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Project deliverables

Deliverable #D1.3

Finalisation of stakeholder engagement strategy and plan

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AGREEMAR

Adaptive agreements on benefits sharing for managed aquifer recharge in the Mediterranean region

Deliverable #D1.3

Finalisation of stakeholder engagement strategy and plan

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Executive summary

To guide project partners in effectively engaging stakeholders during AGREEMAR activities and beyond, this present D1.3, which is the updated version of D1.1, provides a stakeholder engagement strategy and plan. Through this, project partners were provided with tailor-made engagement formats adapted to the needs of the stakeholders, guided in addressing typical engagement challenges and managing conflicts, as well as establishing mechanisms for monitoring and evaluating the engagement progress. The engagement strategy and plan thus formed a common basis for participatory, inclusive and integrative project development. The first version (D1.1) was regularly reviewed and validated, resulting in this final version (D1.3), which is now available at the end of the project.

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Version	Date	Author	Remarks
v.1	19.05.2025	Anika Conrad, Ronjon Heim, Kyra Baumann	First draft shared within project coordinator
v.2	28.05.2025	Kyra Baumann	Feedback included

Abstract

PURPOSE. AGREEMAR considers that sustainable groundwater management is only possible through participatory and inclusive project development that enables fair benefit sharing. This is particularly important in the context of managed aquifer recharge (MAR), as it involves many different water users and their interests, but also due to the invisible nature of groundwater.

To this end, the initial version of this document (D1.1) guided the project partners in decision-making on various aspects of communication, awareness raising and stakeholder engagement during the AGREEMAR project and beyond. It helped maximise the impact of the project and promoted the uptake of results. D1.1 has been regularly reviewed, validated and adjusted and serves now as the final version (D1.3) that includes updates.

APPROACH. This document is built upon a four-step approach developed together with the project partners and refined with relevant key stakeholders based on stakeholder dialogues during first missions to the project demo regions. Building on defined engagement objectives (step 1), stakeholders are mapped and prioritised (step 2), for which, based on a subsequent detailed stakeholder analysis (step 3), coherent and tailored engagement formats are defined (step 4).

CONLUSIONS. The document provided a clear guidance for stakeholder engagement at international, general (national), regional and local levels during the AGREEMAR project and beyond. To this end, it proposes tailored engagement formats adapted to the stakeholders needs, guides the project consortium in addressing typical engagement challenges and managing conflicts, and establishes mechanisms for monitoring and evaluating the engagement progress. It thus provides a common basis for participatory, inclusive and integrative project development.

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Abbreviations

CY	Cyprus
D	Deliverable
DE	Germany
DCSP	Dissemination and Communication Strategy and Plan
G	Global (Level)
GS	General Stakeholders
GW	Groundwater
GW-M	Groundwater Model
H	High
IWRM	Integrated Water Resources Management
KPI	Key Performance Indicator
L	Local (Level) / Low
LS	Local Stakeholders
M	Medium
MAR	Managed Aquifer Recharge
MAR-A	MAR Agreement
MAR-FM	MAR Feasibility Map
MAR-GF	MAR Governance Framework
NGO	Non-Governmental Organisation
PT	Portugal
R	Regional (Level)
RBMP	River Basin Management Plan
RS	Regional Stakeholders
SDG	Sustainable Development Goal
SME	Small and Medium-sized Enterprise
SP	Spain
T	Task
tbd	to be defined
TN	Tunisia
WP	Work Package

Finalisation of stakeholder engagement strategy and plan

1 Introduction

"It's great, but it's not what I wanted" **- how often do we get to hear this from loved ones after we have presented a gift that we had saved for and hoped would be needed. Without ascertaining the actual needs and without jointly developing and agreeing on a way to address these, many activities and resources we spent are often in vain and futile. This is true not only for a well-intended gift, but also for any other activity or project that aims to benefit a certain target or stakeholder group. This is especially true for the AGREEMAR project, which aims to improve benefit sharing for managed aquifer recharge (MAR) schemes. Stakeholder engagement is a means of assuring that needs are properly assessed and that approaches to satisfy those needs are developed collaboratively. It is thus a key to ensure successful project implementation and sustainability. To this end, the present deliverable serves as a guide for decision-making on various aspects of communication, awareness raising and stakeholder engagement during the AGREEMAR project and beyond. By this, it helped effectively implement the project activities and optimize the benefits provided by the MAR schemes.**

1.1 Project context

The AGREEMAR project aimed to support decision-makers in the safe use, sustainable planning and management of managed aquifer recharge techniques (see one example of a running MAR system in Figure 1). This was achieved through the development of *"adaptive agreements on benefits sharing for MAR in the Mediterranean region"* facilitated by MAR feasibility maps and numerical groundwater models. In doing so, the project sought to strengthen the contribution of MAR to water security in the Mediterranean region. Although MAR is a globally recognised method for the sustainable management of water resources, inadequate planning tools and lack of incentive systems hinder its widespread implementation. AGREEMAR worked to address these barriers. The project results were tested at four demonstration sites in the Mediterranean region, namely Cyprus, Spain, Portugal and Tunisia.

Figure 1. Infiltration pond at Ezousas MAR scheme in Cyprus

1.2 Motivation strategy

> *If policy makers and the broad range of stakeholders choose to work only with their peers and within their spheres of activity, instead of with each other, they will fail to meet current and future water challenges*
>
> *(OECD 2015).*

Stakeholder engagement is widely recognized as an essential tool for achieving relevant and sustainable outcomes in water management. First standards for stakeholder and public engagement in decision-making processes were introduced after the Eco Summit 1992 with the Rio Declaration on Environment and Development (Rio declaration 1992). This was taken up by the Dublin Declaration on Water and Sustainable Development (Dublin Principles 1992), which made stakeholder participation one of the guiding principles, followed by Agenda 21 (Agenda 21 1992), emphasising public participation as a means of ensuring better compliance with measures to develop more effective environmental regulations. Finally, the Agenda 2030 seeks to "leave no one behind" and views participation as one of its key principles. In the SDG 6, stakeholder engagement is specifically mentioned as a goal, notably: "Support and strengthen the participation of local communities in improving water and sanitation management" (UN DESA and UNITAR 2020).

Especially in the context of MAR, stakeholder engagement is crucial for successful and sustainable project implementation (Dillon et al. 2022). This is particularly important when using reclaimed water for managed aquifer recharge, which often creates uncertainty and fear concerning contamination of groundwater resources. But also, in general, MAR often involves not only one but several stakeholders, considering several water users of an aquifer. In these cases, solutions work best if all stakeholders involved work together and share the benefits and costs equitably. Best practice examples even show that stakeholder engagement and joint management approaches could create a win-win situation for all (e.g., incentivised groundwater recharge through payments for ecosystem services in Japan (Shivakoti et al. 2018), aquifer contracts in Morocco (Closas and Villholth 2016), smart operational water management, engaging the commitment of both users and water managers in the Netherlands (INLAAT OP MAAT concept[1])).

In general, the potential benefits of engaging stakeholders during project implementation are manifold (UN DESA and UNITAR 2020), which match the motivation of the stakeholder engagement strategy and plan foreseen for AGREEMAR:

- Better tailoring the project approaches and results to the needs, expectations and capacities of those interested and affected, thus fostering ownership and acceptance towards the project results, ensuring their better and sustainable usability and avoid costly mistakes and maintaining the stakeholders' interest throughout the process
- Maximise the project's impact by increasing its visibility and ensuring that project outcomes reach a wide audience of relevant stakeholders
- Raise awareness on water issues and sensitising the public to conflict-prone issues
- Increase trust and acceptability for nature-based and unconventional groundwater management solutions
- Empower society for climate change adaptation and sustainable groundwater management
- Create new networks and exchange platforms to help bridging science-policy-practice gap
- Foster solution transfer, integration and upscaling
- Streamline policy recommendations at national, regional and local level
- Link AGREEMAR to other projects and initiatives fostering sustainable groundwater management in the Mediterranean region, exchange experiences, and seek collaboration opportunities to join efforts
- Engagement comes with a high level of transparency and appreciation of stakeholders, thereby increasing trust among them, fostering buy-in and support for new initiatives and compliance with new regulations
- In the long term, stakeholder engagement can improve service delivery to the local community. Overall, the right to participation can benefit society as a whole by contributing to a more inclusive and pluralistic society.

[1] More information on the ACACIA WATER website: https://en.acaciawater.com/pg-29143-7-111882/pagina/project_inlaat_op_maat.html

Appropriate stakeholder engagement requires a thorough identification of the actors, enablers, knowledge brokers, affected parties, etc. in relation to the issue being addressed. A thorough understanding of their roles, influence on and interest in these, enables an assessment of who should best be engaged, at what time and for what activity.

1.3 Purpose, scope and outlook

In order to promote appropriate stakeholder engagement in the AGREEMAR project and beyond, this deliverable outlines the final stakeholder engagement strategy and action plan that served as a guide for decision-making in various aspects of communication, dissemination and stakeholder engagement during the lifetime of the AGREEMAR project and beyond.

What we mean by stakeholder engagement

In defining stakeholder engagement, the authors refer to definitions made in renowned organisations and networks. For comparison, the definitions of 'Communication' and 'Dissemination' of the European Commission are referred to:

Communication:

> *"a strategically planned process that starts at the outset of the action and continues throughout its entire lifetime, aimed at promoting the action and its results. It requires strategic and targeted measures for communicating about (i) the action and (ii) its results to a multitude of audiences, including the media and the public and possibly engaging in a two-way exchange."* (European Commission)

Dissemination:

> *"The public disclosure of the results by any appropriate means (other than resulting from protecting or exploiting the results), including by scientific publications in any medium."* (European Commission)

Stakeholder engagement:

> *"Engagement means the active involvement and [active or passive] participation of others [...]".* (Durham et al. 2014).
>
> *"Process by which stakeholders are involved in [...] project processes and activities [...]."* (OECD 2015)

Both references on stakeholder engagement include different degrees (or levels) of engagement ranging from more-passive participation limited to communication and dissemination activities for the purpose of informing and raising awareness to active collaboration where stakeholders act as partners providing resources and actively shaping processes and decisions.

For simplicity, in this strategy and plan four levels of engagement have been defined ranging from **informing** as one-way communication and dissemination of project results and outcomes, **consulting** as to also receive feedback to the work done, **involving** as to jointly take decisions during the work and to active **collaborating** as to share the work. To this end, this stakeholder engagement strategy and plan includes all activities conducted in the framework of AGREEMAR and beyond that include communication, dissemination and participation activities.

It is particularly important that this deliverable not only promotes stakeholder engagement but also emerges from a participatory process and is developed together with the project consortium and key stakeholders. Through the participatory involvement of the key stakeholders and the joint signing of a Memorandum of Understanding on the resulting strategy and action plan, sustainable implementation is to be ensured and the project's impact strengthened. In the course of the project, the first version of the engagement strategy and plan (D1.1) has been continuously updated, now being this final version.

Building on the results of a detailed stakeholder identification and analysis through desk research and stakeholder dialogues and workshops applying a participatory co-creation process (more details on the developing process can be found in chapter 2), the engagement strategy and plan comprises the following main contents:

- **Specific engagement objectives** defined by project partners for each demo region and on international level including contributions needed from stakeholders (chapter 3)
- **Relevant stakeholders** on international level and at the project demo regions including a brief overview of the decision-making structure at each demo region relevant for MAR and updated stakeholder maps from D1.1a (chapter 4)
- **Analysis and prioritisation of identified key stakeholder groups** at the project demo regions for engagement based on their degree of influence and on their interest in the project outcomes (chapter 5)

- **Engagement strategies and associated action plan** at international level and each project demo region bringing together the defined engagement objectives and identified target audiences and elaborating actionable steps with timeline for each engagement activity during the course of the project and beyond (chapter 6)
- **Details on the mission agendas and interview guides** on which basis identified key stakeholders have been analysed at the beginning of the project are provided in the Annex.

2 Methodology: developing a strategy and plan for stakeholder engagement

In order to develop an appropriate stakeholder engagement strategy and plan at the project demo regions, a four-step approach has been carried out together with the demo region coordinators and project-task leaders (see Figure 2). Based on the engagement objectives defined by the project consortium, the proposed four-step approach enabled the selection of appropriate stakeholders and tailored engagement formats. The aim was to define who should and can be involved, how, when and on which topic, to best-achieve the project objectives and ensure the long-term use of the project outcomes.

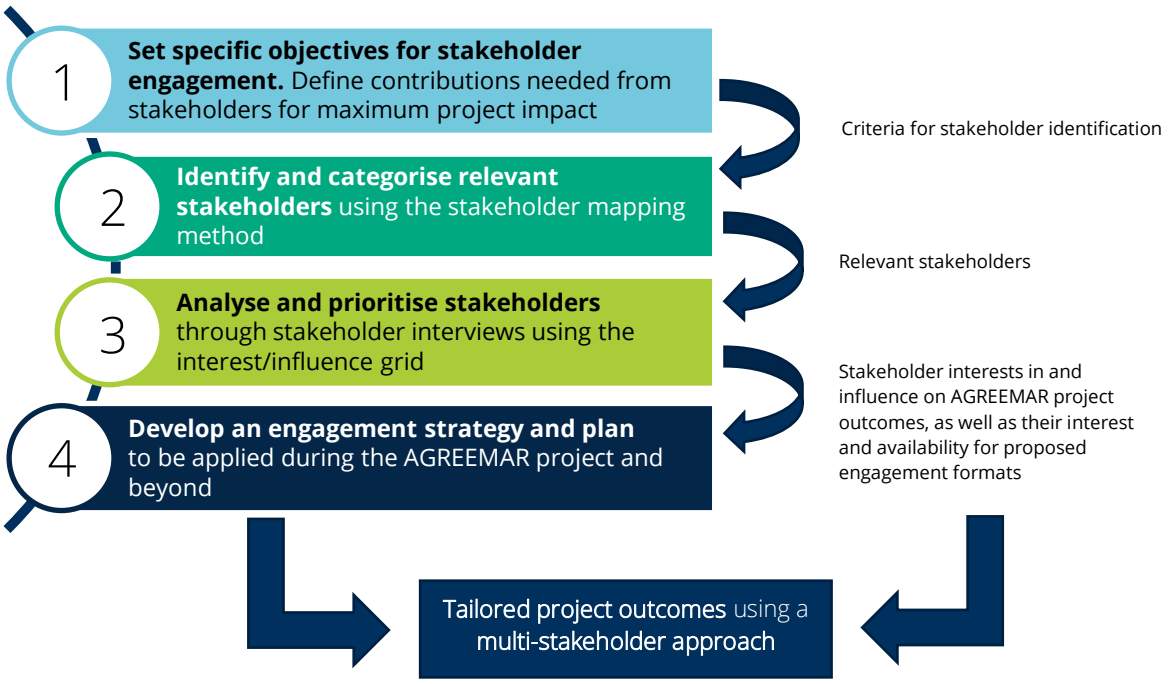

Figure 2. Four-step approach towards a stakeholder engagement strategy and plan

First, it is important to become aware of the expectations regarding stakeholder engagement in the project consortium and to define what contributions are required from each stakeholder and what outcomes are expected through stakeholder engagement (Step 1). Consequently, criteria are established to screen and categorise the stakeholder landscape for relevant stakeholders for the project (Step 2). Relevant stakeholders are considered those who have an influence on, interest in, or are affected by the specific expected project outcomes. In the next step, identified stakeholders are analysed in more detail and divided into four groups according to their level of influence and the interest in the project outcomes (Step 3). This subdivision makes it possible to select relevant stakeholders for specific project activities and to define tailored engagement formats, also considering their interest and availability to be engaged (Step 4).

The individual steps are further described in the following sub-chapters.

2.1 Defining engagement objectives

Deciding on specific objectives and required outcomes of the engagement process is an important part of the project planning phase and serves as a guide for identifying stakeholders. Within the AGREEMAR project consortium, general objectives for engagement and input needed from stakeholders for each project activity were brainstormed and compiled in a table (see exemplary template in Table 1). In addition, information on

which partner is responsible for implementing the engagement activities was evaluated, as well as what support is needed from WP1 to promote stakeholder engagement.

Table 1. Template: Overview of engagement objectives and contributions needed from stakeholders for each AGREEMAR work package (WP)

WP	Project task	Desired outcome / contributions needed from stakeholder engagement	Responsible (project partner, demo region)	Support requested from WP1 (partner to support)
WP1	T1.1 Detailed needs assessment and stakeholder analysis	Interests in, needs, expectations and influence on integrated water resources management (IWRM) and MAR in general and project outcomes for each identified relevant stakeholder of the project demo regions	-	Questionnaire development, stakeholder interviews, results analysis
…	…	…	…	…

The defined engagement objectives and associated desired outcomes were reviewed and revised according to the needs, expectations and capacities of the stakeholders. These have been identified through the stakeholder analysis (chapter 2.3) at the beginning of the project and further been updated through smaller consultation meetings throughout the project.

2.2 Identifying and categorising relevant stakeholders

Building on the specific engagement objectives, relevant stakeholders were identified, e.g., those entities who are interested in or affected by the activities conducted at the demo regions or have a (potential) influence on the project outcomes.

2.2.1 Approach

For this purpose, desk research was conducted by reviewing institutional websites, policies, reports on past and ongoing water projects, etc. The results were validated and refined with the coordinators of the demo regions and through interviews and workshops with the identified key stakeholders (snowball method). In the search for relevant stakeholders, the guiding questions listed below were found to be particularly helpful (Durham et al. 2014):

- Who is responsible for making decisions that might affect the research?
- Are there policies emerging or in existence that will benefit from or be affected by the research? If so, who needs to be informed?
- Which individuals are likely to be affected by the outputs of the research? Who, although not directly affected, may be interested in the results of the research?
- Are there stakeholders that have been involved in similar projects on previous occasions?
- Which groups or individuals may be able to provide relevant information, equipment or resources?
- Who is likely to have a negative view of the research?

Important to note:

The following aspects should be considered when identifying relevant stakeholders:

- Important to define **system boundaries**
- Not all stakeholders can be included in decision making processes -> important to nominate **representatives**

2.2.2 Visualisation and outcome

For the visualisation of the results, different tools are available, from which the stakeholder map in onion shape with an additional subdivision into three pie slices was considered most suitable for the purposes of the AGREEMAR project (see

Figure 3). The chosen structure allows to see at a glance the structuring of the stakeholder landscape in terms of predefined categories. For the AGREEMAR project, the identified stakeholders were categorised as follows:

- **thematic interest/influence in terms of MAR feasibility and management:** intrinsic site suitability, water demand and water availability; here: division into three pie pieces
- **spheres of influence:** general (national level), regional (basin-level) and local (MAR system); here: onion shape layers
- **societal sectors:** policy/decision maker, practitioners/civil, science; here: colour code.

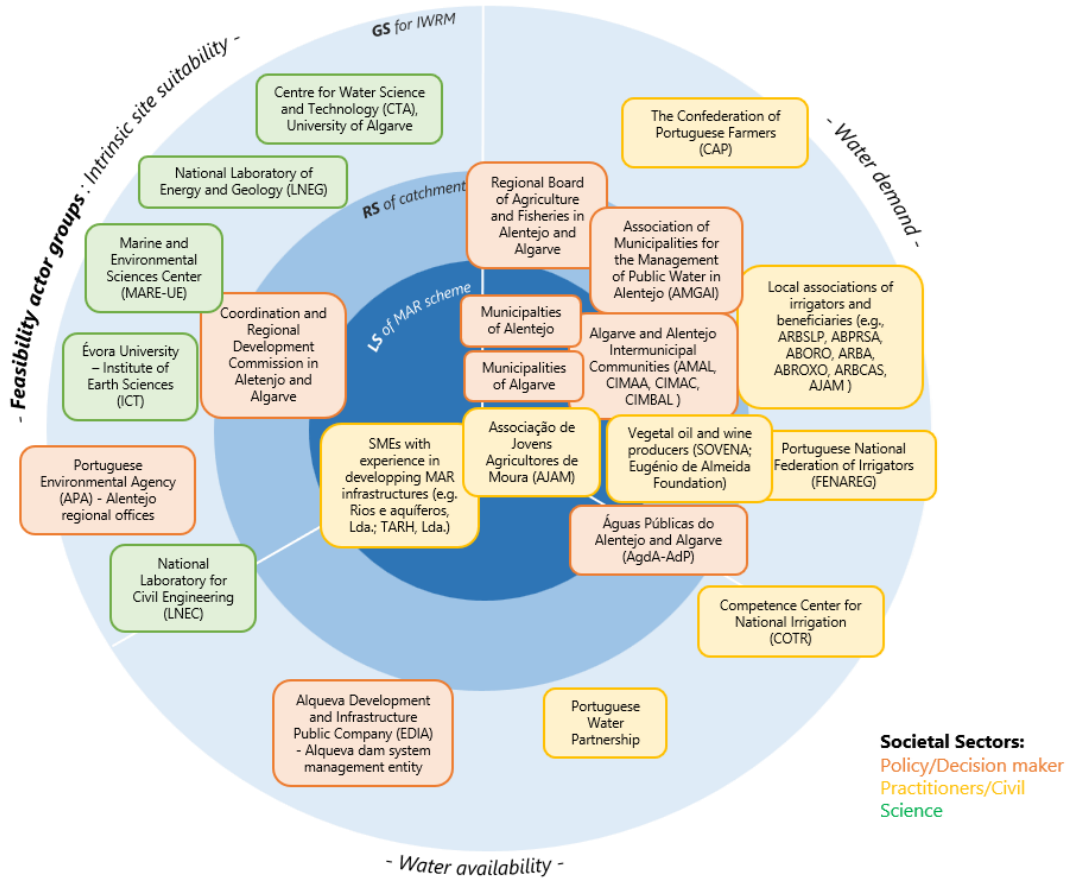

Figure 3. Example of a stakeholder map

The categorisation of identified stakeholders has proven useful to identify overlooked relevant stakeholders more quickly and to ensure equal representation of stakeholder categories in engagement activities. It also supports the analysis of the stakeholder landscape in terms of the balance of influences and interests among the different stakeholders, here in relation to a potential MAR facility at the project-demo regions. Identifying imbalances of influence and interests in MAR planning may be important to avoid conflicts when engaging stakeholders, particularly when involving stakeholders with contradicting interests, as well as when designing governance frameworks and agreements - one of the main intended outcomes of the AGREEMAR project.

The map can further be used to visualize relationships between stakeholders. The different types and qualities of relationships can, for instance, be represented by different symbols. However, the map should not be overloaded with too many visual elements.

The results of this step including initial assessments of the role and needs of stakeholders in relation to the project topics and outcomes, are published in deliverable D1.1a (Conrad and Heim 2022).

2.3 Analysing and prioritising stakeholders

After generating a comprehensive list of relevant stakeholder groups, the stakeholders were analysed in order to prioritise them for engagement. Involving all stakeholders equally is rarely effective and usually exceeds the capacity of a project.

2.3.1 Approach

The most commonly used approach for prioritising stakeholders for tailored engagement is to assess their **levels of interest** (depending on needs or how they are affected by the project results) and **influence** (depending on the mandate, status (political, social or economic), degree of organisation, capacities, control over water resources, informal influence (personal connections etc.)) (Durham et al. 2014). The mere division into influence and interest is often criticised as insufficient (Durham et al. 2014), which is why the following additional aspects were included in the assessment: how beneficial engaging the stakeholder is seen by the project consortium (assigned role e.g. providing data), what views are the stakeholders likely to hold about the project topics, existing relationships among the stakeholders with a special focus on potential conflicts, and willingness and interest of the stakeholders to be engaged.

Table 2 shows a list of different **analysis criteria** that were assessed within the AGREEMAR project to help prioritise the identified stakeholders for each of the four demo regions.

Table 2. Criteria for stakeholder analysis in AGREEMAR

General classification	-	Stakeholder group
	-	Thematic mapping
	-	Existing relationship
	-	Experiences and knowledge on the project contents
Influence	-	Level of influence (general, regional, local)
	-	Role and competencies related to MAR
	-	Influence (H/M/L) on preparing feasibility maps
	-	Influence on preparing groundwater models
	-	Influence on preparing MAR governance model and agreements
	-	Comments on influence (e.g., times or context in which they have more/less influence over the outcomes of the project)
	-	Power-relations/conflicts to other stakeholders
Interest	-	Impact of the MAR demo region on the stakeholder
	-	Needs related to MAR
	-	Impact of feasibility maps on the stakeholder
	-	Needs, interest and expectations related to MAR feasibility maps
	-	Impact of groundwater models on the stakeholder
	-	Needs, interest and expectations related to groundwater models
	-	Impact of the MAR governance framework and agreements on the stakeholder
	-	Needs, interest and expectations related to MAR governance framework and agreements
	-	If interest is low, how might we motivate engagement with the project
Engagement strategy	-	Reasons to engage the stakeholder
	-	Envisaged stakeholder contribution to the project
	-	Willingness to engage
	-	Capacity to engage
	-	Resulting level of engagement
	-	Key contacts and best way of contacting them

For this purpose, missions to the four project demo regions were conducted consisting of bilateral meetings in interview form with identified key stakeholders. Some bilateral meetings have also been preceded by specific stakeholder workshops to introduce the project (as done in Spain and Portugal), if not conducted in the context of the project yet.

The bilateral meetings started with a round of introductions where the stakeholders got to know the AGREEMAR team, the project and its objectives as well as the aim of the meeting and the usage of the information received during the meeting. Then, the stakeholders had the opportunity to introduce their role and their organisation related to the project topics. The main part of the bilateral meetings consisted of a set of questions on the stakeholders' interests, needs and influence related to the project outcomes. The

questionnaires and agendas of the individual missions and stakeholder interviews can be found in the Annex 1..

In addition to the aim of building a better understanding of the stakeholders, the first stakeholder interactions introducing the project also helped to assess their specific needs in relation to the project outcomes, in order to best tailor and customise the project outcomes and thereby maximise its impact. In addition, the missions helped to build trust and ownership on the part of the stakeholders and encouraged them to work together in the future.

2.3.2 Visualisation and outcome

Based on the results from the assessment of the analysis criteria, stakeholders were clustered according to whether they have a high or low interest in, and high or low influence on the project outcomes (see Figure 4).

2.4 Developing a strategy and plan for stakeholder engagement

2.4.1 Approach

Level of engagement

The final decision on how to engage which stakeholder depends on the stakeholder's level of interest in and influence on the project outcomes, as well as their interest and capacity to engage. To this end, the four boxes of the Influence-Interest grid each represent a "level" of engagement (Figure 4):

- **Low influence and low interest:** these stakeholders are seen as **'neutral'**; however, it is advisable to monitor them to ensure that no reasons arise that could lead them to becoming opponents → **inform**
- **High interest, but low influence:** these stakeholders are the **'defenders'**. They are important as they can seek additional ways to influence the project progress and success. It is advisable to maintain a fluid dialogue with them through different channels (see chapter 6.2), in such a way that their eventual doubts can be identified and resolved → **consult**
- **High influence, but low interest**: these stakeholders are seen as **'potential opponents'**. It is necessary to pay constant attention to them and communicate progress because if they are not satisfied, they could become active opponents → **involve**
- **High influence and high interest:** these stakeholders are seen as **'promoters'**. It is advisable to actively involve them to keep their level of commitment high → **collaborate**

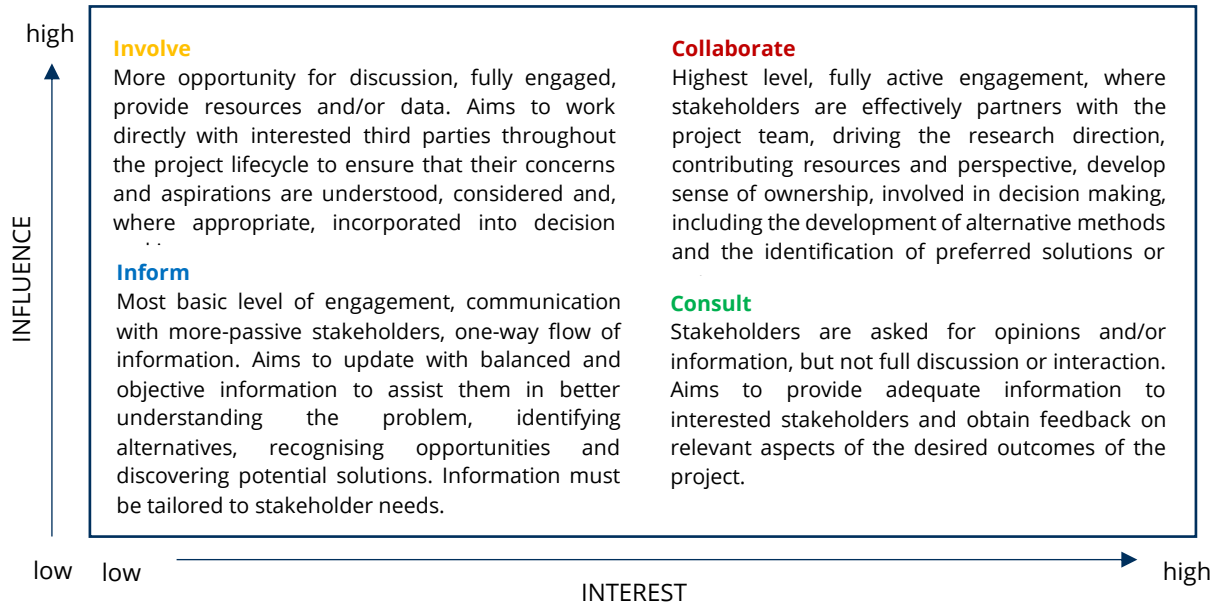

Figure 4. Four levels of engagement assigned according to the level of interest and influence

The assignment to one engagement level does not mean that the stakeholder cannot also be engaged at other levels. The final result provides more a rough desired direction. For example, a stakeholder may fall into the 'involve' category, but this level of engagement may only be necessary in the early stages of the project, whereas later on the same stakeholder may only need to be informed on the project progress. In addition, short-term conditions, e.g., availability of the stakeholder, can also influence the engagement level in the end.

Moreover, the classification is strongly dependent on the stakeholder analysis, which is partly influenced by subjective assessments based on brief stakeholder interviews. Subsequent contacts may lead to different results. This segmentation of the identified stakeholders according to their influence and interests further allows to:

- Prevent stakeholders with high influence but low interest from being overlooked and involve them in project activities from the beginning to quickly identify and manage potential influential opponents of the project, integrate their needs in the design of the project outcomes and raise their awareness regarding the project objectives,

- Strengthen affected stakeholders with high interest in the project outcomes but little influence to give them a stronger voice for their interests, and identify and encourage advocates**.**

The engagement level, however, is also always a result of the current capacities of the stakeholder, which is decisive in the final design of the engagement activities. If this is much lower than desired, a solution should be sought together.

Means / formats of engagement

Based on the defined engagement level, capacities and willingness of the stakeholder for engagement, as well as available project resources for engagement, the appropriate means (formats) of engagement were defined. Table 3 provides a list of examples for different engagement formats suitable for the different four engagement levels, bearing in mind that there is no clear assignment of one engagement levels to each format. In general, collaboration formats always have an informative and consultative character. In the list below, only the main levels are listed for each format.

Table 3. Overview of possible stakeholder engagement formats including brief description, associated type of engagement and a list of supporting tools

Main level of engagement	Engagement means / formats	Brief description	Tools needed/Supporting tools available
Inform	**Project website**	The website provides a central place for general information about the project, its main objectives, upcoming activities and results. It also lists the parties involved and contact persons	Modular systems
	Social media	Online channels for targeted dissemination of activities and addressing stakeholders	Social media platforms (e.g., LinkedIn, Twitter, Facebook, TikTok)
	Newsletter	Regularly published information sheet via email, which summarises the most important news of the project concisely to a target group.	Mailing tools that help create mailing lists for different target groups, function to unsubscribe for the recipients, etc.
	Press releases	Occasional information of the wider public about important activities and results of the project via the regional press	Local newspapers, international newspapers, project website, MAR related websites
	Brochures, leaflets, videos	Individual information products about project goals, activities and outcomes	Sharing platforms (e.g., LinkedIn, Twitter, project website, MAR related websites)
	Training courses (online, face-to-face)	Event in which people are provided with skills to a specific problem (one part of capacity development)	Online conference tools (e.g., Zoom, MS Teams) Presentation tools (e.g., PowerPoint, Prezi)

Main level of engagement	Engagement means / formats	Brief description	Tools needed/Supporting tools available
	Capacity development activities	Encompasses a whole range of activities designed to empower individuals and institutions (including the analysis of policy contexts, awareness building, institutional adjustments, policy research, policy immersion and more)	See training courses and outreach measures
Inform, **consult**	**Conferences, symposia, political fora**	Individual local events with the aim of involving stakeholders and experts through information and workshop activities	Presentation tools (e.g., PowerPoint, Prezi)
	Webinars	Web based seminars in which knowledge and information is provided to the audience, leaving the room for short feedback and discussion (often focused on a specific topic)	Online webinar tools (e.g., Zoom) Presentation tools (e.g., PowerPoint, Prezi)
Inform, consult, involve	**Dialogues and exchange sessions (online, face-to-face)**	A conversation or discussion between two or more people to exchange knowledge on a specific topic and resolve a problem	Online conference tools (e.g., Zoom, MS Teams)
Consult	**Surveys (online)**	Targeted, asynchronous questioning of selected person(s)	Online questionnaire tools (e.g., LimeSurvey)
	Consultation and feedback workshops (online or face-to-face)	Targeted questioning of selected group and presentation of intermediate project results	Online conference tools (e.g., Zoom, MS Teams) Online collaboration tools (e.g., MIRO, Mural) Online poll tools (e.g., Mentimeter, Slido) Presentation tools (e.g., PowerPoint, Prezi)
Consult, **involve**	**Interviews (online)**	Targeted, synchronous questioning of selected person(s), preferably bilateral or small group of < 3 persons	Online conference tools (e.g., Zoom, MS Teams) Online collaboration tools (e.g., MIRO, Mural) Presentation tools (e.g., PowerPoint, Prezi)
	Interviews (face-to-face)		Recording device Notebook
Consult, **involve**, **collaborate**	**Local civil assemblies (face-to-face)**	Body formed from randomly selected citizens to deliberate on important issues	Presentation tools (e.g., PowerPoint, Prezi) Recording device Onsite collaboration and documentation tools (e.g., white board, flip chart with sticky notes)
			Anonymous poll tools (Online poll tools) (e.g., Mentimeter, Slido)
	Roundtable discussions (face-to-face)	Form of academic discussion, participants agree on a specific topic to discuss and debate	Presentation tools (e.g., PowerPoint, Prezi) Recording device Onsite documentation tools (e.g., white board, flip chart with sticky notes) Anonymous poll tools (Online poll tools (e.g., Mentimeter, Slido)
Involve, **collaborate**	**Participatory workshops (online or face-to-face)**	Organised event which brings a group of people together to seek their opinions, extract their knowledge and to solve problems in a collaborative and creative environment	Presentation tools (e.g., PowerPoint, Prezi) Recording device Onsite documentation tools (e.g., white board, flip chart with sticky notes) Anonymous poll tools

Main level of engagement	Engagement means / formats	Brief description	Tools needed/Supporting tools available
			(Online poll tools) (e.g., Mentimeter, Slido)
	Project steering committee	Committee (group of high-level advisors / representatives from identified key organisations) providing support and guidance to the project consortium and oversees the project progress.	Similar to facilitation tools for participatory workshops listed above

2.4.2 Visualisation and outcome

Finally, combining the different results of the above steps, the previously listed engagement objectives including contributions needed and outcomes desired from stakeholder engagement can be matched with identified target audiences. In line with the engagement objectives, needed engagement levels are identified and compared with the results of the stakeholder analysis (Influence-Interest-Grid). Keep in mind that not all identified target audiences are available to engage at the envisaged engagement levels. For example, not all of them can participate in a stakeholder workshop and some of them need to be consulted via short online consultations or online questionnaires in parallel.

To make the stakeholder engagement strategy and plan in Table 4 applicable to all demo regions, stakeholder groups or levels are given in the column 'who to engage / target audience'. The relevant organisations for each demo regions can be derived from the corresponding influence-interest grid.

Table 4. Template: Stakeholder engagement strategy and plan

Time schedule	Project result	Project tasks	Desired outcomes / contributions expected from stakeholder engagement	Responsible project partner	Who to engage / target audience	Engagement level	Engagement format

To help monitor and evaluate the success of the stakeholder engagement strategy and plan, key performance indicators (KPI) are defined for each engagement format (exemplary template in Table 5).

Table 5. Template: Key performance indicators for stakeholder engagement

Engagement format	KPI	Target value by project end

3 Specific engagement objectives

Stakeholder engagement is key in all phases of the AGREEMAR project. Through stakeholder engagement, the project team hopes to gain insights into stakeholder needs, expectations, access to data, locations, but also feedback on project activities and outcomes, up to active co-design, coordination and decision-making in project activities. All engagement formats serve the overarching goal of improving sustainable water management and fair sharing of benefits among stakeholders, as well as maximising the project's real-world impact and fostering the uptake of its results.

In line with the general engagement objectives for stakeholder engagement (presented in section 1.2), the specific engagement objectives listed below have been defined within the project consortium to apply for the AGREEMAR project, including the outcomes desired and contributions expected from stakeholder engagement.

Table 6. Overview of specific engagement objectives including desired outcomes and contributions needed from stakeholders for selected project tasks (T)

Project tasks where stakeholder engagement is relevant and envisaged	**Desired outcomes / contributions expected from stakeholder engagement**
T1.1 Detailed needs assessment and stakeholder analysis	Interests in, needs, expectations and influence on IWRM and MAR in general and project outcomes for each identified relevant stakeholder of the project demo regions
T2.1 Compilation of indicator matrix	Co-design, calibrate and validate the feasibility criteria database
T2.2 Development of stakeholder-adapted criteria weighting system	Co-develop a criteria selection and weighting process
T2.3-T2.5 Compilation of the four thematic MAR feasibility maps	Weighting of site-specific MAR feasibility criteria, rate and rank pre-selected criteria from each demo regions according to the local needs, for each thematic, consultations on the integration of the time scale factor within the weighting process, discussions on the role of qualitative considerations in the MAR feasibility mapping, input on specific site constraints (also linked to non-physical criteria), determine global weights among the three thematic maps (demand, availability and intrinsic)
T2.6 Validation of MAR feasibility map through stakeholders	Refine and validate the final MAR feasibility maps
T3.3 Drafting the general governance framework for MAR	Input on existing national and regional legislation in which the new general framework could be embedded
	Co-develop general MAR governance framework based on feedback from stakeholders on existing legal frameworks and guidelines, their expectations assessed in T1.1, etc.
T3.4 Regional stakeholder consultations for agreement development	Co-create drafts for regional agreements by adapting the general governance framework (T3.3) to each demo region (collect feedback on existing models and regulations at each demo region)
T3.5 Drafting four regional agreements for case study areas	Feedback on regional agreements
T4.1 Stakeholders consultations for refining the modelling objectives	Select one site per regional demo region for groundwater modelling. Define modelling objectives considering the main social and environmental challenges affecting local water use and the results of the feasibility mapping (WP2). Co-design of simulation scenarios and model parametrization.
	Additional data collection for numerical MODFLOW model setup.
T4.4 Analysis of model results and collaborative updates with stakeholders' consultations	Presentation and discussion of model results together with local stakeholders, collaborative update (together with WP5 Governance Framework and training/capacity building)
T5.1 Participative adaptation of regional agreements to local needs	Select demo region for local agreements.
	Input on existing agreements and regulations in which the new agreements could be embedded
	Collect ideas for local agreements based on prior project results and international best-practices (feasibility maps, the regional agreements developed in WP3 and results of numerical models developed in WP4)
	Define objectives for local agreements. Qualitative analysis of envisaged costs and benefits of the selected local demo region based on the results of the numerical models developed in WP3 to identify the benefitting and paying parties of the (potential) MAR system for a fair benefit sharing.
T5.2 Training and capacity building to enhance coherence among local stakeholders	Develop capacities to foster solution upscaling and transfer, market applicability, and improved governance

Project tasks where stakeholder engagement is relevant and envisaged	Desired outcomes / contributions expected from stakeholder engagement
T5.3 Organisation of civil assemblies for adopting local MAR agreements	Pre-discuss draft local MAR agreements with key stakeholders (if considered necessary, consents will be obtained beforehand) and identify potential governance ownership of the local agreement
	Develop concept and materials for civil assemblies in cooperation with key stakeholders potentially governing the agreements
	Actively participate / organise (governing stakeholder) civil assemblies bringing together all stakeholders involved/impacted and benefitting of the (potential) MAR site
	Co-finalise local agreements by governing stakeholders ensuring that expected benefits and costs of the local MAR demo region are wisely and fair shared.
T5.4 Creation of follow-up committees for sustainable exploitation	Co-creation of follow-up committees
T6.2 External communication and outreach	Present project and its results to the international community and general public and raise awareness on sustainable groundwater techniques and improved MAR planning and management methods
	Exchange with the international community and general public
	Transfer of project results to policy and practice and identify integration and replication opportunities
	Improve collaboration with similar projects and initiatives

4 Relevant stakeholders

MAR planning involves many different stakeholders and makes it possible to anticipate and avoid conflicts of interest. Relevant stakeholders have been identified at the international, general (national), regional and local levels, as well as with different interests and influences at the level of water demand, water availability and intrinsic site suitability.

First results of mapping relevant stakeholders at each project demo region are published in Deliverable 1.1a Preliminary analysis of project-relevant stakeholders (Conrad and Heim 2022). These initial findings have been updated in this chapter based on the results of stakeholder dialogues at the project demo regions during the first project missions in November-December 2022.

4.1 International stakeholder landscape

Research having a significant importance of nowadays MAR practices dates back to the 1960s. Recognising the multiple benefits of MAR, there is a well-established community of experts at the international level. The INOWAS research group has identified over 1200 case studies in more than 60 countries worldwide in the first global inventory of MAR (Stefan and Ansems 2018). In order to discuss, validate and disseminate new methods and research findings developed within AGREEMAR, the project consortium seeked collaboration with international experts. A selection is presented below and in the stakeholder map (Figure 5):

Table 7. Selection of stakeholders identified on international level

Stakeholder group	Examples
Scientific community (e.g., universities, research institutes)	- **International Groundwater Resources Assessment Centre (IGRAC, Netherlands):** offers the free to use first global inventory of MAR schemes in its MAR portal - **Bureau de Recherches Géologiques et Minières (BRGM, France)**: expertise in mapping the economic feasibility of MAR (Maréchal et al. 2020) - **TU Darmstadt (Germany), University of Algarve (Portugal), Universitat Politecnica de Catalunya (Spain), LNEC (Portugal):** universities and research laboratories with a research focus on MAR, e.g., GABARDINE, MARSOL, and MARSoluT projects

Stakeholder group	Examples
	- **Commonwealth Scientific and Industrial Research Organisation (CSIRO, Australia)**: conducts research for MAR project planning and risk assessment, develops guidelines and provides expert guidance - **Wheeler Water Institute (USA)**: conducts research on the successful deployment of MAR in the USA to identify how technical, legal, institutional and economic factors converge in MAR systems - **European Soil Data Centre (ESDAC)**: provides maps and groundwater models - **KWR Water Research Institute (Netherlands)**: evaluates and designs complex MAR systems for saline aquifer - **Bundesanstalt für Geowissenschaften und Rohstoffe (BGR, Germany)**: provides maps and groundwater models
Policy makers and regulators	- **Directorate-General for Environment (DG ENV)**: responsible for EU environmental policy, proposes and implements the Commission's environmental protection policy.
Strategic and technical water managers consulting and engineering companies)	- **Tragsa Group (Spain)**: engineering company with a division dedicated to planning, implementation and management of MAR projects - **AKVO GmbH**: private non-profit foundation offering planning and assessment services for MAR schemes. - **Aquaveo:** provides water resources software and engineering consulting services for modeling - **Landell Mills:** consulting company providing project management for MAR projects worldwide, e.g., in Kabul, Afghanistan - **The Energy and Water Agency (Malta)**: Government Agency responsible for the implementation of legislation and policies related to Sustainability of the water supply-base
Networks, clusters, multipliers	- **International Association of Hydrogeologists Commission on Managing Aquifer Recharge (IAH-MAR):** expert commission aiming to exchange, improve, and disseminate knowledge about MAR. Give technical advice for MAR implementation and governance and provide expertise on groundwater modelling, MAR suitability mapping, clogging - **Groundwater Solutions Initiative for Policy and Practice (GRIPP):** global partnership between different national and international institutions on sustainable groundwater management - **International Water Association (IWA)** and **Water Europe**: bring together different water management and research institutions from science and practice and can provide expertise on MAR governance - **IAH International Symposium on Managed Aquifer Recharge (ISMAR)** and the **Congress of the IAH**: provide international forums for the exchange of knowledge between scientists (and practitioners) on groundwater and MAR related topics under the patronage of the International Association of Hydrogeologists (IAH) - **National Groundwater Association (NGWA):** U.S. association supporting all groundwater professionals. Providing expertise, advocacy, collaboration, and information sharing on groundwater-related issues and specifically MAR.
Relevant projects	- **MAR2Protect:** water treatment technologies, real-time sensors and decision support system for optimal MAR design (funded by EC, Horizon Europe programme, project duration: 2022-2026). Web: https://mar2protect.eu. - **AGREEMed:** adapted governance schemes similar to the Morocco's example: 'Aquifer Agreement', stakeholder boards at each Living Lab (Tunisia, Jordan and Morocco), decision support tool on farming/land-use/irrigation water management, brine treatment and utilization, business models for non-conventional water use in agriculture (funded by EC, Prima programme, project duration: 2022-2025). Web: https://agreemed.eu. - **MARSoluT:** technical performance optimisation of MAR systems and technical trainings (funded by EC, Marie Skłodowska-Curie Actions (MSCA) Innovative Training Network (ITN), project duration: 2019-2023). Web: https://www.marsolut-itn.eu.

Stakeholder group	Examples
	- **MARCLAIMED:** harmonizing MAR with alternative water resources practices and encouraging a behavioural transition, promoting greater awareness and trust in MAR (funded by EC, Horizon Europe Programme, project duration: 2024-2027). Web: https://marclaimed.eu/ - **RECREATE**: strengthening climate resilience by integrating alternative water resources into regional planning and practice (Netherlands, Denmark, Greece, Spain) (funded by EC, Horizon Programme, project duration: 2024-2027), Web: https://recreate4water.eu/ - **AWARD**: enhancing water management by integrating alternative water resources into strategic planning (Romania, Italy, Cyprus, Spain) (funded by EC, project duration: 2024-2027). Web: https://www.awardproject.eu/ - **LIFE MATRIX**: aims to demonstrate the technical, environmental and sanitary viability of a MAR system using reclaimed water and treated wastewater subjected to complementary treatment processes for reuse (funded by the LIFE Programme (LIFE20 ENV/ES/000788), project duration: 2021-2024). Web: https://www.life-matrix-project.eu/

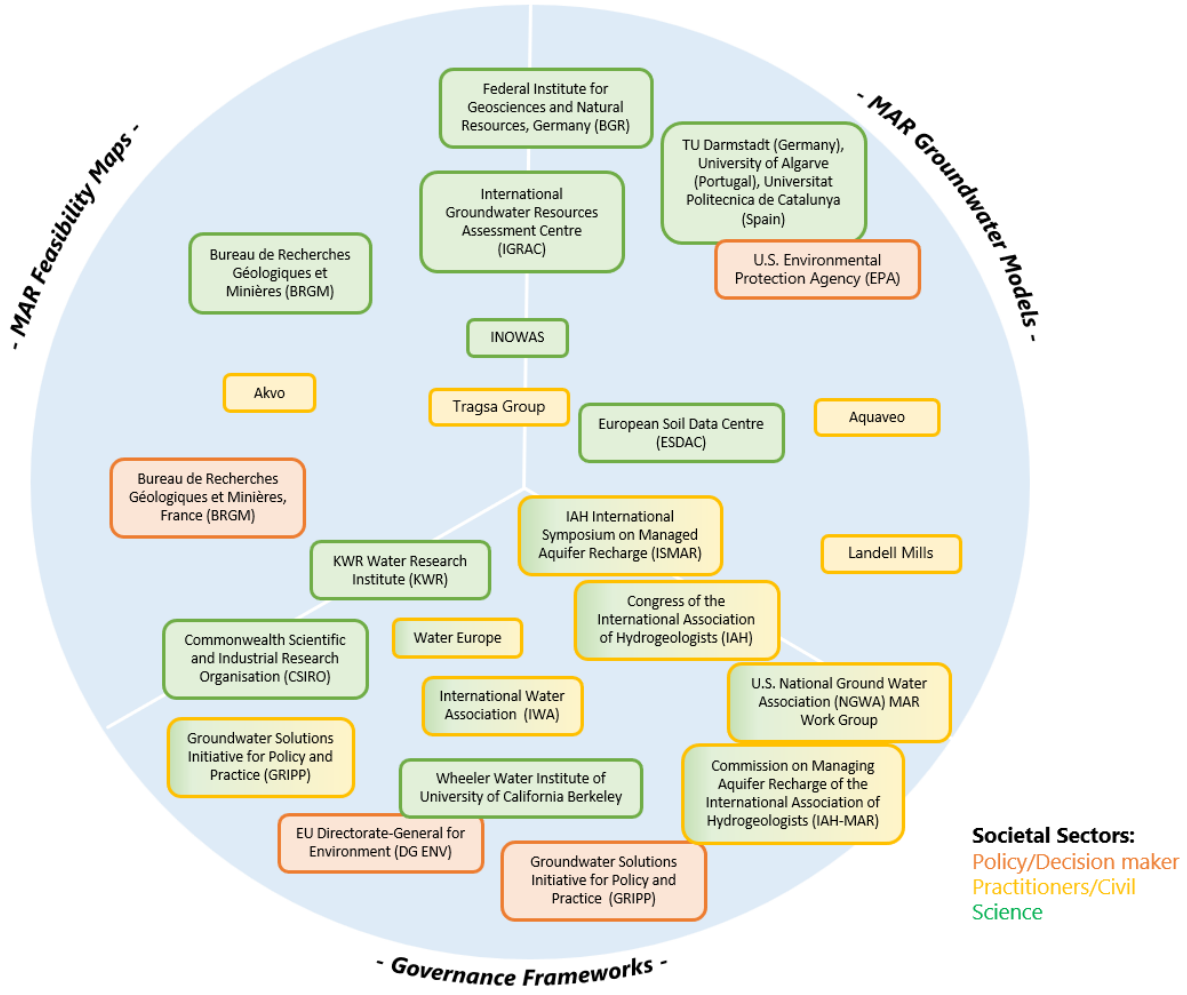

Figure 5. Map of international MAR stakeholders

4.2 Chiba watershed, Tunisia

4.2.1 Decision-making structure of the water sector at national level

The water and sanitation sector is highly centralised in Tunisia. At the policy level, many activities related to water resources management fall under the responsibility of the Ministry of Agriculture, Water Resources and Fisheries (MARHP) and its subordinate directorates/institutions (see Figure 6). In addition, all environmental

aspects, including urban sanitation, are the responsibility of the Ministry of Environment. The water quality and pollution control are the competence of the Ministry of Public Health, and flood management in urban areas is covered by the Ministry of Equipment and Housing. At the operational and executive level, the National Water Supply and Distribution Company (Société Nationale d'Exploitation et de Distribution des Eaux - SONEDE) is in charge of water supply and the National Sanitation Office (Office National de l'Assainissement - ONAS) of sanitation. Whereas the sub-national levels, such as the governorates and the municipalities, have little influence on policy, regulation and service delivery in the sector (OECD 2014).

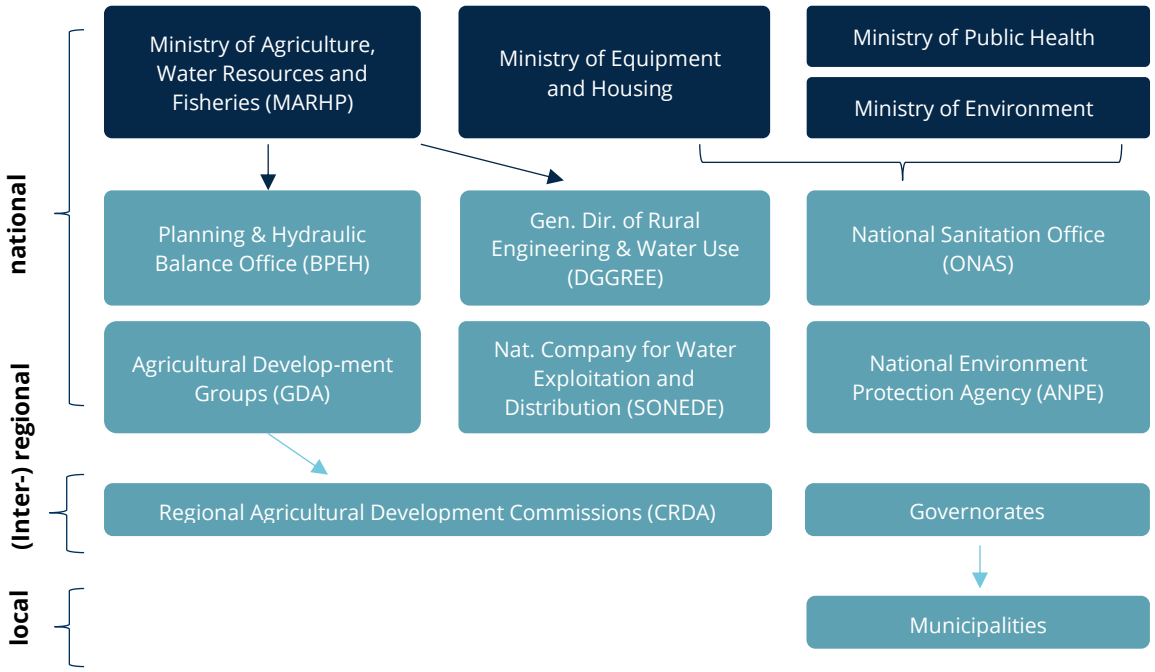

Figure 6. Institutional framework of the water sector in Tunisia (modified after OECD 2014)

4.2.2 Stakeholders relevant for the demo MAR site in Tunisia

Figure 7 maps the relevant stakeholders identified for the demo region and updated during the initial project visits categorized by their level of influence as well as MAR feasibility thematic they have the main influence or interest in. Stakeholders that are considered as most important to engage with are highlighted in bold.

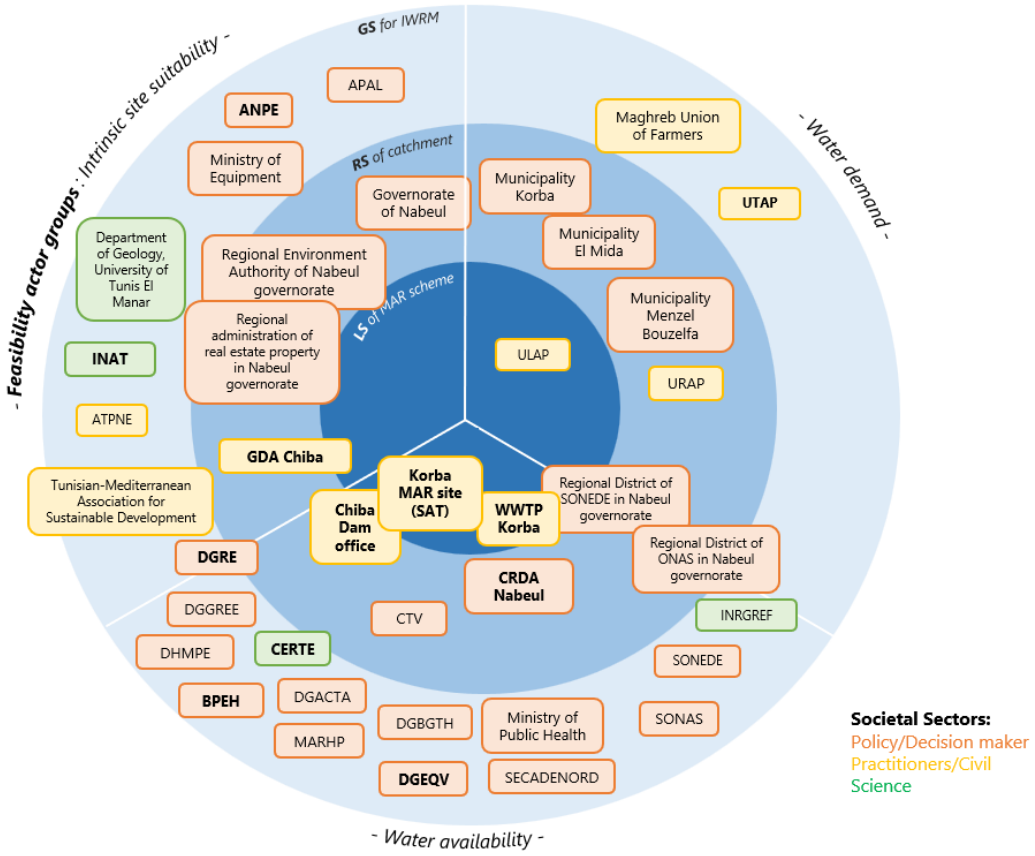

Figure 7. Stakeholder map for Chiba Watershed, Tunisia

Table 8 lists the abbreviations used in the stakeholder map (Figure 7).

Table 8. Abbreviations used in the stakeholder map for Chiba Watershed, Tunisia

Abbreviation	Stakeholder name
MARHP	Ministry of Agriculture, Hydraulic Resources and Fisheries
DGRE	General Directorate of Water Resources
DGGREE	General Directorate of Rural Engineering and Water Exploitation
DGEQV	Department of Environment and Life Quality, Ministry of Environment
DGACTA	General Directorate of Agricultural Land Management and Conservation
DGBGTH	General Directorate of Dams and Major Hydraulic Works
BPEH	Bureau of Planification and Hydraulic Equilibrium – Ministry of Agriculture, Hydraulic Resources and Fisheries
UATP	Tunisian Union of Agriculture and Fisheries
ANPE	National Agency of Environmental Protection
DGEQV	General Directorate of Environment and Life Quality
SECADENOD	Northern Water Canal and Supply Company
SONEDE	National Water Supply and Distribution Company
ONAS	National Sanitation Office
DHMPE	Department of Environmental Hygiene and Environmental Protection, Ministry of Public Health
CRDA Nabeul	Regional Commissariat of Agricultural Development of Nabeul
URAP	Regional Union of Agriculture and Fisheries of Nabeul
Chiba GDA	Agricultural Development Groups in Chiba watershed
CTV	Territorial Unit of Vulgarization of Korba
NGO: ATPNE	Tunisian Association for the Protection of Nature and the Environment
Chiba dam	Chiba Dam office
Korba WWTP	Korba wastewater treatment plant
Korba MAR station	Korba MAR site

Abbreviation	Stakeholder name
ULAP	Local Union of Agriculture and Fisheries
APAL	Coastal Protection and Planning Agency

4.2.3 Engaged stakeholders in the project

Based on the stakeholders identified during the initial phase of the AGREEMAR project, the following were particularly active throughout the project, especially during the civil assembly held to discuss and refine the local MAR agreements for the demo site in Korba:

- DGRE
- CRDA Nabeul
- UATP
- BPEH
- ANPE
- ONAS
- DGACTA
- NGO: ATPNE
- CERTE
- CNSTN

4.3 Republic of Cyprus

4.3.1 Decision-making structure of the water sector at national level

All decisions related to water policies in Cyprus are made at the level of the Council of Ministers (including tariffs for domestic supply and sanitation services – Ministry of Finance, abstraction charges, and annual allocations of water from dams and other sources – Ministry of Agriculture, Rural Development and the environment) (Table 10). According to the Integrated Water Management Law (79(1)/2010), the integrated management of water at execution level, in the framework of the water policy is mainly centred in the responsibility of the Water Development Department (WDD). Its tasks include the monitoring, development and operation of dams and reservoirs, monitoring of the qualitative and quantitative status of surface and subsurface water bodies, and the distribution of desalinated water and treated wastewater within the water network, including the water boards, municipalities and communities, which then distribute the water to the end users. At the regional level, the WDD is supported by District Offices that are responsible e.g., for the collection of hydrological, biological, and chemical data, operation and maintenance of projects, and direct execution or control of construction work. Also, at the local level, District Sewage Boards (Nicosia, Limassol-Amathus, Larnaca, Paphos and Paralimni-Ayia Napa) are responsible for collecting raw wastewater and applying treatment processes. A significant number of municipalities and small communities manage their own water resources (mainly groundwater). In addition, the WDD is supported by the services of the Department of Meteorology and the Geological Service in hydrological evaluations, well drilling and testing (OECD 2019[2], Sofroniou 2014[3]).

[2] https://www.oecd.org/environment/resources/financing-water-supply-sanitation-and-flood-protection-cyprus-workshop.pdf
[3] https://www.mdpi.com/2073-4441/6/10/2898

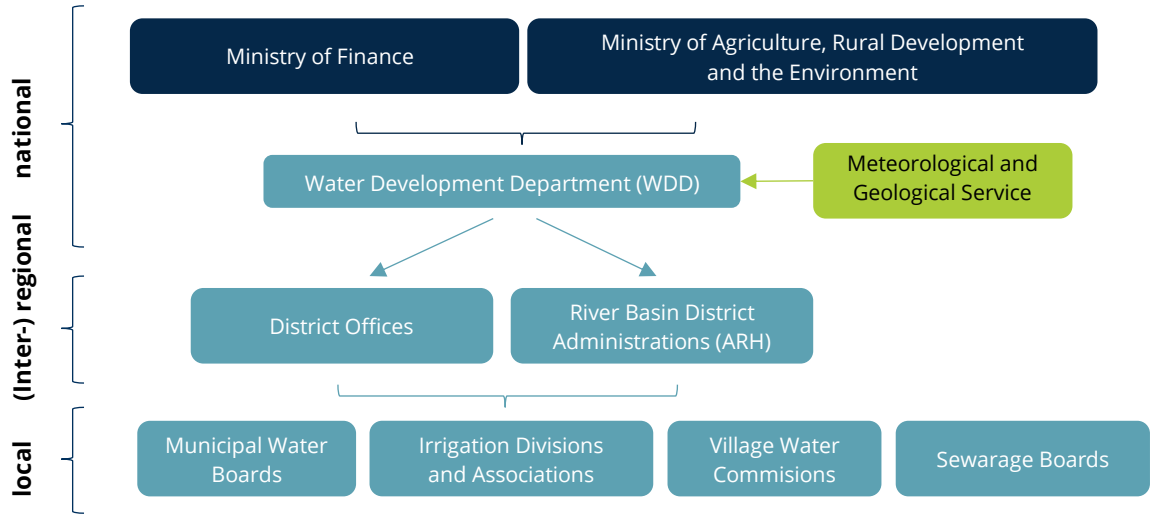

Figure 8. *The administrative, institutional and political setting in Cyprus (adapted from Aeoliki Ltd 2009)*

4.3.2 Stakeholders relevant for MAR in Cyprus

Figure 9 maps the relevant stakeholders identified for the demo region and updated during the initial project visits categorized by their level of influence as well as MAR feasibility thematic they have the main influence or interest in. Stakeholders that are considered as most important to engage with are highlighted in bold.

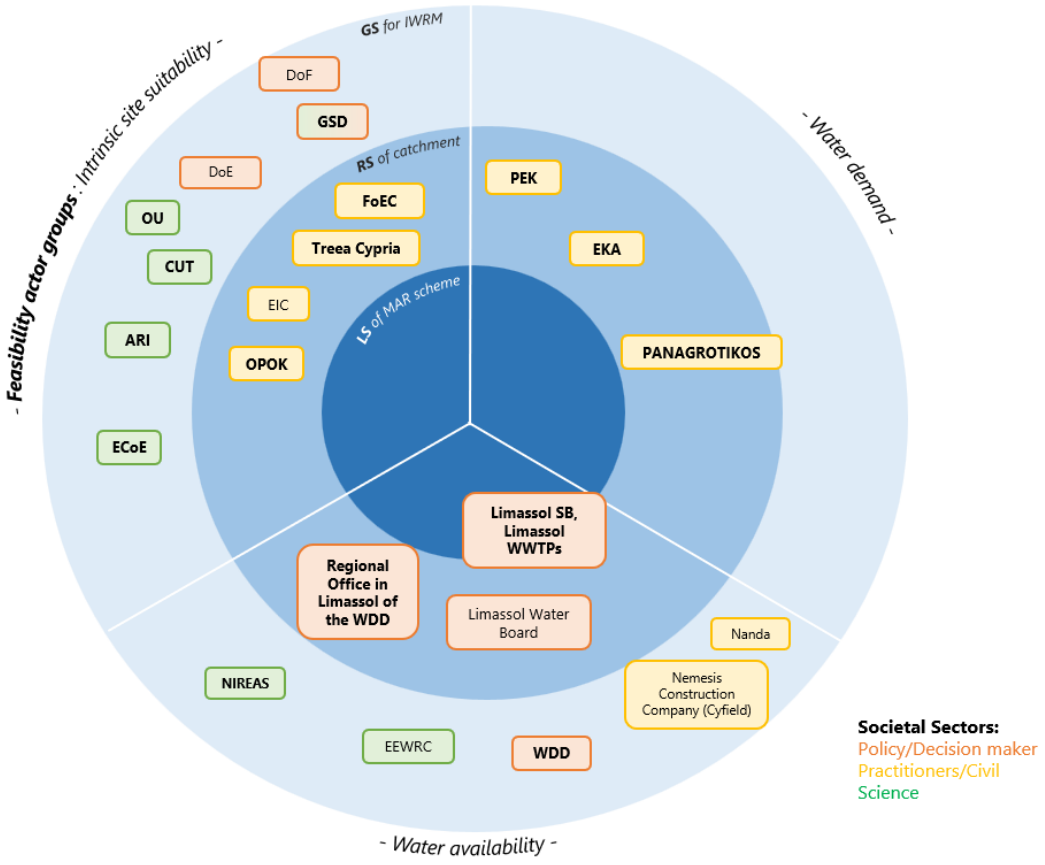

Figure 9. *Stakeholder map for Republic of Cyprus*

Table 9 lists the abbreviations used in the stakeholder map (Figure 9).

Table 9. Abbreviations used in the stakeholder map for Cyprus

Abbreviation	Stakeholder name
GSD	Geological Survey Department
WDD	Water Development Department
DoF	Department of Forest
EEWRC	The Energy, Environment and Water Research Center
Panagrotikos	Panagrotikos Farmer Union
EKA	Union of Cypriot Farmers
PEK	Pancyprian Farmer Union
TC	Terra Cypria
LSB	Limassol Sewage Board
ARI	Agriculture Research Institute
DoE	Department of Environment
OU	Open University
ECoE	Eratosthenes Centre of Excellence
CUT	Cyprus University of Technology
LWB	Limassol Water Board
FoEC	Friends of the Earth-Cyprus
OPOK	Federation of Environmental Organizations for Cyprus
EIC	Environmental Information Centre (EPISKOPI, Paphos)

4.3.3 Engaged stakeholders in the project

In Cyprus, WDD was identified as the primary stakeholder, as it is the key authority responsible for water management planning and the implementation of the EU water policies at both the national and regional levels. WDD played a central role in discussing and refining the local MAR agreement for the demo site in the Akrotiri basin, and was the only signatories of the agreement.

Within the context of the AGREEMAR project, the WDD's mission encompasses the following responsibilities:

- Planning, designing, constructing and operating waterworks, including dams, reservoirs, water conveyance systems, irrigation and water supply networks and water treatment plants.
- Managing and supplying water from government waterworks for various uses.
- Monitoring water status and water balance, as well as preparing and implementing plans to manage the impacts of droughts.
- Executing the national programme for the implementation of the European Directive on the Treatment of Urban Wastewater, including planning and constructing wastewater collection and treatment facilities.
- Implementing measures to protect surface and groundwater bodies.
- Monitoring and assessing the qualitative and quantitative status of groundwater and surface waters.
- Collecting and analysing hydrological, hydrogeological, geotechnical and other data to support the study, maintenance and safety of development projects, as well as the protection and management of water resources.
- Enforcing provisions related to the evaluation, management, and mitigation of flood risks.
- Promoting water conservation and fostering awareness to encourage the rational use and saving of water.

4.4 Alentejo, Portugal

4.4.1 Decision-making structure of the water sector at national level

In Portugal, the Portuguese Environmental Agency (APA) is the Portuguese Water Authority, under the chair of the Environment and Climate Action Ministry. It is responsible to propose, develop and monitor public

policies for the environment and sustainable development, in an integrated and participated manner, and in close cooperation with other sectoral policies and public and private entities. Also, it is responsible for the management of freshwater and coastal and marine zones and sets up RBMPs, which are implemented via their regional River Basin District Administrations (ARH). Therefore, the ARH are territorially deconcentrated services of the APA responsible for water management tasks, including planning, licensing, and supervision. The Competition Authority (AC) and the Court of Auditors (TC) are responsible for all financing issues in the area of regulation. Águas de Portugal (AdP) mission is to build, explore and manage water supply and wastewater sanitation systems within a framework of economic, financial, technical, social and environment sustainability with high levels of competence, capable of efficiently and effectively responding to the major challenges facing Portugal and the world in the environment sector. Still within the wastewater sector, the Water and Waste Services Regulatory Authority (ERSAR) is responsible for supervising, controlling, and regulating wastewater treatment, discharge control and protection of water resources. The Coordination Commissions for Regional Development (CCDRs) are decentralized bodies of the central administration that hold the regulatory power coordination, along with planning, licensing, and supervision functions, in particular in the case of water abstraction and wastewater discharge. They are also responsible for the management of European Community funds and give advice and offer technical assistance during the development of RBMPs. On the local level, the municipalities take responsibility for water supply and sewerage and storm water drainage (Marques and Simões 2020).

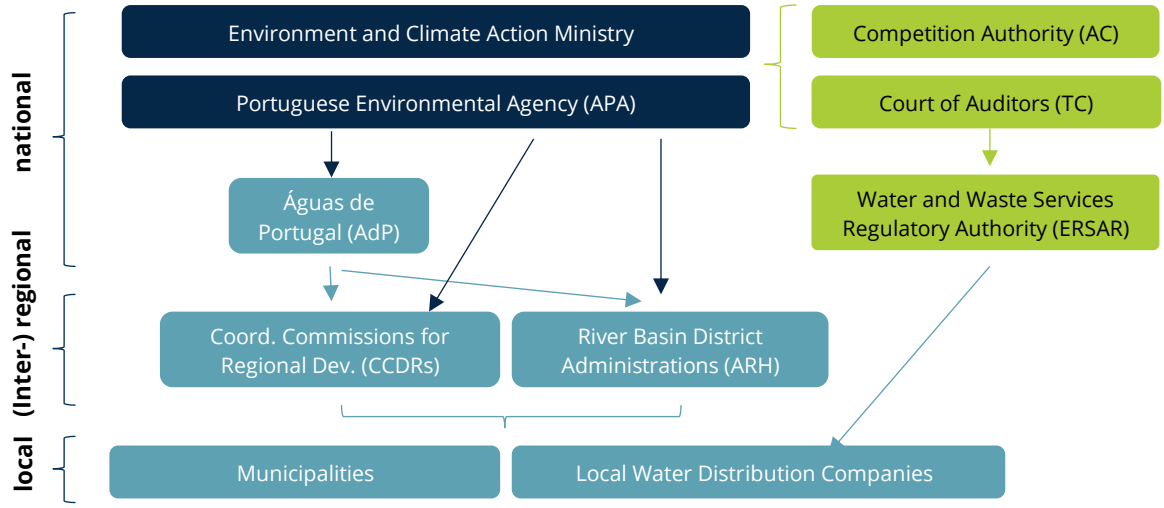

Figure 10. Institutional framework of the water sector in Portugal (adapted from Marques and Simões 2020)

4.4.2 Stakeholders relevant for the MAR demo region in Alentejo, Portugal

Figure 11 maps the relevant stakeholders identified for the demo region and updated during the initial project visits categorized by their level of influence as well as MAR feasibility thematic they have the main influence or interest in. Stakeholders that are considered as most important to engage with are highlighted in bold.

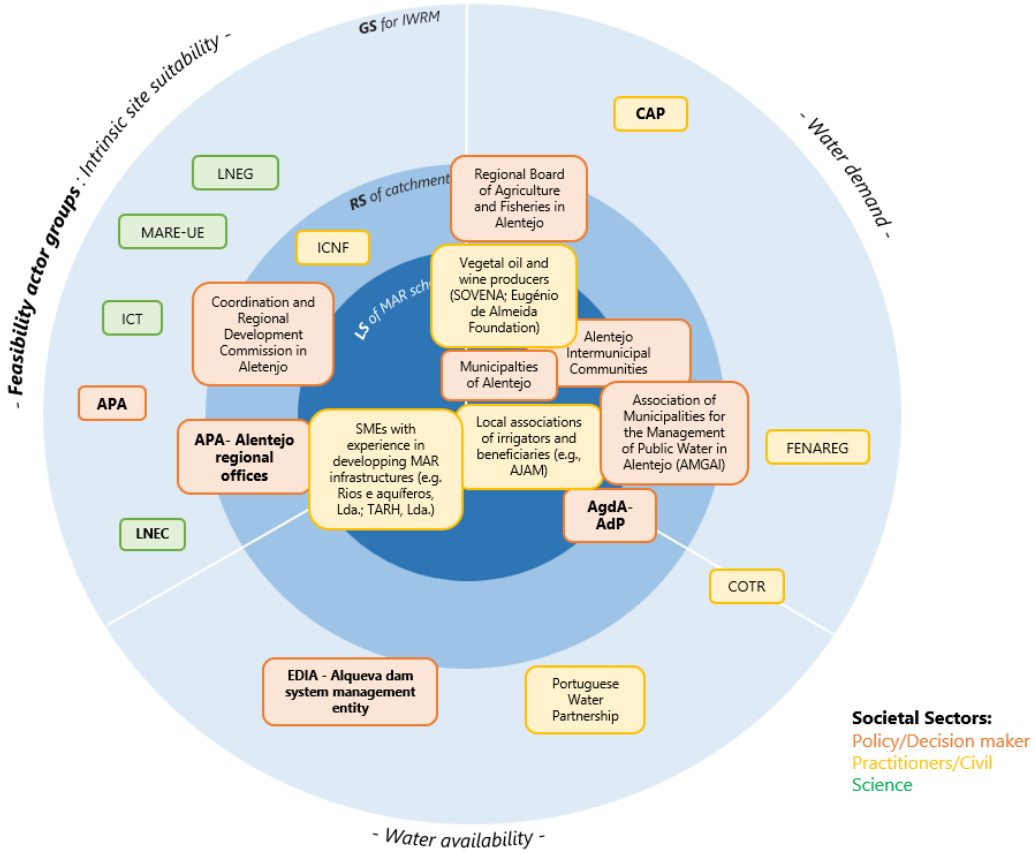

Figure 11. Stakeholder map for Alentejo, Portugal

Table 10 lists the abbreviations used in the stakeholder map (Figure 11).

Table 10. Abbreviations used in the stakeholder map for Alentejo region in Portugal

Abbreviation	Stakeholder name
APA	Portuguese Environmental Protection Agency
LNEC	National Laboratory for Civil Engineering
LNEG	National Laboratory of Energy and Geology
COTR	Competence Center for National Irrigation
CAP	Confederation of Portuguese Farmers
FENAREG	Portuguese National Federation of Irrigators
ICNF	Institute of Nature Conservation and Forests
SOVENA, Eugénio de Almeida Foundation	Vegetable oil and wine producing companies
-	SMEs with experience in developing MAR infrastructures
-	Coordination and Regional Development Commission in Alentejo
-	Regional Board of Agriculture and Fisheries in Alentejo
AMGAI	Association of Municipalities for the Management of Public Water in Alentejo
AgdA	Águas Públicas do Alentejo
MARE-UE	Marine and Environmental Sciences Center
AJAM	Young Farmers Association of Moura
-	Municipalities of Alentejo
-	Local associations of irrigators and beneficiaries

Abbreviation	Stakeholder name
ICT	Évora University – Institute of Earth Sciences
EDIA	Alqueva Development and Infrastructure Public Company

4.4.3 Engaged stakeholders in the project

The two stakeholders most actively engaged during the AGREEMAR project were APA and AgdA. Both participated in the final stakeholder meeting to discuss and refine the local MAR agreement for the demo site in the Alentejo region in Portugal. Additionally, both stakeholders were signatories to the agreement.

4.5 Júcar Water District, Spain

4.5.1 Decision-making structure of the water sector at national level

In Spain, the Ministry for the Ecological Transition and the Demographic Challenge has the nationwide responsibility of water management, executed by the Director General del Agua (DGA) of the State Secretary of the Environment.

Through consultation with the National Council on Water, which is a state-wide consultation and participation body for water planning with the objective of defending environmental interests, the DGA approves RBMPs prepared by the regional river basin authorities, e.g., for the Júcar the Confederación Hidrográfica del Júcar. The latter are defined as public law entities possessing their own legal status and attached as an autonomous institution with full functional autonomy that manage the large-scale water users, such as agriculture, industry or power generation, plan and build water infrastructure, and assists the municipalities in implementing water-related projects.

On a local level, municipalities are responsible for urban water supply and wastewater treatment, water pricing, and the water-related urban planning activities, e.g. for flood risk management. (EU CoR 2023; Ministerio para la Transición Ecológica y el Reto Demográfico 2020)

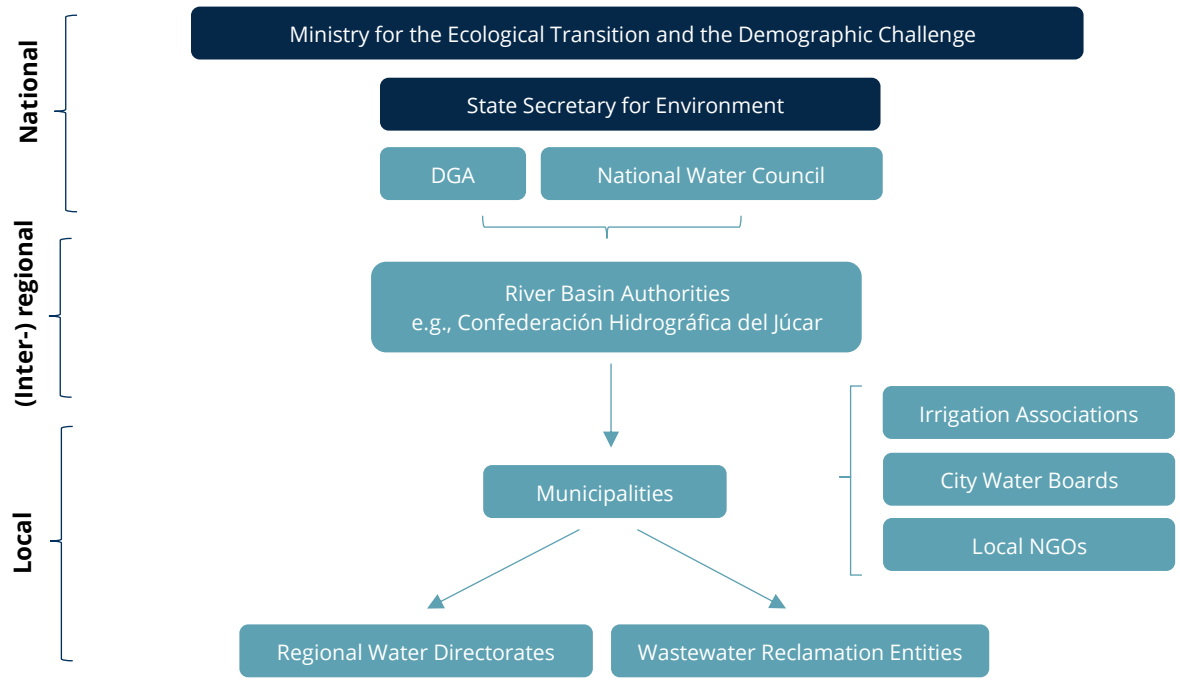

Figure 12. Decision-making structure for water management in Spain (own creation)

4.5.2 Stakeholders relevant for the demo MAR region in Júcar Water District, Spain

Figure 13 maps the relevant stakeholders identified for the demo region and updated during the initial project visits categorized by their level of influence as well as MAR feasibility thematic they have the main influence or interest in. Stakeholders that are considered as most important to engage with are highlighted in bold.

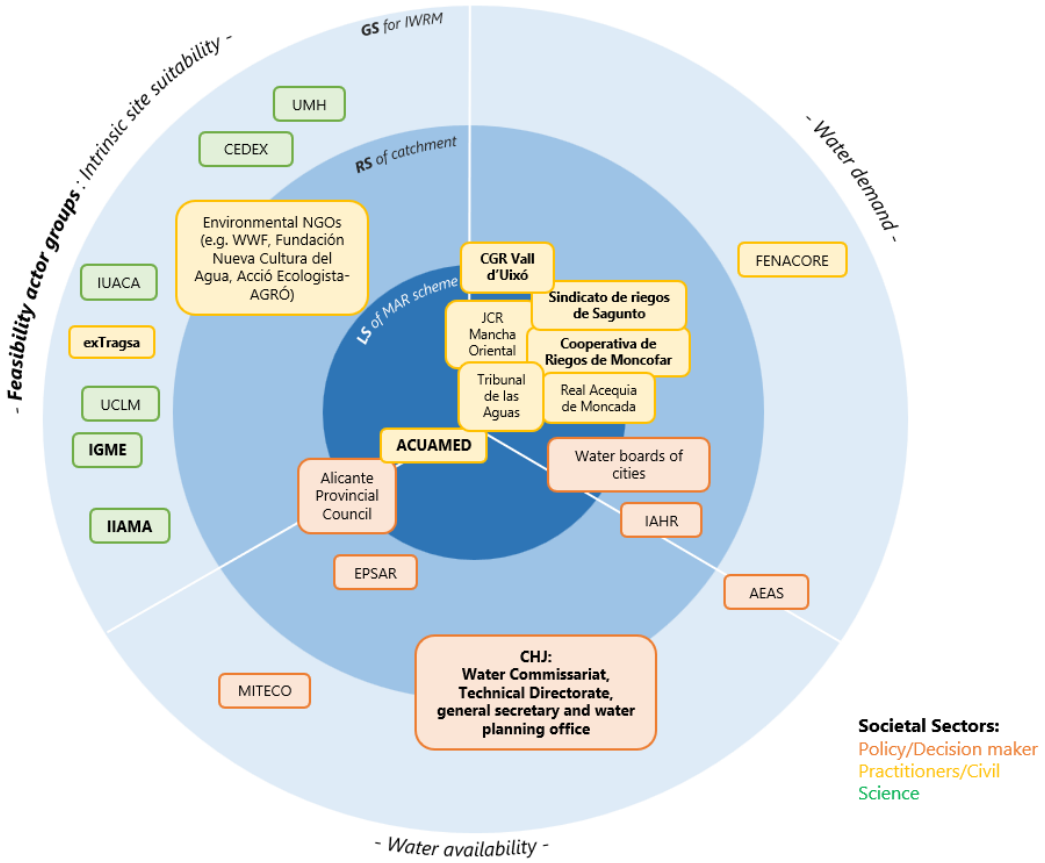

Figure 13. Stakeholder map Júcar Water District, Spain

Table 11 lists the abbreviations used in the stakeholder map (Figure 13).

Table 11. Abbreviations used in the stakeholder map for Júcar Water District, Spain

Abbreviation	Stakeholder name
MITECO	Ministry for the Ecological Transition and the Demographic Challenge
SEMA	State Secretary for Environment
DGA	General Directorate for Water
CHJ	Júcar River Basin Agency
CEDEX	Spanish National Public Works Research Centre
ACUAMED	Water of the Mediterranean Basins (Public company)
-	Alicante Provincial Council
IAHR	General Water Directorate of Valencia Region
IGME	Geological and Mining Institute of Spain
exTragsa	Public business group working on agricultural transformation
AEAS	Spanish Water and Wastewater Association
IIAMA	Institute of Water and Environmental Engineering, Universitat Politècnica de València
IUACA	Institute of Water and Environmental Sciences, University of Alicante
UMH	Department of Agrochemistry and Environment, University Miguel Hernández Elche
UCLM	Remote Sensing & GIS Group, Regional Development Institute, Universidad de Castilla-La Mancha
EPSAR	Wastewater Reclamation Entity of Valencia Region
JCR Mancha Oriental, Acequia Real del Júcar, Canal Júcar-Turia, Real Acequia de Moncada, Tribunal de las Aguas,	Irrigation Associations

Abbreviation	Stakeholder name
CGR Vall d'Uixó, Sindicato de riegos de Sagunto, Cooperativa de Riegos de Moncofar	
FENACORE	Federación Nacional de Comunidades de Regantes de España
WWF, Fundación Nueva Cultura del Agua, Xúquer Viu, Acció Ecologista-AGRÓ	National, regional and Local NGOs

4.5.4 Engaged stakeholders in the project

Stakeholder engagement was structured in three main phases. The first phase focused on gathering input and perspectives through a seminar that brought together a diverse group of stakeholders. Among those present were the Júcar River Basin Agency (CHJ), the Geological and Mining Institute of Spain (IGME), ACUAMED, the General Community of Irrigators of Vall d'Uixó, the Community of Irrigators of the Acequia Mayor of Sagunto, the Moncófar Irrigation Cooperative, Jaime I University of Castellón, the Provincial Council of Alicante, Tragsa, and UPV. This first phase reflected the variety of perspectives that influence MAR in the region.

The second phase concentrated on technical consultations and scenario exploration, involving more targeted dialogue with key institutional stakeholders such as the Water Commissioner's Office of CHJ, the Planning Office of CHJ (OPH_CHJ), ACUAMED, the General Community of Irrigators of Vall d'Uixó, and the Community of Irrigators of the Acequia Mayor of Sagunto, together with UPV. By this stage, the conversations were more structured.

The third phase centered around the Civil Assembly and the co-development of local MAR charter. The Water Commissioner's Office of CHJ, the Planning Office of CHJ (OPH_CHJ), ACUAMED, the General Community of Irrigators of Vall d'Uixó, and UPV remained actively involved. Their ongoing participation allowed for deeper dialogue and a gradual alignment around shared goals.

5 Stakeholder analysis and prioritisation

Identified relevant stakeholder groups on international level and at the project demo regions are further analysed and prioritised according to their influence on and interests in the project outcomes and motivation of the project consortium to engage them.

The results of the analysis are presented in Table 12. The considered project outcomes for the analysis include: MAR feasibility maps (hereafter: MAR-FM), groundwater models (hereafter: GW-M), MAR governance framework (hereafter: MAR-GF), and regional and local MAR agreements (hereafter: MAR-A (R, L). The derived engagement levels were visualised in form of an influence-interest grid for each demo region. These graphics are only available to the project consortium. We hope for the readers understanding that detailed information on the stakeholder analysis and prioritisation is treated confidentially.

Table 12. Stakeholder analysis

Target audience	Influence	Expectations / interests	Motivation / reasons to engage them
International stakeholder landscape			
Science Scientific community (e.g., universities, research institutes) Similar research projects	Recognition of research results beyond the project demo regions	Scientific exchange on MAR feasibility mapping, MAR governance frameworks and agreements and relevant issues; creation of new networks and development of future projects	Scientific exchange: scientific suggestions for the development of new methods and concepts, critical assessment of the results; creation of new networks and

Target audience	Influence	Expectations / interests	Motivation / reasons to engage them
			development of future projects
Policy Policy makers and regulators	Design of international environmental policy and legal frameworks and funding programmes; successful transfer of project results into policy on international level; uptake of policy recommendations	Updates on innovative, new MAR planning and management concepts, methods and tools; decision support in improving sustainable water management and security; recommendations for action to promote favourable policy/legal frameworks for the widespread application of locally successful solutions	Evaluate applicability and transferability of project outcomes into policy outside the demo regions
Practice Strategic and technical water managers (consulting and engineering companies) Networks, clusters, multipliers	Successful transfer of project results into practice on international level	Information on new, innovative technologies and ways of use; exchange/dialogue with research networks to contribute to user-oriented design of technologies and tools; further development of products and entry into new markets	Evaluate applicability and transferability of project outcomes into practice outside the demo regions

Relevant stakeholder groups at project demo regions, with key examples of their influences on and interests in the project outcomes (valid for most demo regions)

GS	General water (planning and allocation) authority e.g., DGRE (TN), BPEH (TN), WDD (CY), APA (PT), MITECO (ES)	**MAR in general:** mandate in managing the country's water resources through e.g., preparing plans and programs for water harnessing and usage (e.g., national water strategy), power to provide incentives for MAR; for TN: creates, manages and monitors MAR projects **MAR-FM:** potential end-user of the maps, **GW-M:** their approval for a MAR project is needed **MAR-GF:** for TN: in charge of national MAR strategy	**MAR in general:** new solution and showcase to improve water security of the country; improved protection and management of scarce water resources towards climate resilience and sustainability; increased water availability and environmental integrity; improved usage of non-conventional water sources; fair distribution of water resources and benefits associated with water management **MAR-FM:** decision support on selecting new MAR sites **MAR-GW:** optimisation of existing models, usage for future decision support, future action plans; interested on trainings on model development and implementation using the INOWAS platform **MAR-GF and MAR-A (R):** for DGRE, TN: interested to coordinate these	Mainstream project results into planning processes; strengthen science-policy interface, coordinate development of the national MAR governance framework
	Environment authority e.g., DGEQV (TN), APA (PT), ICNF (PT), SEMA (ES)	**MAR in general:** policy maker in the areas of environment protection, nature conservation and promotion of the quality of life, power to provide incentives for MAR **MAR-FM and MAR-GF:** represents environmental interests	**MAR in general:** new environmental-friendly solution and showcase to improve water security (also in favour of environmental demand and ESS) of the country; increased level of protection, restoration and upgrading of ecosystems while ensuring the protection of people and property in face of	Mainstream project results into policy actions; strengthen science-policy interface; ensure environmental interests are considered

Target audience	Influence	Expectations / interests	Motivation / reasons to engage them
		extreme events; improved water resources management; maximise environmental benefits of MAR systems **MAR FM:** ensure environmental criteria are considered **MAR-GM:** better understanding of the environmental impacts of MAR **MAR-GF:** ensure environmental integrity and environmental interests are considered	
Environment protection agency e.g., ANPE (TN)	**MAR in general:** involved in the preparation and implementation of environmental protection policies, environment pollution control through environmental impact assessments, etc. final approval of a MAR system related to its environmental impacts **MAR-FM:** final approval of MAR project with regard to its environmental impacts **MAR-GF and MAR-A (R, L):** represents environmental interests	**MAR in general:** new demonstration site for adapting legal framework; new environmental-friendly solution and showcase to improve water security (also in favour of environmental demand and ESS) of the country; increased level of protection, restoration and upgrading of ecosystems while ensuring the protection of people and property in face of extreme events; improved water resources management; maximise environmental benefits of MAR systems **MAR FM:** ensure environmental criteria are included **MAR-GM:** better understanding of the environmental impacts of MAR **MAR-GF:** ensure environmental integrity and environmental interests are considered	Consider project results for adapted legal framework: integration of MAR and the usage of treated wastewater; ensure environmental interests are considered
National farmer union e.g., UTAP (TN), CAP (PT), FENACORE (ES)	**MAR in general:** Supervision, sensitisation and representation of farmers and fishermen in all sectors related to agriculture and fisheries, represent and defend their union interests in case of problems with prices, costs etc., feasibility studies, monitoring and evaluation, research and assessment for the agricultural sector **MAR-FM:** represents interests of the farmers/end-users **MAR-GM:** communication and translation of the model results to the farmers **MAR-GF and MAR-A (R, L):** represents interests of farmers/end users; communication and translation of the legislation requests to the farmers	**MAR in general:** new solution and showcase to improve water security of the country; increased water availability and efficiency for/in irrigation; improved water quality, equitable distribution of water and benefits between farmers **MAR FM:** ensure interests and needs of farmers are reflected in the selection of criteria **MAR-GM:** Evidence of the benefits and functioning of MAR in relation to farmers' interests **MAR-GF and MAR-A (R, L):** ensure interests and needs of farmers are reflected	Ensure project results are in line with the interests of the end users; strengthen science-practice interface; foster communication between project consortium and end users

	Target audience	Influence	Expectations / interests	Motivation / reasons to engage them
	National geological agency or state laboratories e.g., GSD (CY), IGME (ES), ONM (TN), LNEC (PT)	**MAR in general, MAR-FM and MAR-GM:** in charge of monitoring, provision and interpretation of groundwater quality and soil data under the national ministry, consultants of the government in terms of hydrogeological aspects, access to research data and existing GM-models	**MAR in general:** new showcase to protect groundwater resources and for designing future MAR projects **MAR-FM:** use results for decision support and future MAR projects **MAR-GM:** optimise existing management policies, usage of the results of the modelling tools as decision support **MAR-GF and MAR-A (R, L):** facilitating and paving the way for future MAR projects	Exchange technical expertise, data and access to groundwater models
	Research organisations e.g., CERTE (TN), Open University of Cyprus (CY), Cyprus University of Technology (CY), Agricultural Research Institute (CY), IUACA (ES), UCLM (ES), IIAMA (ES), UMH (ES), LNEC (PT), UALG (PT)	**MAR in general, MAR-FM and MAR-GM:** Access to research data and existing GM-models	**MAR in general:** new research results for future projects to build on and education **MAR-FM:** use results for future research **MAR-GM:** optimise existing models, usage of the models for future research **MAR-GF and MAR-A (R, L):** facilitating and paving the way for future MAR projects	Exchange technical expertise and data, potential contribution of resources to project
RS	Regional water authority / River basin district administration e.g., CRDA (TN), WDD district offices (CY), APA – regional offices (PT), CHJ (ES), DGA (ES)	**MAR in general:** regional water resources management, implements water policies, oversees water and soil conservation, manages hydraulic equipment and oversees distribution of water to farmers; for TN, CY, ES: in charge of managing MAR sites in their governorate **MAR-GM:** provision of data and access to the specific site **MAR-A (R, L):** for TN, CY, ES: in charge of managing MAR sites in their governorate	**MAR in general:** new solution and showcase to improve water security of the country; potential revenue from beneficiaries of the new service to cover operation and maintenance costs; improved protection and management of scarce water resources towards climate resilience and sustainability; maintained long-term, safe and efficient water supply; fair distribution of water resources and benefits associated with water management **MAR-GM:** decision support on how to address risks and improve water security; identification of beneficiaries and negotiation tool for cost allocation; optimisation of the MAR site operation **MAR-A (R, L):** tool to solve current barriers such as distribution of responsibilities between general and regional water authority, find solutions to avoid aquifer overexploitation, clarification of the financial problems for operating and maintaining the MAR site	Access to demo regions for data collection

Target audience		Influence	Expectations / interests	Motivation / reasons to engage them
	Regional community / farmer organisations e.g., GDA Chiba (TN), e.g., PEK, EKA, PANAGROTIKOS (CY)	**MAR in general:** Manages water supply systems, operates pilot sites **MAR-GM:** access to sites for data collection	**MAR in general:** increase water availability by storing surplus water, reducing evaporation losses and mitigating saltwater intrusion; reduction of pumping costs by increasing groundwater levels; increased water availability and efficiency for/in irrigation; improved water quality **MAR-GM:** optimisation of the MAR site operation **MAR-A (L):** equitable distribution of water and benefits between end users as well as costs for operating and maintaining the MAR site	Ensure project results are in line with the interests of the end users; strengthen science-practice interface; foster communication between project consortium and end users; access to demo regions for data collection
	Environmental NGOs e.g., Friends of the Earth (CY), Tunisian Associations for the Protection of Nature and the Environment (TN), WWF (ES), Fundación Nueva Cultura de Agua (ES), Xúquer Viu (ES), Acció Ecologista-AGRÓ (ES), APRH (PT), Zero (PT)	**MAR in general:** recognized representatives of the interests of the community in environmental issues, organize events with civils/politicians for discussing and informing about environmental issues that arise involving aquatic ecosystems flora and water pollution, and promote awareness of nature-based solutions	**MAR in general:** improve water availability without adverse impact on the ecosystem; restoration of eco systems that suffer due to anthropogenic and nature activities **MAR-A:** agreements focus on the protection of vulnerable areas (e.g., Natura 2000) in pollution and over-exploitation	Ensure environmental interests are considered and project does not harm environmental integrity
RS / LS	Water Boards / Water supply utilities e.g., Limassol water board (CY), EDIA (PT), Agda-AdP (PT), SONEDE-Korba (TN), ACUAMED (ES)	**MAR in general:** Manages water supply systems, access to data collection (spatio-temporal allocation of water for drinking purposes); for PT: In charge of managing MAR sites in their governorate	**MAR in general:** improve the management of the drinking water; increase water availability	Exchange technical expertise on water safety that involves the source water quality and data
	Wastewater treatment utilities e.g., WWTP Korba (TN), Limassol Sewerage Board (CY), Agda-AdP (PT), AEAS (ES), EPSAR (ES)	**MAR in general:** Manages waste water collection and treatment; for CY: manages spatio-temporal allocation of treated wastewater for agriculture, industrial and domestic purpose; for PT: In charge of managing MAR sites in their governorate	**MAR in general:** improve the management of the treated wastewater; reduce amount of losses **MAR-A:** balanced allocation of the surplus of wastewater among the different end-users	Explore alternative ways to better allocate and use the current amount of wastewater, access to data (wastewater quality)

6 Stakeholder engagement strategy and plan

The Stakeholder Engagement Strategy and Plan provided clear guidance for stakeholder engagement during the AGREEMAR project and beyond. Co-developed with project partners and refined with key stakeholders at the project's demo regions, it provides a common basis for inclusive project development. To this end, it ensures the setting of collaboration principles, guides the creation of project committees

representing relevant stakeholders, and establishes mechanisms for conflict management and monitoring and evaluation of project progress.

The stakeholder engagement strategy and plan cover the following:

- **Tailored engagement formats and most effective channels** to ensure differentiated approaches adapted to stakeholder needs and interests (chapter 6.1 and 6.2)
- **Coherent engagement plan** agreed with the consortium that ensures smooth engagement throughout the project and that the relevant stakeholders are involved at the right time (Table 13)
- **Principles of stakeholder engagement** to guide the project consortium in addressing typical challenges for stakeholder engagement (chapter 6.4)
- **Guidance to manage conflicts** to ensure long-term beneficial solutions for all stakeholders (chapter 6.5)
- **Monitoring and evaluation strategies** to allow timely optimisation and adaptation of the engagement strategy and plan (chapter 6.6)

Stakeholder engagement relied strongly on the input of all AGREEMAR WPs and in turn feed back into all WPs. Engagement is a task where all project partners are expected to cooperate and therefore requires regular coordination between local project partners. While WP1 facilitated the activities, the local engagement at the project demo regions was coordinated by the demo region mentors who leveraged their local networks and communication channels.

Stakeholder engagement activities are inclusive and consider the specific needs and interests of stakeholders as well as citizens from diverse backgrounds, considering gender, age groups, education levels, nationality, and disabilities, among others. Material aimed at non-experts has been translated into the languages of the participating countries.

The stakeholder engagement strategy and plan are aspirations of the AGREEMAR project consortium that have been refined based on discussions with key stakeholders. In doing so, the AGREEMAR project team regularly reviewed and validated the goals set and the resulting plan and reserved the right to adjust the strategy and plan depending on external conditions (e.g., stakeholder availability).

Table 13. Stakeholder engagement strategy and plan

Abbreviations: GS: general stakeholder, RS: regional stakeholder, LS: local stakeholder

Project result	Project tasks where stakeholder engagement is relevant	Outcomes / contributions from stakeholder engagement	Responsible (project partner, demo region)	Who to engage / target audience	Engagement level	Engagement format / tools
Stakeholder engagement strategy and plan	T1.1 Detailed needs assessment and stakeholder analysis	Deliverable (D1.1/D1.3), including methodology of stakeholder engagement, overview of relevant stakeholders per demo region. stakeholder engagement strategy and plan.	adelphi	Identified relevant stakeholders at each project demo region (GS, RS, LS)	**Consult**	Stakeholder workshops, bilateral stakeholder meetings, online questionnaire
MAR feasibility studies	T2.1 Compilation of indicator matrix	Co-design, calibration and validation of feasibility criteria database	ECoE	International MAR community	**Consult**	Expert interviews
	T2.2 Development of stakeholder-adapted criteria	Co-development of criteria selection and weighting process				

Project result	Project tasks where stakeholder engagement is relevant	Outcomes / contributions from stakeholder engagement	Responsible (project partner, demo region)	Who to engage / target audience	Engagement level	Engagement format / tools
	weighting system					
	T2.3-T2.5 Compilation of the four thematic MAR feasibility maps	Weighting of site-specific MAR feasibility criteria from each demo regions according to the local needs, for each thematic, consultations on the integration of the time scale factor within the weighting process, discussions on the role of qualitative considerations in the MAR feasibility mapping, input on specific site constraints (also linked to non-physical criteria), determine global weights among the three thematic maps (demand, availability and intrinsic)	Demo region mentors	RS, GS at demo regions	**Involve**	Online questionnaire and stakeholder participatory workshops
	T2.6 Validation of MAR feasibility map through stakeholders	Refinement and validation of final MAR feasibility maps	Demo region coordinators	RS, GS at demo regions	**Involve**	Exchange sessions
				Participants of the criteria weighting workshop	**Consult**	Online consultation (via mail), feedback sessions as requested
MAR governance framework	T3.3 Drafting the general governance framework for MAR	Input on existing national and regional legislation in which the new general framework could be embedded	UPV (supported by demo region coordinators)	Policy maker on national level at demo regions	**Consult**	Combined with T1.1
		Co-development of general MAR governance framework based on feedback from stakeholders on existing legal frameworks and guidelines, their expectations assessed in T1.1, etc.		GS at demo regions	**Collaborate**	Stakeholder participatory workshop, bilateral meetings
					Collaborate	Stakeholder participatory

Project result	Project tasks where stakeholder engagement is relevant	Outcomes / contributions from stakeholder engagement	Responsible (project partner, demo region)	Who to engage / target audience	Engagement level	Engagement format / tools
	T3.4 Regional stakeholder consultations for agreement development	Co-creation of regional agreement drafts by adapting the general governance framework (T3.3) to each demo region		RS at demo regions		workshop, bilateral meetings
	T3.5 Drafting four regional agreements for case study areas	Feedback on regional agreements		Wider MAR community at demo regions	**Consult**	Online consultation (via mail), feedback sessions as requested
Groundwater models	T4.1 Stakeholders consultations for refining the modelling objectives	Selection of one site per demo region for groundwater modelling, definition of modelling objectives considering the main social and environmental challenges affecting local water use and the results of the feasibility mapping (WP2), co-design of simulation scenarios and model parametrization	Project demo site coordinator supported by TUD	GS, RS, LS at demo sites	**Involve**	Online exchange sessions / meetings
		Additional data collection for numerical MODFLOW model setup		Scientific MAR community	**Collaborate**	Online exchange sessions / meetings
	T4.4 Analysis of model results and collaborative updates with stakeholders' consultations and T3.4 regional stakeholder consultations for agreement development	Presentation and discussion of model results with local stakeholders (together with WP5 Governance Framework and training/capacity building)	Project demo site coordinator supported by TUD, local stakeholders	GS, RS, LS at demo sites	**Collaborate**	Stakeholder participatory workshop / meetings
Local MAR agreements and capacity development	T5.1 Participative adaptation of regional agreements to local needs	Selection of demo site for local MAR agreements.	Demo site coordinator supported by adelphi	RS at demo sites	**Involve**	
		Input on existing agreements and regulations in which the local MAR agreements could be embedded	adelphi supported by demo site coordinator	Decision maker at demo sites	**Consult**	Combined with T1.1

Project result	Project tasks where stakeholder engagement is relevant	Outcomes / contributions from stakeholder engagement	Responsible (project partner, demo region)	Who to engage / target audience	Engagement level	Engagement format / tools
		Collection of ideas for local MAR agreements based on prior project results and international best-practices	adelphi	International MAR community	**Consult**	Bilateral meeting
		Definition of objectives for local MAR agreements, qualitative analysis of envisaged costs and benefits of the selected local demo site based on the results of the numerical models developed in WP3 to identify the benefitting and paying parties of the (potential) MAR system for a fair benefit sharing	adelphi supported by the demo site coordinator	RS, LS at demo sites	**Collaborate**	Bilateral meetings
	T5.2 Training and capacity building to enhance coherence among local stakeholders	Development of capacities to foster solution upscaling and transfer, market applicability, and improved governance	all, facilitated by adelphi	GS, RS, LS at demo sites	**Inform**	Training
	T5.3 Organisation of civil assemblies for adopting local MAR agreements	Discussion of local MAR agreement drafts	Demo site coordinator supported by adelphi	Identified key stakeholder at demo site	**Collaborate / involve**	Online exchange meetings, online exchange (via mail)
		Development of concept for civil assemblies		Identified key stakeholder at demo site	**Collaborate**	Online exchange meetings, online exchange (via mail)
		Active participation / organisation (governing stakeholder) of civil assemblies bringing together all relevant stakeholders	Demo site coordinator supported by adelphi	GS, RS, LS at demo sites	**Collaborate**	Civil assemblies (including presentations, discussions in the audiences or in break-out groups)
		Co-finalisation of local MAR agreements.		Decision maker at regional and local scale	**Collaborate**	Bilateral meetings and/or email exchange with stakeholders who participated in the civil assemblies
	T5.4 Creation of follow-up committees for sustainable exploitation	Steering committee formed in Tunisia		GS, RS, LS at demo sites	**Collaborate**	Stakeholder participatory workshop
		Presentation of the project and its results			**Inform**	Project website, project flyers,

Project result	Project tasks where stakeholder engagement is relevant	Outcomes / contributions from stakeholder engagement	Responsible (project partner, demo region)	Who to engage / target audience	Engagement level	Engagement format / tools
External communication and outreach	T6.2 External communication and outreach	to the international community and general public	all, coordinated by TUD			newsletter, brochures / leaflets, social media campaign, publications, project video
		Exchange with the international community and general public			**Inform** and **Consult**	Presentations/Posters in scientific conferences, trade fairs, exhibitions
		Transfer of project results to policy and practice and identify integration and replication opportunities			**Involve** and **inform**	Policy briefs (D5.3) and recommendations, themed workshops and symposia at conferences
		Improve collaboration with similar projects and initiatives			**Consult**	Exchange meetings and/or participation in webinars/master classes

Table 14. Key performance indicators (KPI) for envisaged engagement formats

Engagement level	Engagement format	KPI planned (by project end)	KPI achieved (by project end)
Inform	Development of a corporate design (logo, templates) to ensure that dissemination and outreach materials have a uniform and recognizable image.	1 logo, 3 templates for technical reports, leaflets, maps	1 logo, 3 templates for technical reports, flyer, maps
	A project website was created to present the project, its objectives and case study areas, it was continuously updated with results and project news. Links to partner websites, relevant organizations and social media channels were also provided.	1,500 visits per year	16,400 visits
	Published articles in technical papers, (e-) magazines, (e-) newspapers	15	9
	Presentations/Posters in scientific conferences, trade fairs, exhibitions	8	32
	Publications in open access international (peer-reviewed) journals and magazines	6	9
	Brochures, leaflets and flyer	Minimum 4	1 flyer in 5 languages
	Social media posts (e.g., LinkedIn, Twitter/X and Facebook) to increase awareness for the project	50 posts; 300 followers	10 posts (LinkedIn), 67 posts (Twitter/X), 18 posts (Facebook) 99 Followers (LinkedIn), 61 followers (Twitter) 83 followers (Facebook)
	Newsletters	6 (2 per year)	3
	A video was created to present the AGREEMAR project, its impacts and the results, in a simplified way to the general public.	1 project video, 3.000 views on project website	1
	Policy briefs to spread policy recommendations towards policy and WRM audience. Translation into the languages of the consortium countries.	5	4

Engagement level	Engagement format	KPI planned (by project end)	KPI achieved (by project end)
	Trainings	Minimum 4 (1 at each demo region)	6 (1 in Spain, 1 in Portugal, 2 in Tunisia, 2 in Cyprus)
Consult	Interviews with stakeholders at project demo regions	Minimum 20 (ca 5 at each demo region)	17 (4 in Spain, 4 in Portugal, 9 in Tunisia)
	Expert interviews (international MAR community)	Minimum 10	10
	Online questionnaires	Minimum 2	1 in 4 languages for external experts 1 for internal use
	Online consultation / feedback sessions	Minimum 20	0
Involve	Online exchange sessions	Minimum 10	0
	Themed workshops and symposia at conferences	Minimum 1	1
Collaborate	Stakeholder workshops for co-creation of project outcomes	Minimum 12 (3 per demo region)	22 (4 in Cyprus, 4 in Spain, 8 in Portugal, 6 in Tunisia)
	Civil assemblies	Minimum 4 (1 per demo region)	4 (Tunisia (01/2025), Portugal (02/2025), Cyprus (03/2025), Spain (04/2025))

6.1 Engagement formats

The engagement formats used in the AGREEMAR project are explained in more detail below.

6.1.1 Project website

The AGREEMAR project website provides a central place for presenting the project, its progress and results to the public. By this, the website serves as a tool to inform and increase awareness on the project and its results. General information about the project is provided including its main objectives, methodology and work plan, demonstration sites and partners involved with contact information. Not only project results are published, but also the key findings are summarised and presented understandable for the non-scientific community. A news section informs about past and ongoing events, stakeholder engagement activities and milestones achieved. The website reaches out and invites interested parties to get in touch with the project and boosts exchange with the project consortium. Find more information in the AGREEMAR Deliverable 6.1 Internet website of the AGREEMAR project (Catalin Stefan 2022).

6.1.2 Outreach material (print)

Printed information material such as flyers, posters and brochures enable low-threshold, easily accessible and implementable local provision of information, e.g., for visitors at the project demo region. Therefore, outreach material has been provided to all project partners, designed in a uniform visual project design (e.g., logo, uniform graphic design of AGREEMAR deliverables and information materials (e.g., flyer, brochure, etc.). Format templates for publications (policy briefs, presentations) are available on an internal project SharePoint for the project partners. A uniform design, which is reflected in both stakeholder workshops and public communication, forms a common thread and creates a recognition value. The uniform image supports the overall narrative:

- Project flyers
- Posters for conferences and other events
- Brochures and leaflets.

6.1.3 Social media campaign

Social media has become an integral part of communicating public and private information. Social media is an important source of information and a channel for audience participation. Communication via social media

has the potential to reach a large number of people. Within AGREEMAR, a social media campaign has been conducted with the below details:

- Set up of project-own accounts on Twitter/X, Facebook and LinkedIn.
- Regular updates on these accounts on achievement of project milestones, key messages and findings, and upcoming activities, underpinned with appealing visuals and photos, etc.

6.1.4 Presentation of AGREEMAR and its results at relevant national and international conferences and panels

To exchange knowledge with other MAR experts, it is important to share the project results and research breakthroughs with the scientific community, policy makers and practitioners. For that, different national and international conferences and forums provide excellent opportunities with different presentation and workshop activities related to groundwater and MAR. Project results with new scientific findings or which involve new methodologies, such as from the MAR feasibility mapping, groundwater modelling, and the governance framework, can be presented and discussed to a broader scientific community at these events.

A list of suitable conferences and forums are listed in section 6.2.

6.1.6 Policy briefs and recommendations

One of the goals of the AGREEMAR project is to aid Mediterranean countries to optimize their hydrological balance. With concrete project results and the expert knowledge involved, there is a high level of expertise that needs to be disseminated to local, regional, and national policy makers in order to be put into practice. Therefore, the AGREEMAR project developed a set of policy recommendations for policy makers active in MAR.

The implementation of the policy recommendations is based on the consultation of water managers, who will be invited to be part of the follow-up committee to develop management agreements and/or recommendations and finally draft them. A follow-up committee (chapter 6.1.10) will be created for each case study, as well as virtual or face-to-face meetings for discussion and proposal of policy briefs and technical guidelines will be set up.

As stated in D5.3, the implementation of the policy recommendations is based on the consultation of stakeholders, who are invited to be part of the follow-up committee to secure the long-term sustainability of the agreements for the implementation of MAR. The follow-up committee (chapter 6.1.10) proposed for each case study and is expected to hold regular meetings to assess the performance of the MAR system. It will be responsible for validating monitoring results, ensuring compliance with regulatory standards, and reviewing stakeholder feedback to guide adjustments in MAR operational strategy.

6.1.7 Stakeholder / expert interviews

Interviews with stakeholders provide a crucial tool to gain a good understanding of their needs, capacities, roles, responsibilities and commitment and their working environment. They enable to lay a foundation for further project activities in the AGREEMAR project by opening lines of communication and building trust among all participating parties. In addition, expert interviews allow to obtain specific information about study areas, such as the selection of feasibility criteria.

Therefore, interviews with stakeholders and experts from the international MAR community have been conducted at different stages of the project (e.g., to develop a criteria and weighting process, to collect ideas for local agreements). The interviews were conducted with general (national), regional and local stakeholders during the field visits in person and online via videoconferencing and mainly in a semi-structured way.

6.1.8 Stakeholder / participatory workshops

With their direct and proactive interaction possibilities, workshops offer an opportunity to promote communication and engagement of all stakeholders as well as participatory co-creation of project results allowing the inclusion of stakeholder needs and boosting stakeholder ownership.

Various stakeholder workshops were conducted at different project phases of AGREEMAR - both online and physical – aiming at better aligning project outcomes with stakeholder needs (e.g., joint weighting of site-specific MAR feasibility criteria, co-development of a MAR governance framework and follow-up committees),

data collection and analysis, interpretation of results, and dissemination and review of findings and results (e.g., presentation and discussion of groundwater modelling results, and co-development of local agreements).

More practical information on how to organise a stakeholder workshop can be found here:

- Biodiversa practical method note on organising stakeholder workshops: https://www.biodiversa.org/710/download

6.1.9 Civil assemblies and MAR agreements

MAR agreements are not only one of the main outcomes of the AGREEMAR project, but also represent an important product of stakeholder engagement and commitment to the project activities, while fostering future cooperation between stakeholders. In order to enable participatory MAR agreements that take into account the interests, concerns and needs of all stakeholders involved, civil assemblies at each demo region were conducted.

Civil assemblies are understood as a form of stakeholder workshops or meetings that bring together a wider range of different stakeholders, including the general public. In this sense, civil assemblies allow for a more democratic method to discuss issues in a participatory manner, to reach an informed judgement and - in the best case - to reach a consensus/compromise that fits all. Civil assemblies are used to empower citizens to participate in policy-making and to resolve intractable problems. Likewise, policy-makers are enabled to better understand the problems and needs of those affected, which helps them to make evidence-based policy decisions.

6.1.10 Follow-up committee

In order to promote and ensure the acceptance of AGREEMAR activities at the demonstration sites on a local level, the establishment of a follow-up committee for the demonstration sites was considered. This was optional and only pursued if supported by the local stakeholders. In some demo regions, the formation of a steering committee is common practice and requested by key stakeholders, while in others, stakeholders reacted more cautiously. First arrangement of follow-up committees were established in Tunisia, where eight institutions related to MAR participated in the first meeting held in 2023, and in Spain, were five institutions related to MAR in the Belcaire Pond case participated in the meeting held in April 2025 to agree on the Charter on MAR.

In general, a follow-up committee comprise members of identified key stakeholder groups that are charged with overseeing, supporting, and guiding project activities at their site by representing the interests of the stakeholder group they represent. Typical tasks of the committee include:

- **Strategical Guidance:** Ensure the setting of realistic milestones; ensure the involvement of all ideas and issues raised; provide guidance to the project team;
- **Progress Monitoring:** Review the progress of the project against the milestones; Ensure the delivery of the project outputs and the achievement of project objectives
- **Quality Monitoring:** Establish qualitative metrics to monitor project progress; contribute to the evaluation of the project, both the process of developing and implementing the project, and its actual impact on its intended audience
- **Risk assessment and management:** Consider the risk involved in the specific project sites; develop a risk management plan
- **Conflict Management:** Help to balance conflicting priorities and resources;
- **Outreach activities:** Actively promote the outputs of the project; foster positive communication outside of the committee regarding the project's progress and outcomes

6.2 Communication and dissemination channels

Selected channels for communication and dissemination activities in the AGREEMAR project:

- **Scientific journals** in which articles have been published during the project:

    - Science of the Total Environment (ISSN: 1879-1026)
    - Environmental Processes (ISSN: 2198-7505)
    - Groundwater for Sustainable Development (ISSN: 2352-801)
    - International Journal of Hydrology Science and Technology (ISSN: 2042-7816)
    - Water (ISSN: 2073-4441)

- **Conferences** at which contributions were made:
    - International Conference on "Integrated Groundwater Management of Mediterranean Coastal Aquifers", Chania, Greece, 27-30 September 2022
    - Mediterranean Geoscience Union (MedGU2022), Marrakesh, Morocco, 27-30 November 2022
    - 16th Congresso de Água "Viver com a Água", Lisbon, Portugal, 21-14 March 2023
    - General Assembly of the European Geosciences Union (EGU2023), Vienna, Austria, 23-28 April 2023
    - International Riverbank Filtration Conference, Dresden, Germany, 16-18 October 2023
    - 29th Conference of the Hydrogeology Section of the German Geological Society, Aachen, Germany, 20-23 March 2024
    - 10th International Conference on Remote Sensing and Geoinformation of the Environment, Limassol, Cyprus, 8-9 April 2024
    - WSTA 15th Gulf Water Conference "Water in the GCC: Embracing Technological Progress", Doha, Dakar, 28-30 April 2024
    - 6th Euro-Mediterranean Conference for Environmental Integration, Marrakesh, Morocco, 15-18 May 2024
    - 8th European Congress "Water – Across Boundaries" of the International Association for Hydro-Environment Engineering and Research (IAHR). Lisbon, Portugal, 4-7 June 2024
    - IAH World Groundwater Congress (IAH2024), Davos, Switzerland, 8-13 September 2024
    - 4th IWA-YWP Spain National Conference, Bilbao, Spain, 29-31 October 2024
    - 3rd Arab Conference, Rabat, Morocco, 18-20 February 2025
    - 12th International Symposium on Managed Aquifer Recharge (ISMAR12), Stellenbosch, South Africa, 28 April – 2 May 2025

- Exchange with **international thematic networks**.:
    - International Association for Hydro-Environment Engineering and Research (IAHR) (https://www.iahr.org/)
    - Commission on Managing Aquifer Recharge of the International Association of Hydrogeologists (IAH-MAR) (https://recharge.iah.org/)
    - Young Water Professionals Spain (https://www.ywp-spain.es/)
    - Groundwater Solutions Initiative for Policy and Practice (GRIPP) (https://gripp.iwmi.org/)
    - EU Directorate-General for Environment (DG ENV) (https://ec.europa.eu/environment/)
    - Water Europe (https://watereurope.eu/)
    - International Water Association (https://iwa-network.org/)
    - EIP Water Action Group 128 "MAR to MARket" (http://www.lnec.pt/en/research/outputs-from-lnec-s-research-projects/) - led by partner LNEC

- Exchange with **platforms of other relevant research projects**, e.g.:
    - MAR2Protect (funded by EC, Horizon Europe programme, project duration: 2022-2026)
    - AGREEMed (funded by EC, Prima programme, project duration: 2022-2025)
    - MARSoluT (funded by EC, Marie Skłodowska-Curie Actions (MSCA) Innovative Training Network (ITN), project duration: 2019-2023)

- Exchange with regional stakeholder networks and users' channels / publications in regional newspapers.:
    - Research Institute of Water and Environmental Engineering (IIAMA) (https://www.iiama.upv.es/iiama/en/)
    - Club del Agua Subterránea (https://www.clubdelaguasubterranea.org/)
    - The Spanish Chapter of IAHR (https://www.iahr.org/index/committe/96)
    - Users Community of AQUATOOL Decision Support System (https://aquatool.webs.upv.es/aqt/en/home/)

- Paidea-News: ΕΡΑΤΟΣΘΕΝΗΣ: Χρηματοδότηση ερευνητικού έργου AGREEMAR – PRIMA (engl.: ERATOSTHENES: Funding of AGREEMAR – PRIMA research project), 15 December 2021 (https://paideia-news.com/tepak-b/2021/12/15/eratosthenis-xrimatodotisi-ereynitikoy-ergoy-agreemar-prima/)
- Elemesos: Κέντρο Αριστείας ΕΡΑΤΟΣΘΕΝΗΣ: Χρηματοδότηση ερευνητικού έργου AGREEMAR – PRIMA (engl.: ERATOSTHENES Centre of Excellence: funding for AGREEMAR – PRIMA research project), 16 December 2021 (https://www.elemesos.com/2018-12-20-09-57-23/item/65868-agreemar-prima.html)
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- Revista Técnica de Medio Ambiente (RETEMA): IIAMA participa en un proyecto para impulsar la recarga gestionada de acuíferos (engl.: IIAMA participates in a project to promote the managed recharge of aquifers), 22 September 2022 (https://www.iagua.es/noticias/iiama/iiama-participa-proyecto-impulsar-recarga-gestionada-acuiferos)
- Kooperation International: PRIMA – Kooperationsprojekt AGREEMAR: Anpassungsfähige Vereinbarungen über die gemeinschaftlichen Vorteile von künstlicher Grundwasseranreicherung im Mittelmeerraum, Teilprojekt 1 (engl.: PRIMA – AGREEMAR Collaborative Project: Adaptive Agreements for Benefits Sharing of Managed Aquifer Recharge in the Mediterranean, Subproject 1) (https://www.kooperation-international.de/laender/afrika/tunesien/bekanntmachungen/detail-laendereinstiegsseite/info/prima-kooperationsprojekt-agreemar-anpassungsfaehige-vereinbarungen-ueber-die-gemeinschaftlichen-vorteile-von-kuenstlicher-grundwasseranreicherung-im-mittelmeerraum-teilprojekt-1)
- TECNOAQUA: Arranca el proyecto europeo Agreemar sobre recarga gestionada de acuíferos (engl.: European AGREEMAR project on managed aquifer recharge gets underway), 17 October 2022 (https://www.tecnoaqua.es/noticias/20221017/iiama-proyecto-agreemar-recarga-acuiferos)
- AgdA – Águas Públicas do Alentejo: Projeto agreeMAR visita a ETAR da Comporta (engl.: Project agreeMAR visits the Comporta WWTP), 22 November 2022 (https://www.tecnoaqua.es/noticias/20221017/iiama-proyecto-agreemar-recarga-acuiferos)
- APRH: Projeto PRIMA AgreeMAR: Questionário sobre Gestão da Recarga de Aquíferos (MAR). Newsletter nº 207 (engl.: Project PRIMA AgreeMAR: Questionnaire on Managed Aquifer Recharge (MAR)), 25 November 2022 (https://www.aprh.pt/Newsletter/newsletter_207_Novembro.html)
- Revista Técnica de Medio Ambiente (RETEMA): Reunión del proyecto AGREEMAR para optimizar la gestión de los acuíferos mediterráneos (engl.: AGREEMAR project meeting to optimise the management of Mediterranean aquifers), 27 September 2023 (https://www.retema.es/actualidad/reunion-del-proyecto-agreemar-para-consensuar-soluciones-hidricas-para-el-merditerraneo)

6.3 Principles of stakeholder engagement to overcome common challenges

Although stakeholder engagement can bring many benefits to the project process, it is important to approach engagement critically and be aware of some of the challenges and limitations that may be faced. Table 15 lists some relevant challenges for the AGREEMAR team.

Table 15. Challenges of stakeholder engagement and measures to overcome these

Identified key challenges during stakeholder engagement	Principles / measures to overcome challenges
The local conditions and needs of AGREEMAR sites are not well addressed by the project.	The coordinators of the AGREEMAR demo regions are very well integrated into the local stakeholder landscape and can draw on a well-connected network and good knowledge of local communities and issues to ensure equal representation of key stakeholders and consideration of their needs. They will also ensure that participatory processes remain open and allow for the inclusion of citizens from diverse backgrounds, taking into account gender, age groups, education levels, nationality, and disabilities, among others and non-preferred ideas.
As AGREEMAR involves a multiplicity of partners and stakeholders, conflicts of interests may arise as well as power imbalances within stakeholder engagement activities	Detailed stakeholder analysis enables timely identification of interest conflicts between stakeholders as well as imbalances between their power (especially when involving stakeholders with a high interest, but low influence on the project outcomes) and ensures an appropriate design of stakeholder engagement activities (e.g., consider parallel activities and involve neutral mediators in case of conflicts).
Stakeholder fatigue	A detailed stakeholder analysis should ensure that only those stakeholders are involved for whom the project outcomes are relevant and who are willing and interested to engage; targeted planning and coordination of engagement by WP1 and the demo regions coordinators will avoid repetition in requests to stakeholders.
AGREEMAR project partners have not the interest and power needed to implement the project.	The project will include stakeholders with a high degree of interest and influence on the project. The results of the stakeholder analysis are presented in chapter 5 of this engagement strategy and plan.
Stakeholder engagement ends with the project end, making it difficult to achieve impacts and deliver benefits expected by the stakeholders	The creation of a follow-up committee at each demo region will help boost the use of the project results and ensure that agreements reached (e.g., via the MAR agreements) are respected beyond the project end.
Stakeholders have unrealistic high expectations	MoUs co-developed with key stakeholder will help to manage stakeholder expectations from the project beginning (see chapter 6.3).
Due to its technical nature, AGREEMAR can be difficult to describe and understand by policy-makers, media or the general audience.	Customised dissemination and communication of project results (e.g., a web-based platform with user-friendly interface) in easy-to-understand formats also for non-scientific stakeholders will overcome this barrier.
The benefits and processes of MAR, like groundwater itself, are often invisible to many stakeholders.	Social media campaigns and other outreaching measures will help to inform and sensitise stakeholders to the objectives of AGREEMAR and the benefits of MAR in general.
AGREEMAR is ambitious in its goal to bridge the gap between science and society.	This goal is attainable by shifting away from research-centric communication to other existing communication channels that target business (SMEs), interest groups, associations, media and other interested stakeholders.

6.4 Managing stakeholder conflicts

Due to the different interests of the participating stakeholders, it is not unlikely that at some point conflicts may arise. Therefore, it is crucial to understand the types of conflicts in advance and prepare a conflict management strategy in order to guide actions to find long-term beneficial resolutions for all stakeholders. Conflict does not necessarily have to be negative, but is simply a part of everyday interactions. It can occur between individuals, between groups of individuals, and between organizations.

Oriented on the BiodivERsA Stakeholder Engagement Handbook Strategy (Durham et al. 2014), AGREEMAR considered the below steps for conflict management:

1. **Conflict identification**: What is the conflict, which possible conflicts may arise in the future and what are possible reasons for their arousal?

2. **Conflict evaluation:** What are the reasons / interests behind the conflict? Who is involved and for how long has the conflict been going on? Which power do the involved stakeholders have? Are they able to work together?

3. **Implementation of conflict resolving and reduction strategies:** Which kind of agreements could be tolerated by conflicting parties? Is external assistance necessary? Are parties from outside conflicting groups tolerated? How can sustainable resolutions be set up? What has been considered binding in previous conflict resolutions?

There is not one way to implement conflict management measures, but rather some general aspects, in order to achieve a sustainable solution in agreement with all parties involved in case of a conflict: These include understanding the conflict and the different views and opinions of the parties involved as objectively and emotionally as possible. It is important to consider the wider social, economic and political context. Furthermore, the entire process should carry out in an iterative and participatory manner, in which the individual steps can be reviewed and refined throughout the process and all information is passed on to key stakeholders to enable them to stay in touch and focus together on resolving the conflict.

6.5 Monitoring and evaluating the engagement

Monitoring and evaluation of the stakeholder engagement process is important for a variety of reasons. It can measure the effectiveness of project outcomes and investments, but also helps to better understand and communicate the impact the project and its partners can have (Durham et al. 2014). During the project, it helps stakeholders to focus on the objectives to be achieved and to reflect on the adopted approach and undertake adjustments if needed. Finally, evaluation helps to learn from the experience for future action (Warburton et al. 2007). Therefore, certain activities of monitoring and evaluation should be considered during the whole project phase, including the planning phase.

Three different main areas of assessment are often considered (Roux et al. 2010):

- **Engagement success:** Were the goals of the engagement process achieved? Where the stakeholders' aims reached?
- **Engagement methods:** Were the methods used appropriate? Were the costs reasonable? How and why did things work well (and not so well)?
- **Impact:** What was the impact of the engagement process? Were there any unexpected outcomes?

Based on the general engagement strategy and plan presented in this deliverable, more detailed and specific engagement objectives and plans were co-designed and agreed with the stakeholders (e.g., with key stakeholders by means of MoUs, find more information in chapter 6.3), providing the basis for further evaluation processes. A regular evaluation of engagement activities was carrieded out through the following criteria:

- **Achievement of set KPIs** (Table 14) which are monitored every six months by WP1. These include websites visits, social media followers, downloads of the project flyer, leaflets from the website, subscriptions to the project newsletter etc. The table is made available to the project consortium on an internal SharePoint, where updates can be added independently.
- **Participants feedback** on specific formats collected during or after key engagement activities.

7 Lessons learned and recommendations

The AGREEMAR project has demonstrated the critical importance of participatory and inclusive stakeholder engagement in achieving sustainable and impactful outcomes. By integrating stakeholders at every stage of the project, its objectives were successfully aligned with the needs, expectations and capacities of stakeholder groups across the four demo regions. This approach not only enhanced the relevance and acceptance of the project outcomes but also fostered a strong sense of ownership and collaboration among all involved parties.

One of the key achievements of the project was the development and implementation of this comprehensive stakeholder engagement strategy, built on a structured four-step approach. This methodology ensured the systematic identification, analysis and prioritization of stakeholders, allowing for tailored engagement formats that addressed varying levels of interest and influence. Tools such as stakeholder maps and influence-interest grids proved invaluable in visualizing relationships, balancing interests, mitigating potential conflicts and fostering equitable benefit-sharing.

The value of adaptive and iterative processes was another significant takeaway from the project. Regular consultations, workshops and bilateral meetings provided opportunities for continuous feedback and refinement of project activities. This iterative approach not only enhanced the quality and applicability of outputs, such as MAR feasibility maps and governance frameworks, but also built trust and strengthened partnership within the project period and beyond. The collaborative development of local MAR agreements, tailored to the unique contexts of Tunisia, Portugal, Cyprus and Spain, stands as a success to the effectiveness of this approach.

Engaging stakeholders as active contributors, rather than passive recipients, is essential for achieving sustainable and widely accepted outcomes. Co-developing tools, frameworks and agreements, ensures that solutions are context-specific and resonate with those impacted.

Since stakeholder dynamics are inherently fluid, engagement strategies must be flexible to accommodate these changes. Interactive feedback loops incorporated into the AGREEMAR project were critical in maintaining the relevance and effectiveness of its activities.

Effective stakeholder engagement requires sustained effort, transparency and trust-building from the beginning of a project until its end. Early and frequent interactions, coupled with clear communication of project goals and benefits, are critical for securing long-term commitment that extends beyond the project duration.

Finally, tailoring engagement formats and communication channels to suit the preferences and needs of different stakeholders enhances participation and ensures that project outcomes are effectively conveyed. This customization fosters inclusivity and strengthens the connections between stakeholders and project partners.

In conclusion, the AGREEMAR project underscores that the sustainable management of MAR is not merely a technical challenge, but also a social one. By placing stakeholder engagement at its core, the project has set a benchmark for participatory and inclusive approaches. Innovative strategies and tools presented in this deliverable provide a valuable roadmap for future initiatives and projects aiming to bridge the science-policy-practice gap and promote sustainable MAR.

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Annex 1.
Concept of the first mission to the project demo regions

A1.1 Objective

The first mission to the project demo regions has three main objectives:

- To introduce and inform key stakeholders on the project objectives and outcomes
- To better understand the stakeholders identified as relevant to the AGREEMAR project in terms of their interest in, needs for, and influence on project outcomes. These outcomes relate to integrated water resources management, watershed management and MAR planning, operation and implementation in general and specifically to MAR feasibility maps, corresponding groundwater models and MAR agreements.
- To directly involve the stakeholders in the weighting process of MAR feasibility criteria. Only this way it will be possible to provide customised feasibility maps supporting MAR planning that consider the views, needs and constraints of a wide range of stakeholders. Their weighting of the MAR feasibility criteria additionally provides further insight into the needs and constraints of stakeholders in relation to MAR implementation and operation.

A1.2 Scope and approach

For this, 5-day missions to the four project demo regions are conducted with the demo region leaders comprised of bilateral meetings in interview form with identified key stakeholders on the three levels - general, regional and local.

Table 16 shows the general mission agenda that were adapted to each project demo regions. Detailed agendas adapted for each demo regions have been developed and are available on request.

A1.2.1 General mission agenda

Table 16. Draft programme for the stakeholder needs assessment (can be adapted to the availability of the stakeholders)

Programme	Overall objective	Methodology	Detailed agenda	Who
Preparation (Day 1)	Setting the scene and objective	Partner meeting / site visit	• Stock Taking with local partner • Refining overall objective of the mission and needs assessment • Check which answers can be already answered by demo region partners and does not need to be requested again in the stakeholder meetings • Needs identified so far • Finalisation of preparation of meetings with stakeholders • Site visit/assessment to have a better understanding of the local demo region	Demo region coordinator, adelphi, other project partners interested
General stakeholders (Day 2)	Overall scope and embedding	Bilateral meetings / (site visit)	• Needs on national level for MAR feasibility maps and agreements • Existing governance frameworks to align with • Institutions to involve in the agreements • Involvement in co-creation of feasibility maps	General stakeholders, demo region coordinator, adelphi, other project partners interested

Programme	Overall objective	Methodology	Detailed agenda	Who
Regional stakeholders (Day 3)	Needs of regional policies and decision structure		• MAR requirements on regional scale / basin level • Ongoing activities related to groundwater management • Governance model in place and linkages to MAR agreements	Regional stakeholders, demo region coordinator, adelphi, other project partners interested
Local stakeholders (Day 4)	Specific requirements and technical details		• Site visit to local demo region together with local stakeholder • Identification of local stakeholder / partners for the elaboration of agreement • Specific issues to be addressed by agreements • Costs and Benefits for stakeholders	Local stakeholders, demo region coordinator, adelphi, other project partners interested
Debriefing (Day 5)	Network with core stakeholders established and action plan for engagement elaborated	partner meeting	• Debriefing and Planning with demo region coordinator • Conclude on findings from meetings • Develop roadmap for upcoming stakeholder engagement	Demo region coordinator, adelphi, other project partners interested

A1.2.2 Interview guide

The bilateral meetings started with a round of introductions where the stakeholders get to know the AGREEMAR team, the project and its objectives as well as the aim of the meeting and the usage of the information received during the meeting. Then, the stakeholders have the opportunity to introduce the role of themselves and their organisation related to the project topics. The main part of the bilateral meetings consists of a set of questions on the stakeholders' interests, needs and influence related to the project outcomes (covering the criteria listed in

Table 2). An interview guide based on which each bilateral meeting was carried out are presented in Table 17. Based on this guide, comprising selected questions for stakeholder analysis and needs assessment, adapted detailed agendas have been prepared for each stakeholder meeting.

The interview guide provides material for two hours or more. According to the availability of the stakeholders, which was checked in advance, the number of questions were adapted.

Many stakeholders interviewed are not or only partially be capable of speaking English. To ensure that the language barrier does not affect the results, the stakeholder interviews have been held in the local language, where possible. To this end, all ppts and meeting material were prepared in the local language.

During the session on MAR feasibility mapping, the stakeholders were asked for their views on MAR feasibility thematics and respective topics. For this, a short weighting exercise were conducted where stakeholders are asked to (1) rate the importance of each thematic with numbers from 1 to 5 (water demand, water availability, intrinsic suitability and non-physical criteria) and (2) select a set of topics from each theme and rate them as well. In this context, they will be informed and prepared for the more extensive online questionnaire on weighting MAR feasibility criteria.

Table 17. Interview guide

(GS – general stakeholders, RS – regional stakeholders, LS – local stakeholders)

Q-ID	Time	Interview process and questions	Target group	Method
	10'	*Arrival and buffer*		
0	**5'**	*Welcoming, aim and structure of the meeting and use of its results*	all	
1	**20'**	**Short round of introduction** (let the stakeholder start focussing on the questions below)		

Q-ID	Time	Interview process and questions	Target group	Method
1.1		Can you tell us a bit about the main tasks / mandate / role of your organisation related to WRM and MAR and what position and tasks you have in the organisation?	all	face to face interview
1.2		In which administrational structures / organisational setup is WRM / MAR currently organised and how are you linked to this structure?	all	
		Introduction of project members present (for those who have not met before)	all who have not met before	
		Presentation of the AGREEMAR project and its objectives	all that do not know the AGREEMAR project	short input session
2	**40'**	**IWRM and MAR in general and feasibility maps**		
		Brief input on MAR adapted to the local context and knowledge of the stakeholder	all that are not familiar with MAR and the current status of the demo region	short input session
		Followed by a brief input on the MAR feasibility maps and related concept for criteria selection and weighting envisaged in AGREEMAR.	all that are not familiar with feasibility maps developed in AGREEMAR	
2.1		What do you think are the main needs at your district/ basin and which could a well working MAR address?	all	face to face interview – optional in case
2.2		What objectives does / could MAR have?	all	
2.3		What are from your point of view the main risks associated with MAR? In general and at the demo region.	all	
2.4		Which are from your perspective the most important criteria, which have to be considered for the feasibility of MAR? (general, in the basin, at the specific site)	all	
2.5		*Present the stakeholder the pre-selected list of criteria (and if needed examples of risks associated with MAR, see below) and ask him/her/them to give rates from 1-5 as they find the criteria most relevant to their work. Types of risks with some examples are presented in case the interviewee needs support in answering the question:* - *risks on human health (water quality issues, pathogens),* - *environmental risks (also water quality but more general potential for groundwater contamination),* - *technological risks (possibly poor operation due to unsuitable location, insufficient water quantity for recharge, massive clogging expected due to improper treatment of influent water),* - *economic risks (lack of investment funds, low return of investment, no govt. subsidies, no willingness to pay by end users etc.)*	all	exercise
2.6		Please describe the planning and decision-making process for setting up a MAR system: which institutions are involved, what is the supporting legal framework?	policy and decision maker in MAR planning	
2.7		Do you currently use any decision support software / platform / system that could help in MAR planning? What information does it have and what decisions does it support?		
2.8		*If not mentioned yet:* What is the role of geo-spatial information in this process? What kind of geo-spatial information is collected and managed by your organisation? Is the information managed by a web-based GIS system? If yes, is this system used only internally, do you make this information also available for the general public? If so, would it be possible to have a look together or get the URLs?		
2.9		What would be needed to make MAR feasibility maps useful for you? What outcome for your institution would you expect?		
2.10		What role do you see for your institution regarding MAR feasibility maps?		
3	**15'**	**Assessment tools and groundwater models**		

Q-ID	Time	Interview process and questions	Target group	Method
		Brief content input on the groundwater models produced in AGREEMAR.	all that are not familiar with groundwater models developed in AGREEMAR	short input session
3.1		Do you use groundwater flow modelling?	all	face to face interview
		If yes:	policy and decision maker in MAR planning	
3.2		a) do these consider changes in water availability and demand, water infrastructure, impacts of climate change, etc. and assess their impacts (floods, droughts, contamination, etc..) in order to derive optimised operating policies?		
3.3		b) What kind of output is expected from the models and tools used and how is this result helping to take decisions?		
3.4		If no: Do you require more knowledge about the geo-hydrological functioning of (potential) MAR system?		
3.5		What would be needed to make the numerical models useful for you? What outcome for your institution do you expect from the models?		
3.6		What role do you see for your institution in preparing / in using the models?		
4	**15'**	**Agreements**		
		Brief content input on the agreements and governance model envisaged in AGREEMAR and expected general advantages - we think – a new collaboration through agreements would have (presenting of best practice examples).	all that are not familiar with the agreements envisaged in AGREEMAR	short input session
4.1		Are there any conflicts that prevent MAR schemes from being implemented / operated?	all	face to face interview
4.2		What benefits do you see in MAR and what benefits does your organisation have?	all	
4.3		What commitment or support do you need from other parties involved in the implementation and operation of a MAR facility (existing or future) in your basin to make MAR a success for you / your organisation and the basin?	all	
4.4		What kind of agreements / contracts are currently in place to organise the tasks and roles and the financial compensations between the stakeholders of MAR systems?	all	
4.5		Which institutions / stakeholders should be involved in framing a	all	
		a) General national governance framework for MAR	GS	
		b) Region / Basin specific MAR agreement templates for …	GS, RS	
		c) Drafting a specific MAR agreement for the implementation / operation for ….	GS, RS, LS	
4.6		What would be needed to make engaging in the development of any of the above beneficial for you/your organisation? What outcome for your institution do you expect from the agreements?	all	
4.7		What role do you see for your institution in preparing / using the MAR agreements (general, regional, local)?	all	
5	**10'**	**Stakeholder engagement**		
		Presenting envisaged engagement activities and introducing to the different levels of engagement: - *We are not interested in this topic* - *We want to be just informed* - *We want to closely follow these activities and provide feedback on the results* - *We want to actively participate and be involved in co-creation processes*	all	short input session
5.1		In which of the planned AGREEMAR engagement activities are you interested to be involved and how?	all	face to face interview
5.2		Who would be our main contact for the different engagement activities?	all	
6	**5'**	**Closure of the meeting**		
		Inform from our side on project activities related to the communicated needs!	all	

Q-ID	Time	Interview process and questions	Target group	Method
		Agree on next steps for cooperation.	all	