



RETOUCH NEXUS

REsilient water gOvernance Under climate CHange
within the WEF E NEXUS

Deliverable 2.2

Factsheets on Good Practices and Innovative Tools for Stakeholder Engagement and Public Participation

Binayak Das (adelphi) and Karolina Susan Heck (adelphi)

Date (30/06/2023)

RETOUCH NEXUS Partners



Technical University of Munich - TUM (Germany) - Maria Vracholi, Johannes Sauer, Markus Disse, Juan Pablo Henao, Jingshui Huang & Nicole Tatjana Scherer

Valencia Polytechnic University - UPV (Spain) - Manuel Pulido-Velazquez, Hector Macián Sorribes, Adria Rubio-Martin & Eulalia Gomez Martin

Vrije Universiteit Amsterdam - VUA (The Netherlands) - Erik Ansink, Nicolien van der Grijp, Daniel Petrovics & Leon Bremer

adelphi research gemeinnutzige - adelphi (Germany) - Annika Krammer, Elsa Semmling, Karolina Heck & Binayak Das

Slovak University of Agriculture - SUA (Slovakia) - Jan Pokrivcak, Ema Lazorcakova & Miroslava Rajcaniova

Euroquality - EQY (France) - Barthélémy Maillard, Clémence Gracia & Solène Fovelle

Vlaamse Instelling voor Technologisch Onderzoek - vito (Belgium) - Katrien Van Hooydonk, Lilian Taverner, Steven Broekx & Wim Sciettecatte

De Watergroep - DWG (Belgium) - Pauline Ottoy, Charlotte Jacobs & Ian Montauban van Swijndregt

Energy and Water Agency - EWA (Malta) - Manuel Sapiano, Nicholas Ellul, Nadine Vella, Aaron Cutajar, Nadia Gatt Gafa & Marco Graziani

Hoogheemraadschap Hollands Noorderkwartier - HHNK (Netherlands) - Floor van Schie, Ronald Koolen & Marja Korting

Greening the Islands - GtI (Italy) - Gianni Chianetta, Emilio Gabrielli, Francesco Luise, Mattia Monaco, Andrea Morabito, Sabrina Pentecoste, Jean Karl Micallef-Grimaud, Graziana Salvati

Regierung Oberfranken - RegOb (associated) (Germany) - Andrea Kuenzl

Ministry of Agriculture and Rural Development - MARD (associated) (Slovakia) - Martin Kovac



Project Acronym	RETOUCH NEXUS
Project Title	REsilienT water gOvernance Under climate CHange within the WEF E NEXUS
Project Coordinator	Maria Vrachioli
Project Duration	01.01.2023 – 31.12.2026

Nature of the deliverable		
R	Document, report (excluding the periodic and final reports)	X
DEM	Demonstrator, pilot, prototype, plan designs	
DEC	Websites, patents filing, press & media actions, videos, etc.	
OTHER	Software, technical diagram, etc.	

Dissemination Level		
PU	Public, fully open, e.g. web	PU
CO	Confidential, restricted under conditions set out in Model Grant Agreement	
CI	Classified, information as referred to in Commission Decision 2001/844/EC	

Deliverable No.	D2.2
Dissemination level ¹	Public
Work Package	WP 2 - Multi-actor engagement mechanisms for water governance
Task	T 2.2 - Review of good practices and innovative tools for stakeholder and citizen engagement in cross-sectoral water management
Lead beneficiary	4 (adelphi)
Contributing beneficiary(ies)	1 (TUM), 2 (UPV), 3 (VUA), 5 (SUA), 7 (VITO), 8 (DWG), 9 (EWA), 10 (HHNK), 11 (Gtl), 12 (RegOfr), 13 (MARD)
Due date of deliverable	30 June 2023
Actual submission date	30 June 2023

Quality procedure			
Date	Version	Reviewers	Comments
12.06.2023	Factsheet template shared	All case study leaders	Feedback on Factsheet Template
24.06.2023	Draft of factsheets shared	All case study leaders	Feedback and contribution of new good practices

Acknowledgements

This report is part of the deliverables from the project "RETOUCH NEXUS" which has received funding from the European Union's Horizon Europe research and innovation program under grant agreement N° 101086522. More information on the project can be found at www.retouch-nexus.eu



Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or REA. Neither the European Union nor the granting authority can be held responsible for them.



Table of Contents

NOTE ON THE FACT SHEETS	6
1. CITIZEN SCIENCE	7
GOOD PRACTICES.....	8
PRACTICAL RECOMMENDATIONS FOR ENGAGEMENT: CITIZEN SCIENCE.....	10
2. CREATIVE COLLABORATIVE EVENTS.....	11
GOOD PRACTICES.....	12
PRACTICAL RECOMMENDATIONS FOR ENGAGEMENT: CREATIVE COLLABORATIVE EVENTS.....	13
3. E-PARTICIPATION.....	14
GOOD PRACTICES.....	15
PRACTICAL RECOMMENDATIONS FOR ENGAGEMENT: E-PARTICIPATION	16
4. LIVING LABS	17
GOOD PRACTICES.....	18
PRACTICAL RECOMMENDATIONS FOR ENGAGEMENT: LIVING LABS.....	20
5. FINANCIAL AND ECONOMIC MECHANISMS.....	21
GOOD PRACTICES.....	22
PRACTICAL RECOMMENDATION OF ENGAGEMENT MECHANISMS: FINANCIAL AND ECONOMICS MEASURES	23
6. INCLUSIVE ENGAGEMENT MECHANISMS	24
GENDER.....	24
PRACTICAL RECOMMENDATIONS FOR ENGAGEMENT: GENDER.....	25
YOUTH.....	26
PRACTICAL RECOMMENDATION FOR ENGAGEMENT: YOUTH.....	27
INCLUSION AND DIVERSITY	28
GOOD PRACTICES.....	29
7. LEGAL MECHANISMS	32
GOOD PRACTICES.....	33
PRACTICAL RECOMMENDATIONS FOR ENGAGEMENT: COMPLAINTS.....	36
8. MOTIVATION AND LEADERSHIP	37
GOOD PRACTICES.....	39
PRACTICAL RECOMMENDATIONS FOR ENGAGEMENT: MOTIVATION AND LEADERSHIP	41
REFERENCES.....	42



List of Figures

FIGURE 1: STEPS TO IMPLEMENTING CITIZEN SCIENCE.....	10
FIGURE 2: STEPS TO IMPLEMENTING E-PARTICIPATION	16
FIGURE 3: STEPS OF IMPLEMENTATION OF LIVING LABS. BASED ON HABIBIOUR ET AL. N.A.	20
FIGURE 4: STEPS TO IMPLEMENTING FINANCIAL AND ECONOMIC MEASURES	23
FIGURE 5: STEPS FOR ENSURING THE QUALITY OF GENDER EQUALITY COMPETENCE INITIATIVES. BASED ON (EUROPEAN INSTITUTE FOR GENDER EQUALITY, 2016)	25
FIGURE 6: STEPS FOR EFFECTIVELY INTEGRATING YOUTH IN DECISION-MAKING.	27
FIGURE 7: STEPS FOR EFFECTIVELY INTEGRATING VULNERABLE GROUPS IN PUBLIC ENGAGEMENT PROCESSES. ...	29
FIGURE 8: WHO COMPLAINS? (EUROPEAN COMMISSION, 2020).	36
FIGURE 9: SOLUTIONS TO MINIMIZE STAKEHOLDERS' FATIGUE AND IMPROVE POLITICAL WILL (OECD, 2015)..	41

List of Tables

TABLE 1: GOOD PRACTICES – CITIZEN SCIENCE	8
TABLE 2: GOOD PRACTICES – CREATIVE COLLABORATIVE EVENTS.....	12
TABLE 3: GOOD PRACTICES – E-PARTICIPATION	15
TABLE 4: GOOD PRACTICES – LIVING LABS	18
TABLE 5: GOOD PRACTICES – FINANCIAL AND ECONOMIC MECHANISMS	22
TABLE 6: GOOD PRACTICES – INCLUSIVE ENGAGEMENT MECHANISMS	29
TABLE 7: GOOD PRACTICES – LEGAL MECHANISMS	33
TABLE 8: GOOD PRACTICES – MOTIVATION AND LEADERSHIP	39



NOTE ON THE FACT SHEETS

The fact sheets serve as informative resources for the RETOUCH NEXUS case studies, highlighting a collection of effective practices and innovative approaches derived from ongoing initiatives in Europe and elsewhere. These engagement mechanisms are associated with OECD Principles on Stakeholder Engagement and their relevant indicators tagged (#) within each factsheet. These good practices will help shaping the planned engagement with citizens applying innovative participatory methods for co-creation. The selected engagement mechanisms and the good practices focused on the needs of the different case studies, and on the key gaps identified in D2.1. The factsheets include **eight engagement mechanisms** capturing a total of **40 good practices and innovative approaches**.

The first four factsheets and the examples focus on approaches and tools to undertake joint activities with stakeholders and citizens. These include Citizen Science, Collaborative Events, E-Platforms, and Living Labs, providing an opportunity to devise innovative participatory methods within the RETOUCH NEXUS case studies.

The fifth factsheet on financial and economic mechanisms shares various approaches linked to instruments on user fees, tariff setting and financing, which are relevant for some of the case studies whose focus is on economic instruments and tariffs.

The sixth factsheet focuses on inclusive mechanisms that prioritize active engagement and collaborative efforts aimed at women, youth, and vulnerable groups. It showcases specific examples of initiatives led by women or youth groups, highlighting their contributions and achievements.

The last two factsheets in the series concentrate on different aspects of engagement mechanisms: legal mechanisms and motivation and leadership. The legal mechanisms factsheet offers citizens valuable insights and examples on understanding the legal tools and measures available to them, enabling them to address grievances, seek information, and access relevant data. It equips citizens with the necessary tools to demand greater transparency and accountability.

On the other hand, the motivation and leadership factsheet suggest approaches and ideas to motivate, mobilize, and engage citizens, including local politicians. Its aim is to foster the development of leaders and champions who can drive positive change in their communities and WEFE nexus collaborations.

Disclaimer:

The steps and recommendations for each mechanism are simplified representation of a process, and each step can involve multiple sub-steps and considerations. Each project is unique, and one may need to adapt these steps to fit into the specific objectives and context. Further details regarding the various applications and actions within each step will be covered in the upcoming manual, as outlined in RETOUCH NEXUS Deliverable 2.4.



1. CITIZEN SCIENCE

Citizen science in the context of water governance and management refers to the active participation of citizens in scientific research, data collection, and decision-making processes related to water resources.

#inclusiveness #equity #efficiency #effectiveness

#information #transparency #youth #public participation #capacity



In citizen science, usually unpaid, volunteers work together to collect or unlock new resources for research, experimentation, and analysis by opening the process to everyone (Nesta, 2019). Citizen science involves the participation of amateur enthusiasts in science. Citizens, especially those residing in specific regions, often possess valuable local knowledge and expertise about their environment. By involving them in citizen science initiatives, their insights can be integrated with scientific data, providing a more holistic understanding of the WEF Nexus and improving decision-making processes. Volunteers contribute by gathering data, ensuring its accuracy and reliability, analysing and interpreting findings, developing research questions, and disseminating outcomes to the wider public (EC, 2020). By harnessing the availability of volunteers worldwide, citizen science unlocks the potential for continuous, global observation, generating data on a great temporal and geographic scale (McKinley, Briggs & Bartuska 2013; Kosmala et al. 2016; Bonn et al. 2018).

This mechanism involves engaging individuals, communities, and non-expert volunteers in various aspects of water monitoring, data collection, analysis, and policy development. In Europe, citizen science initiatives, such as local communities monitoring water quality in rivers and lakes, are playing a vital role in enhancing water governance by providing valuable data for decision-making and fostering public engagement in environmental conservation. By mobilizing volunteers within a small watershed, the ability to locally monitor occurrences increases (Bonn et al. 2018).

DIMENSIONS OF CITIZEN SCIENCE

- Data Collection and Monitoring
- Early Warning Systems
- Education and Awareness
- Participatory Watershed Management
- Policy Advocacy and Decision Making
- Water Quality Assessment

For example, EU Member States have incorporated observations from volunteers into official reporting as stipulated by the updated 2009 Birds and the Habitats Directive. Digital tools and social media have simplified the task of promoting and fostering engagement in citizen science initiatives (EC, 2020). Citizen science drives scientific progress in earth observation research both globally and locally, leveraging remote sensing, social media, and distributed sensors. In 2016, the journal *Remote Sensing* issued a special issue on outcomes of citizen science (Fritz & Fonte 2016) including research on land cover, forest biomass and water clarity (Bonn et al. 2018).

Citizen science, while beneficial, also has some limitations to consider. Data quality concerns may arise due to varying levels of expertise among volunteers. Sampling bias can impact the unequal representation of collected data. Limited resources and capacity can restrict project scale. Volunteers may lack scientific expertise for data interpretation. In addition, ethical considerations such as privacy and community engagement must be addressed. Bias and subjectivity can affect observations. Finally, citizen science may have limitations in addressing complex, large-scale challenges. By recognizing and addressing these limitations, citizen science projects can maximize their effectiveness and contribution to scientific research and decision-making processes.

[EU-Citizen.Science](#) funded by European Union's Horizon 2020 and Horizon Europe Framework Programs is an online platform for sharing knowledge, tools, training and resources for Citizen Science - by the community, for the community. The vision of the platform is to serve as a knowledge hub to support the spread of Citizen Science and build on the growing influence of citizens participating in research across the science spectrum.



GOOD PRACTICES

Table 1: Good practices – Citizen science

GOOD PRACTICE	DESCRIPTION	TARGET GROUP	WEFE SECTOR	SCALE	TOOLS
<u>Catch the Water Monsters</u>	The project conducted by <u>Natuur & Milieu</u> and the <u>Netherlands Institute of Ecology (NIOO-KNAW)</u> focuses on training and educating citizens to assess the quality of small water bodies in their surroundings.	Active community of 1000 citizens, including Civil Society Organizations and individuals.	Water, Ecosystems	National – The Netherlands	Trainings to identify different aquatic plant groups, measure water clarity with a secchi-disc, investigate the macrofaunal community with a dip-net and measurement kit. The citizens receive information on how and where to record the measurements.
<u>WeSenseIt Citizen Observatories</u>	Involving the community in water governance. Collecting non-structured environmental data (such as measurements, images, and messages) and utilizing social media platforms for data mining. Developing descriptive and predictive models as well as decision-making tools to integrate the collected data. Establishing a two-way feedback system to facilitate the exchange of environmental knowledge and experiences between citizens and authorities, which aids decision-making, planning, and governance.	Includes civil society organizations and individuals.	Water	International – UK, Netherlands, Italy	Crowdsourcing, social media, custom applications and dedicated web portals innovative sensors.
<u>HARNESSTOM Citizen Science Platform</u>	The aim is to educate citizens about plant genetic resources through citizen science. To identify characteristics that influence consumer acceptance, a survey was conducted on a European level. Selected varieties underwent evaluation by farmers through Participatory Selection trials, sensory analysis by chefs, and distribution of seed kits to citizens for their assessment. 500 high-school students are	Citizens, farmers, chefs, high-school students	Food	International	Online surveys. Participatory selection trials. Distribution of seed kits.



GOOD PRACTICE	DESCRIPTION	TARGET GROUP	WEFE SECTOR	SCALE	TOOLS
	actively participating in the analysis of the collected data.				
<u>Vadonleső</u>	The program Vadonleső (Wilderness Ranger) invites citizens to participate in protected species conservation.	Citizens, tourists Over the last years, 12,000 people participated in gathering data about 18 protected species.	Ecosystems	National – Hungary	Mobile Wilderness Watcher-App.
<u>DRYvER</u>	DRYvER is a smartphone and web-based application developed to monitor intermittent rivers and transient streams through data collection from the public. These drying river networks (DRNs) act as key ecological corridors for species as well as provide key ecosystem services. Since they experience high variability in their flow and drying, monitoring from the public can provide a new avenue for data collection that can strengthen scientific predictions on the future impacts of climate change on rivers.	Civil Society, Research, Youth	Water, Ecosystems	International – EU level	Website, mobile application, data collection, scientific papers, web developers needed.
<u>Drinkable Rivers</u>	The Foundation Drinkable Rivers works towards making drinkable rivers through inspiring walks, events, research, education, and mobilization through various action programs. It runs a citizen science program that enables people to monitor the health of their rivers. The foundation currently has 40 citizen science hubs in 15 countries. These hubs are run by enthusiastic people who mobilize volunteers around them. Most hubs are part of local environmental organizations, schools, visitor centers or companies. Youth for Drinkable Rivers is a network of young people working towards drinkable rivers.	Civil Society Organizations and individuals.	Water, Ecosystems	International – EU	Website, data platform, manual, instruction videos, film, book.



PRACTICAL RECOMMENDATIONS FOR ENGAGEMENT: CITIZEN SCIENCE



Figure 1: Steps to Implementing Citizen Science

RECOMMENDATIONS TO IMPLEMENT CITIZEN SCIENCE PROJECTS

- Engage citizens right from the start of a project.
- Facilitate capacity building at the local, regional, national, and international levels, shifting from knowledge transfer to knowledge exchange and joint knowledge creation at the science-society interface.
- Recognize citizens as valuable partners in the research process.
- Avoid oversimplified perspectives and embrace nuanced approaches tailored to the project's context.
- Highlight the benefits of citizen involvement to motivate participation.
- Provide financial and other incentives to reward citizen science contributions.
- Ensure inclusivity and accessibility by welcoming individuals from diverse backgrounds and demographics, defining clear goals and objectives.
- Implement well-designed communication, dissemination, and evaluation strategies to maximize project effectiveness.

Source: Bonn et al. 2018



Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or REA. Neither the European Union nor the granting authority can be held responsible for them.



2. CREATIVE COLLABORATIVE EVENTS

Creative collaborative events refer to gatherings or projects where individuals from diverse backgrounds come together to collectively generate innovative ideas, explore new concepts, and create artistic outputs.

#information #youth #transparency #public participation #inclusion
#technology #ICT #creativity #innovation



Creative collaboration events foster co-creation, co-design and collaborative thinking and fosters the development of innovative projects generating knowledge and drive meaningful social change (Gold & Ochu, 2018). New online models are emerging that promote co-creation, collective intelligence, and deliberation, fostering scientific agency and democratic participation (Saunders & Mulgan 2017). Throughout the lifespan of a citizen science project, various creative collaborative events can be organized. Activities include formulating research questions, designing the project, co-designing tools, launching the initiative. ThinkCamps, Open Space Technology (OST), BarCamps, and Hackathons are creative collaborative approaches that can be applied to address water governance in WEFE Nexus. Each approach has unique characteristics and contributions to offer in these contexts.

ThinkCamps provide a platform for collaborative problem-solving, knowledge sharing, and stakeholder engagement. They promote inclusivity by welcoming non-technical participants and fostering offline community-building (Gold, 2012). ThinkCamps enable diverse stakeholders to co-design technological features and functionalities relevant to water governance, facilitating creative problem-solving and exploring new opportunities. A key objective of ThinkCamps is to foster inclusivity by providing a welcoming space for non-technical participants who may not have coding skills or feel uncomfortable but still wish to contribute in a meaningful way. This format was further refined through the EU-funded Citizen Cyberlab project, which aimed to facilitate offline community-building and creative problem-solving.

DIMENSIONS OF CREATIVE COLLABORATIVE EVENTS

- BarCamps
- Community Engagement
- Conferences and Summits
- Co-Creation
- Exhibitions
- Hackathon
- Innovation Labs
- Open Space
- ThinkCamps
- Trainings

Open Space Technology (OST) brings structure to chaotic situations by leveraging self-organization among participants. OST creates a safe and inclusive environment for open discussions, knowledge sharing, and collaborative action (Gold & Ochu, 2018). In water governance, OST enables stakeholders to engage in inclusive and participatory decision-making processes, fostering ownership and collective identification of actions and solutions.

BarCamps emphasize self-directed learning, knowledge sharing, and community building. Participants actively contribute to the event's agenda and content, promoting exchanges of ideas and experiences (Gold & Ochu, 2018). BarCamps can facilitate networking, collaboration, and the generation of innovative approaches in water governance.

Hackathons focus on producing code and developing technological solutions. They provide an intensive and time-limited environment for developers, experts, and stakeholders to work together (Gold & Ochu, 2018). Hackathons can be adapted to address water governance challenges related to data analysis, modeling, and decision support systems, enabling rapid development of technological solutions for the WEFE Nexus.



GOOD PRACTICES

Table 2: Good practices – Creative collaborative events

PROJECT	DESCRIPTION	TARGET GROUP	WEFE SECTOR	SCALE	TOOLS
<u>Flood-IMPAT+</u>	<p>Participatory Integrated Meso & Micro Scale Procedure to Assess Flood Risk.</p> <p>The Flood-IMPAT+ project aims to define new methods for flood damage prediction, which can support both basin planning (aimed at mitigating flood risk) and emergency planning. Using the city of Lodi in Italy as case study.</p> <p>Co-mapping laboratories: Participants were asked to examine flood maps developed within the project with respect to their components of hazard, exposure, vulnerability and damage in order to collect guidelines for increasing communicative effectiveness of the maps. The project also developed a gender equality plan.</p>	Representatives of the civil society, economic activities and local institutions responsible for flood risk management	Water, Ecosystems	Regional – Italy	Participatory GIS → interactive map.
<u>Climate Barcamp</u>	<p>Organised by Czech NGO NESEHNUTI.</p> <p>Participants develop solutions for climate protection in the countries of Central and Eastern Europe. The event (in 2023), will also touch on the issue of sustainable reconstruction of Ukraine.</p>	Activists, NGO workers, journalists, researchers and other representatives of civil society, who work with or are interested in the topic of Climate Change Solutions. from the Czech Republic, Ukraine, Slovakia, Poland, Hungary, Moldova and Belarus	Water, Energy, Food, Ecosystems	International – Central and Eastern Europe	Interactive sessions with open windows for participants to present their topics and projects.
<u>Rhön Stiftung Think Campy</u>	Energy efficiency in hospitals	Medical, healthcare and nursing students from relevant institutions (health insurance companies, pharmaceuticals, consulting, hospitals)	Water, Energy	National – Germany	n.a.



Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or REA. Neither the European Union nor the granting authority can be held responsible for them.



PRACTICAL RECOMMENDATIONS FOR ENGAGEMENT: CREATIVE COLLABORATIVE EVENTS

RECOMMENDATIONS TO IMPLEMENT EVENTS

Before the event

- Resources: allocate a budget for a community manager and consider including grassroots communities in funding applications for events. Proactively consider and budget for accessibility, travel, and dietary requirements of participants.
- Ownership: encourage pre-event challenge submissions and invite the challenge owners to attend. This is crucial for attracting participants and following up on actions after the event. Determine how contributions will be recognized and accredited by the project owners.
- Outreach: actively reach out to a diverse range of (new) participants and take steps to remove barriers to attendance, including considering the time of day and physical location.

During the event

- Context: set the context of the event and find ways to relate it to participants' existing knowledge and experiences.
- Equity: foster an environment where all participants can share and value their knowledge and experiences equally, promoting mutual benefit.
- Representation: incorporate elements into the event program that actively amplify diverse voices, such as employing World Café style dialogues or featuring guest talks.
- Spontaneity: encourage and support spontaneous contributions from participants during the event.
- Innovation: embrace serendipity, failure, and unexpected outcomes as catalysts for innovation.
- Open evolution: document, evaluate, and reflect on the event to share insights and contribute to the further evolution of creative collaboration approaches. Share prototypes, videos, reports, and code online, ensuring proper credit is given and obtaining prior informed consent.

After the event

- Connect: provide forums or facilitate connections that allow participants to stay in touch and stay updated on progress. Ensure that individuals have the option to opt out if they choose to.

Source: Gold and Ochu (2018, p163.)



3. E-PARTICIPATION

E-Participation is the use of digital tools for public participation in a more democratic way.

#youth #inclusiveness #equity #information #transparency
#motivation #awareness #accessibility



E-Participation is the use of digital tools for public, political participation, however, it has several sub categories. For monitoring purposes, E-Information is a form of accessible and relevant digital information that is can inform and encourage people to participate. Further, online deliberation and discussion can occur via E-Deliberation to create a more dynamic and interactive engagement between participants. Another category of E-Participation is for agenda setting. This can be done through E-Campaigning, where support for political projects can be mobilized online and potentially lead to E-Petitions with formal requests to political parties or institutions. E-Consultation aids in the decision-making process through evaluation and input on political decisions. In addition, budgets can be determined through E-Participatory Budgeting and voting through E-Voting. Social networking platforms have become an important E-Participation tool because they allow for instant sharing and response mechanisms, allow for wide range of immediate expression as well as fast mobilization and organizing capacity (Androniceanu, 2022).

E-Participation allows for more inclusion and equity when web-based platforms and the Internet are not an issue to access, and the digital platform is well designed, transparent, and intuitive to navigate. If the platform is well designed, it can also achieve the OECD principles of streamlining the process of inclusive engagement to prevent stakeholder consultation “fatigue” and lack of motivation by reducing the time and resources needed for broad participation. In addition, E-Participation can allow certain groups, such as women and minorities, to participate since in person participation can create obstacles for some (OECD, 2015). E-Participation is a uniquely powerful tool in stakeholder engagement because it has the potential to link all societal sectors, from state to civil organizations and across local to global scales (Androniceanu, 2022).

DIMENSIONS OF E-PARTICIPATION

- Crowdsourcing
- Digital Citizen Engagement Platforms
- E-Campaigning
- E-Deliberation
- E-Information
- E-Participatory budgeting
- E-Petitions
- E-Voting
- Online Consultations
- Online Deliberation
- Online Reporting and Monitoring
- Open Data Initiatives
- Social Media Engagement
- Virtual Town Halls

While there is great potential to access a wide range of stakeholders and handle large amounts of information through electronic forms of participation, many people still cannot access the Internet which can limit the kind of stakeholders that can participate in e-activities. Digital divide is also worth noting, as web based platforms can exclude those who do not have access or knowledge on how to use them, thereby losing the original goals of E-Participation (Androniceanu, 2022). Anonymity and convenience are other strengths of E-Participation, however if the platform is poorly designed, people may not be able to find what they need and participate in an effective manner (OECD, 2015).



GOOD PRACTICES

Table 3: Good practices – E-participation

PROJECT	DESCRIPTION	TARGET GROUP	WEFE SECTOR	SCALE	TOOLS
<u>Citizen Sourcing</u>	Citizens share opinions among themselves and with the government for the purpose of planning. Citizens contribute valuable insights that help the government identify and address emerging problems.	Citizens Governmental authorities	n.a.	n.a.	eRulemaking, IdeaScale, eDemocracy party, CrisisCommons, Challenge.gov, PeerToPatent, SeeClickFix
<u>Government as a Platform</u>	The government provides data for citizens to make informed decisions. By disclosing data, the government aims to build trust and gain legitimacy from the public. The government employs decision heuristics to promote sustainable behavior among citizens.	Citizens Governmental authorities	n.a.	n.a.	Geographical Positioning Systems (GPS), GovOpen Sourcing Data.gov, Recovery.gov
<u>Collaborative Planning & Groupware</u>	Discussion of problems and solutions in workshops with visualizing tools and scenario building, training of citizen scientists; on-going face-to-face contact between government representatives and motivated citizens	Government representatives and motivated citizens	n.a.	n.a.	“CommunityViz” software tool for planning, weather networks funded or facilitated by government, virtual learning platforms, touch-tables and visual scenario-building
<u>“Do It Yourself” Government</u>	Citizens self-organize to produce and consume services with no or little involvement of the government; Online citizen testimonials, sharing of sustainable practices, online advocacy for justice	Citizens	n.a.	n.a.	Open Source, SETI@HomeYelp, NHS Choice, Email, Community websites, social media



PRACTICAL RECOMMENDATIONS FOR ENGAGEMENT: E-PARTICIPATION



Figure 2: Steps to implementing E-Participation

RECOMMENDATIONS FOR E-PARTICIPATION

- Access to Technology: Participants need access to computers, smartphones, or tablets, along with reliable internet connectivity.
- Data Privacy and Security: Adequate measures should be in place to protect participants' personal information and data.
- Platform Selection: Choose a user-friendly e-participation platform or software that aligns with the engagement goals and target audience. Consider features, security, and scalability.
- Excellent Web Development: Develop a user-friendly platform that is easy to navigate, accessible to people of different backgrounds, and available in multiple languages.
- Seamless Data Upload: Ensure a smooth process for participants to upload images and record data. Consider efficient data management for scientists reviewing large amounts of data.
- Funding: Secure necessary funding for web development, management, troubleshooting, and monitoring of the e-participation platform.

Source: UNDESA, 2020



Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or REA. Neither the European Union nor the granting authority can be held responsible for them.



4. LIVING LABS

Living labs are innovative user-centered ecosystems establishing partnerships between public, private, and communities. They use a co-creation approach, integrating research and innovation processes within real-life communities and settings.

#inclusiveness #equity #efficiency #effectiveness
#information #transparency #capacity #innovation



Living Labs (LLs) are dynamic innovation ecosystems that operate within real-life environments, employing iterative feedback processes to foster sustainable impact throughout an innovation's lifecycle. They emphasize collaborative creation, rapid prototyping and testing, as well as scaling-up innovations and businesses, thereby generating shared value for the involved stakeholders.

Within the realm of LLs, they function as intermediaries or orchestrators, bridging citizens, research organizations, companies, and government agencies at different levels. While various living labs exhibit unique implementations, they share common characteristics. Broadly, LLs employ diverse methods and formats, with multi-stakeholder participation, co-creation, orchestration, and real-life experimentation being prevalent approaches (ENoLL, 2023).

Living Labs foster a bottom-up policy coherence. They not only integrate the needs and ideas of local stakeholders, but also connect European policies and programmes, including Horizon 2020, Smart Specialisation, the Urban Agenda, Cohesion Policy, and others. In particular, LLs impact can be observed in concept for smart cities. Here, EU policies and practice supported and contributed to the development of multiple cross-border experiments with Living Labs (Water Europe, Brussels, 2019). Living labs create opportunities for citizens to exchange knowledge and learn from experts, researchers, and other participants.

According to a report by Water Europe in Brussels (2019, p.8), living labs are not independent legal entities but are hosted by commercial or non-commercial bodies. These living labs are primarily located in urban areas and operate on a project basis without establishing long-term engagement with communities. The technological readiness of living labs can vary from low to high maturity, while the commercial maturity of innovation in development tends to be lower. Living labs are embedded in real and/or realistic environments, and they focus on various aspects such as urban, regional, sector-specific, open innovation, virtual, living labs, social innovation, and sustainability topics.

DIMENSIONS OF LIVING LABS

- Open Innovation LLs
- Regional LLs
- Sector-Specific LLs
- Social Innovation LLs
- Sustainability LLs
- Urban LLs
- Virtual LLs
- Living Labs Networks



GOOD PRACTICES

Table 4: Good practices – Living labs

Project	Description	Target Group	WEFE sector	Scale	Tools
<u>GOVAQUA</u>	<p>GOVAQUA consists of six living labs on water governance innovations.</p> <p>Good practices are systematically reviewed and analysed, and further co-developed and validated with key stakeholders.</p>	Citizens, partners, municipalities, policy-makers-developers, planners, researchers, government agencies, and entrepreneurs.	Water	<p>International – EU level</p> <p>Labs:</p> <p>OUGC Water markets, Crau aquifer, France</p> <p>Water stewardship and innovative financing mechanisms, Archipelago Sea Basin, Finland</p> <p>Reconciling competing needs, Axarquía region, Spain</p> <p>Digital Basin, River Thames, Oxfordshire, United Kingdom</p> <p>Nordic hydropower, Finland and Sweden</p> <p>Reporting nature-creating change for citizens, Lower Danube, Bistret-Potelu Romania</p>	European Water Oriented Living Labs → WOLL methodology (cross-sector nexus approach from the European Water Oriented Living Labs (WOLLs)).
<u>Agricultural Research and Education Centre (AREC)</u>	<p>AREC provides a wide range of agricultural and environmental impact assessments, focusing grassland ecology, nature preservation, soil health, animal welfare, organic agriculture, and food quality.</p> <p>AREC's goal is to inform decision-making and promote sustainable practices for the harmonious coexistence of agriculture and the environment.</p>	Multi-stakeholder involvement: Local Government, University, Research Institute, Public Authorities	Water Energy Food Ecosystems	Local – Styrians Enns Valley, Austria	<p>Living lab methods</p> <p>Need finding consulting for sustainable land management and environment project development and management.</p>
<u>Zone ateliers, CNRS Institute for Ecology and Environment (INEE)</u>	<p>Observe, experiment, and model the past and present, in order to understand how ecosystems and anthroposystems function.</p> <p>The research areas of INEE include biodiversity,</p>	Multi-stakeholder involvement: citizens, research centres, universities, local government, and associations	Water, Ecosystems	Local – Bassin du Rhône, Mosenne, Loire, France	<p>Living Lab Methods.</p> <p>User development methods Networking.</p>



Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or REA. Neither the European Union nor the granting authority can be held responsible for them.



	<p>evolution, adaptation, human impact on the environment, ecosystems' feedback on global change, coastal and marine environments (interactions and processes), functional ecology, analysis and management of ecosystem services.</p>				
<p><u>Energy & Water Green Copenhagen Living Lab</u></p>	<p>Perform as mediator and facilitator of co-creation processes between stakeholders and citizens.</p> <p>Develop educational partnerships with focus on energy- and water-supply, climate mitigation and adaptation, citizen involvement and climate adaptation in Greater Copenhagen.</p> <p>Support local climate adaptation solutions in dense city areas</p>	<p>Multi-stakeholder involvement: Utility companies for the Greater Copenhagen, private sector, and city of Copenhagen.</p>	<p>Water, Energy, Ecosystems</p>	<p>Local – Valby, Copenhagen, Denmark</p>	<p>Data collection, pilot project product co-design and prototyping networking.</p>



Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or REA. Neither the European Union nor the granting authority can be held responsible for them.



PRACTICAL RECOMMENDATIONS FOR ENGAGEMENT: LIVING LABS

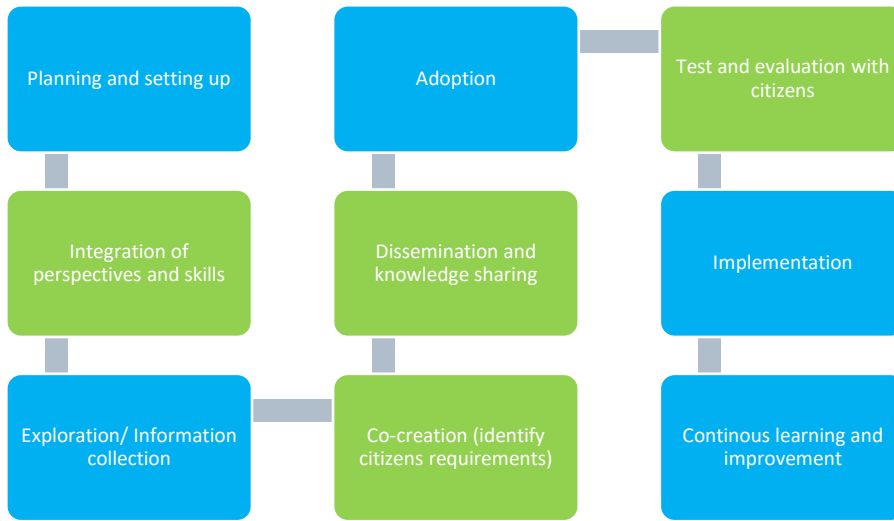


Figure 3: Steps of implementation of Living labs. Based on Habibiour et al. n.a.

RECOMMENDATIONS FOR LIVING LABS

- Foster Openness: Encourage collaboration and cross-fertilization of ideas
- Emphasize Distribution: Transparently distribute the values and knowledge generated within the living lab ecosystem.
- Facilitate Influence: Engage competent partners and domain experts to enhance the quality and relevance of innovation outcomes.
- Promote Continuity: Build trust among stakeholders, accumulating context-specific knowledge over projects and leverage past experiences.
- Prioritize Realism: Conduct tests and experiments in real-world environments to evaluate innovations effectively.
- Embrace Value Creation: Recognize the economic value of innovation outcomes and activities.
- Empower User Communities: Motivate and involve user communities in living lab processes.
- Encourage Spontaneity: Foster an environment that promotes spontaneous interaction, reaction, and ideation.

Source: Guiding Principles of Living Labs, Water Europe, 2019,



Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or REA. Neither the European Union nor the granting authority can be held responsible for them.



5. FINANCIAL AND ECONOMIC MECHANISMS

Financial and economic instruments that generate revenues impact stakeholders and citizens directly and they have a crucial role in shaping the instruments, and they need to be informed about the implications of implementing such instruments.

#efficiency #effectiveness #inclusion #information # Institutionalization
#structuring #integration #accountability #public participation



Economics play a significant role in water, energy, food and ecosystems nexus. Finding innovative ways to determine the value, price and cost of water through financial, economic and commercial instruments is a key component of numerous WEF Nexus projects including in some cases of the RETOUCH NEXUS project. An example of a formal economic or financial engagement mechanism is through innovative contracts and partnerships where different parties produce agreed-upon outcomes as formal agreements. The interest-pay-say principle is another formal mechanism that allows beneficiaries to have a say in the local water authority, if they pay for water use (OECD, 2015).

In addition, shareholding, where shareholders or stockholders legally own a share of stock in public or private cooperation, allows all parties to share the benefits and risks as well as be part of a more integrated decision-making process, where there is a joint decision-making process. These examples of financial and economic engagement mechanisms fall under the primarily under the OECD principles of goals, transparency and accountability since they determine who manages the outcomes, what kind of co-decision making is possible.

DIMENSIONS OF ECONOMIC AND FINANCIAL MECHANISMS

- Benefit-Sharing Agreements
- Community-Based Financing
- Community Shares or Bonds
- Environmental Markets
- Impact Investing
- Payment for Ecosystem Services (PES)
- Public-Private Partnerships (PPPs)
- Subsidies and Grants
- Water blockchain investment
- Water markets and trading
- Water permits
- Water tariffs
- Water User Fees

Some strengths of innovative contracts and partnerships are that there can be effective coordination and cooperation between several levels of government and across many different kinds of stakeholders, however, this process can be time consuming, labour intensive, and if the objectives and roles are unclear, there can be inefficiency. With the Interest-pay-say principle there is a high motivation to be involved since there is a financial contribution and investment, but the process of appointing representatives can sometimes be perceived as less democratic (OECD, 2015).

When implementing economic and financial instruments for water, careful attention must be given to citizens and stakeholders to ensure their effective and equitable participation. Equity and affordability should be at the forefront of considerations. It is essential to design instruments that do not disproportionately burden vulnerable communities or place an undue financial strain on citizens. Adequate measures should be taken to protect the rights of all individuals to access clean and affordable water, ensuring that the economic instruments are designed in a way that does not hinder access for marginalized groups.



GOOD PRACTICES

Table 5: Good practices – Financial and economic mechanisms

Name	Description	Target Group	WEFE sector	Scale	Tools
H20N Token	Crypto water token that brings a more effective and streamlined financing process of water projects worldwide through the use of blockchain technology in secure and less complex ways. The water projects are also evaluated and analyzed by international experts to meet strict environmental standards (ESG). This project also hopes to address the global funding gap for water infrastructure.		Water	International, National, South Africa	Blockchain technology, cryptocurrency, Cryptographically secured immutable smart contracts
New Ideas on Water in France	Innovative pricing solutions ushered in a new economic model for water and sanitation in France that shifts away from relying solely on water volumes being sold. This process led to 16 contracts being developed and had a strong impact on the water company and encouraged local governments to experiment with new tariff schemes that would be evaluated every 5 years.	Local authorities and civil society	Water	National – France	Web Consultation Platform, experts for at national level, public relations campaign, surveys
SOLUTIONSM	A new business model that allows local authorities clear millions of dollars of accumulated debt so that water and sanitation infrastructure can be improved over lengthy period that minimizes the impact of excessive interest rate increases.	Local authorities	Water	National, USA	Joint venture, asset management, contracts
Allwater Joint Venture	An alliance contract was developed for the provision of water and wastewater services in Adelaide. The contract relies on integrated governance rather than the traditional public-private partnership contract which means that all parties share risks, profits and losses.	Local authorities	Water	Local – Australia	Contract, co-operative, transparent, ownership



Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or REA. Neither the European Union nor the granting authority can be held responsible for them.



PRACTICAL RECOMMENDATION OF ENGAGEMENT MECHANISMS: FINANCIAL AND ECONOMICS MEASURES

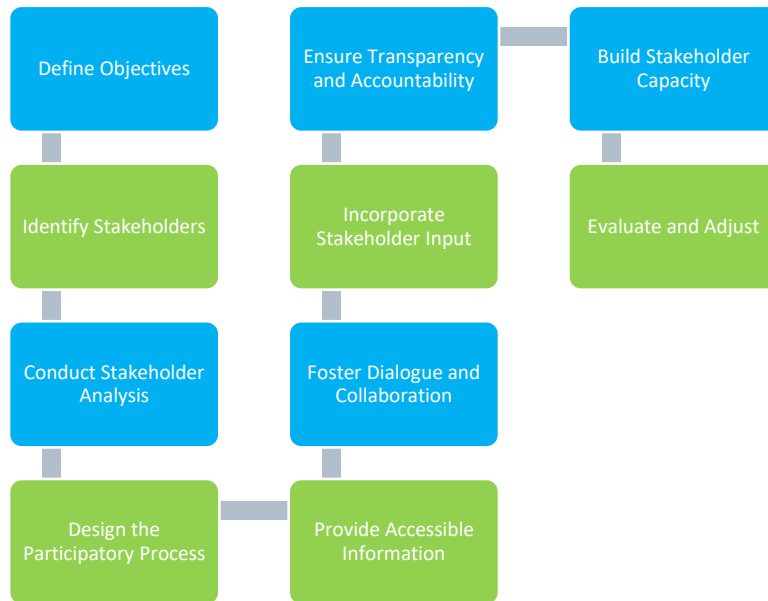


Figure 4: Steps to Implementing Financial and Economic Measures

RECOMMENDATIONS FOR SAFEGUARDS WHILE INTRODUCING ECONOMIC INSTRUMENTS

- Strengthen institutions: Enhance institutional capacity to enforce regulations and ensure effective implementation of economic instruments.
- Complement with decoupled subsidies: Provide decoupled subsidies to compensate users who may experience income losses or economic impacts due to the implementation of water charges.
- Robust monitoring and reporting: Establish a comprehensive monitoring and reporting system to ensure the performance-based payments for payment for environmental services are effectively implemented.
- Inform an objective public debate: Provide transparent and accessible information to facilitate an informed public debate on water trading and its potential impacts.
- Enhance legal security: Establish clear and secure legal frameworks for water trading to ensure fair and regulated market operations.
- Assess willingness to pay and risk: Conduct assessments of users' willingness to pay and evaluate potential risks associated with insurance schemes.
- Target subsidies: Direct subsidies towards specific target groups or sectors to ensure equitable distribution and avoid over- or under-subsidization.
- Implement public monitoring: Establish mechanisms for public monitoring of voluntary agreements to ensure transparency and accountability

Source: Rey, et.al (2018)



Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or REA. Neither the European Union nor the granting authority can be held responsible for them.



6. INCLUSIVE ENGAGEMENT MECHANISMS

To achieve sustainable and equitable development of the Water-Energy-Food-Ecosystems (WEFE) nexus, it is necessary to consider gender equality and inclusion of women, youth and vulnerable groups

#youth #gender #inclusion #equity #information #capacity
 #public participation #accessibility #communication



GENDER

Gender-related stakeholder engagement mechanisms aim to ensure the active participation of both women and men in decision-making processes. Firstly, they play a vital role in promoting gender equality by actively involving women and men in decision-making processes. By empowering women as key stakeholders, these mechanisms contribute to breaking down gender barriers and creating a more inclusive governance framework. Secondly, gender-sensitive stakeholder engagement ensures that the specific needs, priorities, and perspectives of women and men are considered. This approach helps address gender disparities and promotes inclusive development by recognizing the diverse experiences and challenges faced by different genders. Thirdly, engaging a diverse range of stakeholders leads to more comprehensive and informed decision-making. By incorporating gender perspectives, water and WEFE governance efforts become more effective and sustainable, as they acknowledge the different roles, knowledge, and experiences of women and men in relation to water resources and the environment. Lastly, gender-related stakeholder engagement mechanisms promote equity and social justice by ensuring that marginalized or underrepresented groups, particularly women, have a voice and influence in shaping policies and decisions that directly impact them. The European Institute for Gender Equality (EIGE) provides information on gender stakeholder consultation. Gender stakeholders, such as women’s organizations and gender experts, act as ‘control towers’, watching over public-policy processes to ensure that governments fulfil their commitments to gender equality and are accountable for their gender equality commitments (EIGE).

Gender-sensitive consultations actively engage all genders, seeking their perspectives and incorporating their inputs into decision-making. These consultations promote gender equality, recognizing diverse needs and avoiding marginalization. They create inclusive policies, strategies, and projects addressing gender-specific challenges. Gender-focused working groups address disparities and advance gender equality in water and WEFE governance. They foster collaboration and develop gender-responsive approaches. Women's networks and organizations amplify women's voices, advocate for their rights, and contribute to gender-responsive policies.

DIMENSIONS OF GENDER-INCLUSIVE PARTICIPATION

- Disaggregated Gendered Data
- Focused Group Discussions and Individual Interviews
- Gender-Balanced Task Forces and Committees
- Gender-Responsive Budgeting
- Gender-Responsive Communication and Outreach
- Gender-Responsive Consultations
- Gender-Sensitive Surveys
- Gender Training and Capacity Building
- Gender Mainstreaming
- Mentorship and Leadership Programs
- Women's and Gender Forums

Gender impact assessments understand differential impacts of governance decisions on women and men. They identify gender gaps and integrate considerations into policies, programs, and projects. This promotes gender equality and empowerment.



PRACTICAL RECOMMENDATIONS FOR ENGAGEMENT: GENDER

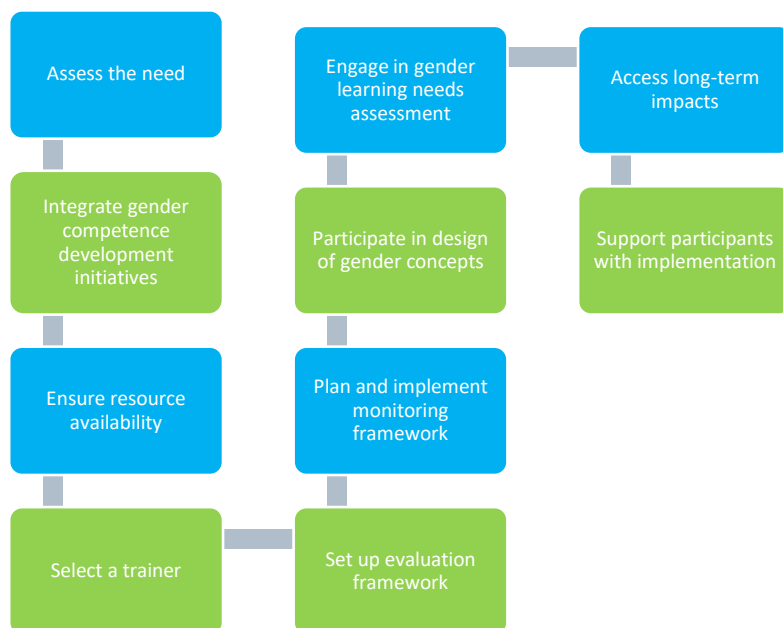


Figure 5: Steps for ensuring the quality of gender equality competence initiatives. Based on (European Institute for Gender Equality, 2016)



YOUTH

Throughout Europe, there is growing concern about the declining participation of young people in conventional forms of engagement. They are less inclined to vote than older generations and show lower levels of trust in institutions such as parliaments, governments, and political parties.

However, young people are not disengaged from politics. Many actively participate through alternative means. For instance, they engage in campaign movements and youth activism, often centered around specific issues such as the environment. To promote youth participation, we need to encourage traditional involvement while exploring and utilizing alternative forms.

Engaging youth as stakeholders in WFE governance is essential for several reasons. Firstly, young people’s perspectives and insights are crucial for shaping sustainable and inclusive water governance frameworks that meet the needs of future generations. Secondly, youth bring fresh ideas, innovation, and a unique understanding of technology, which can contribute to addressing WEFE challenges and finding novel solutions. Additionally, involving youth in decision-making processes fosters a sense of ownership and empowerment, promoting their active participation in WEFE-related initiatives and advocacy.

DIMENSIONS OF ENGAGING YOUTH

- Advisory Councils/Forums
- Art and Media-based Approaches
- Capacity-Building and Training Programs
- Community-Based Participatory Approaches
- Digital and Online Platforms
- Engagement through Education and Schools
- Gamification and Serious Games
- Hackathons
- Intergenerational Dialogues and Exchanges
- Mobile Applications and Technology Solutions
- Research and Innovation Projects/Exchanges
- Storytelling and Narrative-Based Approaches
- Water Ambassadors
- Water Festivals
- Youth Networks and Coalitions
- Youth-Led Initiatives

To effectively engage youth as stakeholders in water governance, several steps can be taken. Firstly, creating platforms for youth participation, such as youth forums, councils, or advisory groups, allows them to express their views and actively contribute to decision-making processes. Secondly, capacity-building initiatives should be implemented to enhance youth knowledge and skills in water related policy development, and advocacy. Training programs, workshops, and mentorship opportunities can empower young individuals. Furthermore, fostering partnerships and collaboration between youth organizations, academic institutions, civil society, and government bodies can create networks and platforms for sharing experiences and knowledge.

Additionally, integrating youth perspectives into policy development and decision-making processes is essential. This can be achieved through inclusive consultations, where youth voices are heard and considered in the development and implementation of water governance policies, strategies, and projects.

Lastly, leveraging digital platforms and technology can facilitate youth engagement, as young people are often well-versed in digital tools and social media. Utilizing online platforms, mobile applications, and virtual engagement methods can enhance youth participation and ensure their voices are heard in water governance discussions.



PRACTICAL RECOMMENDATION FOR ENGAGEMENT: YOUTH

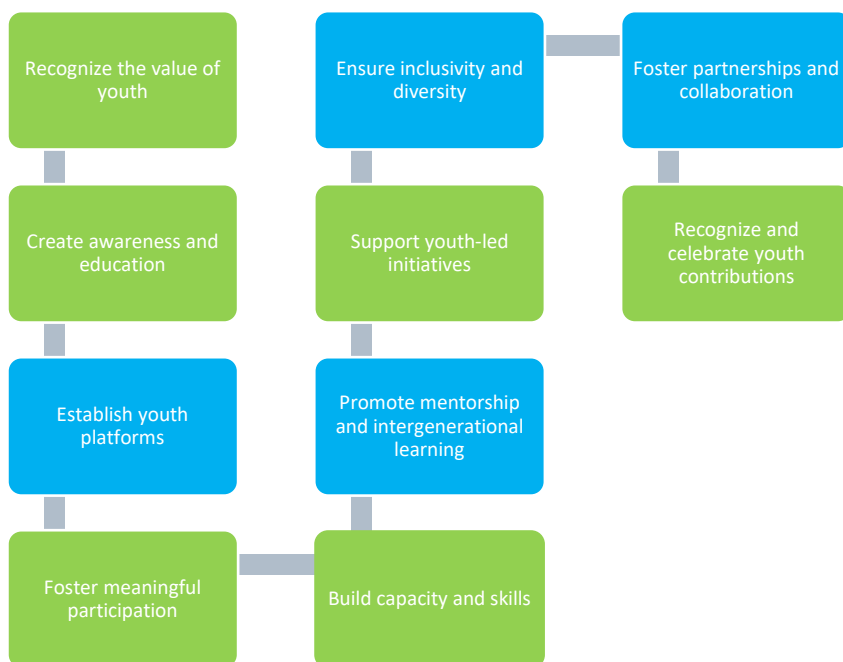


Figure 6: Steps for effectively integrating youth in decision-making.



Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or REA. Neither the European Union nor the granting authority can be held responsible for them.



INCLUSION AND DIVERSITY

Generally, all forms of participation have the potential to be equally social inclusive. Inclusivity means recognizing and valuing diverse voices, ensuring opportunities for everyone to be heard, and considering everyone’s unique experiences and needs. Vulnerable groups encompass a wide range of individuals who may experience marginalization, discrimination, or limited access to water resources and decision-making processes. They can include but are not limited to ethnic minorities, indigenous communities, women, children, elderly individuals, persons with disabilities, socioeconomically disadvantaged populations, and rural communities.

Engaging these diverse vulnerable groups in water governance is essential for several reasons. Firstly, it promotes social justice and equity by ensuring their voices are heard and their needs are considered in decision-making processes. Secondly, inclusive participation leads to more comprehensive and effective water management strategies that address the unique challenges faced by these groups. Additionally, their knowledge, experiences, and perspectives contribute to more holistic solutions.

DIMENSIONS OF INCLUSIVE ENGAGEMENT

- Capacity-Building and Empowerment Programs
- Community-Based Participatory Approaches
- Empowering Marginalized and Disadvantaged Groups
- Inclusive Financing and Resource Allocation
- Inclusive Planning and Policy Development
- Multilingual and Culturally Sensitive Approaches
- Recognition and Respect for Traditional Knowledge and Practices
- Representation and Diversity in Decision-Making Bodies
- Tailored Engagement of Vulnerable Communities
- Water Ethics Committees

Language barriers, cultural differences, and limited awareness of participation opportunities can hinder their effective involvement. Socioeconomic disparities and power imbalances may limit their access to resources, information, and decision-making platforms. Historical marginalization and exclusion can also contribute to mistrust and reluctance to engage with governance processes. Additionally, limited capacity around skills and resources, may impede their meaningful participation.

To address these challenges and promote inclusive engagement, several approaches can be taken. These include creating accessible and inclusive platforms for participation, providing translation services and multilingual materials, conducting outreach and awareness campaigns tailored to the specific needs of vulnerable groups, offering capacity-building programs to enhance their skills and knowledge, establishing partnerships with community-based organizations, and ensuring representation of these groups in decision-making bodies. It is crucial to actively listen to their perspectives, involve them in project planning and implementation, and foster a culture of mutual respect and inclusivity.

Inclusion goes beyond access alone; it also involves providing opportunities for individuals from all backgrounds to take leadership roles. This may need the establishment of dedicated spaces and projects specifically designed for underrepresented groups who are less likely to have their voices heard. By doing so, these initiatives create safe environments for marginalized groups to raise issues that are important to them (SALTO Participation and Information Resource Center, 2023).

Exclusion of young people and other vulnerable groups from participation can arise from prejudice or hate speech targeting vulnerable groups. Exclusion can unintentionally occur due to project designs that create barriers for certain individuals to participate. To foster inclusivity, it is crucial to identify the groups of people who face limited opportunities within the specific context.





Figure 7: Steps For effectively integrating vulnerable groups in public engagement processes.

GOOD PRACTICES

Table 6: Good practices – Inclusive engagement mechanisms

Name	Description	Target Group	WEFE sector	Scale	Tools
Gender					
<u>Women4Climate Initiative</u>	<p>Launched in 2016 by C40 Cities and the L'Oréal Foundation, <u>Women4Climate</u> emphasizes the link between achieving climate justice and gender equality.</p> <p>Aims are:</p> <ul style="list-style-type: none"> Strengthen and inspire the next generation of climate leaders through a global mentoring program targeting women in C40 cities. Raise awareness through research on gender, cities, and climate to highlight the key role women play in advancing climate action in cities. Connect mayors, city officials, business leaders, international organizations, and civil society with emerging women climate leaders. 	Female climate leaders in C40 cities	n.a.	International	<p>Online courses</p> <p>Mentoring program</p>
<u>Women & Inclusivity in Sustainable</u>	WISER is a global network of women and non-binary academics in the field of clean, low-carbon, or sustainable energy research. It seeks to increase the	Women and non-binary academics in the field of	Water, Energy, Ecosystems	International	



Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or REA. Neither the European Union nor the granting authority can be held responsible for them.



<u>Energy Research (WISER)</u>	strength, visibility, and impact of gender-diverse energy scholars.	clean, low-carbon, or sustainable energy research			
<u>GWNET – Global Women's Network for the Energy Transition</u>	GWNET aims to advance the global energy transition by empowering women in energy through interdisciplinary networking, advocacy, training, and mentoring. GWNET seeks to address the current gender imbalances in the energy sector and to promote gender-sensitive action around the energy transition in all parts of the world.	Interdisciplinary networking, advocacy, training, coaching and mentoring, and services related to projects and financing	Energy	International	e.g. global online mentoring programme for women in junior and middle-management positions
<u>Events – Nordic Energy Equality Network (NEEN)</u>	NEEN aims to make the energy sector increasingly visible to women and highlighting role models in order to attract more women to this sector. NEEN aims to build bridges between education, research, government and industry and promote an inclusive approach through the whole sector.	Anyone who is involved in the Nordic energy sector and want to work for gender equality, diversity and empowerment of women	Energy	International - Nordic Countries	Workshops, Network Meetings
<u>Gender Wave</u>	A digitool to support incorporation of gender perspectives into marine research and innovation. In project management, gender needs to be taken into consideration at the different levels. This digitool seeks to support the integration of gender issues in research and innovation content. The digitool provides means by which researchers and innovators can examine how their projects link to gender and promote gender equality.	Projects coordinators, teams and/or members in marine research and innovation	Water, Ecosystems	International	Digitool application
Youth					
<u>Water Youth Network (WYN)</u>	The Water Youth Network is a global and inclusive connector in the water sector. A community of students and young professionals across disciplines. The aim of the Water Youth Network is to offer a hybrid platform for young people to exchange, to promote their inclusion in decision-making processes and to facilitate the adoption of youth friendly policies at all levels.	Young people around the world interested in water-related issues	Water	International	
<u>Student Energy</u>	<u>Student Energy</u> is a global youth-led organization empowering young people to accelerate the sustainable energy transition through a variety of initiatives.	Students	Energy	International	Energy System Map Student-led energy conference
<u>"Energy Detectives" Project</u>	The Energy Detectives project in the UK involves students investigating energy use in their schools and identifying ways	School children	Energy	National - UK	Trainings to conduct energy audits, monitor energy usage, and



	to reduce energy consumption. Students are trained as energy detectives.				develop action plans to implement energy-saving measures.
<u>Danube Youth Council (DYC)</u>	<u>The Danube Youth Council</u> has been officially established as of October 2022 and is composed of 28 members, 2 members from each of the 14 Danube Region countries The Youth Council proposes concrete actions and projects and suggest topics and ideas to the attention of high-level politicians from EU Strategy for the Danube Region (EUSDR) states and regions They engage at a transnational level and participate in EUSDR events as well as international and EU related youth events.	Youth in the Danube Water Basin	Water	International - all Danube Basin countries	Dialogue
Inclusion					
<u>Youth of European Nationalities (YEN)</u>	Youth of European Nationalities (YEN) is the largest network of youth organizations of autochthonous, national and linguistic minorities in Europe. Under the slogan “Living Diversity”, YEN represents the interests of young members of national, ethnic and linguistic minorities. In April 2020, 41-member organizations from 18 countries are represented in YEN.	Youth in EU Member States	n.a.	International – EU Level	e.g. Toolkit



7. LEGAL MECHANISMS

Legal mechanisms empower CITIZENS to PLAY a meaningful role in WEFE nexus governance by enhancing transparency, accountability, and democratic decision-making.

#inclusiveness #equity #transparency #accountability
#efficiency #effectiveness #legal #institutionalization,



Citizens have a vital role in upholding and enforcing EU environmental laws within their respective countries. They not only serve as informants, identifying instances of law violations, but also actively advocate for the implementation and adherence to these laws. Their support and trust in the consistent application of EU laws play a crucial role in promoting environmental regulations throughout the European Union. Environmental law often lacks directly affected individuals and can be complex in nature (EC 2012). The Aarhus Convention grants individuals and representative associations the right to access information, participate in decision-making processes related to environmental issues, and seek remedies if these rights are violated. The convention encompasses three main areas of action: ensuring public access to environmental information held by the public authorities; fostering public participation in decision-making which affects the environment; extending the conditions of access to justice in environmental matters (EUR-Lex, 2018). Citizens can monitor and report violations of water and WEFE regulations and laws. This can include reporting instances of pollution, illegal water extractions, or non-compliance with environmental standards. Such information can support legal enforcement actions and help hold accountable those responsible for violations.

DIMENSIONS OF LEGAL MECHANISMS

- Administrative Appeals
- Complaints
- Environmental Litigation
- Monitoring
- Participation in Environmental Impact Assessments (EIA)
- Public Interest Litigation (PIL)
- Whistleblowing

Citizens have the power to address environmental issues through various legal mechanisms. One approach is environmental litigation, where individuals can initiate legal proceedings by filing lawsuits. This allows concerned citizens to bring attention to environmental concerns and seek legal remedies for environmental harm. By taking legal action, citizens can hold polluters accountable and advocate for the protection of the environment.

Another avenue for citizen involvement is through administrative appeals. This involves challenging permits, licenses, or decisions that may have negative environmental impacts. Citizens can submit appeals to administrative bodies or boards responsible for environmental regulation, seeking a review of decisions that may be detrimental to the environment. This process allows citizens to voice their concerns and push for more environmentally responsible outcomes.

Public interest litigation is another effective tool for citizens and environmental organizations. By representing the interests of the environment, these groups can engage in legal action to address environmental issues. Public interest litigation aims to secure legal remedies for environmental harms, creating positive changes and ensuring the protection of natural resources.

Additionally, citizens can participate in the Environmental Impact Assessment (EIA) process for proposed development projects. This involves providing input, attending public hearings, and raising objections if the proposed project is likely to have significant environmental impacts. By actively participating in the EIA process,



citizens can ensure that environmental concerns are adequately considered and addressed. This level of engagement helps to promote sustainable development practices and safeguards the environment.

Complaints

EU Member States (MS) have diverse complaint mechanisms that vary based on the country's legal traditions and administrative structures (EC 2012). Registering environmental complaints serves as a means of articulating grievances among individuals, local communities, environmental associations, politicians, and businesses. Simultaneously, environmental complaints assist authorities in the implementation of environmental laws and policies. They can provide warning systems, facilitating timely and efficient interventions by the authorities (European Commission, 2020). Complaints in most cases, the first and most accessible step for citizens and hence in the recommendations, the steps focus on complaints.

Legislative bodies

The establishment of environmental courts can have a positive impact on citizen access to justice by tailoring the first point of contact for citizens to a specific environmental problem. In addition, training judges on environmental issues can strengthen their knowledge and increase awareness. This new acknowledgment of the importance of environmental issues can have a positive effect on the motivation and trust of citizens to exercise their rights and is therefore, elaborated below. MS with environmental courts (like Sweden and Finland) are prioritizing access to justice on environmental matters. Instead of a dedicated environmental court, Denmark has various administrative appeals boards in charge of environmental law cases (Nesbit 2019).

Mediation is a structured process, voluntarily undertaken by two or more parties in dispute, with the assistance of a mediator, to reach an agreement on resolving their dispute. A good example is the Scottish Mediation Board, providing a user-friendly website (The Scottish Mediation Register) to find mediators (EC 2012). To improve the access to justice and environmental law enforcements, the judicial system in Portugal has a focus on innovation and technological means in the form of online portals for data sharing and information distribution. The Centre for Judiciary Studies (Centro de Estudos Judiciários, CEJ) provides a course (“formação contínua”) in environmental topics for magistrates.

Capacity Building for Judiciary

MS do not seem to have well-established, regular capacity building activities on environmental law enforcement integrated into their institutional programs. Some MS include environmental topics in their judiciary training programs, but no consistent trend in prioritizing capacity building measures can be observed. Specialized judicial academies and training institutes primarily focus on environmental crimes when providing training in environmental matters. In terms of capacity building for judiciary, environmental law enforcement authorities and police, the “Expertise Network Environment” in Belgium has been created within the Public Prosecutors Offices. It aims to support prosecutors dealing with environmental cases, and provides advice, ex officio or on request (Nesbit 2019). A few MS stand out for their proactive measures in prioritizing judicial capacity building. For example, Estonia and Lithuania have implemented measures to ensure ongoing education for judges. Judges in these countries are expected to participate in compulsory trainings which include topics related to environmental law (Nesbit 2019).

GOOD PRACTICES

Table 7: Good practices – Legal mechanisms



Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or REA. Neither the European Union nor the granting authority can be held responsible for them.



Project	Description	Target Group	WEFE sector	Scale	Tools
<u>Independent Complaint Mechanism, Internationale Klimaschutzinitiative (IKI) (international-climate-initiative.com)</u>	<p>The mechanism is intended to enable people who suffer (potential) negative social and/or environmental consequences from IKI projects</p> <p>The complaints centre is based at Zukunft – Umwelt – Gesellschaft (ZUG) gGmbH</p>	<p>Individuals</p> <p>Private Organisations</p> <p>Public Bodies</p> <p>Special groups</p>	Water, Energy, Food, Ecosystems	International	Independent expert panel
<u>LIFE-A2J-EARL</u>	<p>The "Access to Justice for a greener Europe" (A2J EARL) project, led by ClientEarth and Justice & Environment, aims to improve the enforcement of environmental law in EU countries by enabling the public to challenge violations in court. Making sure Europeans can bring environmental cases to court is the goal of the "Access to Justice for a greener Europe" (A2J EARL) project.</p>	<p>Citizens</p> <p>NGOs</p>	Water, Energy, Food, Ecosystems	International	<p>A monthly newsletter about the latest updates in access to justice</p> <p>A guide on access to Justice EU procedural rules and case law and the Aarhus Convention equivalents</p> <p>National toolkits on access to justice in 8 Member States</p> <p>A digital information platform with an "ask a lawyer function"</p> <p>A public-interest lawyer database regrouping lawyers active in the field of environmental law</p> <p>A series of webinars held in different locations in eight-member states</p> <p>An EU wide conference held in Brussels</p>
<u>European Citizens' Initiative</u>	<p>For EU citizens to get a greater say in the policies that affect their lives by calling on the European Commission to propose new laws. Once an initiative has reached one million signatures, the Commission will decide on what action to take.</p> <p>Introduced in the 2011 Lisbon Treaty as a way to strengthen citizens' participation in EU law making, the</p>	Citizens of the EU	n.a.	International – EU level	Step to Step Guide on how to start an initiative



Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or REA. Neither the European Union nor the granting authority can be held responsible for them.



	first one was the 'Right2Water citizens' initiative which raised over 1.6 million signatures.				
Society for Civil Rights / Gesellschaft für Menschenrechte	The Society for Civil Rights e.V. (Gesellschaft für Freiheitsrechte e.V. or "GFF") is a donor-funded organization that defends fundamental and human rights by legal means. The organization promotes democracy and civil society, protects against disproportionate surveillance and advocates for equal rights and social participation for everyone.	Citizens Organisations	Food (from ongoing legal cases)	National – Germany	The GFF accompanies its cases with legal expertise and active, information-oriented public relations work
Scottish Mediation	The Scottish Mediation Register is platform for the purpose of finding mediators who meet the Scottish Mediation Network Benchmark Standards. It offers detailed search options to find a suitable mediator and their contacts. Costs or free services is mentioned as well.	Citizens Companies		National – Scotland	Detailed search machine to find a suitable mediator. Many filter options available.



Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or REA. Neither the European Union nor the granting authority can be held responsible for them.



PRACTICAL RECOMMENDATIONS FOR ENGAGEMENT: COMPLAINTS

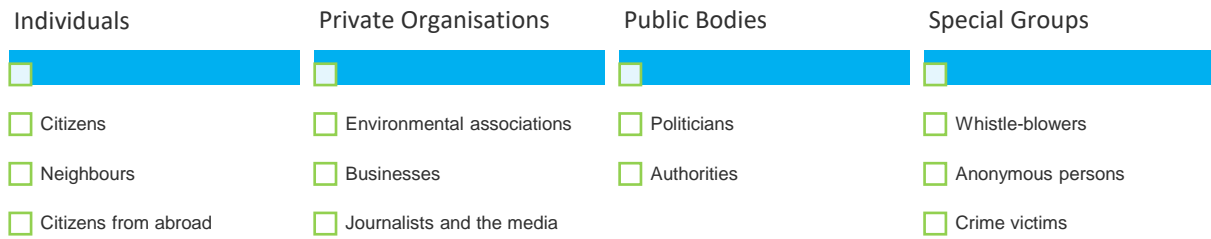


Figure 8: Who complains? (European Commission, 2020).

RECOMMENDATIONS TO FACILITATE COMPLAINTS

Preparations

- Develop a reference document outlining key principles such as fairness, accessibility, responsiveness, efficiency, and integration across different areas of policy action.
- Establish online submission as a general practice through a dedicated web portal or provide a central email for submitting complaints.
- Provide a standard and easily accessible explanation of entitlements and the process for environmental complaint handling.

Timely Response

- Implement a system that allows complainants to track their case and provide relevant contact information to facilitate communication.

Processing Complaints

- Characterize complaints based on their content, complainants, time of submission, mode of transmission, and assigned handlers.
- Identify the purpose of the complaints, distinguishing complaint type, claims related to legal and governance aspects (e.g., infringement, or policy gaps), and the substantiation of claims through establishing facts.
- Establish a specialized complaint-handling unit dedicated to address urgent complaints.
- Enable complaints to be submitted in different forms, including oral, written, social media, and indirect complaints originating from media outlets or city council debates.
- Implement accountability structures to ensure that complaints are directed to the appropriate complaint-handling body.
- Utilize efficiency tools such as guidance for complaints, templates, and benchmarks to streamline the processing of complaints.
- Have evaluation and reporting tools in place to monitor and assess the handling of complaints.
- Proactively employ tools to reduce the incidence of complaints.

Source: EC (2020); EC (2012)



8. MOTIVATION AND LEADERSHIP

An environmental leader is a champion, who takes proactive and impactful actions to address environmental and climate challenges, inspire change, and mobilize others towards sustainable and responsible practices

#accountability #adaptiveness #motivation
#trust #public awareness #change



In order to address Water-Energy-Food-Ecosystems (WEFE) challenges and strengthen governance, the presence of active citizen leaders and politicians, especially local are crucial. These leaders play a collaborative role in restoring a sense of community and driving transformative action towards an inclusive WEFE nexus approach. Sustainable issues, such as WEFE nexus problems and social inequity, encompass complex and interconnected systems, requiring adaptive solutions. Resolving these sustainability issues necessitates interdisciplinary leadership practices (Burns et al., 2015). However, some obstacles elaborated below hinder the effective utilization of public engagement in tackling these challenges (OECD, 2015).

Lack of political will and the shift of power

The lack of political will and leadership are main obstacle to effective stakeholder engagement in the water sector. Political will encompasses the enduring commitment of politicians and administrators to allocate necessary resources for achieving specific objectives and their readiness to develop and implement policies despite opposition. The determination of political actors to embrace and enforce engagement principles plays a crucial role in integrating stakeholder engagement into water-related decision-making and implementation. Leaders have the potential to create incentives that encourage other actors, both political and non-political, to pursue stakeholder engagement, even when their willingness may differ (OECD, 2015).

Lack of interest and concern

Stakeholders do not always use the available engagement opportunities. Merely establishing avenues for involving various actors in water and/or WEFE nexus policies does not guarantee their active engagement. As the number of issues requiring engagement processes grows and stakeholder interest diminishes, the concept of stakeholder fatigue becomes a concern. Also, stakeholders may have limited resources, including time, personnel, and financial means and there may be situations where stakeholders perceive water issues as already well managed, leading to a lack of concern. One common problem observed in the RETOUCH Case Studies is the lack of political will. Sustainable leader and

DIMENSIONS OF LEADERSHIP

- Formal Leadership
 - Authority
 - Accountability
 - Setting clear roles, responsibilities and communication standards
- Informal Leadership
 - Influence and persuasion
 - Relationship building
 - Encourage knowledge and expertise sharing in innovative and experimental setting

respective leadership programs can fill the gaps of political will to fully embrace public engagement mechanisms. Additionally, having a great environmental leader can (among others) increase the impact of a public engagement project and consequently, increase citizens' motivation to participate (OECD, 2015).



Leadership Programmes

Leadership programs in the water, energy, food, and ecosystems (WEFE) sectors play a critical role in driving transformative change and attracting followers who are dedicated to addressing the challenges of the WEFE nexus. According to Wurzel (2020), effective leadership in the WEFE sectors requires individuals to operate at multiple levels of nexus governance, concurrently or sequentially, to achieve their internal and external goals. To design and implement successful leadership programs, Shriberg and MacDonald (2013) identified a set of best practices.

One best practice is the use of experiential learning, which encourages practical application within local communities. By engaging leaders in real-world experiences and facilitating connections with the community, experiential learning fosters a sense of connection and active engagement. Another best practice involves integrating disciplines and employing methods like systems thinking to cultivate a holistic mindset among leaders. This approach goes beyond individual disciplines and provides comprehensive professional preparation.

Additionally, leadership programs should move beyond a narrow focus on sustainability knowledge and instead inspire leaders to envision a future of ecological, social, and economic transformation. By encouraging individuals to create a better world rather than merely sustaining it, leadership programs can instill a sense of purpose and long-term impact. Building a strong community of practice is also crucial, as significant learning occurs through peer interaction and experiential learning activities.

Furthermore, leadership programs should go beyond traditional transformational leadership approaches and incorporate systems and ecological thinking. This perspective is vital for effectively addressing the complex sustainability challenges of the WEFE nexus. Change agent training should be a central focus, as program participants are primarily interested in becoming effective agents of change. Lastly, programs should provide participants with specific skills relevant to sustainability leadership, such as visioning, communication, systems thinking, and self-assessment.



GOOD PRACTICES

Table 8: Good practices – Motivation and leadership

Project	Description	Target Group	WEFE sector	Scale	Tools
<u>Water schools for mayors in Spain</u>	<p>The Duero river basin authority in Spain launched a project aiming to develop “schools’ for mayors in order to provide local elected officials training and information-sharing activities in various aspects of water management.</p> <p>Eleven schools for mayors were established between 2012-14, where on an average, 25 mayors participated in each school meeting.</p>	Mayors	Water	National – Spain	n.a.
<u>Policy Leadership Award</u>	<p>This award is part of the Champions of the Earth award by UNEP category recognizes individuals or organizations in public service whose actions and leadership have brought about profound, positive change for the environment within their country or internationally.</p> <p>There are numerous global awards that encourages citizen and political leadership for environmental and resource protection.</p>	Individuals, and organisations in public service	Water, Energy, Food, Ecosystems	International	Selection by a jury after public nomination process
<u>Environmental Leadership Journey</u> <u>Federal Agency for Nature Conservation,</u> <u>German Society for International Cooperation</u>	<p>The Environmental Leadership Journey is an intensive training course for conservation professionals and leaders designed for our times. It is deliberately not aimed at specific leadership positions, but at people who, regardless of their position, want to actively advance nature conservation and contribute to transformative change. The course focuses on how profound change happens</p>	Experts working on conservation issues in the context of the German development cooperation (GIZ, KfW, consultancies, BMZ, BMUV, NGOs, foundations, partner organisations)	Water, Energy, Food, Ecosystems	National – Germany	n.a.



	on the level of Self, Teams, Organisations and Society. The Journey provides knowledge, skills, underlying mindsets, hands-on tools, and time for reflection.				
<u>Young European Leadership (YEL)</u>	YEL aims to empower youth through providing them with high-level leadership development opportunities and to connect young people with decision-makers in the European Union and abroad. The organization trains young Europeans in leadership skills including public speaking and negotiation skills. YEL is also a platform for networking. Young adults participate in the Y7 and Y20 youth summits, as well as other European and international events.	Youth	Water, Energy, Food, Ecosystems	International – EU level	n.a.



Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or REA. Neither the European Union nor the granting authority can be held responsible for them.



PRACTICAL RECOMMENDATIONS FOR ENGAGEMENT: MOTIVATION AND LEADERSHIP

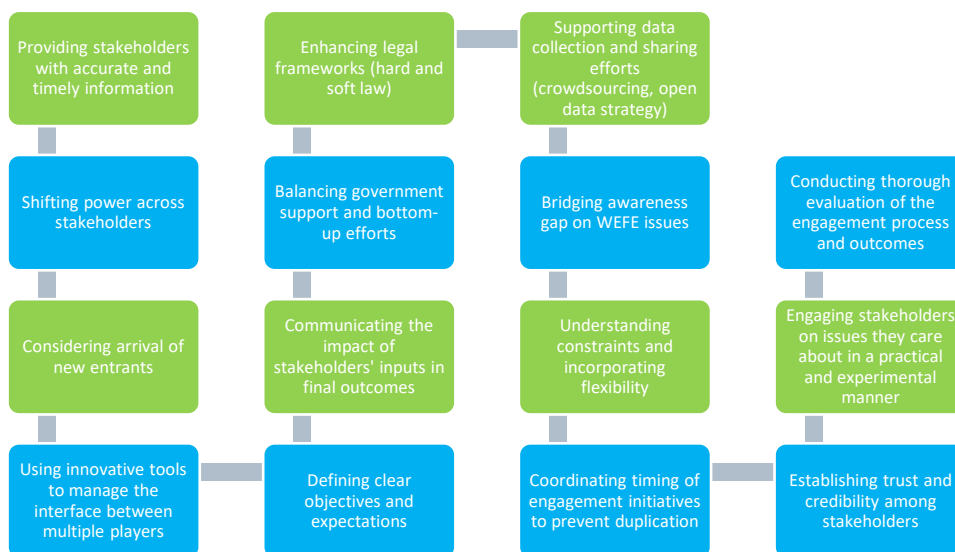


Figure 9: Solutions to minimize stakeholders' fatigue and improve political will (OECD, 2015).

RECOMMENDATIONS FOR ENVIRONMENTAL LEADERS

- Strive for holist view: Capture the multi-faceted holistic environment, economic, social aspects
- Transparency about challenges: the complex and uncertain characteristics of environmental problems require long time to be solved
- Flexibility to address the often 'wicked problems' accordingly
- Collaborate with stakeholders by ...
 - o Listen to stakeholders' opinions and help to address their interests
 - o Collectively create a clear vision
 - o Follow a process of collective decision-making (co-production/ co-creation, consensus building, etc.)
 - o Foster trust among all followers
 - o Celebrate interdisciplinarity and diversity to get the whole picture of an environmental problem
- Apply scientific knowledge to develop innovative and sustainable approaches
- Motivation of youth is essential. Offer field trips. Organize educational campaigns, workshops, and training sessions
- Develop communicating, listening, and interpersonal skills. Sense of humor is important
- Inspire and empower others to act and to become environmental leaders themselves

Mino & Hanaki (2013)



Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or REA. Neither the European Union nor the granting authority can be held responsible for them.



REFERENCES

Citizen Science

- Bonn, A., Bonn, A., Bowser, A., Makuch, Z., Vogel, J., & Haklay, M. (2018). Citizen science to foster innovation in open science, society and policy. In *Citizen Science: Innovation in Open Science, Society and Policy*.
<https://doi.org/10.2307/j.ctv550cf2.38>
- EC (European Commission). (2020a). Best practices in citizen science for environmental monitoring. Commission Staff Working Document.
https://ec.europa.eu/environment/legal/reporting/pdf/best_practices_citizen_science_environmental_monitoring.pdf
- Kosmala, M., Wiggins, A., Swanson, A., & Simmons, B. (2016). Assessing data quality in citizen science. *Frontiers in Ecology and the Environment*, 14(10), 551–560. <https://doi.org/10.1002/fee.1436>
- McKinley, D. C., Miller-Rushing, A., Ballard, H. L., Bonney, R., Brown, H., Cook-Patton, S. C., Evans, D. S., French, R. S., Parrish, J. K., Phillips, T. B., Ryan, S. G., Shanley, L., Shirk, J. L., Stepenuck, K. F., Weltzin, J. F., Wiggins, A., Boyle, O. D., Briggs, R. D., Chapin, S., . . . Soukup, M. S. (2017). Citizen science can improve conservation science, natural resource management, and environmental protection. *Biological Conservation*, 208, 15–28. <https://doi.org/10.1016/j.biocon.2016.05.015>
- Steffen, F., Fonte, C. C., & See, L. (2017). The Role of Citizen Science in Earth Observation. *Remote Sensing*, 9(4), 357. <https://doi.org/10.3390/rs9040357>

Creative Collaborative Events

- Gold, M. M., & Ochu, E. (2018). Creative collaboration in citizen science and the evolution of ThinkCamps. In *Citizen Science*. UCL Press eBooks (pp. 146–167). <https://doi.org/10.2307/j.ctv550cf2.17>
- Saunders, T. & Mulgan, G. (2017). *Governing with Collective Intelligence*. London: Nesta.
http://www.nesta.org.uk/sites/default/files/governing_with_collective_intelligence.pdf.
- Gold, Margaret. 2012. 'Community Building for Collaborative Problem Solving'.
<http://mobilecollective.co.uk/community-building-for-collaborative-problem-solving/>.

E-Participation

- OECD (2015). *Stakeholder Engagement for Inclusive Water Governance*. Paris, France. Organization for Economic Co-operation and Development (OECD).
- Mukhtarov, F., Dieperink, C., & Driessen, P. P. J. (2018). The influence of information and communication technologies on public participation in urban water governance: A review of place-based research. *Environmental Science & Policy*, 89, 430–438. <https://doi.org/10.1016/j.envsci.2018.08.015>



- Linders, D. (2012). From e-government to we-government: Defining a typology for citizen coproduction in the age of social media. *Government Information Quarterly*, 29(4), 446–454.
<https://doi.org/10.1016/j.giq.2012.06.003>
- Androniceanu, A., & Georgescu, I. (2022). E-PARTICIPATION IN EUROPE: A COMPARATIVE PERSPECTIVE. *Public Administration Issues*, 0(5), 7–29. <https://doi.org/10.17323/1999-5431-2022-0-5-7-29>
- La Blanc, D. 2020. E-participation: a quick overview of recent qualitative trends. Edt. United Nations. Department of Economic and Social Affairs. DESA Working Paper No. 163 E-participation: a quick overview of recent qualitative trends (un.org)

Living Labs

- Finnish Environment Institute > Living Labs. (n.d.). https://www.syke.fi/en-US/Research__development/Research_and_development_projects/Projects/Governance_innovations_for_a_transition_to_sustainable_and_equitable_water_use_in_Europe__GOVAQUA/Living_Labs
- Habibipour, A., Ståhlbröst, A., Zalokar, S, Vaittinen, I. (n.d). Living lab handbook for urban living labs developing nature-based solutions. Edt. Urban Nature Labs (UNaLabs)
- European Commission. Soil health and food. (2023, April 18). Research and Innovation. https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/eu-missions-horizon-europe/soil-health-and-food_en
- The European Network of Living Labs (ENoLL) (2021a). Shaping Europe’s digital future. The European Network of Living Labs (ENoLL) explained | Shaping Europe’s digital future (europa.eu)
- The European Network of Living Labs (ENoLL) (2021b). What are Living Labs. What are Living Labs - European Network of Living Labs European Network of Living Labs (enoll.org)
- Water Europe, Brussels. (2019). Atlas of the EU Water oriented Living Labs.

Economic and Financial Mechanisms

- Rey, D., Pérez-Blanco, C.D., Escrivá-Bou, A., Girard, C. Veldkamp, T.I.E. (2019). Role of economic instruments in water allocation reform: lessons from Europe. In: *International Journal of Water Resources Development*. 35(2).
- Securities, H. (2022, July 15). H2O Securities develops first crypto water token and raises \$150 million. *Smart Water Magazine*. <https://smartwatermagazine.com/news/h2o-securities/h2o-securities-develops-first-crypto-water-token-and-raises-150-million>
- OECD. (2015). Stakeholder Engagement for Inclusive Water Governance. Paris, France. Organization for Economic Co-operation and Development (OECD).

Gender



Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or REA. Neither the European Union nor the granting authority can be held responsible for them.



European Institute for Gender Equality (2016a). GENDER EQUALITY TRAINING. Gender Mainstreaming Toolkit

European Institute for Gender Equality (2016b). Gender in environment and climate change.

European Institute on Gender Equality (2023): Gender Stakeholder Consultation. Gender stakeholder consultation | EIGE (europa.eu)

SALTO Participation and Information Resource Center. (2023). Toolkit for participation in EU youth programmes.

GEF. 2017. stakeholder engagement and gender mainstreaming. Expanded Constituency Workshop 2017. PowerPoint Presentation (thegef.org)

Mulema AA, Cramer L, Huyer S. 2021. Stakeholder engagement in gender and climate change policy processes: Lessons from CCAFS. CCAFS Working Paper no. 349. Wageningen, the Netherlands: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS).

Youth

Wehn, U., Collins, K., Anema, K., Basco-Carrera, L., & Lerebours, A. (2017). Stakeholder engagement in water governance as social learning: lessons from practice. *Water International*, 43(1), 34–59. <https://doi.org/10.1080/02508060.2018.1403083>

Sundman, V., Dadvar, I., and Yaari, E. (2021). Making Waves: Youth Engagement in Water Diplomacy. Stockholm International Water Institute. Stockholm, Sweden. https://siwi.org/wp-content/uploads/2021/03/SIWI_working_paper_making_waves_youth_engagement_in_water_diplomacy.pdf

Inclusion and Diversity

IWA. (2020). Engaging vulnerable groups in the implementation of Climate Resilient WSP. https://iwa-network.org/wp-content/uploads/2020/06/WSP_inclusion_factsheet_final_web.pdf

OECD. (2015). Stakeholder Engagement for Inclusive Water Governance. Paris, France. Organization for Economic Co-operation and Development (OECD).

Legal Mechanisms

European Commission (2020): ENVIRONMENTAL COMPLAINTS – A summary guide to their handling for national administrations.

Nesbit, M., Lucha, C., & Stec, S. (2019). Development of an assessment framework on environmental governance in the EU Member States: Final report (No 07.0203/2017/764990/SER/ENV.E.4). Brussels, Belgium. European Commission. <https://doi.org/10.2779/299476>

EUR-Lex 2018. Access to information, public participation and access to justice in environmental matters (Aarhus Convention). EUR-Lex - I28056 - EN - EUR-Lex (europa.eu)



European Commission (EC). 2012. Report from the Commission to the Council and the European Parliament on the experience gained in the application of DIRECTIVE 2003/4/EC on access to environmental information.

Leadership

Mino, T., & Hanaki, K. (2013). Environmental Leadership Capacity Building in Higher Education: Experience and Lessons from Asian Program for Incubation of Environmental Leaders.

https://library.oapen.org/bitstream/20.500.12657/28096/1/10.1007_978-4-431-54340-4.pdf

Shriberg, M., & O Tu MacDonald, L. T. A. (2013). Sustainability Leadership Programs: Emerging Goals, Methods & Best Practices. *Journal of Sustainability Education*, 5.

<http://graham.umich.edu/media/pubs/Shriberg-MacDonald-SustainabilityLeadershipPrograms.pdf>

Wurzel, R. K., Liefferink, D., & Torney, D. (2018). Pioneers, leaders and followers in multilevel and polycentric climate governance. *Environmental Politics*, 28(1), 1–21.

<https://doi.org/10.1080/09644016.2019.1522033>

OECD (2015). Stakeholder Engagement for Inclusive Water Governance. Paris, France. Organization for Economic Co-operation and Development (OECD).

Burns, H., Diamond-Vaught, H., & Bauman, C. (2015). Leadership for Sustainability: Theoretical Foundations and Pedagogical Practices that Foster Change. *International Journal of Leadership Studies*, 9(1).

<https://www.regent.edu/acad/global/publications/ijls/new/vol9iss1/6-IJLS.pdf>

