FINAL REPORT

TUNIS INNOVATION CAMP ON NON CONVENTIONAL WATER RESOURCES

Tunis, Tunisia 7th and 8th of February 2023
GDA Sidi Amor

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ACRONYMS USED IN THE REPORT

BP	Best Practice
EE	Enabling environment
EC	European Commission
IOS	Institute of Sciences
IPCC	Intergovernmental Panel on Climate Change
JRC	Joint Research Centre
NCWR	Non-Conventional Water Resource
MoU	Memorandum of Understanding
PPP	Public Private Partnership
SE&DP	Stakeholder Engagement & Dissemination Plan
UfM	Union for the Mediterranean
UN	United Nation
WWTP	Waste Water Treatment Plants

1. INTRODUCTION

The Medwaycap project in a nutshell and the purpose of the Innovation camp

The ENI CBC MED MEDWAYCAP project addresses the challenge of **how to embrace the non-conventional water reuse and management in the Mediterranean region through the promotion of sustainable strategies and technological innovations.**

Challenge-driven cooperation is a crucial aim to provide coherent and continuous cross-border dialogue and process including sustained awareness-raising of public authorities and policy-makers at regional/national level, capacity building, easy access to information and a friendly use of tools for mutual learning.

The challenge-driven approach is applied within the MEDWAYCAP project via innovative participatory methods so as to contribute to mitigating local water crisis, a common challenge in the Mediterranean, through facilitating general access and promotion of best practices including the improvement of treated wastewater reuse as a non-conventional water resource (NCWR).

Moreover, indication shows weakness in the multi-level governance and law enforcement, in planning, managerial and operational capacities, further than low-level involvement of the stakeholders in the decision-making process. MEDWAYCAP project faces these issues and addresses the final beneficiaries, to be equipped with state-of-the-art knowledge on NCWR techniques, management, planning and skills to reuse at territorial level for domestic and agricultural purposes thanks to the well organised capitalization platforms for networking and knowledge transfer and capacity building tool box.

The project has been structured to: transfer and “upgrade” knowledge; reinforce new\existing networks & alliances; raise awareness among public authorities, policy-makers and “challenge owners” about NCWR measures and related opportunities for planning policies and related funding measures.

The report of the ENI CBC MED MEDWAYCAP project Innovation Camp that took place in Tunis on the 7th and 8th of February 2023 describes the process, challenges and proposed prototypes to address them. The innovation Camp involved 45 participants from eight Mediterranean countries: Tunisia, Egypt, Jordan, Palestine, Lebanon, Greece, Italy and Malta (see annex C).

The report initially makes an outline of the purpose of the MEDWAYCAP project then describes what has been done within the Innovation Camp in terms of methods and processes that were adopted and finally describes the challenges and the prototypes that have been proposed to address the challenges.

The three challenges addressed during the Tunis MEDWAYCAP Innovation Camp were the following

- **Challenge 1: NON-CONVENTIONAL WATER CLUSTER OF KNOWLEDGE**
- **Challenge 2: TOWARDS A MEDITERRANEAN CAPITALISATION ALLIANCE**
- **Challenge 3: CIRCULAR WATER FOR CIRCULAR BUSINESS**

The focus of the Innovation Camp has been to reflect on the following questions:

Why? The purpose of the challenge groups is to develop prototypes that can be tested and improved so as to identify solutions that increase non-conventional water reuse and management.

How? It is a co-design process that applies interactive participatory methods and through synchronous and asynchronous digital collaboration and communication.

What? Every challenge group can design and test prototypes that can address and solve some of the key challenges of non-conventional water reuse and management. Your work can bring a fundamental contribution.

The Challenge groups proposed eight prototype solutions to address the challenges in the short, medium and long term both at the local and mediterranean level.

2. THE FIRST MEDWAYCAP INNOVATION CAMP IN TUNIS

The Tunis MEDWAYCAP Innovation Camp (hereafter IC) is the result of clear and strong challenges, competent teams, great teamwork, an inspiring venue and an effective working method.

The IC took place in the premises of the GDA Sidi Amor, an association and site promoting innovation and sustainable development in the rural areas just outside Tunis. To see the photo album of the Innovation Camp please follow the link in Annex C).

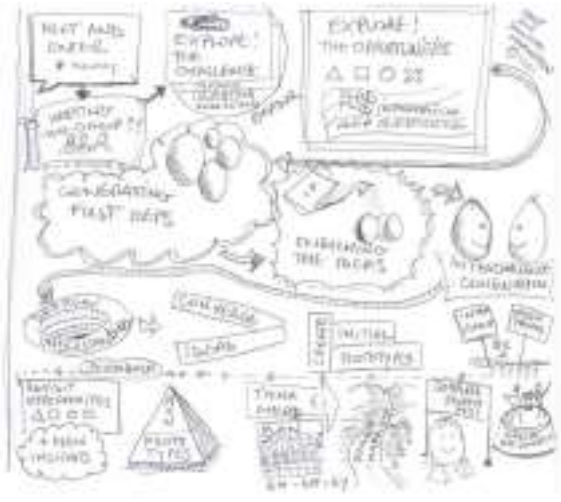
This section describes the new methodological approaches and techniques, the use of the diverse creative tools and techniques, the challenge prototype diaries, the new role descriptions which leads to the description of the main outcomes in terms of the prototypes that emerged from each challenge groups.

2.1 The innovation Camp Methodology and process

From Non Conventional Water challenges to the innovation camp organisation and preparation
In this report we demonstrate how the Innovation Camp method applied in the Tunis MEDWAYCAMP process has contributed to prototype solutions to the NCWR Challenges.

The Innovation Camp prototyping method
The MEDWAYCAP Innovation Camp addresses three of the forefront challenges facing decision makers, technicians and all quadruple helix socio-economic actors:

1. to consolidate the knowledge framework on NCWR;
2. to strengthen the impact and the value of innovative integrated NCW management solutions;
3. to foster a circular economy.



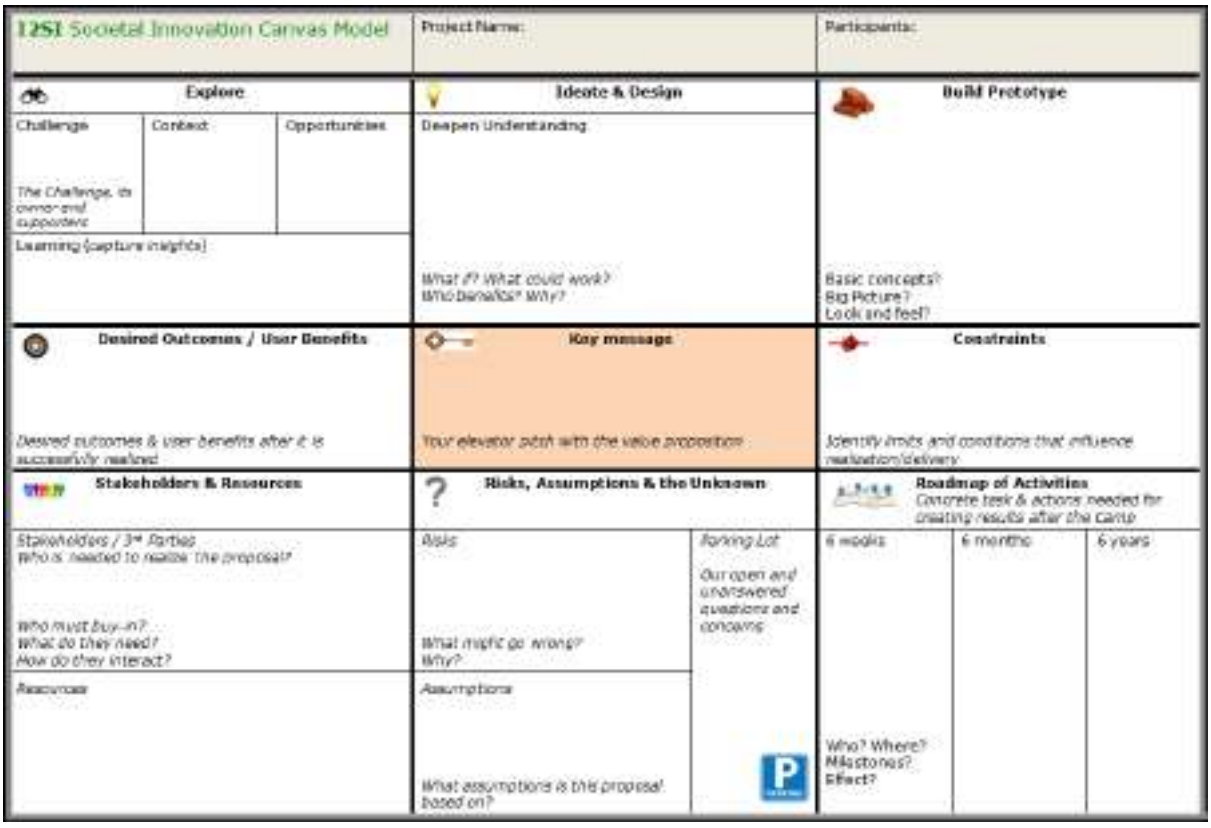
By prototyping and testing solutions according to design thinking principles, the participants in the Labs work with facilitators and interactive brainstorming methods to reframe the challenges, look for opportunities, define goals, identify key actors, build initial ideas, develop prototypes and a roadmap to test the prototypes in real contexts.

The Innovation Camp Method has been adopted by the European Commission Joint Research Centre (JRC) and the Committee of the Regions to foster evidence informed and participatory policy making on societal challenges and innovations.

The Innovation Camp sessions

The Innovation Camp (IC) has been organized in two face-to-face sessions as well as asynchronous prototyping collaboration. The Innovation Camp addressed the three main challenges of **Knowledge harmonization, Mediterranean alliance and Circular economy**, to identify, test and implement diverse prototypes. You will find the descriptions of the challenges, themes and open questions in the sections below.

Through the Innovation Camp participants addressed a challenge, reframed it, identified possible goals and objectives that can be solved with a prototype. Along the process participants identified actors and partners that can support their prototypes and define the activities in the long, medium and short term that can help them to find solutions to the challenge. Within the participatory process we use the key elements of the Innovation Camp canvas with guiding questions and steps that can help the discovery process from understanding, exploring and reframing the challenge to defining a roadmap of activities.



The activities that are performed in the interactive MEDWAYCAP Innovation Camp concentrate on the following main steps in the canvas:

- Exploring the challenge, through its reformulation and deepening its understanding.
- Defining desirable and possible objectives to address the challenges through prototypes that can help to reach the desired outcomes and benefits for the target groups.
- Prototyping solutions by identifying actors, partners, beneficiaries, resources and setting up a roadmap of activities.

Roles and responsibilities within the Innovation Camp

The effectiveness of the Innovation Camp (IC) method depends on strong challenges and a combination of factors. These include the involvement of participants with diverse skills and perspectives and teamwork involving people that have more expertise on the contents and challenges of the IC and people that have more expertise on the process and participatory techniques envisaged by the IC. The venue and logistic support is also a key element as a good atmosphere and environment can contribute positively to the internal collaboration and cooperation among participants. The core working team (the crew) of the Innovation Camp, apart from the main camp convenor/host that invites all participants to address the challenges to prototype solutions involves four main roles and responsibilities that were also applied in the Tunis MEDWAYCAP Innovation Camp:

- The **Challenge Owner** is in charge of the challenge and content. Can bring power and influence as the main client. She or he knows (or thinks to know) what is the main challenge but needs ideas and proposals on how to find ways to address and solve them through prototypes. Her or his role is to present the challenges and provide comments on the emerging results indicating how well they match the main problems and aims of the challenge. She or he has the power and influence to implement the prototypes throughout their iterative process. This role is normally covered by the main decision maker on the topic addressed by the Innovation Camp. When the challenge owner cannot participate in the Innovation Camp she or he will delegate a **challenge holder** as deputy to represent her or him.
- **The Prototype holder** and reporter collects and writes all useful information for the final report and slides (on the basis of the report format) and acts as a prototype holder for one of the prototypes. She or he facilitates one of the sub-groups and provides organisational support to carry the prototypes forward. Prototype holders could be of two kinds: A) from a project consortium, in which case, through the project, they can invest more time in supporting activities such as light facilitation of smaller groups and reporting. B) When a prototype holder is one of the participants that is not funded, commitment and interest in the topic, the prototype and its impact becomes the key element that can really make the difference in performing the support and reporting activities envisaged in the follow-up.
- **The facilitator** is responsible for the design and organisation of the process, the selection of questions and tasks with the Challenge Owner, the organisation of space and management of time of the workshop. She or he facilitates the group main sessions and subgroups by moving between them according to the needs. Specific activities performed before, during and after the Innovation Camp:
- **The logistic support and organisation** is a fundamental role before, during and after the IC as it sets the stage for the activities to be carried out among the participants. This includes the selection and organisation of the venue, its internal and external spaces, its furniture, chairs, movable panels, posters, stationery, markers, sticky-notes and all the materials that may be needed in the co-creation process. The support activity includes the documentation of the Innovation Camp with pictures, movies and interviews and the support to the reporting and organisation of the material for the challenge owners/holders to then finalise the report.

The way in the above roles are implemented during the Innovation Camp is described in Annex D.

Within the Tunis IC all the above roles have been attributed with the core team that has been designing the Innovation camp also to consider that the outcomes of each challenge are strongly related to the MEDWAYCAMP objectives. For this purpose reporting and harvesting the results is

crucial and needs to be performed with the greatest attention by the MEDWAYCAMP partners during and after the Innovation Camp. Here follows the distribution of roles and responsibilities for each challenge.

- **Challenge 1: NON-CONVENTIONAL WATER CLUSTER OF KNOWLEDGE**
  - Challenge holder (deputy of owner): **Latifa Bousselmi** (CERTE)
  - Prototype holder and reporter 1.1 **Kostas (Konstantinos) Plakas** (CERTH)
  - Prototype holder and reporter 1.2 **Thouraya Mellah** (ESEN)
  - Prototype holder and reporter 1.3 **Amani Charrad/ Hichem Ben Hassine** (Agence Nationale de la Promotion de la Recherche Scientifique / Institut Pasteur de Tunis)
  - Facilitator: Francesca **Giovanna Martinez** and **Silvia Martinez** (FUTOUR)

- **Challenge 2: TOWARDS A MEDITERRANEAN CAPITALISATION ALLIANCE**
  - Challenge holder (deputy of owner): **Roula Khadra** (CIHEAM-BARI)
  - Prototype holder and reporter 2.1 **Paola Pinna** (NRD UNISS)
  - Prototype holder and reporter 2.2 **Manuel Sapiano** (EWA)
  - Prototype holder and reporter 2.3 **Luna Al-Hadidi** (NARC)
  - Facilitator: **Paolo Martinez** (FUTOUR)

- **Challenge 3: CIRCULAR WATER FOR CIRCULAR BUSINESS**
  - Challenge holder (deputy of owner): **Monther Khanfir** / **Dahlia Sabri** ((Innovation policy advisor/ Confederation of Egyptian European Business Association - CEEBA)
  - Prototype holder and reporter 3.1 **Lobna Mansouri** (CERTE)
  - Prototype holder and reporter 3.2 **Ahmed Ghrabi/Hela Hassairi** (CERTE)
  - Prototype holder and reporter 3.3 **Karim Ergaieg** (Institut National Agronomique de Tunisie))
  - Facilitator: **Elisa Tachis** (FUTOUR)

- Support team
  - **Barbara Sarnari** with **Alessandra Fiorilla** (SviMed): overall supervision and communication.
  - **Marco Martinez** (FUTOUR): liaison and support of the Facilitation Team.
  - **Ghazi Chouk, Mahmoud Beltifa** (CERTE)**:** registration, logistics, communication and consumables.

2.3 The running of the MEDWAYCAP Tunis Innovation Camp

The programme of the Tunis MEDWAYCAP Innovation Camp

The programme of the Innovation Camp involved one and a half days of highly interactive work based on the divergent and convergent thinking and on the prototyping mindset of the Innovation Camp.

The theme of the first day of the IC was to meet and enter, for the participants to know each other, to then explore the challenge and opportunities so as to deepen the understanding and start building the initial prototypes.

Day 1: Tuesday February 7th - GDA Sidi Amor - Tunis

Theme	*Meet & Enter* *Explore the Challenge* *Explore The Opportunities* *Deepen Understanding* *Build initial Prototypes*
Morning	*9:00* Opening Plenary. The MEDWAYCAP Innovation Camp Challenges and Method
	10.00 In Groups - Meeting the group - Exploring the challenge (reframing) - Exploring the opportunities (and setting ideal goals) - Generating first ideas and enriching the idea - Converge ideas (identify prototype groups)
	LUNCH: ca. 13.00 -14.00
Afternoon	14.00 in groups Create initial prototypes in breakout groups - Brainstorm in groups on the prototype goals, actors as beneficiaries and supporters, what can hinder and what can help the prototypes. - Prepare for an Inter-Challenge consultation 17.00 Inter-Challenge consultation 18.00 Plenary closing and announcements for next day
	20.00 Dinner

During the second day of the IC participants continued the development of the prototypes, reflecting and renewing their perspectives on the basis of the feedback from others and thinking of a roadmap for their implementation in the short, medium and long term that was then presented and evaluated by the participants and by the challenge holders in terms of the impact and feasibility of the prototypes.

Day 2: Wednesday February 8th - GDA Sidi Amor - Tunis

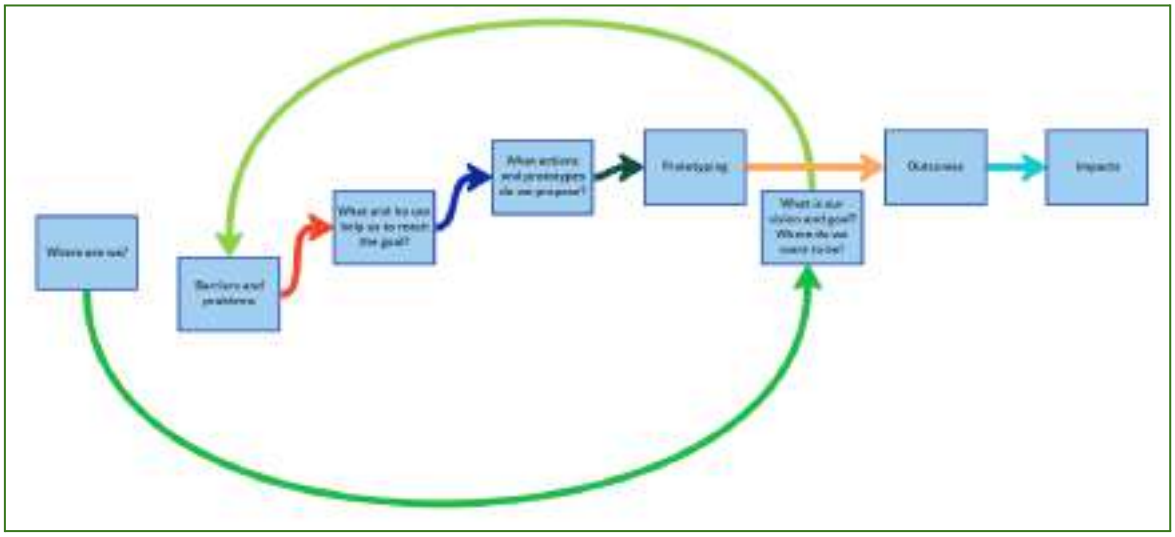
Theme	*Thinking Forward* *Reflect & Renew* *Present*
Morning	*9:00* Plenary start
	9:15 In Groups - Feed-forward: Road-mapping - Next 6 weeks/6 months/6 years - Revisiting opportunities and adding new insights - Thinking ahead to plan 6-week prototyping period - New prototypes - Complete prototypes
	11.30 Inter-Group presentations in the main plenary - The ways forward: prototyping on location
	13:00 End of the Camp
	LUNCH: ca. 13.00

Opening Plenary

The initial opening plenary and welcome was addressed by the main host GDA Sidi Amor, CERTE, CHIEAM Bari and SVIMED.

The three challenges of the Innovation Camp were briefly introduced and FUTOUR, after a short ice-breaker, described the main working method and mindset.

The embedded principles of the IC envisage that participants start by “reflecting on the current situation and where they are at the moment”, then imagine the ideal end-state “what is the ideal vision and goal, where they want to be” by diving in an ideal future with positive outcomes.



Once there in the future they go back to the present and reflect on the current barriers and problems, on what and who can help them to reach their goal to then design specific actions and prototypes that can generate medium term outcomes and longer term impacts.

The participants then spit into the three groups to start addressing the challenges.

In this section we describe the activities performed in each challenge group and the IC methods adopted to generate prototypes and an action plan to address the challenges.The facilitators provided every group with a handout that explained the steps of each phase of the prototyping process.

Meeting the group. Who are we? Knowing each other's competencies, skills, experiences

The Innovation Camp induces a constructive dialogue among people with different stakeholder/actor quadruple-helix backgrounds. The first step is for participants to know each other, to discover the distinctive competencies and resources that each one brings to the Tunis Innovation Camp on Non Conventional Water Resources.

Participants were asked to create pairs to interview and describe each other with **drawings** and key words on an A4 sheet in about 10 minutes.

The facilitator gave some guidelines for the reciprocal interviews so as to collect with drawings and keywords more information on the other person's:

- Competences and "superpowers"
- Needs and challenges
- Dreams and aspirations
- An original element that may help you and the others to remember the person that was interviewed ;-)

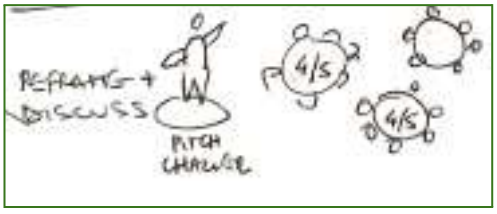
Participants were then invited to show the drawings and keywords and introduce the other person in 30 seconds starting with "I am really glad to introduce you to ….."

This process helped everyone in the group to know more about each other in a light way that stimulated active listening and amused the participants building the team spirit. The process generated a series of visual profiles of the participants that were exhibited throughout the IC as "artworks" on the panels and free walls of each challenge group.

Understanding and exploring the challenges and the purpose of the challenge group

Addressing a challenge to find innovative solutions requires participants to better understand the challenge, its purpose and to reframe the challenge by reflecting on it through some questions that would trigger the discussion among participants.

In this phase **participants** were invited to sit at the tables in groups of up to five people. Each group was asked to assign the following roles: a timekeeper, a moderator and a presenter.



The **challenge holder** then described in greater detail the challenge addressed by the group.

The **group facilitator** launched a question to all groups for rapid discussion rounds of 6 minutes. Eg questions such as: Why are we addressing this challenge? What is the challenge? What makes it a challenge? Is it always a challenge or only sometimes? Can you make it more concrete?

For each question the groups discussed for 6 minutes and identified some issues and questions by writing them on an A4 sheet that was then handed on to the challenge holder.

At the end of all the question rounds a few minutes were given to the Challenge Holder to provide feedback and inspire the participants in view of the next step on the identification of the possible prototype topics.

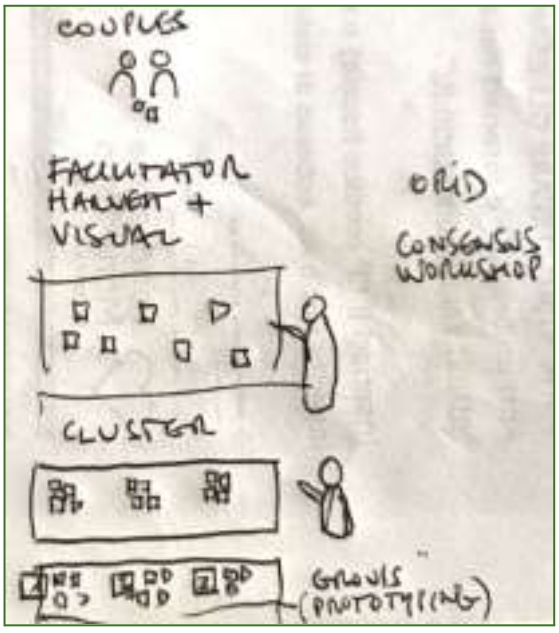
Once participants had a better understanding of the challenge and current situation by exploring the challenges and opportunities the next step was that of setting ideal goals so as to identify possible

prototypes: that is, where we would like to be to then reflect on what steps to take to reach that goal.

Setting the Goal /Objective of the Prototyping

In this phase participants triggered the iterative process of the Innovation Camp by continuing to explore the opportunities and setting ideal goals, generating and enriching the first ideas and converging on them to identify prototype groups.

To define the ideal Goals and Objectives every challenge team performed a consensus workshop process.



Participants were asked to change tables and to form pairs. Then everyone was invited to reflect in silence and write 3 goals that they would like to achieve with reference to the challenge and to imagine positive outcomes while being concrete/realistic. Goals and objectives would have to also be something that each participant could contribute to, not just a list of wishes that would have to be performed and achieved by others. What can/could I do, what can/could we do? What commitment and change can we achieve together?
After completing each individual list of goals the facilitator invited them to share their three goals, one at a time, with their partner, to select two of them and to write them on a large sticky note, one for each goal: synthesis (7 words), one concept per sticky-note, write legibly in capital letters.

The facilitator then started collecting the sticky notes with the goals on a shared panel that was visible for all participants so as to identify clusters with the help of the group in four rounds:

- 1st round: collecting one top card from each pair of participants and asking the participant to read it aloud, then adding the large sticky note with the goal on the panel so that every participant could both understand its meaning and content. This generated a first list of goals that could be visualised by all participants. In most cases as there were 12 to 14 participants the poster had about 6-7 initial goals.
- 2nd round: the facilitator then collected the second large sticky note with a new goal that had not been mentioned before. Participants were asked not to repeat goals that had already been presented in the first round and to just add new and different ones. At the end of this round there were about twelve to fourteen goals distributed across the main shared panel.
- 3rd round: the facilitator read aloud every goal and with the help of participants positioned similar ones close to one-another. Then clustered goals with similar aims and concepts were provided a new name that represented the cluster aims.
- 4th round: participants assigned priorities to the prototypes so as to select the two or three that would be addressed in the prototyping groups and registered in them, making sure that every group would have a similar, balanced, number of people.

Prototyping in challenge groups

Participants started working in their new prototyping groups to explore opportunities and develop first ideas on a first canvas representing their prototype of proposed actions to face the challenge. Every group was supported by a prototype holder/reporter to collect the information and develop the prototype reports.

Every prototype group worked on a canvas based on four steps and guiding questions:

1. **OBJECTIVES/GOALS What we want to achieve** (Outcomes and Impact). What is our goal? What do we want to do and achieve? What are the outcomes we expect to generate?
2. **ACTORS. For whom** (final beneficiaries) **and with whom** (experts and partners). Who are the actors we need to involve in terms of beneficiaries and partners/supporters?
3. **ACTIONS. How to do it** (Short six weeks, medium six months and long term 6 years: What/How/Who/When). How do we get there? What can be the hindrances and barriers? What can be the strengths that support us in the process?
4. **PRIORITIES What we should start from** (Select the top priorities). How can we monitor and measure the achievement of the goals?

Each prototyping group had about 5 participants and worked for two hours by using the **1-2-4-All process for each step of the canvas**. In each group they started reflecting individually, then shared the ideas in couples, then as a group to find the emerging issues.

Once every canvas was completed the every group within the challenge team shared their initial ideas of the prototypes so as to further improve them in view of the inter-challenge presentation and selected a spokesperson.

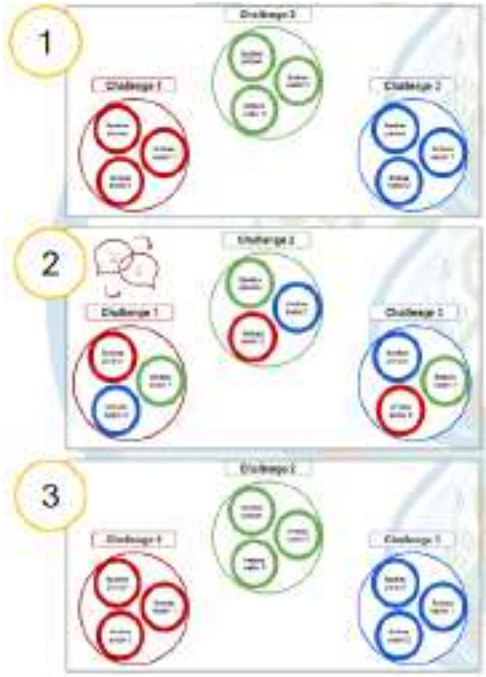
The inter-challenge consultation

In the inter-challenge consultation the challenge groups receive feedback on their prototypes from other challenge group participants so as to further improve them, identify connections, opportunities and synergies.

The inter-challenge is based on three consultation steps.

1. Preparation within the challenge group

- Identify a spokesperson(s) to present the prototypes and rehearse the presentation.
- The **spokesperson(s)**, the **challenge holder**, the **facilitator** and **prototype holders** remain in the challenge group to host other ambassadors.
- The remaining people are divided into two balanced teams to go as **ambassadors** to visit other challenge groups and provide support and advice. Ambassadors visit another challenge group. They are peer advisors that ask questions, provide ideas, suggestions and feedback to the other prototypes. They also collect suggestions for their challenge and prototype group.
- **Prototype holders** take notes on the feedback and questions received by the group hosting the presentation. The challenge holder listens carefully to collect elements for the bigger strategic picture.
- When all challenge groups are ready the ambassadors move to the hosting group .



2. Inter-challenge consultation

- **15 min. The spokesperson describes the prototypes** and asks the ambassadors for questions, suggestions, ideas, connections,.
- **15 min. Ambassadors** provide feedback to each prototype through three main questions after all the presentations and collect ideas and information to bring it back to their challenge group **:**
    - *What are you impressed by?*
    - *What would you make stronger?*
    - *What would you change?*
- ***The prototype holder/reporter*** *writes all comments and suggestions that are made in this phase.*

3. Reflection on feedback within the challenge

- Ambassadors go back to their challenge group, bring the ideas, suggestions and proposals that were collected and consult with their spokespersons.
- The challenge group reflects on the main feedback provided to their prototypes and on ideas collected by the ambassadors in other presentations
- These ideas serve to improve and adapt the prototypes.

The feedback received during the inter-challenge presentation at the end of the first day stimulated further reflections and possible adaptations of the prototypes.

The second day of the Innovation Camp and roadmap for the prototypes

In the second half-day of the camp, during the opening plenary participants were invited to prepare a presentation that would propose concrete steps in the short, medium and long term.
Through an ice breaker based on promoting a positive and constructive approach they were asked to think of activities that they could do as teams, individually and by inviting others within their network. That is, to propose prototypes that would be ambitious and at the same time manageable by the participants, not to be delegated to other organisations or hierarchies that were not present, unless they had an idea and direct contacts to mobilise them.

The format that was provided to develop the final prototype roadmap was asking participants to propose concrete actions and tasks needed to achieve the results after the innovation camp. The format of the posters would include the following items:

- What: what change? What purpose? What impact?
- HOW: which activities?
- WHO Which people? Which resources?
- WHEN? What to do in 6 weeks, 6 months and 6 years? What milestones? How will we know we are getting there? How do we measure progress?

The groups worked in parallel and prepared the presentations with three prototypes presented by challenge 1, three by challenge 2 and two by challenge 3.

The next section describes the challenges and the outline of the prototypes.

3. CHALLENGES AND PROTOTYPES

In this section we summarise the challenges and provide the abstracts of each prototype. For the full description of the prototype reports see annex A.

3.1 CHALLENGE 1 - NON-CONVENTIONAL WATER CLUSTER OF KNOWLEDGE

NCW is considered as a resource by the water community. However, until today, despite the existing management, treatment and valorisation solutions and best practices, **decision makers and economic actors have not widely adopted these solutions.** Main shared reasons are that solutions are locally scattered/fragmented and do not enable to reach the critical threshold necessary for a driving impact of change. On the side, the multiplicity of technologies and solution possibilities is such that decision-makers are not able to identify the most appropriate solution for their needs. Finally, the access to the solution's data (technologies, context, performances, cost, etc.) remains difficult.

Identified Need:
Consolidation of the **knowledge framework on NCW** valorisation identifying and harmonising best practices, key results, lessons learnt in the Mediterranean area promoting benchmarking and access for capitalization.

The aim of the Innovation Camp's challenge: KNOWLEDGE HARMONISATION using place-based analysis of best practices and methodologies to foster a multilevel water governance.

Main questions:

- ✓ *How can we make knowledge related to NCW really **transferable and re-usable?***
- ✓ *How can knowledge become **accessible and socially oriented**?*
- ✓ *How can we **identify** innovative and **transferable** knowledge and boost its replicability?*
- ✓ *Which **harmonisation** tools have to be developed?*

Additional related questions :

- *What kind of **partnerships** are needed, and at what levels, to contribute effectively to the transfer of know-how related to NCW solutions?*
- *What **professional skills** are needed in the present and future to foster a greater use of NCW? How can we **innovate educational paths** (school and university) and **vocational** education (professional orders and associations)?*

Challenge Group Participants

- **Challenge holder(s):** Latifa Bousselmi (CERTE)
- **Facilitator:** Giovanna Martinez and Silvia Martinez (FUTOUR)

- **Prototype holders and reporters:** 1.1 **Kostas (Konstantinos) Plakas** (CERTH); 1.2 **Thouraya Mellah** (ESEN), 1.3 **Amani Charrad/Hichem Ben Hassine (**ANPR/IPT); **Participants:** Latifa Bousselmi (CERTE, Tunisia), Konstantinos Plakas (CERTH, Greece), Ammar Mohammad Hussein (PWEG, Palestine), Alberto Carletti (Sassari University, Italy), Houssem Hmaidi (Ministry of Equipment and Housing, Tunisia), Saddam Abu-Nawas (Aqaba Water Company, Palestine), Jihan (GDA Sidi Amor, Tunisia), Thuraya Mellah (CERTE, Tunisia), Henry Debattista (EWA, Malta), Yaser Abunnasr (American University of Beirut), Ahmed Aziz Raach (Enactus INAT, Tunisia), Nabeel Bani Hani (National Agricultural Research Center (NARC), Jordan),Oussama Hsini (CERTE,Tunisia), Khair Al-Deen Bsisu (University of Jordan, Jordan), Sura Al-Sbaehi (University of Jordan, Jordan), Giulio Conte (Iridra, Italy), Hichem Ben Hassine (IPT, Tunisia), Mohammad Arabiat (The University of Jordan), Amani Charrad (ANPR, Tunisia)

3.1.1 Summary of the prototypes on Challenge 1

Prototype 1.1. - Fostering the Dissemination of the MEDWAYCAP Best Practice Inventory Platform

With the aim to change the paradigm of non-conventional water valorization in the Mediterranean region MEDWAYCAP project established an inventory platform in which the water community and final beneficiaries (municipalities, farmers, water utilities, water management authorities, etc.) can be informed about implemented Best Practices (BPs), Innovative Solutions and Sustainable Strategies for an urban-rural integrated development towards mitigating the water scarcity needs and the effects of the climate change in the arid and semi-arid countries of the Mediterranean.

In an effort to foster the dissemination of this open and dynamic platform, making it a unique reference point in the field of NCWR valorization, it is important to draw a concrete and effective Stakeholder Engagement & Dissemination Plan (SE&DP) addressing to diverse final beneficiaries, with the aim to increase the portfolio of BPs in the platform and enlarge its potential users.

The SE&DP shall be elaborated by MEDWAYCAP partnership right after the completion of the 1st Innovation Camp with the actual involvement of the responsible organizations for the development of the BP inventory platform (CERTE, ESEN) and the two research institutions (NRD-UNISS and CERTH) that have developed the two interactive platforms connected to the BP inventory platform (MENAWARA and AQUACYCLE platforms). For this scope, experts with specific know-how and experience on communication and dissemination shall be appointed with the responsibility of drafting and implementing the SE&DP.

To this end, they shall suggest the best dissemination channels for scientific and end-user awareness. Cross-cutting measures, alongside specific communication and awareness actions should be prioritized in order to achieve the desired impact and attract adequate attention. All those jointly will increase the perception of the target groups on NCWR and the available technological solutions / BPs.

Prototype 1.2. - Bridging Ideas on Sustainability

The populations of the Mediterranean are more needed than ever to support the management of all available water resources in the context of growing water scarcity, which seems to be aggravated by climate change and increasing demands. In such conditions, there are two concerns with good water management: firstly, non-conventional waters are resources that should be considered with the same good management standards. Secondly, the cornerstone of sustainable water resource management

appears to be effective management on a decentralised basis. To optimise the non-conventional water resources uses, various best practices are put into place, and context-specific solutions are devised. These initiatives are little known and poorly reproduced due to a lack of visibility and efficient ways to disseminate knowledge and ideas widely. The Best Practices Inventory platform is designed to contribute to bridge this gap, and it is being developed within the MedwayCap project framework. The platform is a business intelligence solution that aims to foster good practices by disseminating information and spreading knowledge. The "bridging idea sustainably" prototype is a collection of new functionalities that will be added to the platform, to strengthen its credibility, reliability, accessibility, and user-friendly features, as well as to assure its financial viability.

The platform includes tools for inventory and data gathering, web scraping to identify new BP and creative solutions, reporting, and data analysis. It provides individual space for each BP holder to register and present his solution. Along with the aforementioned platform features, the prototype “Bridging ideas sustainably” brings two additional components:

1. Peer review process, standards and certification: BPs will be reviewed and certified as part of a process that is designed to do just that. A community of experts will be established in order to oversee this process and establish the standards and guidelines necessary to add BPs to the platform. This procedure would guarantee the accuracy of the information spread.
2. Prospective analysis of the new knowledge development: utilising AI to examine the new ways of thinking and the creation of new concepts and solutions, as well as the dynamics of the contributors, their interactions.

Prototype 1.3. - Social Knowledge on Non-Conventional Water

The aim of this prototype is to Integrate in the cluster of knowledge people’s perception and experience in Non-Conventional Water (NCW) through social survey and analysis. People need to support the scientists and decision makers to adopt strategies for NCW diffusion and to proactively approach water scarcity and support other prototypes in their endeavours. This can be achieved by social surveys and analysis of end users, domestic users, farmers, industry, and by linking this prototype to other prototypes to ensure long term social impact. It is a preliminary phase of dissemination and education. The prototype can be considered as a facilitator for the other prototypes, and not standalone prototype in order to ensure its use and impact. It will involve social scientists, universities, researchers, domestic users, women, children, people in general, farmers and industrial users and syndicates and NGOs. Prototype financing will depend on funding from EU or National funding programmes.
In a short time, the prototype should be integrated to other prototypes on the dissemination and education. As a second step, the proposal for the project funding should be developed.

Conclusions of the Challenge Holder CERTE

MEDWAYCAP project implemented a BP inventory platform for Non Conventional Water which is related to the challenge one “NON-CONVENTIONAL WATER CLUSTER OF KNOWLEDGE ». The BP inventory is based on collection and provision to the water community of implemented solutions (best practices BP) with systematization, clustering, extraction and sharing of know-how while highlighting contexts, impacts and sustainability to make it transferable and reusable. The three prototypes are interlinked and strengthen the BP inventory platform's functionality, adhesion of the water community and engage stakeholders around it for its embedding in the strategic, technological and social contexts and existing dissemination channels. The integration of social experience through the engagement of social community remains a challenge that will be addressed as a first step through a social survey and analysis. Prototypes will improve visibility and credibility, which can then

play a determining role in the adoption and valorisation of BPs and a prospective one in the processes of knowledge or new concept generation. The development of each prototype requires the elaboration of an action plan, it will involve as the first phase:

- Partners and associated partners mobilisation to inform, identify needs and create synergies with Mediterranean programmes, agencies, centres and platforms as part of Stakeholder Engagement & Dissemination Plan (SE&DP).
- The design of an organisation chart and an operating plan to increase the platform credibility and reliability.
- The initiation of a collaboration with experts in the social field to build the social survey and the methodology to consider, in the BPs inventory platform, people's perception and experience in Non-Conventional Water (NCW) to ensure long term social impact ; as well as the possibilities of building a multi-disciplinary project around it.

3.2 CHALLENGE 2 - TOWARDS A MEDITERRANEAN CAPITALISATION ALLIANCE

This challenge intends to enact a sustainable strategy and establish a Memorandum of Understanding (MoU) that: overarches Best Practices s & Enabling Environment, and supports the process of instituting a resourceful, clearly targeted debate, towards the implementation of a Med Alliance, as a vehicle for collective learning among research, policy, practice and investment. The alliance will enable a pool of ideas and value actions that will support the progressive enacting of a medium-long term strategy, a reference base for and decision making to to finally design a Mediterranean pathway toward an integrated vision of the water governance at domestic and agricultural level, including NCW reuse, and acting to support the Union for Mediterranean - UfM Water Agenda & Arab Water Council.

Identified Need

Capitalising the fragmented and rich experience of the Region is core to foster change at Mediterranean level. A MED capitalization alliance for collective learning is strategic to address this need and specifically, strengthen the value and increase the impact of the innovative integrated NCW management solutions. The aim of this Innovation camp challenge is to enact a sustainable strategy and establish a Memorandum of Understanding (MoU) that overarches best practices (BPs) and enabling environments (EE) towards the implementation of a **Med Alliance** among research, policy, practice and investment, for an integrated vision of water governance at domestic and agricultural level, including NCW reuse.

Main questions:

- ✓ *How can we **improve coordination and networking** among individuals and institutions to support the steps to be taken for an **NCW sustainable strategy implementation?***
- ✓ *How can the scheduled initiatives in the Region **boost the implementation of a sustainable strategy** to address the challenge of treatment and reuse?*
- ✓ *What **measurable milestones** could be established to assess the pertinence of joint initiatives?*
- ✓ *What are the actions to undertake or/and the process to implement to **enforce the implementation of the MoU**?*

Challenge Group Participants

- **Challenge holder:** Roula Khadra (CIHEAM Bari).
- **Facilitator:** Paolo Martinez (FUTOUR).
- **Prototype holders:** 2.1) Paola Pinna (NRD UNISS); 2.2) Manuel Sapiano (EWA); 2.3) Luna Al-Hadidi (NARC).
- **Participants:** Manuel Sapiano (EWA, Malta), Luna Al-Hadidi (National Agricultural Research Centre NARC, Jordan),Tarek Ahmed El-Sammn (Arab Water Council, Egypt), Paola Pinna (UNISS), Ilaria Principi (Iridra, Italy), Ahmad Al-Salaymeh (The University of Jordan), Alessandra Paulotto (UNISS, Italy), Joanna Incorvaja (Ministry for Environment, Energy and Enterprise, Malta), Anna Crescenti (WeWorld GWC, Italy), Roula Khadra (CHIEAM Bari, Italy), Kenza Guelloub (Enactus INAT, Tunisia), Marco Graziani (EWA, Malta)

In the opening presentation of challenge 2 by its challenge holder Roula Khadra, a flyer describing the main aims of the Memorandum of Understanding on the alliance for long-term capitalization Strategy at Mediterranean level was provided to all challenge group participants. We provide a copy of the flyer below.

3.2.1 Prototypes on Challenge 2

Prototype 2.1. - Regional Framework

The primary purpose of Prototype 2.1 is the definition of a coordinated framework for the promotion and mainstreaming of NCWR at national and regional level in the Mediterranean region. This, since currently there is limited cooperation between Mediterranean countries (and regions) on the development of policy frameworks for the water sector. Such cooperation is predominantly at the policy (political) level and does not involve yet the Communities of Practice and Living Labs.

Within the Mediterranean Region, cooperation in the water sector is currently defined through the following frameworks:

(i) Mediterranean countries which are Member States of the European Union or accession countries cooperate at the level of the European Union with the cooperation parameters being defined by the European Water Acquis;

(ii) Countries in the Western Mediterranean cooperate through the 5+5 water agenda, cooperation being generally at a higher political level. NCWR is identified as a priority element within the 5+5 water agenda, and initiatives to support NCWR mainstreaming are planned such as the Western Mediterranean Water Academy; and

(iii) Countries in the Mediterranean (and the EU) cooperate through the Union for the Mediterranean's Water Agenda, which has developed a regional policy framework based on the nexus approach through addressing a) the Water-Energy-Food-Ecosystem (WEFE) nexus; b) the Water Employment and Migration (WEM) nexus; c) Water Supply, Sanitation and Hygiene (WaSH) nexus; d) the Water and Climate Change Adaptation (WCCA) nexus, complemented by a regional financial strategy for identifying financing opportunities for the regional water sector. This regional policy framework addresses the mainstreaming of NCWR in water management planning through transversal actions under each nexus.

Whilst existing regional frameworks do address the main water management challenges experienced in the Mediterranean Region, it is felt that there is limited top-down communication between these high level policy frameworks and action on the ground in the Mediterranean Member States. Therefore, the main action being proposed under Prototype 2.1 relates to the establishment of the necessary structures to link these high-level policy frameworks with the Community of Practice (grassroots) working in the water sector, and thereby establish a more solid link between higher level decision-makers and practitioners (CoPs) during the future development of the Mediterranean Regional Water Management Framework. This will make the process more effective and will optimise the already existing framework, ultimately enabling a broader impact in the mainstreaming of NCWR while planning policies, since they will be more concretely diverted towards the needs of the Med region.

In this view, the prototype deems necessary the facilitation of a bottom-up process leading to **a)** easier horizontal relations/communication among same-role insiders (technicians, directors, experts, etc.) across the Med countries; **b)** reinforcement of capacity building activities involving experts, stakeholders and general public within the existing *Living Labs*; **c)** set-up of a common place of discussion for the Mediterranean *Community of Practice* (CoP) to create connections with high level EU decision makers, technology and market experts within the current Regulatory Framework.

Prototype 2.2. - Water re-use Community

The focus of the prototype is to establish a Community of Practice (CoP) on water reuse that works at MED Alliance level through different practices (webinars, meetings, capacity building).

The purpose of the CoP is to raise awareness on the concept of water re-use and share best practices. The CoP will be the "space" to engage and share different perspectives, interests, and needs, and ultimately to co-produce knowledge.

It will work in two dimensions: regional and cross border level. The CoP is composed of the same stakeholders identified in Challenge 2_prototype 2.1: the network of Living Labs, Local Authorities and decision makers, NGOs, Investors, Business Sector, Schools and Universities, Civil Society at large, and so on.

The final challenge will be to effectively involve all stakeholders in knowledge co-production activities and to maintain the interest at its highest.

Prototype 2.3. - Network of Living Labs towards a MED-Alliance

The purpose of this prototype is to create a network of living labs (LL) within the MED countries that can share and capitalise experience, support job creation, catalyse the change in positive perception towards the use and reuse of non-conventional water (NCW) resources and finally establish a good linkage between NCW users and decision makers with a bottom-up approach.

The suggested network of the LLs will operate in innovation hubs for non-conventional water reuse, and advocate for change in the decision making and community perceptions.

It is expected that living labs can be a platform to mature innovative technologies and approaches, develop training and capacity building activities to enable engaged stakeholders to access dedicated financial mechanisms.

The LL are open innovation labs allowing for cross fertilisation among different experiences, actors, and geographical areas.This exchange is part of the maturation process. Among the actors, the following are targeted: NGO's and research centers as planners, farmers and farmers' and water users' associations, private sector, utilities/municipalities, and the civil society.

Conclusions of the Challenge Holder CIHEAM Bari

The three prototypes represent a revolving loop that enables an inclusive strategy of capitalization, as part of the development of a Mediterranean pathway, toward an integrated vision of water management that includes the mainstreaming of NCWR at national & regional levels.

To ensure sustainability and mobilise forces to foster change, the prototypes focus on the co-creation of spaces that facilitate a bottom-up process and engage the different stakeholders.

Living labs are active corridors for raising awareness, building capacity, engaging, and influencing a cross-Mediterranean CoP that: i) facilitates horizontal relations/communication among same-role insiders; ii) highlights higher level of brokering including high level EU decision makers, technology and market experts; and iii) acts as a catalyst that encourages targeted debate in certain frameworks with aim to break boundaries and silos and reach a mutual understanding.

A plan enabling the implementation of the strategy and accounting on a first phase for the following shall be developed:

- the techniques, technologies and approaches capitalised in the active Living Labs

- the community of practice matured in the framework of the capitalised projects.

The MoU shall seal the commitment toward the implementation and further development of the strategic plan.

3.3 CHALLENGE 3: CIRCULAR WATER FOR CIRCULAR BUSINESS

The objective of this challenge is to overcome barriers to financing flows toward the water sector and contribute to increasing investment at the local and national level as the primary goal of a circular economy is to maintain the value of products over a maximum period of time. The mapping of relevant economic entities and projects has to be defined to overview the regional opportunities comprehensively. In addition, to identifying and engaging key stakeholders to enhance the green jobs opportunities related to the proposed best practices. The third challenge also aims to promote Capitalization projects on water efficiency and the green economy.

Identified Need: ***CIRCULAR BUSINESS, Translating best practices into regional and local plans***

The aim of the Innovation Camp's challenge: To foster the replication & mainstreaming of best practices & highlights for decision-makers at local/national & regional levels through cross-border initiatives addressing environmental challenges, promoting a green economy, sustainable development & long-term endogenous economic growth in the MED area.

Main questions:

- *How can we foster NCW valorisation so as to boost the circular economy,adopt new market dynamics and **upscaling measures** at the local level?*
- *How can we promote investments in NCW technologies so as to **increase water efficiency** and its use for irrigation and domestic purposes?*
- *How can we get the **private sector on board?***
- *What **public support** is required to deal with the risks in relation to innovation and a limited market?*
- *Which pillars and strategies do we need to go towards a circular and **green water economy**?*

Challenge Group Participants

- **Challenge holder(s):** Dahlia Sabri (Confederation of Egyptian European Business Association - CEEBA) with Monther Khanfir (Governance and Innovation Policy Advisor)
- **Facilitator:** Elisa Tachis (FUTOUR)
- **Prototype holders:** 3.1 Lobna Mansouri (CERTE ; 3.2 Ahmed Ghrabi/Hela Hassairi (CERTE); 3.3 Karim Ergaieg (INAT)
- **Participants:** Monther Khanfir (Innovation Expert, Tunisia) e Dahlia Sabri (CEEBA, Egypt), Lobna Mansouri (CERTE, Tunisia), Dimitris Sioutopoulos (CERTH, Greece), Naem Mazahreh (National Agricultural Research Centre NARC, Jordan), Monther Hind (PWEG, Palestine), Dalanda Hamdi (CERTE, Tunisia, Hela Hassairi (Certe, Tunisia), Ahmed Ghrabi (CERTE, Tunisia), Karim Ergaieg (National Agronomic Institute of Tunisia), Alessandra Fiorilla (Svimed, Italy), Hamza Wasti (Enactus INAT, Tunisia), Fabio Masi (Iridra, Italy), Walid Barhoumi (ENICARTHAGE, Tunisia).

3.3.1 Prototypes on Challenge 3

The third challenge group developed initially three prototypes but then concentrated only on two:
1) Low (Cost/Tech) collective WWT and Reuse in Rural areas,
2) Water for future generation

We briefly summarise its core proposal of the third prototype and then describe in greater detail the prototypes that were completed.

The third prototype that was not completed had a focus on a new business model (APOC), i.e. to promote low Cost WWTP for small communities.

- Objectives/ Goals: commercialisation of the system (Business Plan), design & implementation already tested
- Actions: Business Plan, fund raising (incubation), creation of start-ups
- Actors: small communities (municipalities, farms, …), SMEs/ Start-ups, NGO
- Priorities: How to monetise and what

The participants then focused on the two prototypes below.

Prototype 3.1. - A low-(cost, tech) collective wastewater treatment (WWT) and reuse in rural areas (LCTWR).

This prototype titled "*A low- (cost, tech) collective method for wastewater treatment (WWT) and reuse in rural areas* (LCTWR)", describes a decentralised water management system as a viable alternative for rural areas. It aims to strengthen sustainable water management in the rural areas, with a focus on water-reuse, minimising the environmental impacts, facilitating the resources recovery and involve changes in the way in which perception, planning, and decisions are made regarding the governance of water resources. Additionally, this prototype emphasises a more holistic approach that considers the benefits of reducing the amount of waste at source, the option of recycling or reuse at the site, and the opportunity to strengthen the environmental, social, and local sustainable development of the community.

The prototype is based on conventional aerobic biological wastewater treatment units: the vertical trickling filters. It is suitable for small to medium-sized communities with a high filter loading rate and marked by their ease of operation, self-cleaning capacity, and efficient removal of pollutants. The prototype will be usefully applied in rural areas for treatment of domestic wastewater (It can be applied for bigger and smaller communities).Once applied, the prototype will enhance the local wastewater management systems, and will provide both ecological and human benefits.It will help to reduce the negative impact of untreated faecal sludge and wastewater on human health and the environment. With the ability to use the treated wastewater with high quality, for the irrigation purposes in agriculture, the prototype can enhance the crops productivity limited by water resources scarcity and offer the opportunity for farmers to cultivate diversified cultivations in the fields. Treated wastewaters can contribute to compensate for the gap between agricultural water demand and supply and provide consistently high-quality water throughout the year.

The prototype will address the final beneficiaries – farmers, technicians, extension agents, local authorities, researchers, and citizens – to equip them with state-of-the-art knowledge on non-conventional waters treatment techniques, management, planning and skills to reuse at local level for irrigation purposes. Furthermore, it will help to raise awareness among community, local authorities, and stakeholders about NCW reuse opportunities and management. Enhancement of green business and creation of new opportunities of jobs in the region will be also targeted in this challenge.

The actions proposed to design this challenge combines different steps as follows: (1) Assessment study on the social, economic, and environmental feasibility (area and beneficiaries' selection). In addition to a cost-benefit analysis in non-conventional water resources management at local level, (2) Fundraising (Capital investment, maintenance, monitoring…) through grants opportunities, specific calls…, which will be the most decisive step otherwise the project cannot be carried out. Then, (3)
A specific tailor-made and design step should be launched taking into account the specificity of the selected community (each community has a different size, so different approach of system conception and up-scaling). After that, (4) a tender for construction and implementation will be launched to (5) Startup the exploitation of the plan and ensure continuous monitoring (water quality, impact on soil, environmental, cultivations…). Eventually, (6) once the prototype succeeds in achieving its planned objectives, a dissemination and republication program in other regions would be launched (as a success story within the local circular economy concept).

Prototype 3.2. - Water for future generations

The prototype is a sustainable construction that brings together a number of nature-based technologies/solutions that can have an impact on the environment (water-energy-food).

A place that brings together different research results from international cooperation projects.

A site that is both demonstrative and educational. It will be a space for exchange between experts and citizens offering expertise on some NBS prototypes.

A training area specialised on the design of NBS for green entrepreneurs.

As it can be an educational space for children/pupils offering appropriate educational techniques and tools developed by young students/innovators/start-ups playing the role of scientific mediators.

Conclusions of the Challenge Holder - CEEBA

The first prototype gives an example of overcoming barriers to financing flows by implementing low-cost projects. This decentralised water management system could be introduced as a viable alternative for rural areas. This prototype shows the concept of circular economy in which natural system behaviour is replicated. Hence, water continues to be reused after treatment again in repeating cycles. The wastewater is converted into a new source of the resource. The prototype shows how the circularity approach benefits by regenerating wastewater that can be used in agricultural irrigation, aquifer recharges, and for irrigation of green landscapes. Wastewater reuse will decrease demand for freshwater, reduce the environmental impact and generate job opportunities. The circular economy model not only manages to regenerate and reuse wastewater, but also, in turn, it manages to enhance green business which strengthen sustainable development of local communities.

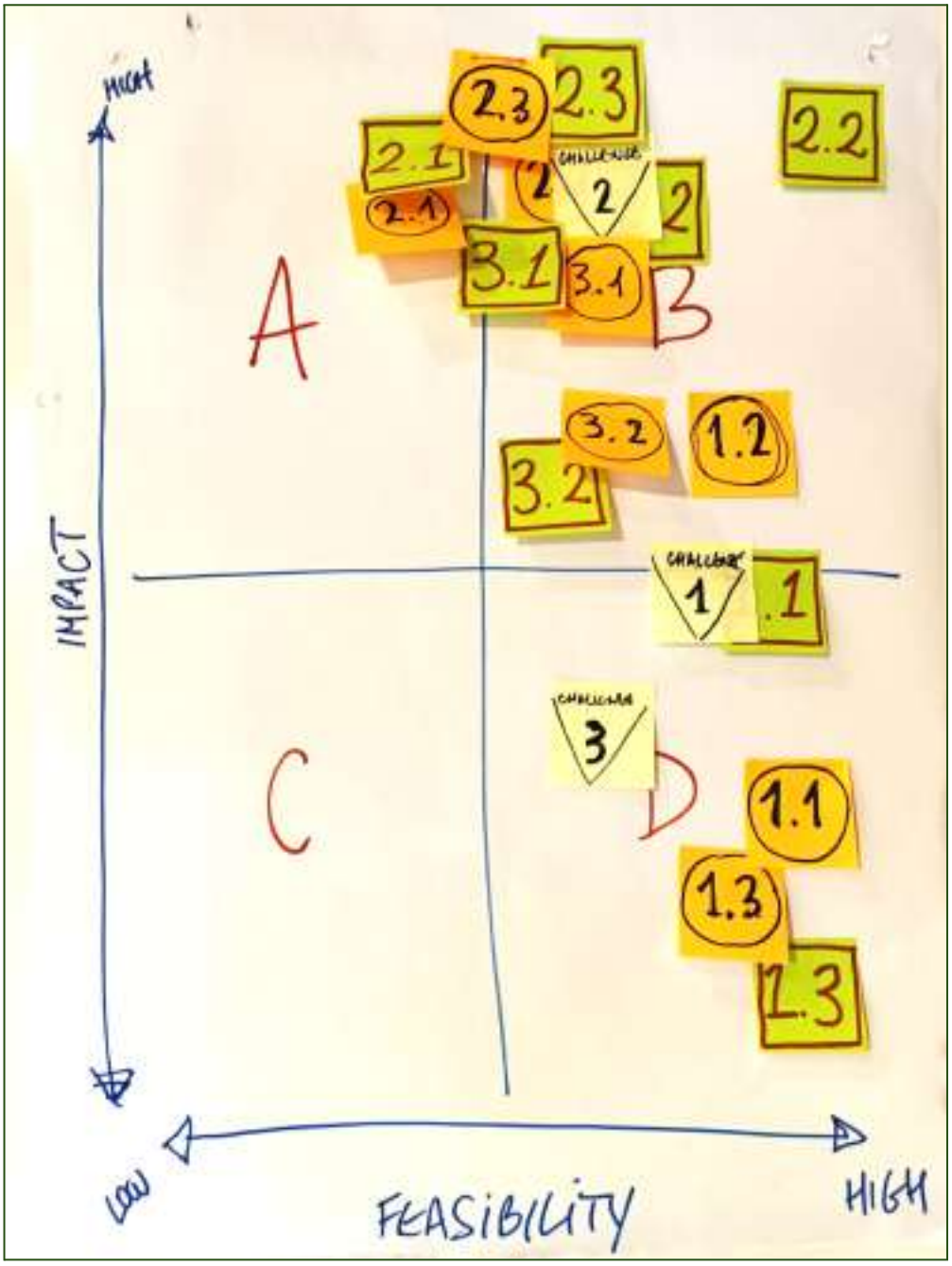
The second prototype represents an example of how to build the young generations' capacity and bridge the knowledge gaps on water nature-based technologies/solutions. The prototype highlights the need to raise effective education and improvement in educational curriculum at all school levels on the importance of a circular economy in the water sector. It is crucial for the society and economy to emphasise on future green opportunities and the new vision of circularity of water resources with training and educational changes starting from early childhood. However, innovative educational curriculum, teaching and learning methodologies and approaches, such as real-world problem-solving, and social interaction for the green economy concept, have been applied only at higher education levels, e.g, engineering schools. Hence, the prototype highlights the importance of early childhood education on water issues and raises awareness on widely adopted sustainable technologies.


CHALLENGE 2:
CIRCULAR WATER FOR CIRCULAR BUSINESS
WHAT
WHO
WHEN
PROTOTYPE 1
PROTOTYPE 2
WHAT
HOW
WHO
WHEN
Water for future generations
GOALS
ACTIONS
ACTORS
FACILITATORS

4 ASSESSMENT OF THE PROTOTYPES

During the closing presentations challenge holders, prototype holders and participants were asked to assess the impact and feasibility of the overall challenge prototypes and of the individual prototypes. The table below shows the feedback and assessment of the initial prototypes.

A. High impact and low feasibility (Very relevant/important but difficult to achieve)
B. High impact and high feasibility (Very relevant/important and feasible)
C. Low impact and low feasibility (Without significant impact and Very difficult to achieve)
D. Low Impact and high feasibility (without significant impact and feasible)



The picture above shows the chart that was used during the workshop to assess the impact and feasibility of prototypes and challenges. The orange sticky notes with the number within a circle represent the self-assessment by the prototype team while the green ones with the number within a square the assessment by all other participants. The yellow sticky notes represent the overall assessment of participants on how the challenge can address the NCWR issues through the prototypes.

In the table below we indicate the Challenge, Prototype number and title and the assessment given by the participants.

N.	**Description**	Assessment by **prototype team**	Assessment by **all participants**
	Challenge 1 - NON-CONVENTIONAL WATER CLUSTER OF KNOWLEDGE	D	B/D
1.1	Fostering the Dissemination of the MEDWAYCAP Best Practice Inventory Platform	B	B
1.2	Bridging Ideas on Sustainability	B	B
1.3	Social Knowledge on Non-Conventional Water	D	D
	Challenge 2 - TOWARDS A MEDITERRANEAN CAPITALISATION ALLIANCE	B	B
2.1	Regional Framework	A	A
2.2	Water re-use Community	B	B
2.3	Network of Living Labs towards a MED-Alliance	B	B
	Challenge 3 - CIRCULAR WATER FOR CIRCULAR BUSINESS	B	D
3.1	A low-(cost, tech) collective wastewater treatment (WWT) and reuse in rural areas (LCTWR).	B	A/B
3.2	Water for future generations	B	B

5 CONCLUSIONS AND LESSONS LEARNT

The Tunis Innovation Camp was a strong catalyst of creativity and generated in just one and a half day 8 very compelling prototypes. This was the result of excellent teamwork among the core team that organised and performed the camp and the participants.

The Tunis Camp has generated eight prototypes that will be pursued locally and among the countries involved in the MEDWAYCAP project.

In the Tunis IC the outcomes and prototypes of the first challenge have enriched the participants tremendously and brought important results that will continue to be pursued.

The second challenge has defined the main regional framework for the Mediterranean Alliance on NCWR that can lead to the design and signing of the MoU. The work of this challenge will continue in the next Jordan Innovation Camp with greater focus on how to implement the MoU.

The third challenge on circular economy and business solutions will need further attention and this will result in two specific challenges that will address these topics in Jordan.

The use of methods and the power of facilitation demonstrated that work can be more efficient, effective and enjoyable and this certainly leads to greater impact.

The Tunis Innovation Camp demonstrated that collective intelligence is an incredible tool and can meet the most complex challenges when it is in a creative environment. It promotes a holistic approach, the pillar for sustainable solutions.

The prototypes of Challenge 1 are interconnected and complementary which allows a global approach to address the different current limitations to a broad adhesion and sustainability impact of Non Conventional Water BP inventory platform as a knowledge sharing tool and more (bpinventory.com).

5 ANNEXES

5.1. Annex A - Prototype Reports of the MEDWAYCAP Tunis Innovation Camp

This Annex collects the detailed prototype reports to implement non-conventional water reuse (NCWR) and management within each Challenge.

For each prototype we have created a section that includes the prototype title, the participants and other information from the digital brainstorming sessions that can contribute to developing the slide presentation with keywords, the prototype report and a video clip.

All prototypes build on the Challenge and theme and on the specific objective of the prototype.

Each **prototype report** is written by the prototype holder with the support of the prototype team including the abstract and more in depth description of the Prototype (which is used in the main body of the final report).

The **prototype reports** describe in detail what has been explained with keywords in the final poster presentation and a roadmap and can help each prototype group in the follow-up activities to test the prototype.

5.1.1 Annex A.1 - Prototypes from challenge 1

Report of Prototype 1.1 - Fostering the Dissemination of the MEDWAYCAP Best Practice Inventory Platform

Title of the Prototype: Fostering the Dissemination of the MEDWAYCAP Best Practice Inventory Platform

- **Challenge 1: NON-CONVENTIONAL WATER CLUSTER OF KNOWLEDGE**
- **Challenge Holder(s):** Latifa Bousselmi (CERTE, Tunisia)
- **Facilitator:** Giovanna Martinez, Silvia Martinez (FUTOUR)
- **Prototype Holder**: Konstantinos Plakas (CERTH, Greece)
- **Participants:** Ammar Hussein, Saddam Abu-Nawas, Houssem Hmaidi, Alberto Carletti, Jihan (...)
- **Date:** 8th of February 2023

Konstantinos Plakas (CERTH, Greece), Ammar Mohammad Hussein (PWEG, Palestine), Saddam Abu-Nawas (Aqaba Water Company, Palestine), Houssem Hmaidi (Ministry of Equipment and Housing, Tunisia), Alberto Carletti (Sassari University, Italy), Jihan (GDA Sidi Amor, Tunisia)***

1. ABSTRACT OF THE PROTOTYPE (BASED ON THE SUMMARY PRESENTATION OF THE PROTOTYPE

With the aim to change the paradigm of non-conventional water valorization in the Mediterranean region MEDWAYCAP project established an inventory platform in which the water community and final beneficiaries (municipalities, farmers, water utilities, water management authorities, etc.) can be informed about implemented Best Practices (BPs), Innovative Solutions and Sustainable Strategies for an urban-rural integrated development towards mitigating the water scarcity needs and the effects of the climate change in the arid and semi-arid countries of the Mediterranean. In an effort to foster the dissemination of this open and dynamic platform, making it a unique reference point in the field of NCWR valorization, it is important to draw a concrete and effective Stakeholder Engagement & Dissemination Plan (SE&DP) addressing to diverse final beneficiaries, with the aim to increase the portfolio of BPs in the platform and enlarge its potential users. The SE&DP shall be elaborated by MEDWAYCAP partnership right after the completion of the 1st Innovation Camp with the actual involvement of the responsible organizations for the development of the BP inventory platform (CERTE, ESEN) and the two research institutions (NRD-UNISS and CERTH) that have developed the two interactive platforms connected to the BP inventory platform (MENAWARA and AQUACYCLE platforms). For this scope, experts with specific know-how and experience on communication and dissemination shall be appointed with the responsibility of drafting and implementing the SE&DP. To this end, they shall suggest the best dissemination channels for scientific and end-user awareness. Cross-cutting measures, alongside specific communication and awareness actions should be prioritized in order to achieve the desired impact and attract adequate attention. All those jointly will increase the perception of the target groups on NCWR and the available technological solutions / BPs.

2. WHY IS THIS PROTOTYPE IMPORTANT? [WHAT IS THE PURPOSE AND HOW DOES IT ADDRESS THE CHALLENGE?]

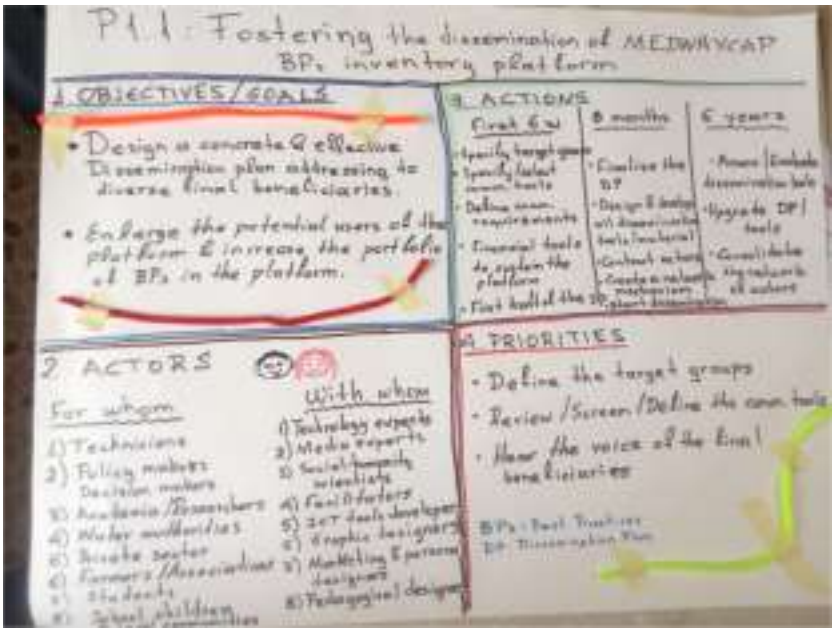
The importance of a SE&DP for the effective promotion and sustainability of MEDWAYCAP's BPs inventory platform is linked with the following key objectives:

- Improve the access and enlarge the dissemination of implemented solutions/strategies for non-conventional water valorization to the water community
- Increase the portfolio of BPs / innovative technologies / sustainable strategies of NCWR management in the platform
- Enlarge the potential users of the platform
- Connect with existing platforms
- Allocate the financial tools and actors to sustain the platform
- Making the platform an one-shop reference point for discovering innovative BPs in the field of NCWR valorization and management

3. DESCRIPTION OF PROPOSED ACTIONS [ACTION ORIENTATION IS EXTREMELY IMPORTANT]

The proposed actions include **awareness raising** on the platform through engaging in a **2-way dialogue**, **dissemination of the platform's attributes**, **knowledge transfer** to relevant stakeholders, and **creating an impact** on Mediterranean society as a whole. For this scope, the task force shall agree on the following actions, which are next analyzed to different sub-actions at short term, mid term and long term vision for a successful SE&DP:

- Identify the relevant target groups and select the most appropriate dissemination tools
- Develop the dissemination material and start the dissemination
- Sustain the platform and consolidate the network of actors



4. WHAT WILL THIS ACHIEVE? WHAT IS THE SOCIETAL IMPACT?

The availability of water in the Mediterranean basin is limited, therefore the area is one of the most vulnerable to water crises and to the impacts of global warming. Despite some encouraging progress, current water-use efficiencies in the drinking water and irrigation sectors still represent a challenge for the area. NCWRs can be an alternative water source and thus overcome water scarcity. Utilizing NCWRs, such as saline water, brackish water, agricultural drainage water, municipal wastewater, and water obtained at domestic level (greywater and rainwater), are increasingly growing as an emerging opportunity for solving water resource limitations and can be especially useful in arid and semi-arid areas. These are supplementary water sources requiring specialized processes such as desalination, rainwater harvesting, tertiary treatment technologies, which may lead to applying appropriate strategies for a specified goal. However, the applications of NCWRs and their impacts on water scarcity and water supply are limited in the Mediterranean region, and often carried out at a case study level (with bright exemptions in the area of Murcia, Spain, and in Jordan, where more than 90% of the municipal wastewater is reused for agricultural purposes). The lack of a tool that brings the collective knowledge together to better understand the BPs and innovative solutions of NCWRs' valorization highlights the significance of the platform to better planning and policymaking at country level for closing the water demand-supply gap.

5. WHO ARE THE FINAL BENEFICIARIES?

The potential beneficiaries are BPs' providers and users, who have different profiles and are possibly numerous. Stakeholders potentially range across countries and include the following categories, as preliminary identified by the prototype developers during the Innovation Camp. These address the questions "For whom" and "With whom", as proposed by the Innovation Camp facilitators. It is understood that a stakeholder mapping is necessary when drawing the SE&DP to facilitate stakeholder engagement from the very beginning.

FOR WHOM	WITH WHOM
Technicians Policy makers Decision makers Academia/Researchers	Technology experts Media experts Social-humanity scientists Facilitators

Water Authorities Local communities Private sector Farmers/Associations Students School children	ICT tools developers Graphic designers Marketing & personal designers Pedagogical designers

6. WHO IS RESPONSIBLE? (WHO WILL IMPLEMENT THE PROPOSED ACTIONS?) **WHO WILL BE INVOLVED?** (IN SOCIETY? IN THE CHALLENGE TEAM?)

Prototype 1.1 shall be elaborated by MEDWAYCAP partnership with the actual involvement of the responsible organizations for the development of the BP inventory platform (CERTE, ESEN) and the two research institutions (NRD-UNISS and CERTH) that have developed the two interactive platforms connected to the BP inventory platform (MENAWARA and AQUACYCLE platforms). The Challenge Holder is appointed with the responsibility to lead Prototype 1 and to monitor the proposed actions, the respective achievements and suggest solutions/measures for mitigating risks thus assuring an effective and efficient dissemination of the BP inventory platform.

7. DESCRIPTION OF THE BEST IDEAS

IDEA 1: For a broad dissemination of the BP inventory platform it is necessary to contact/involve existing strategic organizations, technology platforms, regional authorities, representatives of governments, knowledge and science as well as entrepreneurs, which have water and water reuse in their strategic agenda, namely:

- Union for Mediterranean (UfM)
- Water Europe (and relevant Working Groups)
- MEP Water (EU Parliament)
- GWP-Med
- HORIZON EUROPE partnerships (e.g. Water4All, Processes4Planet, etc.)
- …

IDEA 2: Capitalization of existing dissemination tools developed by ongoing and previous ENI CBC MED, PRIMA, HORIZON, INTERREG projects on water efficiency and reuse.

IDEA 3: Active involvement of MEDWAYCAP associated partners, especially those having broad networking, such as ASCAME, Arab Water Council, Arab Water Experts Network. The role of CIHEAM Bari and CEEBA (MEDWAYCAP Partners) in promoting the BP inventory is important and their support in the design and implementation of the SE&DP should be pursued from the very beginning.

8. NEXT STEPS: WHAT MUST HAPPEN IN THE NEXT 6 WEEKS? *WHO SHOULD DO WHAT?*

The Challenge holder with the assistance of MEDWAYCAP Coordinator shall create a SE&DP task force with the aim to set the principles for an effective SE&DP structure. At first, the subject of the dissemination (what will be disseminated?) will be identified, then the relevant target groups will be segmented (who will most benefit from the platform?) and the most adequate method(s) and tool(s) will be selected. The timing of the dissemination, as well as its management (i.e. responsible party of the dissemination, KPIs for activity monitoring) also consist principles of the SE&DP. In summary, the actions in the next 6 weeks can be summarized as follows:

- Specify target groups
- Specify/select dissemination tools
- Define dissemination requirements
- Financial tools to sustain the platform
- First draft of the dissemination plan

9. FOLLOW-THROUGH STEPS; EARLIEST OUTCOMES: WHAT MUST HAPPEN IN THE NEXT 6 MONTHS? *WHO SHOULD DO WHAT?*

According to the dialogue between the colleagues involved in the Prototype planning and the comments made by the ambassadors during the 2nd day of the Innovation Camp, the following steps were proposed for the next 6 months:

- Finalize the dissemination plan (CERTE)
- Design and develop all dissemination tools/material (CERTE, CERTH, ESEN, other)
- Contact actors (All MEDWAYCAP partners and associated partners)
- Create a network mechanism (CERTE, CERTH, CIHEAM-Bari)
- Start dissemination (All MEDWAYCAP partners and associated partners)

The assignment of tasks for taking the above steps shall be made by the task force and potentially involves the partners mentioned in the brackets.

10. IMPACT IN 6 YEARS. IMPACT IN SOCIETY IF THE PROTOTYPE HAS BEEN IMPLEMENTED

The effective dissemination of the BP inventory platform will contribute to a sustainable capitalization of BPs and their replicability in the Mediterranean region (and not only). By fostering the replication & mainstreaming of BPs and sustainable strategies at local/national & regional level, it is expected that water stress and environmental challenges in the region will be largely addressed, leading to a sustainable development & long-term endogenous economic growth in the Med area. The MEDWAYCAP partnership adopts the vision of the EU, the UfM and the Water Europe in which the true value of water is recognised and realised, and all available water sources are managed in such a way that water scarcity and pollution of water are avoided. Water and resource loops are largely closed to foster a circular economy and optimal resource efficiency, while the water system is resilient against the impact of climate change events.

11. OTHER RELEVANT INFORMATION ON THE PROTOTYPE (LINKS, REFERENCES, CONTACTS)

- https://ufmsecretariat.org/water-agenda/

- https://ufmsecretariat.org/platform/ufm-water-expert-group-weg/
- https://watereurope.eu/
- https://watereurope.eu/working-groups/#Water-circular-transition-CLUSTER
- https://mepwatergroup.eu/
- https://doi.org/10.1016/j.scitotenv.2022.154429

12. SUGGESTIONS FOR IMPROVING THE EFFECTIVENESS OF THE INNOVATION CAMP

This was the first time that people involved in the design of Prototype 1.1 participated in such a stakeholder interactive event with the aim to develop grassroots ideas and prototypes to address the three challenges of the Tunis Innovation Camp. Since no previous experience on similar events existed, it has been difficult to suggest improvements. To the rapporteur point of view, the event was excellently organized while the creativity and inspiration of FUTOUR team assisted the dialogue, communication, interaction, brainstorming, capacity building and learning, resulting in an enhanced culture of innovation among the participants. Possibly, the extension of the camp by one day, giving space for reporting preparation, could be considered. An introduction (info-day) to the Innovation Camp, for the registered participants is also proposed, with the aim to collect expectations.

Report of Prototype 1.2 - Bridging Ideas on Sustainability

Title of the Prototype: Bridging Ideas on Sustainability

- **Challenge 1: NON-CONVENTIONAL WATER CLUSTER OF KNOWLEDGE**
- **Challenge Holder(s):** Latifa Bousselmi (CERTE, Tunisia)
- **Facilitator:** Giovanna Martinez, Silvia Martinez (FUTOUR)
- **Prototype Holder**: Thouraya Mellah (CERTE, Tunisia)
- **Participants:** Yaser Abunnasr (American University of Beirut), Henry Debattista (EWA, Malta), Nabeel Bani Hani (National Agricultural Research Center (NARC), Jordan), Ahmed Aziz Raach (Enactus INAT, Tunisia), Oussama Hsini (CERTE,Tunisia).
- **Date:** 8-9th February 2023

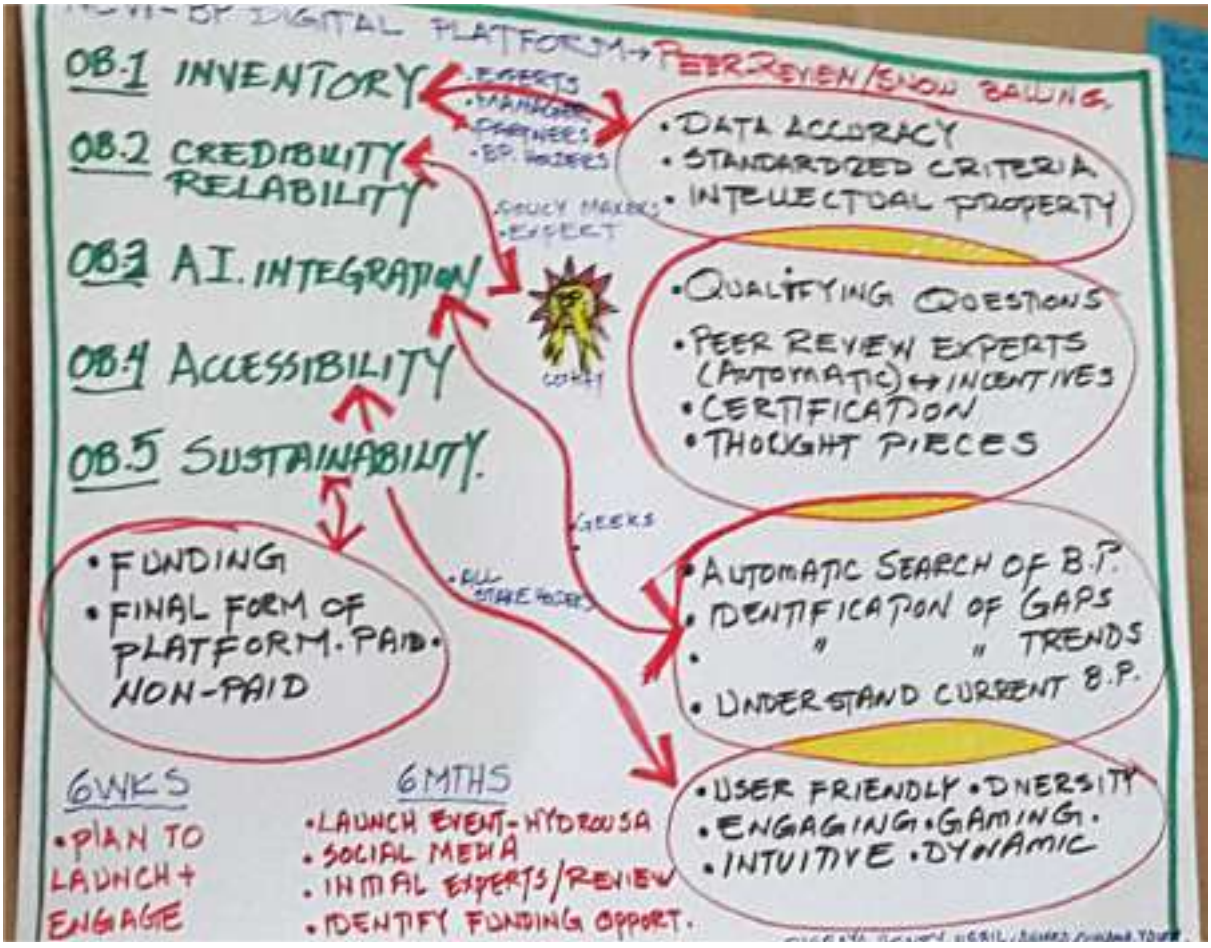
1. ABSTRACT OF THE PROTOTYPE (BASED ON THE SUMMARY PRESENTATION OF THE PROTOTYPE

Note to the Rapporteur:

The populations of the Mediterranean are more needed than ever to support the management of all available water resources in the context of growing water scarcity, which seems to be aggravated by climate change and increasing demands. In such conditions, there are two concerns with good water management: firstly, non-conventional waters are resources that should be considered with the same good management standards. Secondly, the cornerstone of sustainable water resource management appears to be effective management on a decentralised basis. To optimise the non-conventional water resources uses, various best practices are put into place, and context-specific solutions are devised. These initiatives are little known and poorly reproduced due to a lack of visibility and efficient ways to disseminate knowledge and ideas widely. The Best Practices Inventory platform is designed to contribute to bridge this gap, and it is being developed within the MedwayCap project framework. The platform is a business intelligence solution that aims to foster good practices by disseminating information and spreading knowledge. The "bridging idea sustainably" prototype is a collection of new functionalities that will be added to the platform, to strengthen its credibility, reliability, accessibility, and user-friendly features, as well as to assure its financial viability.

The platform includes tools for inventory and data gathering, web scraping to identify new BP and creative solutions, reporting, and data analysis. It provides individual space for each BP holder to register and present his solution. Along with the aforementioned platform features, the prototype "Bridging ideas sustainably" brings two additional components:

3. Peer review process, standards and certification: BPs will be reviewed and certified as part of a process that is designed to do just that. A community of experts will be established in order to oversee this process and establish the standards and guidelines necessary to add BPs to the platform. This procedure would guarantee the accuracy of the information spread.
4. Prospective analysis of the new knowledge development: utilising AI to examine the new ways of thinking and the creation of new concepts and solutions, as well as the dynamics of the contributors, their interactions.



2. WHY IS THIS PROTOTYPE IMPORTANT? [WHAT IS THE PURPOSE AND HOW DOES IT ADDRESS THE CHALLENGE?]

In order to change behaviour for a sustainable future, the prototype seeks to assemble non-conventional water (NCW) best practices on a global scale. By offering insightful information and useful expertise on how to better manage and use water, it helps to improve water management. This platform has the potential to connect sustainable thinking and influence society and policy makers to lessen anthropogenic impact and improve adaptation actions.

3. DESCRIPTION OF PROPOSED ACTIONS [ACTION ORIENTATION IS EXTREMELY IMPORTANT]

- Integrate AI into the comprehensive inventory of best practices to look for the potential solution that may be developed. It is a prospective task of identifying the dynamic of news knowledge production.

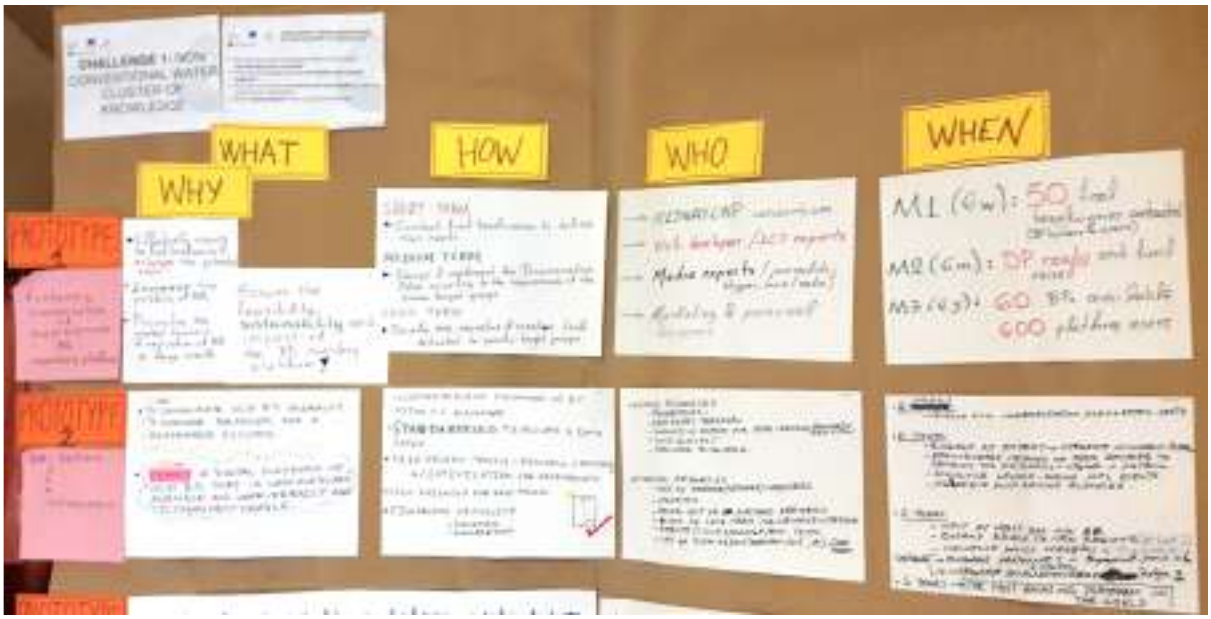
- Set up a peer reviewer process ensuring the credibility of data entry and giving certification for reliability; the network of reviewers should be built up of the community of experts; the involved reviewer defines the standards that the data should be entered in. To include a BP in the inventory platform, the data displayed by the BP holder should meet the standards. Moreover, the BP can be certified as a conclusion of the reviewing process by the peer review community members. However, BP included in the inventory platform should meet the standard, but without necessarily getting certification.

4. WHAT WILL THIS ACHIEVE? WHAT IS THE SOCIETAL IMPACT?

The BP inventory platform has several goals and could have a significant societal impact:

- Knowledge consolidation is accomplished by providing a comprehensive inventory of credible and trustworthy information on sustainable water management practices.
- Change behaviour by demonstrating successful NCW practices that may influence actors and the general public to implement more sustainable water management solutions.
- Bringing together the ideas of the local community, experts, and practitioners to create news knowledge.

The platform has the potential to contribute to a more sustainable future by promoting sustainable water management practices, ensuring that water resources are used more efficiently and effectively. As a result, this solution has the potential to improve the lives of people all over the world, particularly those living in areas where water scarcity is a real issue. Furthermore, because of the platform's financial viability and accessibility, it can reach a large audience, making it a valuable tool for promoting sustainable water management practices globally.



5. WHO ARE THE FINAL BENEFICIARIES?

The beneficiaries of the BP Inventory platform, including the prototype 2, are wide-ranging and varied, demonstrating the platform's potential to give a variety of stakeholders useful insights and information on sustainable water management practices.

The platform can assist communities in managing and conserving their water resources more effectively by disseminating knowledge of best practices. The platform can offer the private sector helpful information on market dynamics in relation to demand for future prospects. The platform can also serve the development of public policies as it can report successful experiences and the conditions for implementing good practices through its data analysis and prospective analysis tools.The platform can provide a rich source of data for a researcher to explore and develop new insights into sustainable water management practices.

6. WHO IS RESPONSIBLE? (WHO WILL IMPLEMENT THE PROPOSED ACTIONS?) **WHO WILL BE INVOLVED?** (IN SOCIETY? IN THE CHALLENGE TEAM?)

The challenge holder will be primarily responsible for carrying out the proposed actions of Prototype 2. The challenge holder and the MedwayCap project team will also be in charge of securing the necessary financial resources to cover the costs of developing and maintaining the platform.The peer-review process will involve the community of experts to ensure that the non-conventional water (NCW) best practices included in the platform are of high quality and relevance.

7. DESCRIPTION OF THE BEST IDEAS

- Using AI algorithms, expand the comprehensive inventory of non-conventional water (NCW) best practices platform.
- Establish a peer-review process to ensure that the NCW best practices included in the platform are high quality and relevant. This will ensure the platform's credibility and consistency.
- Form a team of programmers, data entry personnel, data scientists, and hardware engineers to enhance the platform with new features.
- Find the required financial resources to cover the costs of storage, salaries, rent, maintenance, cloud storage, and dissemination.
- Enter at least 200 NCW best practices within two years of the platform's launch.
- Announce the platform's launch at events and engage AI experts and developers within six months.
- Influence policymakers to implement more sustainable water management practices by promoting successful NCW best practices on the platform.
- Maintain the platform constantly and update it to ensure that it remains user-friendly and accessible.

8. NEXT STEPS: WHAT MUST HAPPEN IN THE NEXT 6 WEEKS? 9.WHAT MUST HAPPEN IN THE NEXT 6 MONTHS? 10. IMPACT IN 6 YEARS? *WHO SHOULD DO WHAT?*

the prototype's timetable

- A comprehensive implementation plan and precise expenses will be developed over a six-week period.
- During the next six months, developers and AI specialists will be engaged. The launch will also be published at events.
- The platform seeks to add at least 200 NCW best practices and influence policymakers within the next two years.

- The platform wants to be the most incredible platform in the world in six years.

11. OTHER RELEVANT INFORMATION ON THE PROTOTYPE (LINKS, REFERENCES, CONTACTS)

The preliminary version of BP inventory platform Medwaycap

12. SUGGESTIONS FOR IMPROVING THE EFFECTIVENESS OF THE INNOVATION CAMP

This was my first time participating in a process like this, and it was a wonderful opportunity for sharing and a great place to foster collective intelligence.congratulations to the moderators and facilitators.

It seems to me that during the reframing phase, the first stage of the exercise that explores the challenge, discussions around the questions (question such as: Why are we addressing this challenge? What is the challenge? What makes it a challenge? Is it always a challenge, or only sometimes? Can you make it more concrete?) should involve all participants, not just a discussion by small group. It takes time and is difficult to have a lot of conversations, but it enables the participants to have a common understanding about the challenge.

Report of Prototype 1.3 - Social Knowledge on Non-Conventional Water

Title of the Prototype: Social Knowledge on Non-Conventional Water

- **Challenge 1: NON-CONVENTIONAL WATER CLUSTER OF KNOWLEDGE**
- **Challenge Holder(s):** Latifa Bousselmi (CERTE, Tunisia)
- **Facilitator:** Giovanna Martinez, Silvia Martinez (FUTOUR)
- **Prototype Holder**: Amani Charrad (ANPR, Tunisia), Hichem Ben Hassine (CERTE, Tunisia)
- **Participants:** Kair Al-Deen Bsisu (The University of Jordan, Jordan), Amani Charrad (ANPR, Tunisia), Giulio Conte (Iridra, Italy), Hichem Ben Hassine (CERTE, Tunisia), Sura Al-Sbaehi (University of Jordan, Jordan), Hichem Ben Hassine (CERTE, Tunisia), Mohammad Arabiat (The University of Jordan, Jordan)
- **Date:** 08.02.2023

1. ABSTRACT OF THE PROTOTYPE (BASED ON THE SUMMARY PRESENTATION OF THE PROTOTYPE

The aim of this prototype is to Integrate in the cluster of knowledge people's perception and experience in Non-Conventional Water (NCW) through social survey and analysis. People need to support the scientists and decision makers to adopt strategies for NCW diffusion and to proactively approach water scarcity and support other prototypes in their endeavours. This can be achieved by social surveys and analysis of end users, domestic users, farmers, industry, and by linking this prototype to other prototypes to ensure long term social impact. It is a preliminary phase of dissemination and education. The prototype can be considered as a facilitator for the other prototypes, and not standalone prototype in order to ensure its use and impact. It will involve social scientists, universities, researchers, domestic users, women, children, people in general, farmers and industrial users and syndicates and NGOs. Prototype financing will depend on funding from EU or National funding programmes.
In a short time, the prototype should be integrated to other prototypes on the dissemination and education. As a second step, the proposal for the project funding should be developed.

2. WHY IS THIS PROTOTYPE IMPORTANT? [WHAT IS THE PURPOSE AND HOW DOES IT ADDRESS THE CHALLENGE?]

- To support scientists and decision makers to adopt strategies for Non Conventional Water NCW diffusion.
- To support other prototypes in their endeavors

3. DESCRIPTION OF PROPOSED ACTIONS [ACTION ORIENTATION IS EXTREMELY IMPORTANT]

- Social survey and Analysis of end-users to support the design of effective Dissemination & Education (D&E) campaigns

4. WHAT WILL THIS ACHIEVE? WHAT IS THE SOCIETAL IMPACT?

- We are not expecting direct impact
- Societal impact will come from effective D&E campaign

5. WHO ARE THE FINAL BENEFICIARIES?

- Social scientists and other actors designing D&E campaigns

6. WHO IS RESPONSIBLE? (WHO WILL IMPLEMENT THE PROPOSED ACTIONS?) **WHO WILL BE INVOLVED?** (IN SOCIETY? IN THE CHALLENGE TEAM?)

- Universities and Research Centers
- Involving NGOs and End-users

7. DESCRIPTION OF THE BEST IDEAS

Typical social analysis tool:

- Quantitative survey
- Interviews
- Focus Groups
- Task-force

8. NEXT STEPS: WHAT MUST HAPPEN IN THE NEXT 6 WEEKS? *WHO SHOULD DO WHAT?*

- Integrate with other prototypes on D&E strategies

9. FOLLOW-THROUGH STEPS; EARLIEST OUTCOMES: WHAT MUST HAPPEN IN THE NEXT 6 MONTHS? *WHO SHOULD DO WHAT?*

- Design/Prepare a proposal about D&E project including our prototype

10. IMPACT IN 6 YEARS. IMPACT IN SOCIETY IF THE PROTOTYPE HAS BEEN IMPLEMENTED

- Results of the project reached 25% of the population

11. OTHER RELEVANT INFORMATION ON THE PROTOTYPE (LINKS, REFERENCES, CONTACTS)

- Need of Social scientists

12. SUGGESTIONS FOR IMPROVING THE EFFECTIVENESS OF THE INNOVATION CAMP

- We need more time

5.1.2 Annex A.2 - Prototypes from Challenge 2.

Report of Prototype 2.1 - Regional Framework

Title of the Prototype: Regional Framework

- **Challenge 2 - TOWARDS A MEDITERRANEAN CAPITALISATION ALLIANCE**
- **Challenge Holder(s):** Roula Kahdra
- **Facilitator:** Paolo Martinez
- **Prototype Holder**: Manuel Sapiano
- **Participants:** Marco Graziani, Manuel Sapiano, Roula Kahdra, Paolo Martinez
- **Date:** 08/02/2023

1. ABSTRACT OF THE PROTOTYPE (BASED ON THE SUMMARY PRESENTATION OF THE PROTOTYPE

The primary purpose of Prototype 2.1 is the definition of a coordinated framework for the promotion and mainstreaming of NCWR at national and regional level in the Mediterranean region. This, since currently there is limited cooperation between Mediterranean countries (and regions) on the development of policy frameworks for the water sector. Such cooperation is predominantly at the policy (political) level and does not involve for a such as Communities of Practice and Living Labs.

Within the Mediterranean Region, cooperation in the water sector is currently defined through the following frameworks:

(i) Mediterranean countries which are Member States of the European Union or accession countries cooperate at the level of the European Union with the cooperation parameters being defined by the European Water Acquis;

(ii) Countries in the Western Mediterranean cooperate through the 5+5 water agenda, cooperation being generally at a higher political level. NCWR is identified as a priority element within the 5+5 water agenda, and initiatives to support NCWR mainstreaming are planned such as the Western Mediterranean Water Academy; and

(iii) Countries in the Mediterranean (and the EU) cooperate through the Union for the Mediterranean's Water Agenda, which has developed a regional policy framework based on the nexus approach through addressing a) the Water-Energy-Food-Ecosystem (WEFE) nexus; b) the Water Employment and Migration (WEM) nexus; c) Water Supply, Sanitation and Hygiene (WaSH) nexus; d) the Water and Climate Change Adaptation (WCCA) nexus, complemented by a regional financial strategy for identifying financing opportunities for the regional water sector. This regional policy framework addresses the mainstreaming of NCWR in water management planning through transversal actions under each nexus.

Whilst existing regional frameworks do address the main water management challenges experienced in the Mediterranean Region, it is felt that there is limited top-down communication between these high level policy frameworks and action on the ground in the Mediterranean Member States. Therefore, the main action being proposed under Prototype 2.1 relates to the establishment of the necessary structures to link these high-level policy frameworks with the Community of Practice (grassroots) working in the water sector, and thereby establish a more solid link between higher level decision-makers and practitioners (CoPs) during the future development of the Mediterranean Regional Water Management Framework. This will make the process more effective and will optimise the already existing framework, ultimately enabling a broader impact in the mainstreaming of NCWR while planning policies, since they will be more concretely diverted towards the needs of the Med region.

In this view, the prototype deems necessary the facilitation of a bottom-up process leading to **a)** easier horizontal relations/communication among same-role insiders (technicians, directors, experts, etc.) across the Med countries; **b)** reinforcement of capacity building activities involving experts, stakeholders and general public within the existing *Living Labs*; **c)** set-up of a common place of discussion for the Mediterranean *Community of Practice* (CoP) to create connections with high level EU decision makers, technology and market experts within the current Regulatory Framework.

2. WHY IS THIS PROTOTYPE IMPORTANT? [WHAT IS THE PURPOSE AND HOW DOES IT ADDRESS THE CHALLENGE?]

There is a need for building up a stronger link between the regional policy frameworks and practitioners in the water sector, leading to communication and experience sharing to be not only limited to high level fora but broadened down to professionals, academia and practitioners working in the water sector within all countries in the Mediterranean Region.

The prototype therefore proposes that current regional Inter-Governmental policy frameworks be supported through the establishment of regional Community of Practices working on specific water management issues. These Community of Practices would be made up of representatives of water management entities, utilities, water services providers, academia and e-NGOs from different Mediterranean countries, thereby bringing together a range of experiences and knowledge on addressing the specific water management challenges. In turn the Community of Practices would be supported by Living Labs established in specific Member States, enabling the effective channelling of expertise on the subject in question. This framework would enable the setting up of a broad regional knowledge base on specific water management challenges (in this case mainstreaming of NCWR) effectively linking up expertise at the national level, with regional policy making frameworks.

This process is also aimed to break the prevailing tendency of “working in isolation” in the region, by enhancing the creation of CoPs and horizontal projects that will link together all of those small projects working separately on different NCWR challenges, and ultimately influencing the available regional funding instruments (ENI CBC MED, PRIMA, etc) to keep supporting increased experience sharing and policy development at a regional (Mediterranean) level.

- CHANGE: Enabling a more effective intergovernmental framework structure, enabling a better bottom-up approach in guiding the development of regional water management policies;
- PURPOSE: Reaching the grass root of MED region (CoPs & Living Labs) to ensure that local knowledge in Mediterranean Member States informs regional initiatives supporting NCWR mainstreaming;
- IMPACT: Mainstreaming of NCWR in the IWRM Frameworks at National & Regional levels.

3. DESCRIPTION OF PROPOSED ACTIONS [ACTION ORIENTATION IS EXTREMELY IMPORTANT]

The prototype therefore proposes the development of a Community of Practice (CoP), bringing together the different stakeholders from different Mediterranean countries with an interest in the promotion of NCWR as an effective and safe water management tool. The CoP will be important in terms of supporting the development of the necessary knowledge-base to inform the uptake of NCWR on a regional level – and hence the knowledge-base needs to address identified "gaps" at different levels (governance level).

This will be achieved through the following actions:

1. Development of a proposal for the setting up of a framework linking up Living Labs to Communities of Practice to the regional water policy framework.
2. Establishing a directory of stakeholder entities with an interest in the promotion of NCWR at the national and regional level, as well as existing Living Labs on NCWR already active in the Mediterranean region.
3. Formulating a first Community of Practice on NCWR mainstreaming, based on key representatives from entities involved in existing successful Living Labs, hence enabling the direct link between Living Labs and the Community of Practice.
4. Identifying key barriers and enablers for the mainstreaming of NCWR in national and regional policies, including governance, safety, economic, social and environmental considerations, as well as other related externalities such as energy and the circular economy.
5. Linking the Community of Practice with established regional actions such as the Union for the Mediterranean's Water Agenda.

4. WHAT WILL THIS ACHIEVE? WHAT IS THE SOCIETAL IMPACT?

- Development of a Communities of Practice linked to existing Living Labs hence ensuring the transfer and sharing of technical information linked to the application of NCWR to policy development initiatives;
- Ensure that Communities of Practice are linked to Regional Policy Making Initiatives and hence facilitating the bottom-up transfer of knowledge, thereby moving towards data-driven policy development in the Mediterranean region;
- Optimise the use of investment in capacity building at the national and regional level by making effective use of existing knowledge on NCWR mainstreaming in the region;
- Facilitating contacts between financing programmes and the regional water management frameworks to ensure that such programmes effectively address the main water management priorities of the region.

5. WHO ARE THE FINAL BENEFICIARIES?

The Final Beneficiaries of this process will include:

(i) regional organisations such as the Union for the Mediterranean involved in the development of water policy frameworks at the Mediterranean level,

(ii) public policy entities at the national level in Mediterranean countries involved in the development of national water management policy frameworks, and who are also tasked in supporting the development of regional initiatives, and

(iii) stakeholder entities involved in the promotion of Non Conventional Water Resources as a safe and reliable water management tool.

6. WHO IS RESPONSIBLE? (WHO WILL IMPLEMENT THE PROPOSED ACTIONS?) **WHO WILL BE INVOLVED?** (IN SOCIETY? IN THE CHALLENGE TEAM?)

- Policymaking Entities
- Regulatory Entities
- Water Services Operators
- Investment Programme Managers
- Technology Providers (private sector)
- Broader Beneficiaries (water users)
- Supply Chain Operators (private sector)
- Non-Governmental Organisations

7. DESCRIPTION OF THE BEST IDEAS

- Bottom-up process (CoPs moves upwards to influence regional policies)
- Identification of simple priorities in the Water Agenda
- Comprehensive approach of the proposed optimised Regional Framework
- Effective and efficient use of the already existing regional funding instruments
- Linking small projects “working in isolation” with CoPs and other horizontal projects to gain more funding accessibility and long-term sustainability.

8. NEXT STEPS: WHAT MUST HAPPEN IN THE NEXT 6 WEEKS? *WHO SHOULD DO WHAT?*

- Define a common vision about the setting up of a regional structure linking up living labs to communities of practice to regional policy entities.
- Develop a final proposal for the setting up of a regional stakeholder framework supporting the mainstreaming of NCWR in regional water management policies

9. FOLLOW-THROUGH STEPS; EARLIEST OUTCOMES: WHAT MUST HAPPEN IN THE NEXT 6 MONTHS? *WHO SHOULD DO WHAT?*

- Development of an operational model involving (linking) Living Labs, to Community of Practice to Regional Initiatives.
- Meetings with Regional Initiatives and entities which can support the funding required to set up regional Communities of Practice.

10. IMPACT IN 6 YEARS. IMPACT IN SOCIETY IF THE PROTOTYPE HAS BEEN IMPLEMENTED

- Development of an operational framework for linking up Living Labs to Communities of Practice to Regional Water Policy initiatives – to ensure the development of a knowledge base on NCWR mainstreaming which would guide the development of regional and national policies enabling the application of NCWR to optimise existing water management frameworks.

11. OTHER RELEVANT INFORMATION ON THE PROTOTYPE (LINKS, REFERENCES, CONTACTS)

- Union for the Mediterranean – Water Agenda: https://ufmsecretariat.org/water-agenda/

12. SUGGESTIONS FOR IMPROVING THE EFFECTIVENESS OF THE INNOVATION CAMP

- None

Report of Prototype 2 (2.2) “Water (re) use Community”

Title of the Prototype: Water re-use Community

- **Challenge 2 - TOWARDS A MEDITERRANEAN CAPITALISATION ALLIANCE**
- **Challenge Holder(s):** Roula Kahdra
- **Facilitator:** Paolo Martinez
- **Prototype Holder**: Paola Pinna
- **Participants:** Giovanna Dragonetti, Tarek Ahmed El Samman, Ahmed Al-Salaymeh, Alessandra Paulotto, Marco Martinez.
- **Date:** 08/02/2023

1. ABSTRACT OF THE PROTOTYPE (BASED ON THE SUMMARY PRESENTATION OF THE PROTOTYPE

The focus of the prototype is to establish a Community of Practice (CoP) on water reuse that works at MED Alliance level through different practices (webinars, meetings, .. capacity building).

The purpose of the CoP is to raise awareness on the concept of water re-use and share best practices. The CoP will be the “space” to engage and share different perspectives, interests, and needs, and ultimately to co-produce knowledge.

It will work in two dimensions: regional and cross border level. The CoP is composed of the same stakeholders identified in Challenge 2_prototype 2.1: the network of Living Labs, Local Authorities and decision makers, NGOs, Investors, Business Sector, Schools and Universities, Civil Society at large, and so on.

The final challenge will be to effectively involve all stakeholders in knowledge co-production activities and to maintain the interest high in the involved.

2. WHY IS THIS PROTOTYPE IMPORTANT? [WHAT IS THE PURPOSE AND HOW DOES IT ADDRESS THE CHALLENGE?]

- Facilitate knowledge sharing;
- Development of innovative approaches across sectors and partners;
- Allow information and knowledge to circulate in a smooth way;
- Effectively involve all stakeholders in knowledge co-production activities;
- Mutualise existing tools and platforms (like training modules, best practices, procurements, etc.);
- Improve awareness of each actor involved (community members);
- Build trust among participants.

3. DESCRIPTION OF PROPOSED ACTIONS [ACTION ORIENTATION IS EXTREMELY IMPORTANT]

- Improvement of the existing platforms (new tools like forum, repository and new sections) and make it more attractive;
- Identification of an inspiring core team (which is a starting team) to activate the process and attract others members and a moderator of the CoP platform;
- Engagement of proactive stakeholders (Communications and dissemination activities to get involved members through newsletters/events, bilateral meetings, etc.;
- Make the platform attractive and user friendly.

4. WHAT WILL THIS ACHIEVE? WHAT IS THE SOCIETAL IMPACT?

- Optimisation of resources
- Capitalisation and Circulation of technology, innovative approaches and ideas
- Knowledge transfer

5. WHO ARE THE FINAL BENEFICIARIES?

- Policy makers.
- Local Governments.
- Economic operators / Business sector.
- Investors.
- Schools and universities.
- Technicians.
- NGOs.
- Civil Society.

6. WHO IS RESPONSIBLE? (WHO WILL IMPLEMENT THE PROPOSED ACTIONS?) **WHO WILL BE INVOLVED?** (IN SOCIETY? IN THE CHALLENGE TEAM?)

- Responsible: coordinator of the CoP
- Who will be involved: other partners (one per,partner) will be part of the core team and the stakeholders above identified

7. DESCRIPTION OF THE BEST IDEAS

- In progress.

8. NEXT STEPS: WHAT MUST HAPPEN IN THE NEXT 6 WEEKS? *WHO SHOULD DO WHAT?*

- Definition of the communication strategy
- Collection of information (data, toolkits, etc)
- Organization of the core team;
- Definition of the training path for the core team;
- Dissemination (through newsletters, mailing lists, events, …….)

9. FOLLOW-THROUGH STEPS; EARLIEST OUTCOMES: WHAT MUST HAPPEN IN THE NEXT 6 MONTHS? *WHO SHOULD DO WHAT?*

- Continuing update
- Active Forum
- Workshops for engagement
- Establish connections with living labs
- Identification of financing mechanism

10. IMPACT IN 6 YEARS. IMPACT IN SOCIETY IF THE PROTOTYPE HAS BEEN IMPLEMENTED

- Identification of new ideas

- Submission of new projects
- Monitoring and evaluation
- Continues update
- Network with other community of practices

11. OTHER RELEVANT INFORMATION ON THE PROTOTYPE (LINKS, REFERENCES, CONTACTS)

- Link to the MENAWARA platform: https://www.menawara.eu/
- Database Innovation BP link: https://bpinventory.com/best-practice

12. SUGGESTIONS FOR IMPROVING THE EFFECTIVENESS OF THE INNOVATION CAMP

- To have one or two more extra days
- To have an expert linked to the prototype in the each team

Report of Prototype 2.3 - Network of Living Labs towards a MED-Alliance

Title of the Prototype: Network of Living Labs towards a MED-Alliance

- **Challenge 2 - TOWARDS A MEDITERRANEAN CAPITALISATION ALLIANCE**
- **Challenge Holder(s):** Roula Khadra (CHIEAM Bari)
- **Facilitator:** Paolo Martinez (FUTOUR)
- **Prototype Holder**: Luna Al-Hadidi (NARC)
- **Participants:** Joanna Incorvaja, Anna Crescenti, Kenza Guelloub, Luna Al-Hadidi (NARC)
- **Date:** 8th February 2023

1. ABSTRACT OF THE PROTOTYPE (BASED ON THE SUMMARY PRESENTATION OF THE PROTOTYPE

Network of Living Labs towards a MED-Alliance:

Abstract:
The purpose of this prototype is to create a network of living labs (LL) within the MED countries that can share and capitalize experience, help in job creation, impose the change in positive perception towards the use and reuse of non-conventional water (NCW) resources and finally establish a good linkage between NCW users and decision makers with a bottom-up approach.

The suggested network of the LLs will have practical innovation places where different stakeholders can see and learn how non-conventional water can be used and reused. Also, to advocate for changes in the decision making and community perceptions.

It is expected that living labs can be a platform to implement different and innovative technologies, training and capacity building for different stakeholders (SH) who can learn how to enable access to financial mechanisms.

The participants of the network of the living labs between countries can attend events and exchange visits which is considered part of the sustainability and capitalization of the LL network. Many actors

are considered in the living lab including NGO's and research centers as planners, farmers and farmer user association, local NGO's, private sector, utilities/municipalities, and the civil society.

Next steps on a short-term basis will include brainstorming within all stakeholders involved, mapping of possible existing facilities, identification of different stakeholders and possibly publishing a call of ideas. While on the follow-through steps activities will include selection of places/facilities/beneficiaries to be involved, planning of the interventions/activities, definition of needed resources and people, capacity building, identification of success stories, and finally setting up a meal system.

2. WHY IS THIS PROTOTYPE IMPORTANT? [WHAT IS THE PURPOSE AND HOW DOES IT ADDRESS THE CHALLENGE?]

- To create a network of LL within the MED countries.
- To have practical innovation places where different stakeholders can see and learn how NCM can be used and reused.
- To advocate for changes in the decision making and community perceptions.

3. DESCRIPTION OF PROPOSED ACTIONS [ACTION ORIENTATION IS EXTREMELY IMPORTANT]

- Implementation of different and innovative technologies.
- Training and capacity building for different SH.
- Enabling access to financial mechanisms.
- Networking different LL from several countries to learn from each other.
- Events, exchange visits- part of the sustainability and capitalization of the LL.

4. WHAT WILL THIS ACHIEVE? WHAT IS THE SOCIETAL IMPACT?

- Sharing and capitalization of experience.
- Job creation.
- The change in positive perception towards the NCW.
- Linkage between NCW users and decision makers with a bottom up approach.

5. WHO ARE THE FINAL BENEFICIARIES?

- NCW final users (farmers, local communities, industry, municipalities,….
- Research and academia.
- NGO's.
- Local authorities.
- We look at resources needed in-terms of funding, equipment, tools and infrastructure. Also, people as holders of capacities (trainers).

6. WHO IS RESPONSIBLE? (WHO WILL IMPLEMENT THE PROPOSED ACTIONS?) **WHO WILL BE INVOLVED?** (IN SOCIETY? IN THE CHALLENGE TEAM?)

- NGO's and research centers as planners.
- Farmers and Farmer user association, Local NGO's.
- Private sector, utilities/municipalities.
- Civil society.

7. DESCRIPTION OF THE BEST IDEAS

- In each target country, there will be a selection of potential local entities where to set up/scale up an innovative LL.
- New technologies and innovation will be installed and developed involving all possible actors.

- LL will be an active place to share and capitalize best experiences, training, capacity building to local SH and users.
- Creating job opportunities and proposing a replicable model.

8. NEXT STEPS: WHAT MUST HAPPEN IN THE NEXT 6 WEEKS? *WHO SHOULD DO WHAT?*

- Brainstorming within all involved stakeholders.
- Mapping possible existing facilities.
- Identification of different stakeholders.
- Publish a call of ideas.

9. FOLLOW-THROUGH STEPS; EARLIEST OUTCOMES: WHAT MUST HAPPEN IN THE NEXT 6 MONTHS? *WHO SHOULD DO WHAT?*

- Selection of places/facilities/Beneficiaries to be involved.
- Planning of the interventions/activities.
- Definition of needed resources and people.
- Capacity building of the LS.
- Identification of success stories.
- Setting up a MEAL system.

10. IMPACT IN 6 YEARS. IMPACT IN SOCIETY IF THE PROTOTYPE HAS BEEN IMPLEMENTED

- Implementing infrastructure/ prototypes/ models,…
- Training at different levels.
- Develop and construct an active network.
- Knowledge exchange.
- Advocacy plan and activities.
- Setting up tools for giving sustainability of the LL (fund, new projects and even becoming local NGO's).
- Develop a governance system of the LL.

11. OTHER RELEVANT INFORMATION ON THE PROTOTYPE (LINKS, REFERENCES, CONTACTS)

- Photos
- Report

12. SUGGESTIONS FOR IMPROVING THE EFFECTIVENESS OF THE INNOVATION CAMP

- Different stakeholders should be there.
- What is next/propose something, create real partnership, continue,…

5.1.3 Annex A.3 - Prototypes from Challenge 3

Report of Prototype 3.1 - A Low-(Cost, Tech) collective wastewater treatment (WWT) and reuse in rural areas (LCTWR).

Title of the Prototype: A LOW-(COST, TECH) COLLECTIVE WASTEWATER TREATMENT (WWT) AND REUSE IN RURAL AREAS (LCTWR).

- **Challenge 3 - CIRCULAR WATER FOR CIRCULAR BUSINESS**
- **Challenge Holder(s):** Dahlia Sabri (Confederation of Egyptian European Business Association - CEEBA) with Monther Khanfir (Innovation policy advisor)
- **Facilitator:** Elisa Tachis (FUTOUR)
- **Prototype Holder**: Lobna Mansouri (CERTE)
- **Participants:** Lobna Mansouri (CERTE), Dimitris Sioutopoulos (CPERI), Naem Mazahreh (NARC), Monther Hind (PWEG), Dalanda Hamdi (CERTE)
- **Date:** 7-8th of February 2023

1. ABSTRACT OF THE PROTOTYPE (BASED ON THE SUMMARY PRESENTATION OF THE PROTOTYPE

This prototype titled "*A low- (cost, tech) collective method for wastewater treatment (WWT) and reuse in rural areas* (LCTWR)", describes a decentralised water management system as a viable alternative for rural areas. It aims to strengthen sustainable water management in the rural areas, with a focus on water-reuse, minimising the environmental impacts, facilitating the resources recovery and involve changes in the way in which perception, planning, and decisions are made regarding the governance of water resources. Additionally, this prototype emphasises a more holistic approach that considers the benefits of reducing the amount of waste at source, the option of recycling or reuse at the site, and the opportunity to strengthen the environmental, social, and local sustainable development of the community.

The prototype is based on conventional aerobic biological wastewater treatment units: the vertical trickling filters. It is suitable for small to medium-sized communities with a high filter loading rate and marked by their ease of operation, self-cleaning capacity, and efficient removal of pollutants. The prototype will be usefully applied in rural areas for treatment of domestic wastewater (It can be applied for bigger and smaller communities).Once applied, the prototype will enhance the local wastewater management systems, and will provide both ecological and human benefits.It will help to reduce the negative impact of untreated faecal sludge and wastewater on human health and the environment. With the ability to use the treated wastewater with high quality, for the irrigation purposes in agriculture, the prototype can enhance the crops productivity limited by water resources scarcity and offer the opportunity for farmers to cultivate diversified cultivations in the fields. Treated wastewaters can contribute to compensate for the gap between agricultural water demand and supply and provide consistently high-quality water throughout the year.

The prototype will address the final beneficiaries (farmers, technicians, extension agents, local authorities,researchers, citizens…) to be equipped with state-of-the-art knowledge on non-conventional waters treatment techniques, management, planning and skills to reuse at local level for irrigation purposes. Furthermore, it will help to raise awareness among community, local authorities, and stakeholders about NCW reuse opportunities and management. Enhancement of green business and creation of new opportunities of jobs in the region will be also targeted in this challenge.

The actions proposed to design this challenge combines different steps as follows: (1) Assessment study on the social, economic, and environmental feasibility (area and beneficiaries' selection). In addition to a cost-benefit analysis in non-conventional water resources management at local level, (2) Fundraising (Capital investment, maintenance, monitoring…) through grants opportunities, specific calls…, which will be the most decisive step otherwise the project cannot be carried out. Then, (3)
A specific Tailor-made and design step should be launched taking into account the specificity of the selected community (each community has a different size, so different approach of system conception and up-scaling). After that, (4) a tender for construction and implementation will be launched to (5) Startup the exploitation of the plan and ensure continuous monitoring (water quality, impact on soil, environmental, cultivations…). Eventually, (6) once the prototype succeeds in achieving its planned objectives, a dissemination and republication program in other regions would be launched (as a success story within the local circular economy concept).








2. WHY IS THIS PROTOTYPE IMPORTANT? [WHAT IS THE PURPOSE AND HOW DOES IT ADDRESS THE CHALLENGE?]

- To strengthen safe and sustainable water management in rural areas, with a focus on water-reuse. The reuse of treated wastewater (TWW) is an opportunity/option to improve local water availability and save water, which is worsening due to climate change.
- To increase the opportunity for farmers to cultivate in the fields and increase crops productivity limited by water resources scarcity. Therefore, the challenge aims to enhance the circular economy in the rural area. (Job creation)
- To transfer the know-how from the lab to the market and create new job opportunities (farmers, suppliers, technicians, researchers…).
- To develop of a system more financially affordable, more socially responsible, and more environmentally benign

3. DESCRIPTION OF PROPOSED ACTIONS [ACTION ORIENTATION IS EXTREMELY IMPORTANT]

The actions proposed to design this challenge combines:

- Assessment study on the social, economic, and environmental feasibility (area and beneficiaries' selection). In addition to a cost-benefit analysis in non-conventional water resources management at local level.
- Fundraising (Capital investment, maintenance, monitoring…) through grants opportunities, specific calls…
- Tailor-made and design (each community has a different size, so different approach of system conception and up-scaling)
- Tendering for construction and implementation
- Startup and monitoring
- Dissemination and republication (success story within local circular economy concept)

4. WHAT WILL THIS ACHIEVE? WHAT IS THE SOCIETAL IMPACT?

- Improved agricultural production (Treated wastewater provides an alternative source of water throughout the year)
- Significant environmental benefits, such as reduced nutrient loads to receiving waters due to reuse of the treated wastewater.
- Know-How transfer from lab to the market/ Promoting sustainable water resource management and reuse practices (transition to a circular economy).

5. WHO ARE THE FINAL BENEFICIARIES?

- Farmers (High quality and sustainable water resource for irrigation)
- Researchers (Results validation, prototype up -scaling, experimental deo-site…)
- Decisions markers/ Stakeholders/NGOs (sustainable local water management approach)
- Private sector (Green business/suppliers/ sales companies/architect/designer...)
- Technicians (capacity building training/creation of green jobs)
- Population surrounding the site (Enhanced environmental and health conditions/food security)

6. WHO IS RESPONSIBLE? (WHO WILL IMPLEMENT THE PROPOSED ACTIONS?) **WHO WILL BE INVOLVED?** (IN SOCIETY? IN THE CHALLENGE TEAM?)

- Researchers: Data collection and Assessment study
- NGOs, Research institute, community: Fundraising
- Researchers, Private sector (architect, Civil engineer, designer…): Tailor-made and design

- Researchers, NGOs, Local authority: Tendering for construction and implementation
- Researchers , Technician, extension agents :Startup and monitoring
- Farmers: Users of treated Wastewater for irrigation

7. DESCRIPTION OF THE BEST IDEAS

This prototype emphasises the need for the Community, NGOs, decision-makers, scientists and professionals to agree to develop a common understanding of the problems and solutions and to exploit new opportunities in the selected field. In addition, it can be argued that water is a unique element in the circular economy because it is a resource, a product and a service without equivalent in the economic system and which must be considered and valued in the circular economy of the water.

8. NEXT STEPS: WHAT MUST HAPPEN IN THE NEXT 6 WEEKS? *WHO SHOULD DO WHAT?*

- Data collection and Assessment study (Researchers, organisations, and local authority)
- Fundraising (NGOs, Research institute, community)

9. FOLLOW-THROUGH STEPS; EARLIEST OUTCOMES: WHAT MUST HAPPEN IN THE NEXT 6 MONTHS? *WHO SHOULD DO WHAT?*

- Fundraising (Organization, research institute, community)
- Tailor-made and design (each community has its particularity: site location, community size, WW discharge volume… so different approach of system conception and up-scaling): Researchers, Private sector (architect, Civil engineer, designer…).

10. IMPACT IN 6 YEARS. IMPACT IN SOCIETY IF THE PROTOTYPE HAS BEEN IMPLEMENTED

- Awareness raising towards a new water culture/NCR perception.
- Advance the use of NCWR, as a sustainable, innovative, and cost-effective way of improving community access to water in rural areas.
- To promote knowledge and sharing of experiences on aspects of the NCWR system at local level within the circular economy concept (experience that could be replicated).
- Educational /research opportunity(Demo-site) and material for students and researchers.
- Guarantee of a safer and healthier environment for the community.

11. OTHER RELEVANT INFORMATION ON THE PROTOTYPE (LINKS, REFERENCES, CONTACTS)

- Monther Hind; Palestinian Wastewater Engineers Group (PWEG)
- https://www.youtube.com/watch?v=SmYBT5EUanE
- MEDWAYCAP Project

12. SUGGESTIONS FOR IMPROVING THE EFFECTIVENESS OF THE INNOVATION CAMP

- Finding the right balance between participant backgrounds (Researchers, business market expert, private sector, stakeholders, civil society). So, finding balance between creativity and business reality
- The importance of what happens after the camp? This aspect should be made clear to everyone.

Report of Prototype 3.2 - Water for future generations

Title of the Prototype: Water for future generations

Challenge 3 - CIRCULAR WATER FOR CIRCULAR BUSINESS

- **Challenge Holder(s):** Dahlia Sabri (Confederation of Egyptian European Business Association - CEEBA) with Monther Khanfir (Innovation policy advisor)
- **Facilitator:** Elisa Tachis (FUTOUR)
- **Prototype Holder**: Ahmed Ghrabi (CERTE, Tunisia), Hela Hassairi (Certe, Tunisia)
- **Participants:** Dahlia Sabri (Confederation of Egyptian European Business Association - CEEBA), Monther Khanfir (Innovation policy advisor), Hela Hassairi (Certe, Tunisia), Ahmed Ghrabi (CERTE, Tunisia), Karim Ergaieg (National Agronomic Institute of Tunisia), Alessandra Fiorilla (Svimed, Italy), Hamza Wasti (Enactus INAT, Tunisia), Fabio Masi (Iridra, Italy)
- **Date:** 7-8th February 2023

1. ABSTRACT OF THE PROTOTYPE (BASED ON THE SUMMARY PRESENTATION OF THE PROTOTYPE

The prototype is a sustainable construction that brings together a number of nature-based technologies/solutions that can have an impact on the environment (water-energy-food). A place that brings together different research results from international cooperation projects. A site that is both demonstrative and educational. It will be a space for exchange between experts and citizens offering expertise on some NBS prototypes. A training area specialised on the design of NBS for green entrepreneurs. As it can be an educational space for children/pupils offering appropriate educational techniques and tools developed by young students/innovators/start-ups playing the role of scientific mediators.

2. WHY IS THIS PROTOTYPE IMPORTANT? [WHAT IS THE PURPOSE AND HOW DOES IT ADDRESS THE CHALLENGE?]

- The aim is to raise awareness about the challenges of climate change, water scarcity and food security.
- The idea is to ensure a partnership between research and entrepreneurship in order to raise awareness of citizens regarding water circularity
- Educate civil society and stakeholders to basic Sustainable Water Management principles including closing loops.

3. DESCRIPTION OF PROPOSED ACTIONS [ACTION ORIENTATION IS EXTREMELY IMPORTANT]

- Preparation of communication strategy and Marketing plan
- Involve all stakeholders to collect ideas and proposals and propose a participatory action plan
- Organisation of demonstration visits/tours and practical workshop on SWM
- Elaborate digital and playful educational support about sustainability and Water reuse
- Participation in calls for projects, fundraising and implementation of new projects

4. WHAT WILL THIS ACHIEVE? WHAT IS THE SOCIETAL IMPACT?

- A Network for exchange and partnership between researchers, public managers, entrepreneurs, educational institutions and representatives of civil society
- Increasing citizens' awareness of water issues by bringing research closer to citizens and also preparing future generations interested in water science and research
- Creating opportunities for young people to engage in green entrepreneurship

5. WHO ARE THE FINAL BENEFICIARIES?

- Students of all levels, public managers, investors/start-ups, private sector (company library, private school, ICT company
- Ministry of education and Ministry of higher education and research, Ministry of environment, ministry of agriculture, civil society, NGOs, fundraising programme

6. WHO IS RESPONSIBLE? (WHO WILL IMPLEMENT THE PROPOSED ACTIONS?) **WHO WILL BE INVOLVED?** (IN SOCIETY? IN THE CHALLENGE TEAM?)

- CERTE
- Civil society

7. DESCRIPTION OF THE BEST IDEAS

- none

8. NEXT STEPS: WHAT MUST HAPPEN IN THE NEXT 6 WEEKS? *WHO SHOULD DO WHAT?*

- Organise a meeting with the various stakeholders to establish an action plan
- Communicate about the idea and build a related network
- Seek funding and identify key partners

9. FOLLOW-THROUGH STEPS; EARLIEST OUTCOMES: WHAT MUST HAPPEN IN THE NEXT 6 MONTHS? *WHO SHOULD DO WHAT?*

- Identify key partners by CERTE/SC
- Business plan by experts from IC participants
- Communication plan design by key partners
- Seek funding by key partners

10. IMPACT IN 6 YEARS. IMPACT IN SOCIETY IF THE PROTOTYPE HAS BEEN IMPLEMENTED

- NBS widely adopted as sustainable technologies by all actors
- Green entrepreneurs/start-ups well trained
- Behavioural change initiated among future generation (awareness and more)

11. OTHER RELEVANT INFORMATION ON THE PROTOTYPE (LINKS, REFERENCES, CONTACTS)

- TDC example
- SWM House example
- GDA Sidi Amor Examples
- Projects pilots
- Green prototypes

12. SUGGESTIONS FOR IMPROVING THE EFFECTIVENESS OF THE INNOVATION CAMP

- Have multidisciplinary and multisectoral participants in each group

5.2 Annex B - Participants of the Innovation Camp

The participants of the Innovation Camp distributed themselves among the three challenge groups on the basis of their expertise, country and background so as to guarantee quadruple helix participation and the maximum diversity of perspective.

Challenge 1	**Challenge 2**	**Challenge 3**
Latifa Bousselmi (CERTE, Tunisia)	Roula Khadra (CHIEAM Bari, Italy)	Monther Khanfir (Innovation Expert, Tunisia) e Dahlia Sabri (CEEBA, Egypt)
Prototype 1.1	**Prototype 2.1**	**Prototype 3.1**
Konstantinos Plakas (CERTH, Greece)	Manuel Sapiano (EWA, Malta)	Lobna Mansouri (CERTE, Tunisia)
Ammar Mohammad Hussein (PWEG, Palestine)	Roula Khadra (CHIEAM Bari, Italy)	Dimitris Sioutopoulos (CERTH, Greece)
Alberto Carletti (Sassari University, Italy)	Marco Graziani (EWA, Malta)	Naem Mazahreh (National Agricultural Research Centre NARC, Jordan)
Houssem Hmaidi (Ministry of Equipment and Housing, Tunisia)		Monther Hind (PWEG, Palestine)
Saddam Abu-Nawas (Aqaba Water Company, Palestine)***		Dalanda Hamdi (CERTE, Tunisia
Jihan (GDA Sidi Amor, Tunisia)***		
Prototype 1.2	**Prototype 2.2**	**Prototype 3.2**
Thuraya Mellah (CERTE, Tunisia)	Luna Al-Hadidi (National Agricultural Research Centre NARC, Jordan)	Hela Hassairi (Certe, Tunisia)
Henry Debattista (EWA, Malta)	Joanna Incorvaja (Ministry for Environment, Energy and Enterprise, Malta)	Ahmed Ghrabi (CERTE, Tunisia)
Yaser Abunnasr (American University of Beirut)	Ahmad Al-Salaymeh (The University of Jordan)	Karim Ergaieg (National Agronomic Institute of Tunisia)
Ahmed Aziz Raach (Enactus INAT, Tunisia)	Kenza Guelloub (Enactus INAT, Tunisia)	Alessandra Fiorilla (Svimed, Italy)
Nabeel Bani Hani (National Agricultural Research Center (NARC), Jordan)	Anna Crescenti (WeWorld GWC, Italy)	Hamza Wasti (Enactus INAT, Tunisia)
Oussama Hsini (CERTE,Tunisia)		Fabio Masi (Iridra, Italy)

Prototype 1.3	**Prototype 2.3**	
Khair Al-Deen Bsisu (University of Jordan, Jordan)	Paola Pinna (UNISS)	
Sura Al-Sbaehi (University of Jordan, Jordan)	Alessandra Paulotto (Sassari University, Italy)	
Giulio Conte (Iridra, Italy)	Tarek Ahmed El-Sammn (Arab Water Council, Egypt)	
Hichem Ben Hassine (CERTE, Tunisia)		
Mohammad Arabiat (The University of Jordan) ***	Ilaria Principi (Iridra, Italy)	
Amani Charrad (ANPR, Tunisia) ***		
REGISTERED BUT DID NOT ATTEND	**REGISTERED BUT DID NOT PARTICIPATE**	**REGISTERED BUT DID NOT PARTICIPATE**
Nour Benwahida (NUMERYX, Tunisia)	Taieb Ben Miled GDA SIDI AMOR	Alaa Ezz (CEEBA, Egypt)
Ihsen Jarraya (NUMERIX, Tunisia)	Hamadi Kallali (CERTE, Tunisia)	Wafa Hawamdeh (Jerash Municipality)
Hatem Benkedim (municipality of Tunis)	Adriano Battilani	Reem Dorgahmi (CONECT, Tunisia)
		Hatem Khalfallah (CONECT, Tunisia)
		Ahmad Elshbeli (Jerash Municipality, Jordan)
		Walid Barhoumi (ENICARTHAGE, Tunisia)

Three asterisk are for participants that were not registered but participated

5.3 Annex C - Photo Album of the Tunis MEDWAYCAP Innovation Camp

Pictures are worth more than a thousand words and the photo album that collects the experiences and emotions of the Tunis MEDWAYCAP Innovation Camp represents these in a very effective way.

Here is the direct link to the album https://www.flickr.com/gp/ideai/2qEzFZuK4W
And the short URL https://tinyurl.com/37h6nkms

5.3 Annex D - Roles and Responsibilities in the Innovation Camp

As indicated in the report we enclose a more detailed description of the leading roles and responsibilities of the team that supports the coordination and facilitation before, during and after the Innovation Camp.

- **The challenge owner** is in charge of the challenge and content. Can bring power and influence as the main client. She or he knows (or thinks to know) what is the main challenge but needs ideas and proposals on how to find ways to address and solve them through prototypes. Her or his role is to present the challenges and provide comments on the emerging results indicating how well they match the main problems and aims of the challenge. She or he has the power and influence to implement the prototypes throughout their iterative process. This role is normally covered by the main decision maker on the topic addressed by the Innovation Camp. When the challenge owner cannot participate in the Innovation Camp she or he will delegate a challenge holder as deputy to represent her or him. Specific activities performed before, during and after the Innovation Camp by the Challenge owner:
    - Before the Innovation Camp (most of these tasks have been performed at this stage).
        - Defines and describes the challenge in the challenge form.
        - Contributes to the guide for participants.
        - Provides the framework, context that helps to better understand the context.
        - Is open to accepting suggestions and ideas. Identifies dimensions and possible questions for “How can we…?”
        - Prepares the slides and a brief presentation for the plenary.
        - Defines what kind of actors would be most suited to address the challenge and helps to compose balanced groups.
        - Selects and invites the participants that are most suited to address the challenge and keeps a good balance between the diversity of age, gender, professional experience, eclecticism and heterogeneity.
        - Validates the challenge report and prototype report format.
    - During the Innovation Camp.
        - Coordinates the content of the challenge throughout the process.
        - Presents the Challenge in the opening plenary and in the Challenge group.
        - Liaises with the facilitator who is in charge of the process.
        - Monitors if the emerging topics for the prototypes are in line with the challenge.
        - Gives as much time as possible for the participants to talk and reflect among themselves. Speaks as little as possible, only when specific questions are asked to her or him.
        - Gives feedback to the prototype presentations recognising the effort performed and thanking the people that have worked on them. How the prototypes contribute to addressing the challenge.
    - After the Innovation Camp
        - Is in charge of the overall quality of the content for the prototype reports created by the Prototype Holders of its challenge and of the comprehensive reports that collect them. See the prototype diaries of challenge 1, challenge 2 and challenge 3.
        - Endorses the most promising prototypes to support their iterative continuous improvement and implementation through the Go No-go phase (short-medium and long term activities).
        - Liaises and supports the prototype holders to propose follow up actions.
        - Collects all the reports of the prototype holders.
        - Supports the prototype holder in the prototyping phase by providing feedback and advice.

        - Participates in the collaborative prototyping platform based on Basecamp by sending updates, messages, questions and setting up tasks to be performed with the other prototype holders and participants.

- **The Prototype holder and reporter** collects and writes all useful information for the final report and slides (on the basis of the report format) and acts as a prototype holder for one of the prototypes. She or he facilitates one of the sub-groups and provides organisational support to carry the prototypes forward. Prototype holders could be of two kinds: A) from a project consortium, in which case, through the project, they can invest more time in supporting activities such as light facilitation of smaller groups and reporting. B) When a prototype holder is one of the participants that is not funded, commitment and interest in the topic, the prototype and its impact becomes the key element that can really make the difference in performing the support and reporting activities envisaged in the follow-up. Specific activities performed before, during and after the Innovation Camp:
    - Before the Innovation Camp
        - As all participants she or he reads the information material to come prepared and know more about the challenges and context.
        - If the initiative promoting the innovation camp has already identified people that could commit to supporting the development and improvement of the prototype, these can be selected on the basis of their experience and influence (as in the case of some European Projects or other funded initiatives).
    - During the Innovation Camp
        - Coordinates and facilitates discussion in one of the prototype groups so as to cover all the questions and steps of the prototyping, under supervision of the facilitator who will monitor all prototype sub-groups.
        - Collects all necessary information to write the detailed prototype report / slides and abstract for the prototype for which she or he is responsible. We have added three empty prototype templates for each challenge. Agree with the other prototype holders of your challenge which prototype number you will take.See below the Prototype sections that include three prototype templates each and add more if necessary:
            - Prototypes of Challenge 1
            - Prototypes of Challenge 2
            - Prototypes of Challenge 3
        - Takes notes during the final plenary presentation to summarise the key concepts of its prototype.
        - Before the end of the final day of the workshop and after the presentations the prototype holder completes the digital version of the report and informs its challenge holder.
    - After the Innovation Camp
        - Carries forward the prototypes.
        - Contacts the members of the protype group to plan and implement commonly agreed follow-up actions.
        - Liaises with the challenge owner/ holder to inform her/him of the results of activities and sends its prototype report.
        - Participates in the collaborative prototyping platform based on Basecamp by sending updates, messages, questions and setting up tasks to be performed with the other prototype holders and participants.

- **The facilitator** is responsible for the design and organisation of the process, the selection of questions and tasks with the Challenge Owner, the organisation of space and management of time of the workshop. She or he facilitates the group main sessions and subgroups by moving between them according to the needs. Specific activities performed before, during and after the Innovation Camp include:
    - Before the Innovation Camp

        - Designs and adapts the process and method with the main organiser, the challenge owner/older.
        - Provides guidance on the design of the challenge form and guide of participants.
        - Provides advice on the logistic organisation and on the identification of roles and responsibilities: challenge owner/holder, challenge reporter and prototype holders.
        - Provides guidance on how to map and select stakeholders and actors according to the quadruple helix (public institutions, business, research and civil society.
    - During the Innovation Camp
        - Coordinates the process, method and time.
        - Asks questions and stimulates the participants to propose ideas.
        - Helps participants to reach the agreed objectives and outcomes.
        - Performs the internal retrospective briefings and debriefings of the team to share feedback on the process.
        - Liaises with the challenge owner and/or holder to align the work so as to help to reach the objectives or to adapt the method to the circumstances.
        - Provides guidelines on how to make the reporting: eg. the prototype reports and presentation slides/canvas (Prototype Holders), the challenge reports and the final report (Challenge holder/owner and rapporteur).
    - After the Innovation Camp.
        - Contributes to the Innovation camp report with methodological advice and guidance.
        - Performs a retrospective session to keep improving the process.
        - Trains the core team and participants on how to use the collaborative prototyping platform based on Basecamp.

- Logistic support and organisation of all aspects related to the camp, from the venue to the catering and registration of participants, furniture, tables, audiovisual equipment and so on.

References

Rissola G., Kune H. and Martinez P., Innovation Camp Methodology Handbook: Realising the potential of the Entrepreneurial Discovery Process for Territorial Innovation and Development, EUR 28842 EN, Publications Office of the European Union, Luxembourg, 2017, ISBN 978-92-79-74613-0, doi:10.2760/924090, JRC102130. Download from t.ly/PNqBc