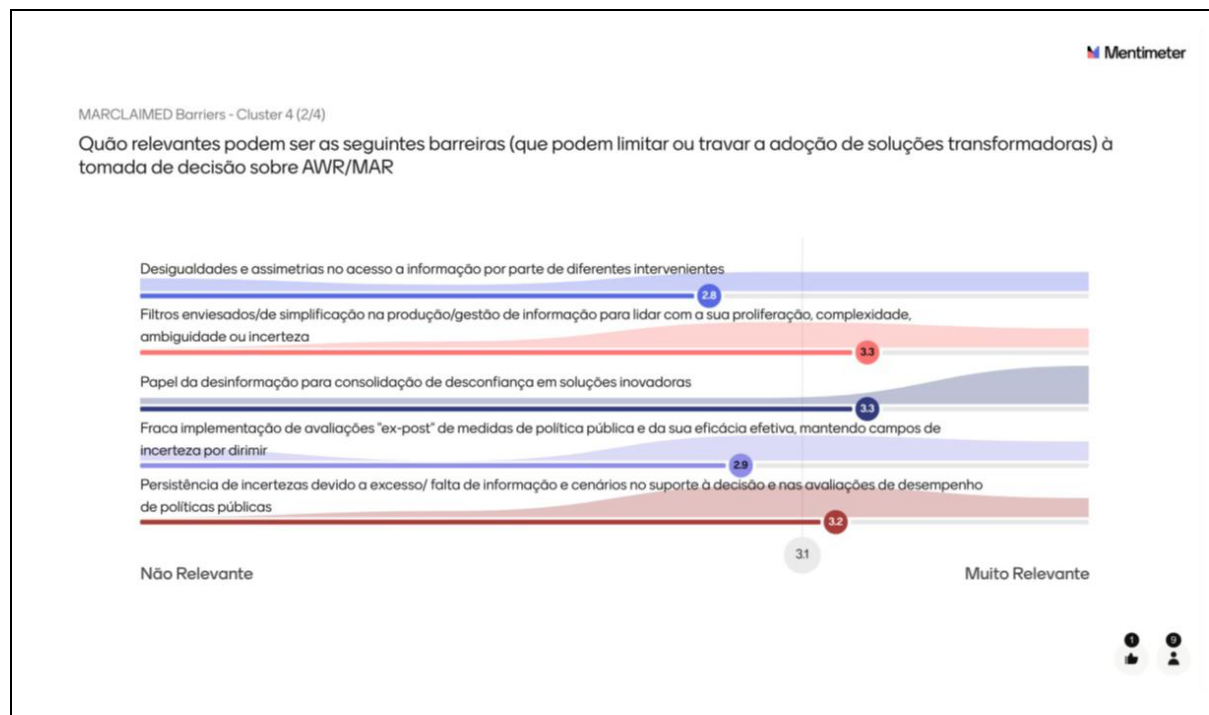
<https://www.menti.com/alr64g8fpf67>
Code: 5556 5424

- A minha atividade enquadra-se no seguinte grupo de stakeholders (ver hipóteses)
- Quão relevantes podem ser as seguintes barreiras (que podem limitar ou travar a adoção de soluções transformadoras) à tomada de decisão sobre AWR/MAR – 2 slides
- Pertença de género (1 slide)

➤ **Para cada um de vós e para a atividade relativamente à Comporta!**

<https://www.mentimeter.com/app/presentation/alqtxeq34r9ob2q6zww3goz7vn9fmy3s/edit?source=share-modal>

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Barreiras Confiança & Aceitabilidade



Cluster #4 – Informação & Conhecimento



- Quais destas barreiras podem ser muito relevantes **para a construção da confiança e aceitabilidade** da AWR/MAR?

- **Escolhem até 2 destas barreiras para cada Pessoa** (e sinalizam na folha da mesa)

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Barreiras Confiança & Aceitabilidade

Cluster #4 – Informação & Conhecimento



#31 - Desigualdades e assimetrias no acesso a informação por parte de diferentes intervenientes

#33 - Papel da desinformação para consolidação de desconfiança em soluções inovadoras

#35 - Persistência de incertezas devido a excesso/ falta de informação e cenários no suporte à decisão e nas avaliações de desempenho de políticas públicas

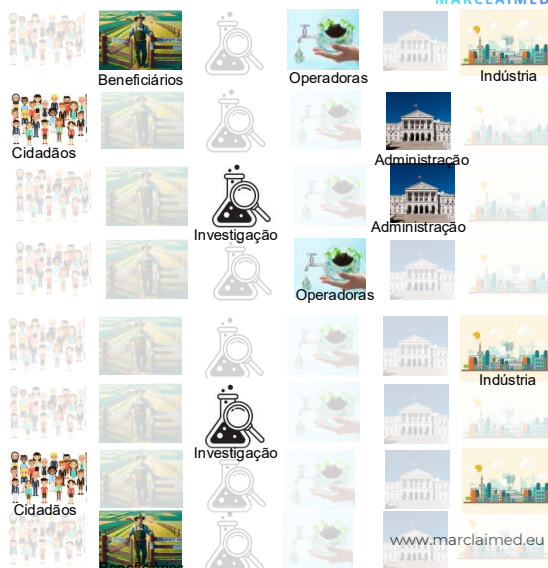
#32 - Filtros enviesados/de simplificação na produção/gestão de informação para lidar com a sua proliferação, complexidade, ambiguidade ou incerteza

#37 - Dificuldade humana em processar a profusão de informação disponível de forma a sustentar decisões racionais

#38 - Pressão para se "pensar rápido" (face ao "pensar devagar") com impactes negativos na tomada de decisões racionais

#39 - Maior sensibilidade à forma como a informação é apresentada do que ao seu conteúdo

#40 - Maior sensibilidade a "informação repetida" do que na necessidade de aferir a sua validade



Barreiras Confiança & Aceitabilidade



Top 2



- População
- Investigação
- Operadoras
- Administração
- Indústria

Para cada Persona (de entre as 8 pré-selecionadas)
ESCOLHEM as **2 mais relevantes**:

- 1 barreira que possa dar origem a soluções de curto prazo
- 1 barreira que possa dar origem a soluções de médio prazo

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Barreiras Confiança & Aceitabilidade



Top 2

Para cada Persona (de entre as 8 pré-selecionadas)
ESCOLHEM as **2 mais relevantes**

#17 - Oposição a transformações e soluções inovadoras devido a perceções de risco de degradação do ambiente e da qualidade da água (i.e., contaminação)



Cidadãos



Operadoras

#16 - Dificuldade em implementar soluções de adaptação ou mitigação de alterações climáticas devido a perceções de impactos negativos ao nível local

#31 - Desigualdades e assimetrias no acesso a informação por parte de diferentes intervenientes



Beneficiários



Indústria

#27 - Dificuldades das organizações adotarem soluções transformadoras e mudanças que não seja por choques e/ou crises que exijam reações rápidas



Investigação

#10 - Falta de implicação das pessoas nos debates sobre soluções transformadoras por não acreditarem que a sua opinião possa fazer a diferença



Administração

#28 - Definição de políticas públicas e de tomadas de decisão sobretudo dependentes de "crenças instaladas" nos seus eleitorados/clientes

#37 - Dificuldade humana em processar a profusão de informação disponível de forma a sustentar decisões racionais

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Quadros Resumo (1/4) ... ordenados por media Mentimeter



(ORDENADA por média Mentimeter)

Date: 2025-12-05

Question: Quão relevantes podem ser as seguintes barreiras (que podem limitar ou travar a adoção de soluções transformadoras) à tomada de decisão sobre AWR/MAR

Cluster	#	Choices	Weighted average	1	2	3	4	Cidadãos	Beneficiários	Investigadores	Operadores	Administração	Indústria	N Personas	Ideias
Privado/Público	17	Oposição a transformações e soluções inovadoras devido a percepções de risco de degradação do ambiente e da qualidade da água (i.e., contaminação)	3,88	0	0	1	7	Top 2			Top 2			4	#2
Decisão	29	Orçamentos limitados que obrigam a escolhas entre investimentos (i.e. correntes vs estruturais vs na inovação)	3,78	0	0	2	7							2	
Privado/Público	19	Existência de "mitos instalados" que dificultam a busca ou aceitação de novas evidências	3,63	1	0	0	7							1	
Decisão	25	Desmobilização do setor público em apoiar inovação devido a "zonas cinzentas" na definição de prestações de contas e responsabilidades	3,56	0	1	2	6								
Decisão	27	Dificuldades das organizações adotarem soluções transformadoras e mudanças que não seja por choques e/ou crises que exijam reações rápidas	3,56	0	1	2	6						Top 2	1	

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Quadros Resumo (2/4) ... ordenados por media Mentimeter



(ORDENADA por média Mentimeter)

Date: 2025-12-05

Question: Quão relevantes podem ser as seguintes barreiras (que podem limitar ou travar a adoção de soluções transformadoras) à tomada de decisão sobre AWR/MAR

Cluster	#	Choices	Weighted average	1	2	3	4	Cidadãos	Beneficiários	Investigadores	Operadores	Administração	Indústria	N Personas	Ideias
Privado/Público	12	Resistências por parte de quem se sente ameaçado nos seus ganhos nos sistemas instituídos, face à introdução de transformações	3,38	0	2	1	5							1	
Privado/Público	16	Dificuldade em implementar soluções de adaptação ou mitigação de alterações climáticas devido a percepções de impactos negativos ao nível local	3,38	1	0	2	5				Top 2			1	#2
Governança	1	Tempos demasiadamente longos que as transformações podem levar decorrentes do ritmo da sua difusão e diferenças na perceção da sua inovação	3,33	0	0	6	3							3	
Governança	2	Efeitos de falhas em cascata decorrentes de políticas transformadoras mal concebidas	3,33	0	0	6	3							1	
Decisão	21	Custos de transição significativos associados a falta de evidências (i.e. com pesquisas, informação, negociação) para a adoção de inovação	3,33	1	1	1	6							1	
Conhecimento	33	Papel da desinformação para consolidação de desconfiança em soluções inovadoras	3,33	1	1	1	6							2	
Privado/Público	20	Dificuldade em sair de "zonas de conforto" através de pensamento crítico	3,25	0	1	4	3							1	
Conhecimento	32	Filtros enviesados/de simplificação na produção/gestão de informação para lidar com a sua proliferação, complexidade, ambiguidade ou incerteza	3,25	0	1	4	3							1	#4
Conhecimento	35	Persistência de incertezas devido a excesso/ falta de informação e cenários no suporte à decisão e nas avaliações de desempenho de políticas públicas	3,22	0	1	5	3							2	
Conhecimento	36	Dificuldade em validar o desempenho de políticas transformacionais apenas com medições diretas locais ou quando a informação não é comparável	3,13	0	1	5	2								
Decisão	26	Opções de retornos de curto prazo nas decisões de política pública, face a retornos de médio e longo prazo (i.e. para além dos ciclos eleitorais)	3,11	0	1	6	2								

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Quadros Resumo (3/4) ... ordenados por media Mentimeter



(ORDENADA por média Mentimeter)

Date: 2025-12-05

Question: Quão relevantes podem ser as seguintes barreiras (que podem limitar ou travar a adoção de soluções transformadoras) tomada de decisão sobre AWR/MAR

Cluster	#	Choices	Weighted average	1	2	3	4	Cidadãos	Beneficiários	Investigadores	Operadores	Administração	Indústria	N. Pessoas	Idéias
Governança	6	Dificuldades na construção de compromissos entre grupos e comunidades de interesse em função do poder das suas estruturas e relações de confiança	3	1	1	4	3							1	
Governança	10	Falta de implicação das pessoas nos debates sobre soluções transformadoras por não acreditarem que a sua opinião possa fazer a diferença	3	1	1	4	3			Top 2				2	#2
Privado/Público	18	Indisponibilidade de tecnologias avançadas no mercado para levar a cabo transformações de natureza adaptativa	3	0	2	4	2							2	
Decisão	23	Impacto negativo das transformações noutros setores (side effects) e na sua respetiva estrutura de viabilidade	3	0	2	4	2							1	
Governança	4	Dificuldades em estimar impactos das novas soluções e dos seus custos financeiros, ambientais e de recursos para outros setores	2,89	0	3	4	2							1	
Governança	7	Inexistência de sistemas interoperativos que permitam o funcionamento em rede de grandes infraestruturas para levar a cabo transformações adaptativas	2,89	0	3	4	2							3	
Governança	9	Oposição a transformações decorrentes de soluções inovadoras devido a perceções de agravamento de desigualdades	2,89	1	2	3	3								
Decisão	28	Definição de políticas públicas e de tomadas de decisão sobretudo dependentes de "orengas instaladas" nos seus eletroradocientes	2,89	1	0	7	1				Top 2			2	
Conhecimento	34	Frac implementação de avaliações "expos" de medidas de política pública e da sua eficácia efetiva, mantendo campos de incerteza por cima	2,89	2	0	4	3								
Privado/Público	11	Prevalência de satisfações individuais na escolha entre soluções viáveis	2,88	1	1	4	2								
Governança	5	Dificuldades em envolver atores que não são dominantes ou não beneficiam diretamente (financeira ou politicamente) da definição de políticas da água	2,78	1	1	6	1								
Conhecimento	31	Desigualdades e assimetrias no acesso a informação por parte de diferentes intervenientes	2,78	2	1	3	3		Top 2				Top 2	3	#1 #3 #4
Conhecimento	38	Pressão para se "pensar rápido" (face ao "pensar devagar") com impactos negativos na tomada de decisões racionais	2,78	1	1	6	1							1	
Conhecimento	39	Menor sensibilidade à forma como a informação é apresentada do que ao seu conteúdo	2,78	0	3	5	1							1	

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Quadros Resumo (4/4) ... ordenados por media Mentimeter



(ORDENADA por média Mentimeter)

Date: 2025-12-05

Question: Quão relevantes podem ser as seguintes barreiras (que podem limitar ou travar a adoção de soluções transformadoras) à tomada de decisão sobre AWR/MAR

Cluster	#	Choices	Weighted average	1	2	3	4	Cidadãos	Beneficiários	Investigadores	Operadores	Administração	Indústria	N. Pessoas	Idéias
Governança	8	Dificuldades em envolver fatores que não fazem parte da experiência de vida/formação dos indivíduos nos processos de decisão	2,67	0	4	4	1								
Decisão	24	Pressão de interesses instalados sobre soluções de política pública (noção de "estado alargado")	2,67	1	2	5	1							2	
Decisão	30	Promessas e expectativas muito elevadas de sucesso que limitam a adoção de medidas que ainda comportem riscos ou incertezas associadas	2,67	1	2	5	1							1	
Conhecimento	37	Dificuldade humana em processar a profusão de informação disponível de forma a sustentar decisões racionais	2,67	2	1	4	2						Top 2	1	#3
Decisão	22	Perda nos ativos e investimentos anteriormente realizados decorrentes de transformações	2,56	0	6	1	2							1	
Conhecimento	40	Menor sensibilidade a "informação repetida" do que na necessidade de atenuar a sua validade	2,56	2	2	3	2							1	
Privado/Público	14	Perceção de ameaça à privacidade por parte de soluções inovadoras que utilizam instrumentos digitais	2,5	3	1	1	3							1	
Governança	3	Oposição às transformações acompanhada de atos violentos (i.e. dano de equipamentos)	2,44	2	2	4	1								
Privado/Público	15	Contratação de "data analytics" a privados com riscos de perda de controle de dados públicos e transferência de vantagens para o setor privado	2,38	1	3	4	0								
Privado/Público	13	Vantagem de não cumprimento da lei decorrente de trade-off entre custos e ganhos	2,29	2	1	4	0							1	

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Soluções- Ideation



And if ... Ficha de Ideias


 (Nome da ideia)	 (Destinatários) Para quem?	 (Promotores) Quem Com quem?
 (Para ultrapassar que Barreiras / Desafio)	 (Recursos necessários para fazer acontecer)	 (Quando?)
 (Desenvolvimento da ideia O quê? Como? (Detalhes para fazer acontecer)	 (Aceleradores)	 (Travões)
 (Valor Acrescentado Indicador de impacte)	 (Milestones)	 (Próximos Passos Imediatos)

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Soluções- Ideation



#1 - And if ... Ficha de Ideias


 Dia Aberto na ETAR	 • População em geral • Agricultores • Responsáveis de empreendimentos turísticos • Escolas	 AGdA + LNEC
 Para ultrapassar Barreira / Desafio #31	 • Painéis ilustrativos • Recursos Humanos • Sala para reunir • ETAR	 1 de junho 2026
 • Visitar o sistema de tratamento + bacias • Ações de sensibilização do MAR/AWR	 J.F. Comporta para divulgação e cedência de espaços	 (sem)
 Reduzir a desigualdade do acesso a informação	 Cativar os participantes para o evento	 Contactar a Junta de Freguesia

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Soluções- Ideation

#2 - And if ... Ficha de Ideias





Abertura do projeto à comunidade da Comporta



Para ultrapassar Barreira / Desafio **#10 + #16 + #17**

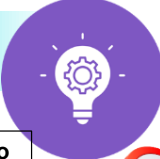


1 dia na Comporta

- Visita à ETAR e piloto
- Apresentação de objetivos e resultados
- Dinâmica de grupo sobre vantagens/desafios/barreiras



Taxa de aceitação MAR/AWR





- População geral
- Municípios
- ARH / APA / ARS
- Turismo
- Agricultores



- Auditório da Comporta
- Divulgação papel e digital



Apoio de CM + JF + Associação local que apoie a ideia



- (jan) Apoio da CExecutiva
- Preparação materiais
- Contactos com aceleradores
- (abr) divulgação
- Convites a dirigentes
- Organização e logística



AGdA + LNEC



maio 2026



Risco de falta de adesão + falha na publicidade + agentes desestabilizadores



Informar a C.Executiva
www.marclaimed.eu

Soluções- Ideation

#3 - And if ... Ficha de Ideias





OPEN DAY



Para ultrapassar Barreira / Desafio **#31 + #37**



- *Administração* (saúde pública, qualidade da água, impacte na opinião pública)
- *População* (ganho direto ou não perda)
- *Indústria* (ganho direto, garantia de recurso hídrico)



Perceção de MAR





- Administração
- População
- Indústria
- Agricultores



- Tempo
- Custos do evento



Rede de contactos que permita enviar os convites às pessoas certas



- Escolha da data
- Conteúdos
- Logística
- Atividades no local



AGdA + LNEC + AdP
Parceiros do Projeto



julho 2026



Risco de falta de adesão



Desenvolver conteúdos

- Recolha de amostras pelos cidadãos
- Amostra de casos equivalentes

Soluções- Ideation



#4 - And if ... Ficha de Ideias





Plataforma de Partilha de Informação

Para ultrapassar Barreira / Desafio **#31 + #32**



Desenvolvimento de Plataforma de partilha e consulta de informação sobre recarga de aquíferos com AR (informação de contexto, resultados, questões, características, descritores ambientais)



App acessível em desktop e aparelhos móveis com perfis de acesso





• Stakeholders









(para desenvolvimento em função do IDST)

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Soluções- Roteiro





Make
it
Happen

www.marclaimed.eu

Soluções- Roteiro



(Com a devolução das co-produções) –
Sensibilizar membros ausentes para a ação a promover em 2026

Jan – LNEC + AGdA - promover um grupo de trabalho para estabilizar a ideia, a data, os conteúdos e a organização de um *Dia na Comporta / Dia aberto* (com base nas diferentes sugestões)

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MARCLAIMED So far...

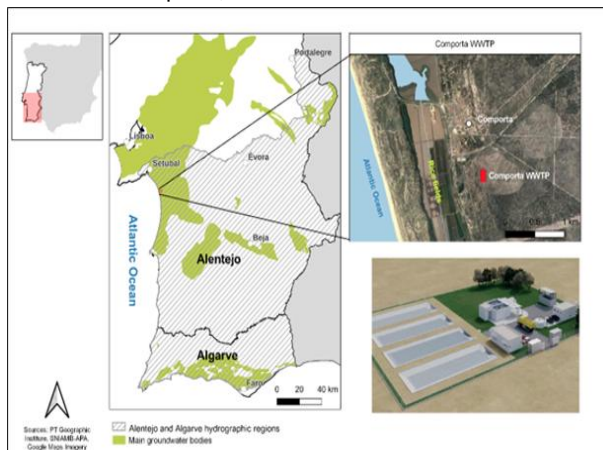

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the European Union**

Progressos MARCLAIMED



ETAR da Comporta, com um sistema de SAT-MAR

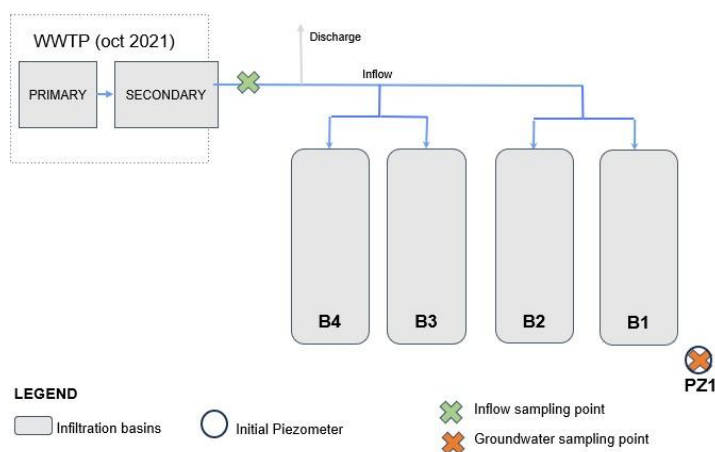


- Verificar a melhoria da qualidade da água recarregada (dados da zona vadosa e das águas subterrâneas)
- Manter as taxas de infiltração
- Melhorar a avaliação dos riscos de poluição das águas subterrâneas
- Melhorar a aceitação, a fiabilidade e a confiança social e política
- Expandir SAT-MAR como solução estrutural para ETAR de pequena dimensão, região do Alentejo

52

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Progressos MARCLAIMED



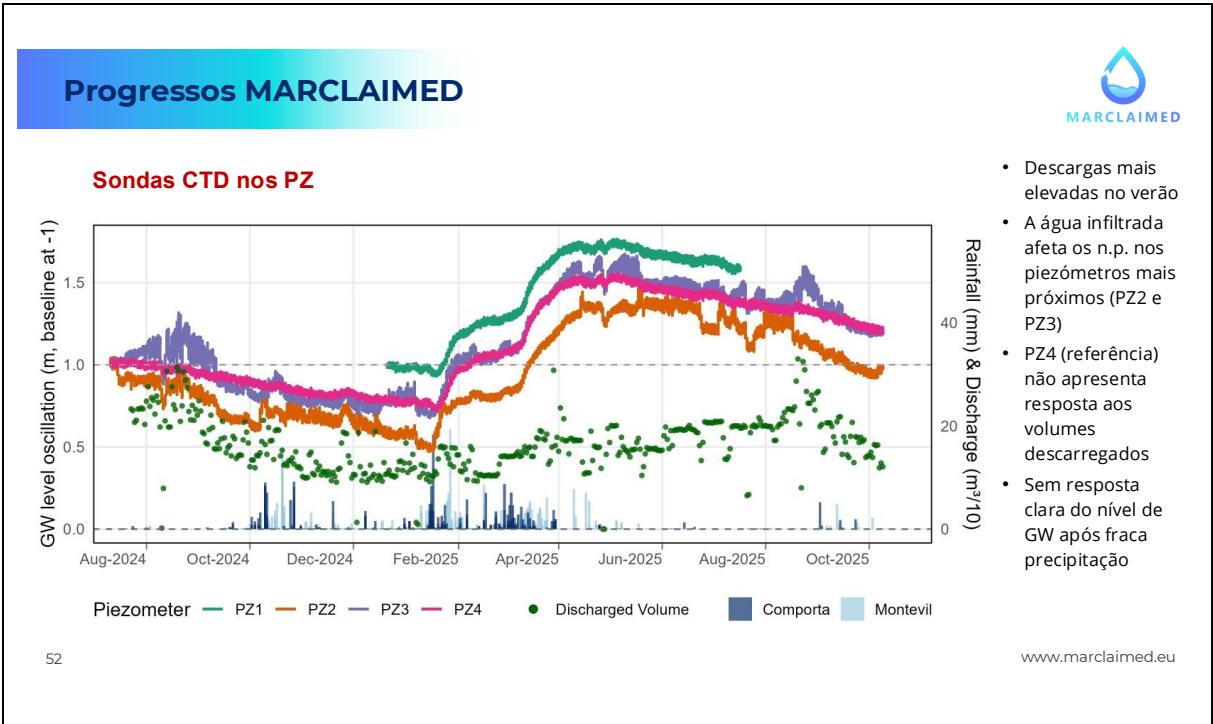
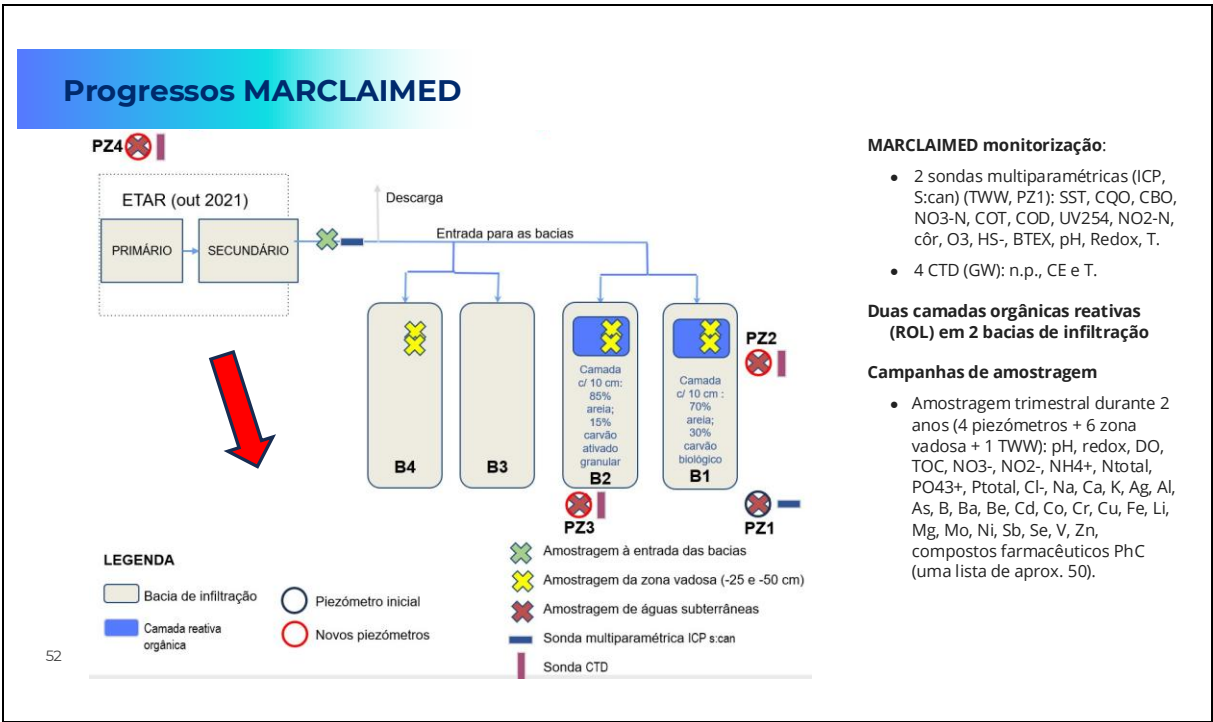
Situação inicial (definida pela Licença):

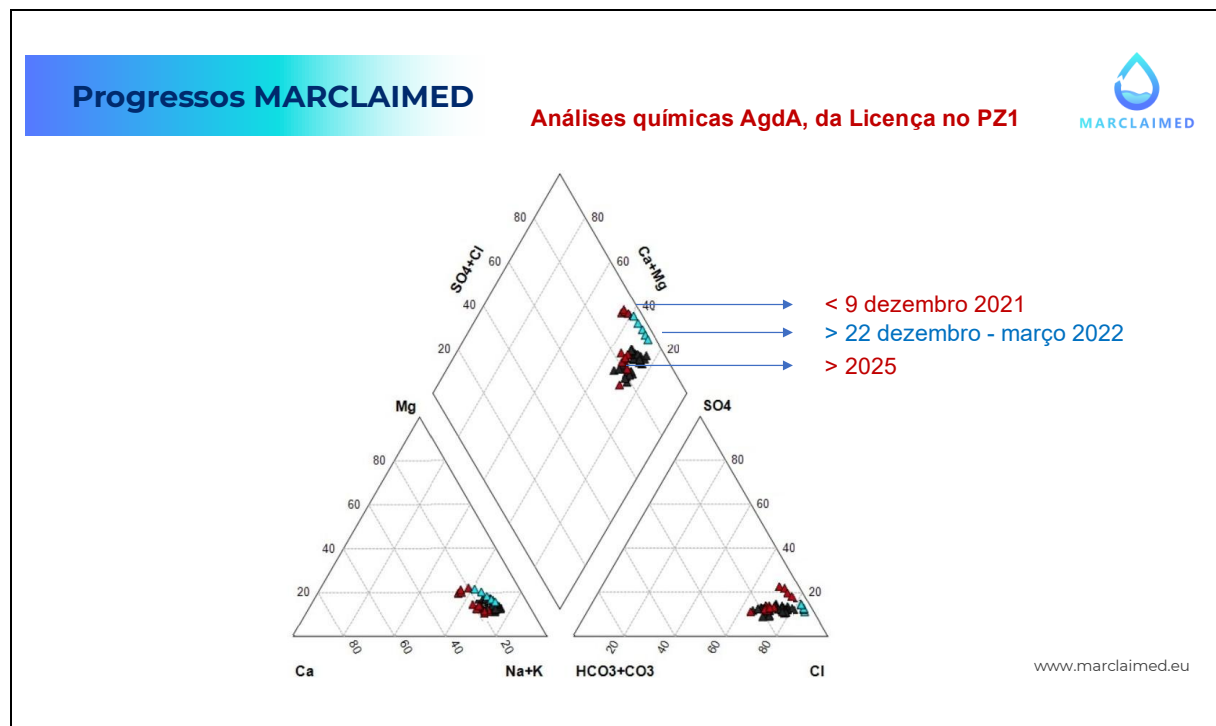
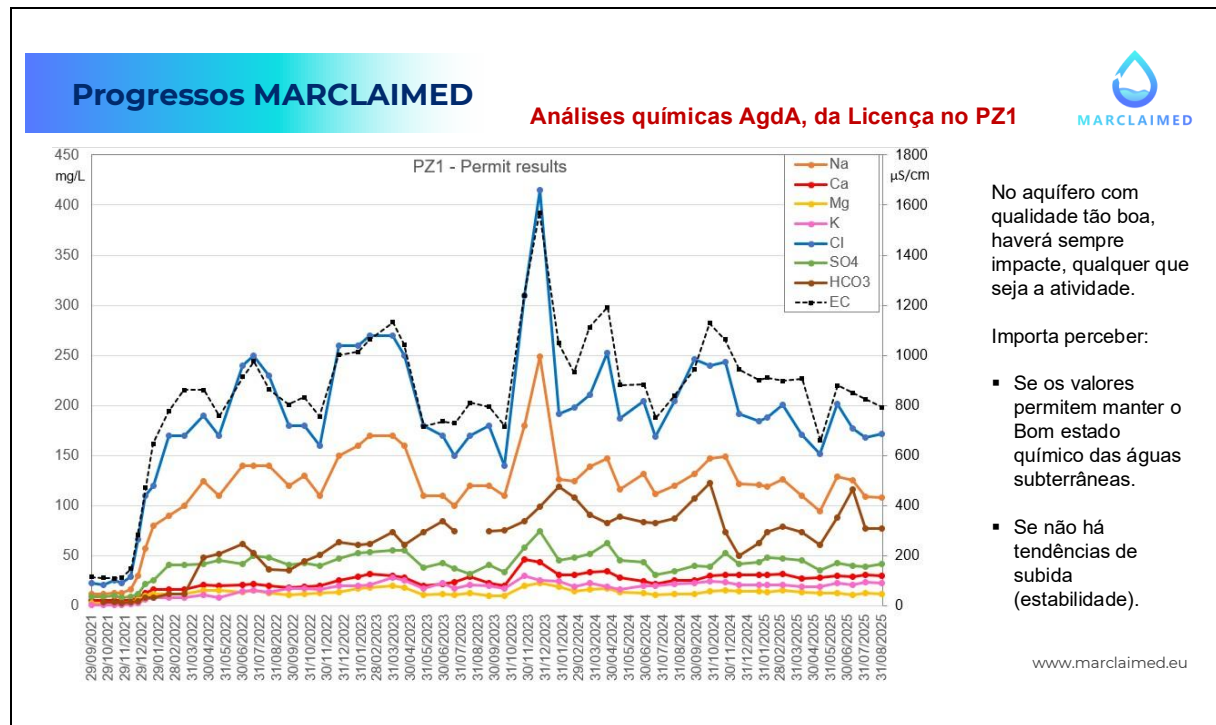
- Saída ETAR, mensal: pH, TSS, CQO, CBO, N, P, óleos e gorduras.
- PZ1, mensal: pH, T, CE, HCO₃, Cl, SO₄, Na, Ca, Mg, K, Br, Si, nível piezométrico.

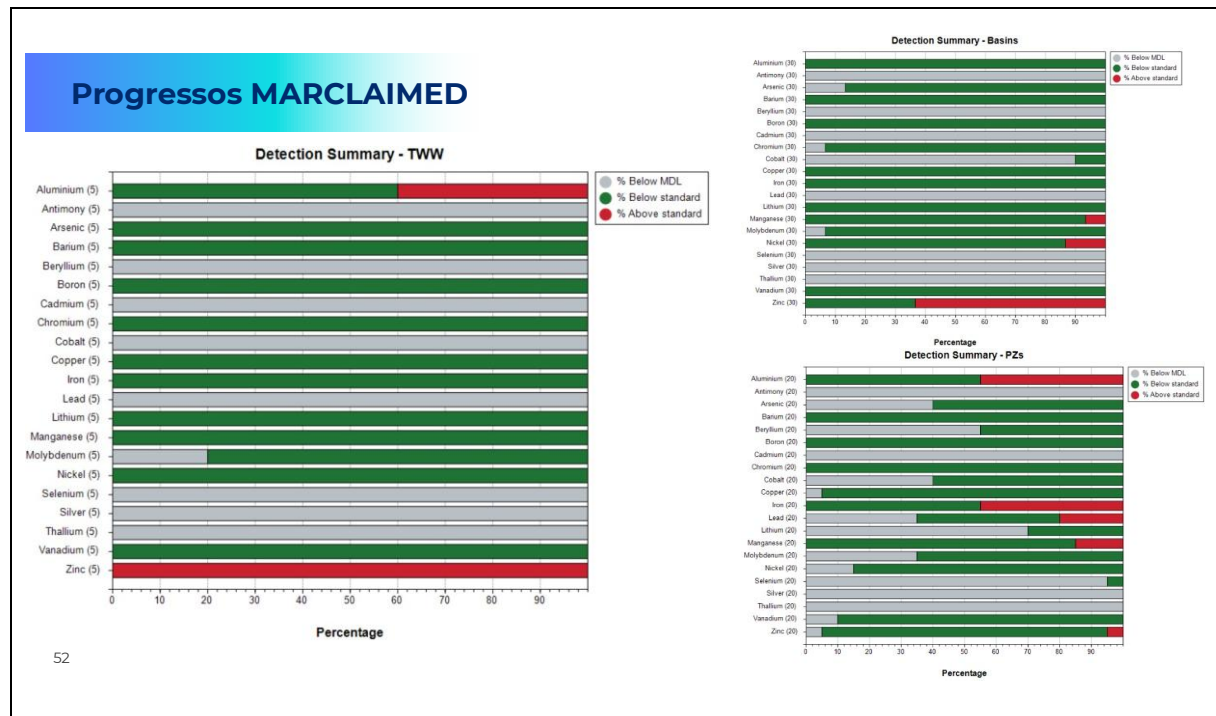
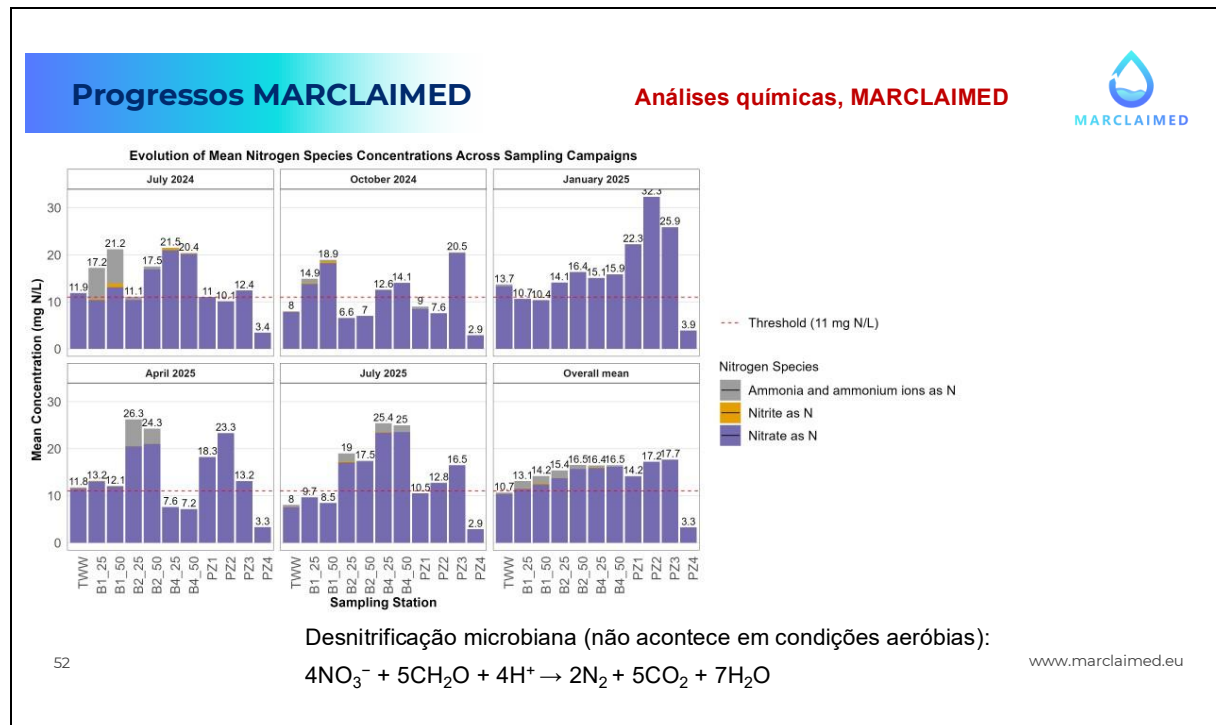
52

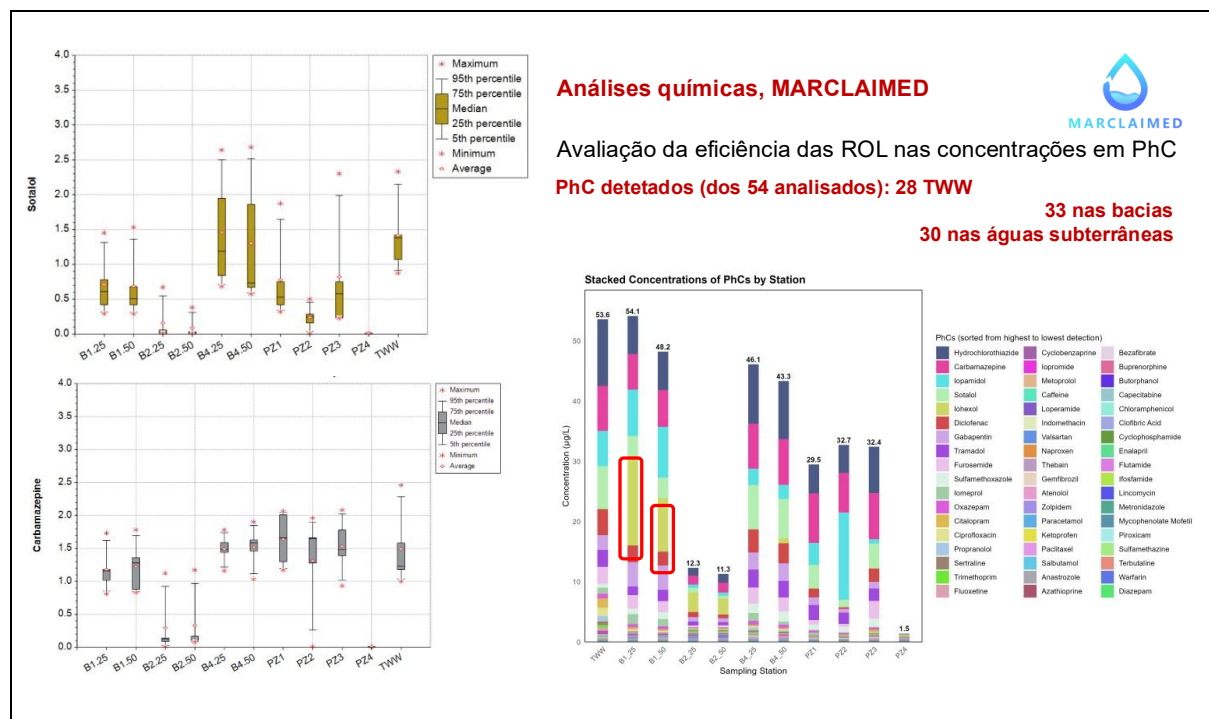
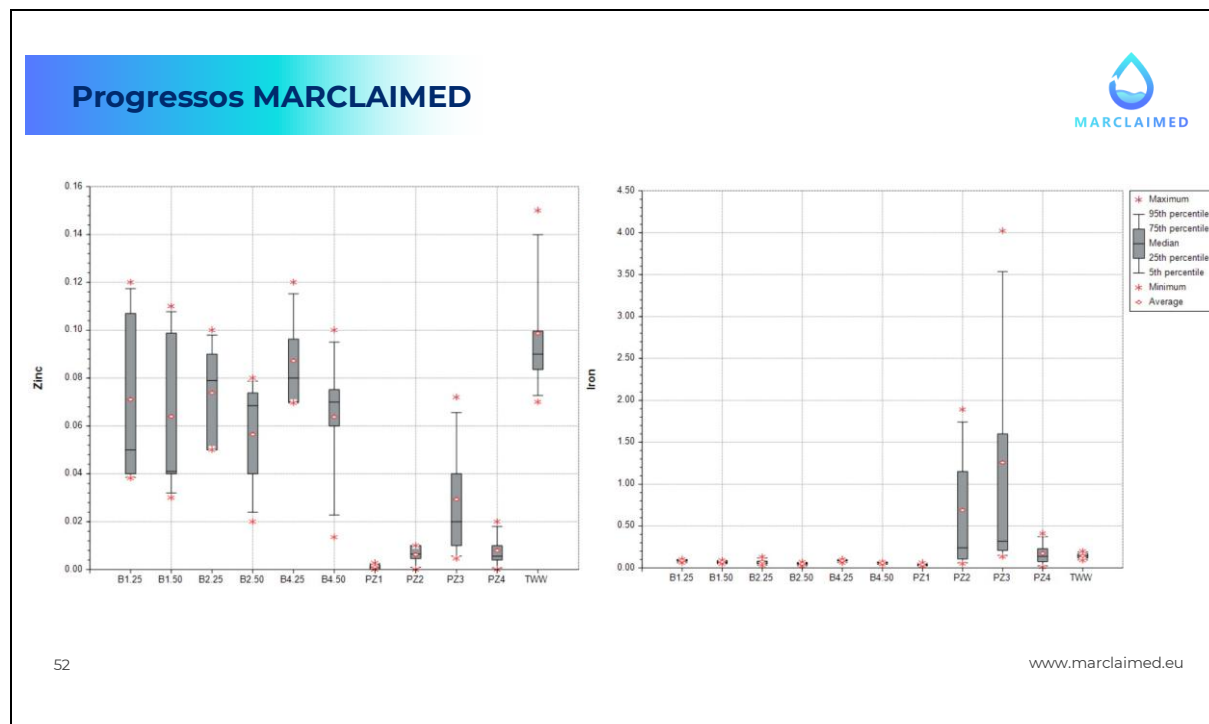
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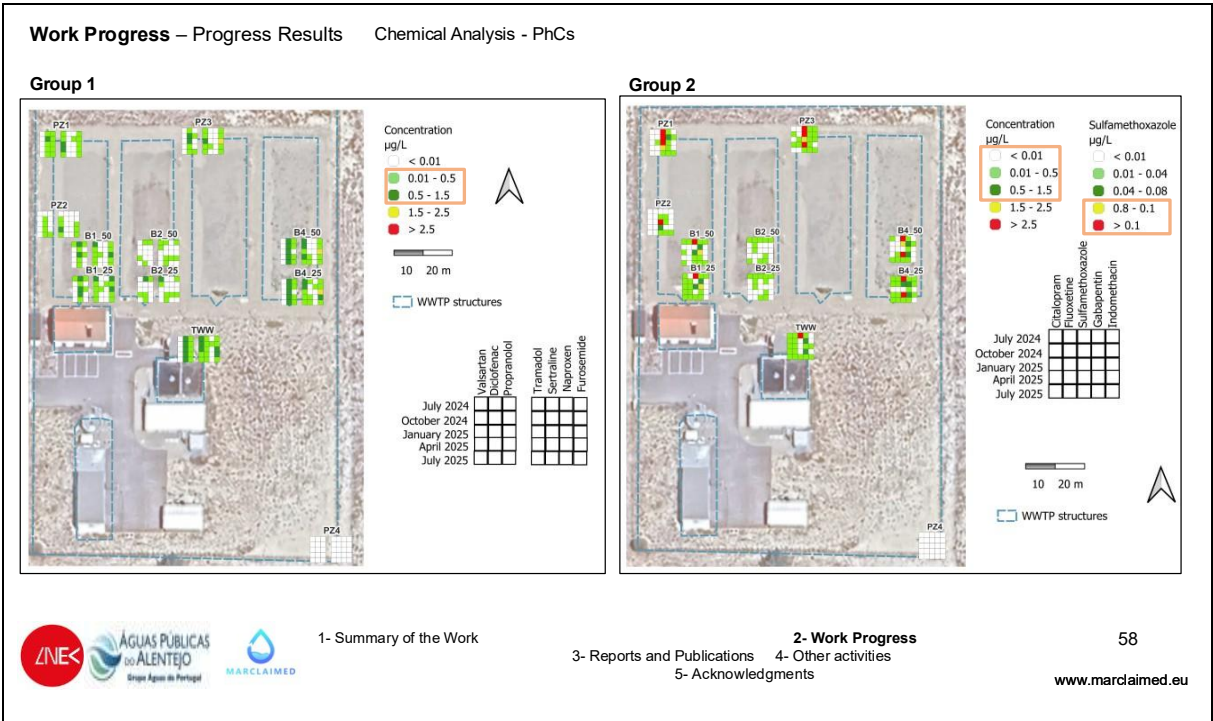
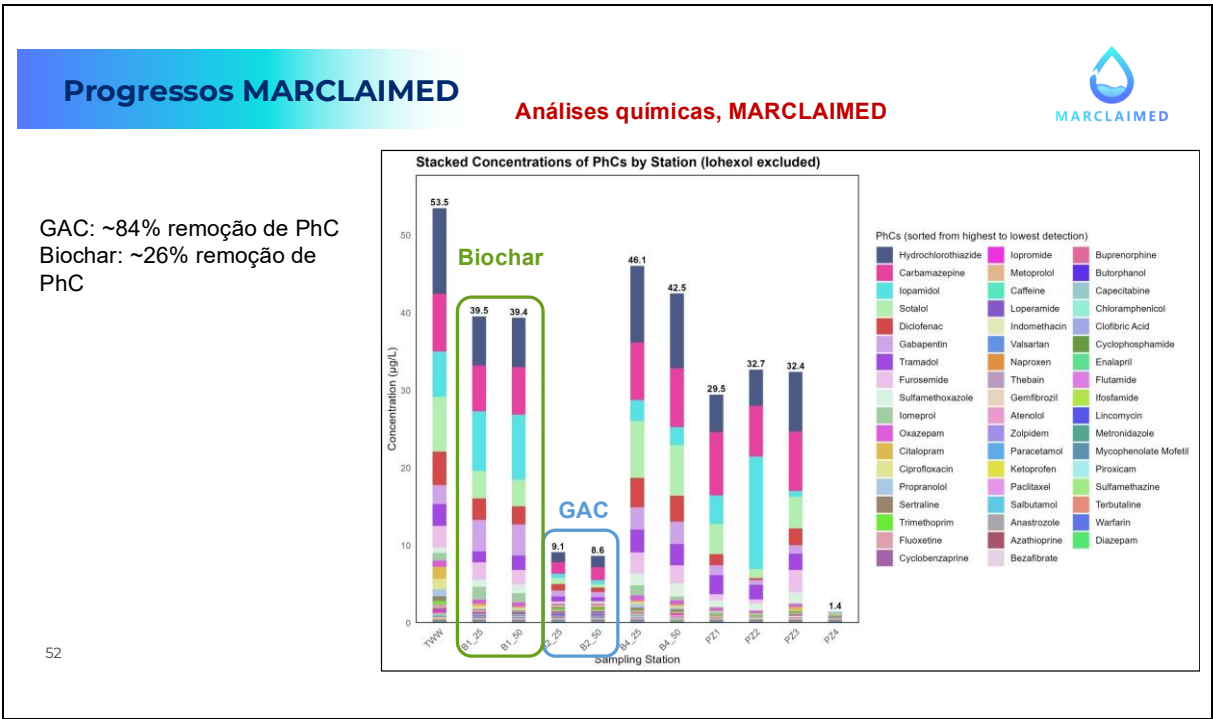












Work Progress – Progress Results

Chemical Analysis - PhCs

Group 3

Group 4

1- Summary of the Work

3- Reports and Publications

2- Work Progress

4- Other activities

5- Acknowledgments

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Progressos MARCLAIMED

S::can, MARCLAIMED

UV254 (Jul 2024 – Oct 2025)

TWW (Inflow)

PZ1 (Groundwater)

Tendência geral de diminuição nos indicadores de matéria orgânica, CQO, CBO, e UV254, todos consistentes com a biodegradação, adsorção e remoção dos PhC

3 de 54 PhC surgiram esporadicamente acima da 'norma' nos piezómetros (mesmo junto à ETAR)

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90 LNEC - Proc. 0804/1101/2368701

Progressos MARCLAIMED



CONSIDERAÇÕES FINAIS:

- Para garantir que MAR 'não compromete a concretização dos objetivos ambientais estabelecidos para as águas subterrâneas', é importante considerar um tratamento adicional das águas residuais tratadas (TWW) para a redução do teor de N e P antes da sua infiltração nas águas subterrâneas.
- Será esta uma solução melhor do que a atual, i.e., descarga, sem mais tratamento, em “linhas de água” (secas no Alentejo a maior parte do ano)? Aí não há dados mas...
- ¼ das bacias 1 e 2 com ROL 700€ e 2100€.
- Novo piezómetro mais distante para medir o efetivo impacte nas águas subterrâneas a 100 m?
- Comentários / discussão

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Próximos passos



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Próximos Passos

Desenvolvimento do Projeto

Apresentação do IDST

Validação de Resultados

WS#4
março-abril 2026

WS#5
outubro 2026

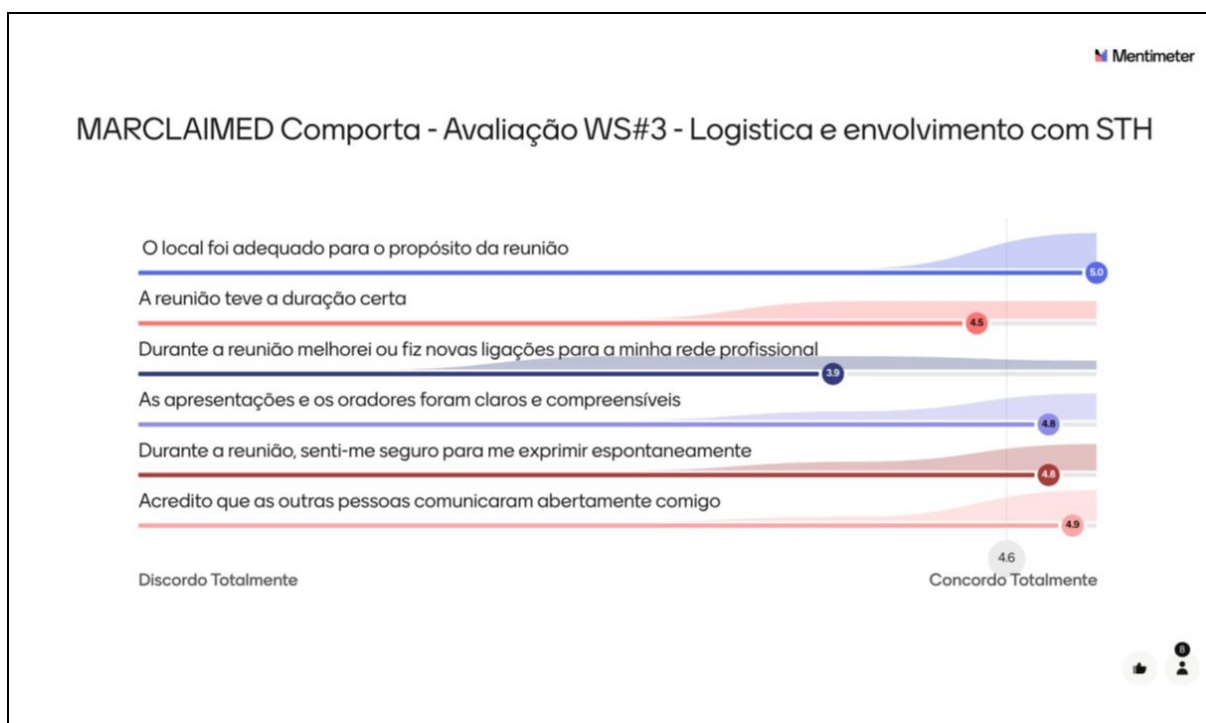
Avaliação da Sessão

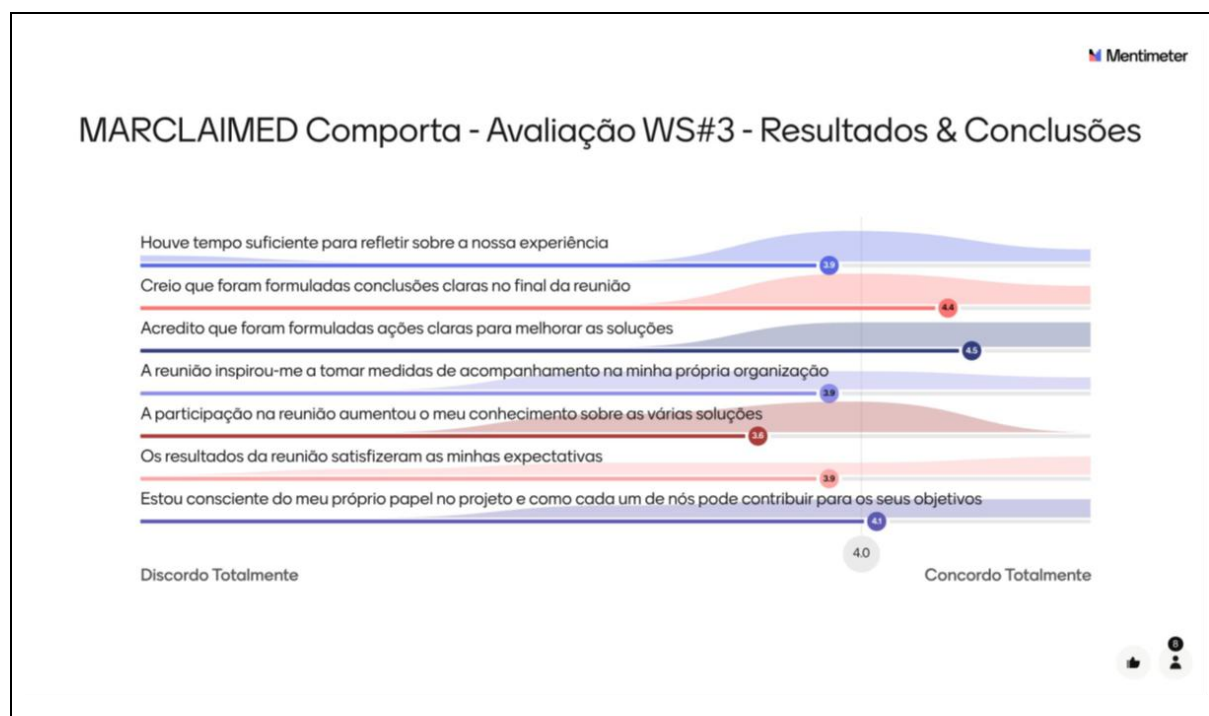
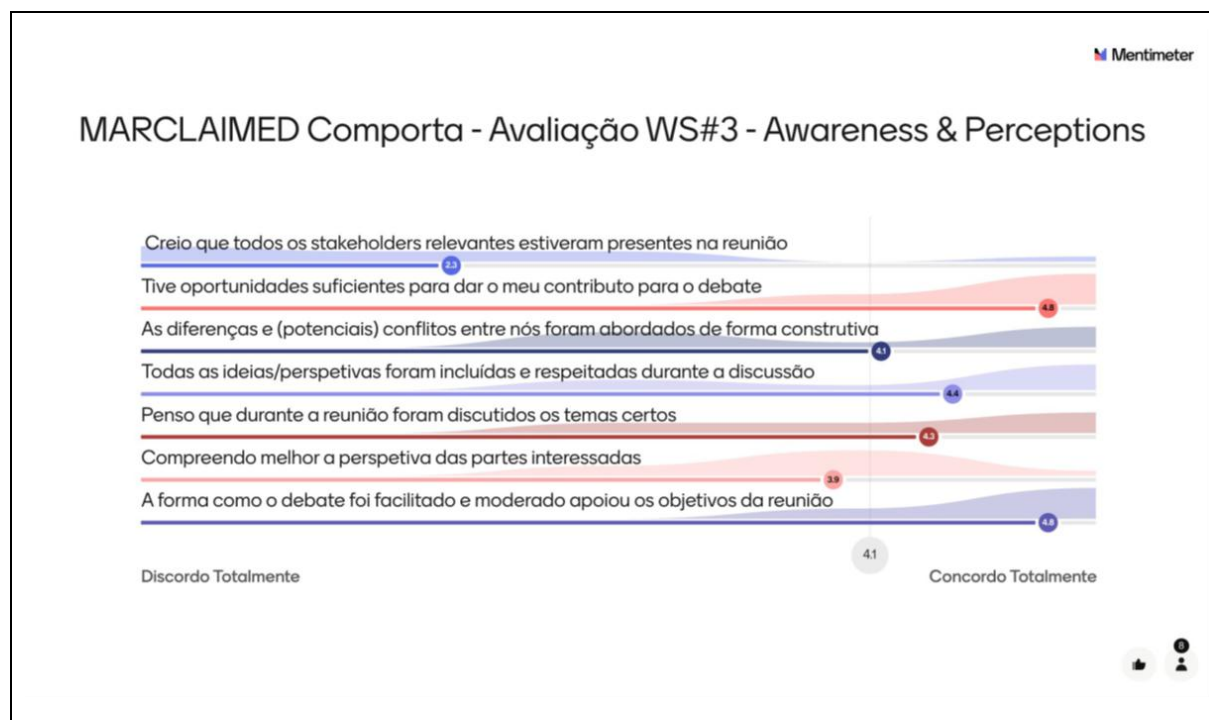
<https://www.menti.com/alfjpou59d44>
Código: 1297 2134

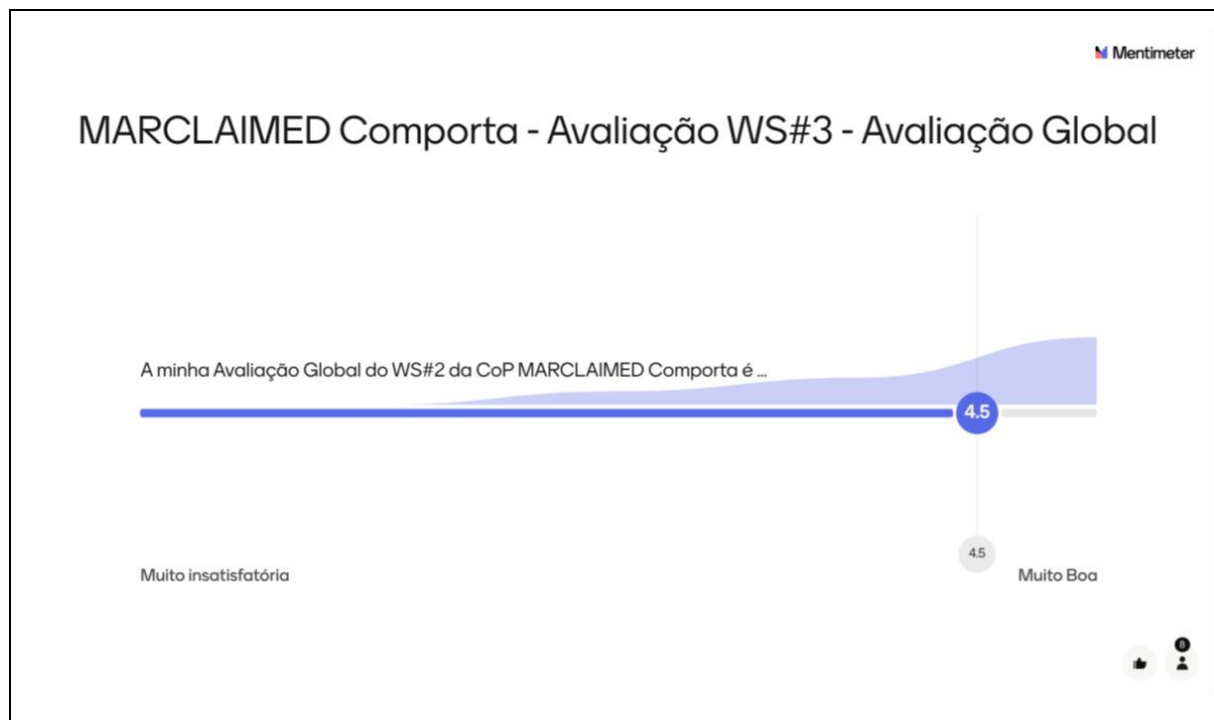
Tudo é impossível até que seja feito!

(Nelson Mandela)

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Mentimeter

MARCLAIMED Comporta - Avaliação WS#3 - Testemunhos (aspetos mais ou menos positivos, sugestões, etc.)

Boa interação e discussão	Troca de ideias e sugestões para o futuro	Como aspeto menos positivo foi a ausência do regulador ambiental	Cada um transmitiu a sua perspectiva
Positiva	Dinâmico	Dinâmico	

👍 👤

Obrigado(a)!


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 LABORATÓRIO NACIONAL DE ENGENHARIA CIVIL

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 **ÁGUAS PÚBLICAS DO ALENTEJO**
Grupo Águas de Portugal

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ANNEX II

Comporta CoP WS#3 number of participants by institution and gender

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Comporta CoP WS#3 number of participants by institution and gender

Institutions	No. of Participants		
	<i>Total</i>	<i>Male</i>	<i>Female</i>
<i>Project Members</i>			
LNEC	5	3	2
AgdA	2	1	1
<i>Water utilities / operators</i>			
AdP Valor	2	0	2
<i>Representatives of other sectors</i>			
CAP	1	0	1
<i>Others</i>			
IMDEA	1	1	0
Total	11	5	6

(Stakeholders not attending WS#3)

Water Authorities

Research Organizations/Academia/R&D

Policy Makers

End-Users

Irrigation Associations

Water Supply

Wastewater Treatment



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