

Participatory Action Research on Water Scarcity and Contamination in Basrah Governorate

Mercy Hands, UNICEF, Basrah Directorate of Youth and Sports

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The water crisis in Basrah, which has led to 118,000 hospitalizations according to Human Rights Watch, has shed light on the city's and the governorate's water supply and purification problems, which have been affecting its 4 million inhabitants for decades. This crisis, impressive in its scale although not the first - 2009 and 2015 likewise saw health crises caused by contamination of water supplies - is the logical consequence of decades-long poor management of upstream sources, inadequate regulation of pollution and sewage, chronic neglect and mismanagement of water infrastructure (HRW, 2019). Faced with this situation, the inhabitants of Basrah have long since learned to live in a state of chronic water scarcity, and more generally have developed a special relationship with this resource whose unstable availability directly affects them. Mercy Hands, in partnership with UNICEF, decided to investigate the impact of this complex situation on the young people of Basrah and their community. This research answers 3 main questions: 1. How does water scarcity and contamination affect young people in Basrah and their community? 2. What is the opinion and level of knowledge of young people in Basrah on the problems of water scarcity and contamination in their city and governorate? 3. What form does and could the involvement of young people in their community take in the fight against water scarcity and contamination?

This research, conducted in a Participatory Action Research (PAR) format with a team of 17 young researchers from the town, was based on qualitative data gathered using individual interviews (IIs) and Focus Group Discussions (FGDs) with local residents and members of civil society. The study highlighted the paramount importance that Basrawis attribute to water resources, considered to be the foundation of life and an inalienable human right. Lack of water is generally seen as a major source of concern, likely to affect them personally in many ways. However, participants also pointed to their communities' excessive use of water, and showed little knowledge of the administrative and legal system governing water in their neighborhoods, towns and governorates. In their view, better water management in the future will require greater individual voluntarism coupled with reform of water governance. Particularly vulnerable to the repercussions of water scarcity and contamination, young people are perceived as quite powerless in the face of these threats, hampered in their action by a number of economic and institutional factors: their commitment and their voice deserve, according to the participants, to be supported to improve water governance.

ACRONYMS :

CSOs : Civil Society Organisations

DOYS : Department of Youth and Sports

FGDs : Focused-Group Discussions

IIs : Individual Interviews

IOs : International Organisations

JICA : Japan International Cooperation Agency

MH : Mercy Hands for Humanitarian Aid
MoE : Ministry of Environment
MoF : Ministry of Finance
MoH : Ministry of Health
MoMPW : Ministry of Municipalities and Public Works
MoP : Ministry of Planning
MoWR : Ministry of Water Resources
SIWI : Stockholm International Water Institute
UN : United Nations
UNICEF : United Nations Children’s Fund
USAID: U.S. Agency for International Development

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EXECUTIVE SUMMARY

The [Research Background and Methodology](#) section of the report aims at providing the necessary institutional and operational background about Mercy Hands and UNICEF and their activities in the WASH and social sectors in Basrah city and governorate. Both organisations have already worked jointly in the past in other fields, to facilitate girls and vulnerable children access to school. The You-Act project, from which this study originates, also comes from a cooperation between both organisations between March 2023 and March 2024: this study, structured around the Participatory Action Research (PAR) methodology, is part of the 3rd output of the project. Spearheaded by a team of 17 young researchers, this PAR has been structured around the conduction of 14 Focus Group Discussions (FGDs) and 36 individual interviews. After the coding and analysis steps, the young researchers have finally undertaken evidence-driven action formed as 5 civic-initiatives, aiming at implementing on the ground the lessons learned from their participation into the research and the writing of the present report.

The [Research Findings](#) part of this report is structured around two main parts, detailing first the [Results for the youth community and the wider Basrah population](#), and second the specific [Results for the Young people of Basrah](#). Among others, the first part highlighted that the **participants to both the FGDs and the individual interviews are aware of and interest in the issues surrounding water** – as they estimate that it is fundamental to the development of life and social stability – **but believe that it is dilapidated by Basrawis**: a discrepancy therefore appeared between the words and deeds of Basrah’s inhabitants when it comes to water. Furthermore, precisely because water is fundamental to life if individuals and societies, **it constitutes for the participants a fundamental human right that should be guaranteed by the State**, even though its legal framework and the share of responsibilities surrounding it seems poorly understood. If not or badly provided, the young researchers **found that water can be perceived as a source of threat and concerns**. These differ in nature and intensity: the majority of participants were concerned about the repercussions that water issues could have on themselves and their immediate environment (health problems, impact on purchasing power), followed by the destabilizing consequences for their community and society. Finally, we found that for most participants, **better water management in Basrah would require first and foremost an intensification of individual voluntarism**, particularly aimed at reducing water waste; **a major and better intervention of public authorities only came second in the ranking of priorities**, detailing that they should work on improving and extending water supply and distribution systems and better share water governance with civil society actors.

As part of the second part focused on the results specifically regarding young people, the team of young researchers together with Mercy Hands discovered that despite their vulnerability to the consequences of water scarcity and contamination, **young people’s awareness and commitment don’t seem very high in the eyes of the participants**. According to them, **the youth should focus on two courses of action to tackle water issues: raising awareness around their peers and getting involved in decision-making processes around water**. This engagement of young people would deserve to be supported by the public authorities, that should do so simplify volunteering, facilitate access to fundings and trainings and open up decision-making processes. Lastly,

participants highlighted the role new technologies, more specifically social medias and technological infrastructural projects, **could play in tackling water scarcity and contamination**.

Acknowledging these findings and knowledge, both young researchers and participants came up with some innovative ideas for youth action that are gathered in the section [Conclusions for Evidence-Driven Action](#) and structured in [Main Findings and Action Paths](#) according to the main findings and the three main research questions, presented in introduction. These range from different leverages for young individuals or youth-led civil society organisations to raise awareness in their immediate environment or wider community, to on-the-ground activities aiming at monitoring researching and reporting water issues impacts and quality variations that could help youth set a foot in public decision-making processes together with private sector actors and public authorities. Finally, in the [Evidence-Driven Civic Initiatives](#) part, this study details the 5 actions that the team of young people undertook themselves on the basis of their knowledge, findings and experience in the Participatory Action Research (PAR) as part of the 4th component of the You-Act project. These vary from the creation of a Working Group on Green Economy, gathering civil society members and experts to discuss specific green economy-related themes in Basrah, to the implementation of a constructed wetland in a farm of Basrah's area, aiming at naturally purifying wastewater to make it proper for new uses.

[RESEARCH BACKGROUND AND METHODOLOGY](#)

[UNICEF AND MERCY HANDS' ENGAGEMENT IN BASRAH](#)

Over the last years, UNICEF has been actively engaged in Basrah, Iraq, with a focus on improving the lives of children and their families. One of the organization's primary areas of focus has been water, sanitation, and hygiene (WASH). In response to the water crisis in Basrah in 2018, UNICEF provided emergency water supplies to hospitals and schools, and worked to repair damaged water and sanitation infrastructure. UNICEF has also been working to promote safe hygiene practices in communities and schools, with a particular emphasis on preventing the spread of diseases such as cholera and COVID-19.

In addition to its WASH activities, UNICEF has been working to improve access to education for children in Basrah. The organization has supported the rehabilitation of schools and the provision of learning materials, as well as teacher training and curriculum development. UNICEF has also been working to promote children's rights and protection, including through the establishment of child-friendly spaces and the provision of psychosocial support to children who have been affected by violence and conflict.

The project that originated this study has been conducted together with Mercy Hands, an Iraqi non-governmental organization committed to operating in conflict-ridden regions, delivering both humanitarian and developmental assistance. Founded in 2003 in the aftermath of the attack on the UN Headquarters in Baghdad, it aimed to fill the gap created in the humanitarian context by the pull-out of humanitarian organizations: as the humanitarian needs for interventions and help grew, MH developed alongside from a small local NGO to a nationwide organization that has helped millions of people.

MH and UNICEF have a long-standing history of working together to improve water issues and education in Basrah. In 2021 already, both had conducted together the **Girls Transition to Lower Secondary Schools in Shat al Arab district**, a 7 months-long project that aimed at ensuring that girls and adolescents have an increased access to equitable and quality learning opportunities and enroll and complete the first grade of secondary school with learning outcomes. Building on UNICEF's long experience on working on girls' education and women empowerment in Basrah, this project managed to help 2400 young girls transition to next grade and increased their attendance and results at school. Still in the field of education, another project carried out in 2022-2023, named **Leaving no child behind in education: supporting the school enrollment of Basrah's most vulnerable**

children, enabled MH to sign up 2600 OOSC into remedial classes, mainstream the most vulnerable into primary school and provide them with the ability to interact with decision-makers and development/humanitarian actors.

MERCY HANDS AND THE YOU-ACT PROJECT

This study has been conducted by a team of young researchers coordinated by the NGO Mercy Hands for Humanitarian Aid (MH) as part of the You-Act project. This team of 17 young people, who had for the most part already collaborated in some UNICEF-led projects before and were familiar with Mercy Hands engagements in Basrah, supported and led the research throughout its making, from working on the field to collect the qualitative data to writing this final report together with the project's staff.

Originated by UNICEF, the You-Act (Youth Opportunities Under Actions on life skills development) project aims at incentivizing youth involvement in the above-mentioned water issues of Basrah's city and governorate. It is structured around 4 outputs:

Output	Description
1	Delivering of the required life skills development to young promoted and actively supported
2	Business and entrepreneurship opportunities promoted and provided to young people of Basrah
3	Engagement of young to influence decision-making processes impacting their lives through social, civic and digital engagement at the community level encouraged and facilitated
4	Increased knowledge of students in the school and communities on water saving and on how to develop climate resilient water, sanitation services and safe hygiene in Basrah

The You-Act project, spearheaded by Mercy Hands (MH), aims to engage young people in Basrah, Iraq, to address pressing issues such as water scarcity and contamination through Participatory Action Research (PAR) and capacity-building initiatives. Through PAR, young individuals take the lead in researching and addressing community concerns, utilizing a four-step cycle of planning, research, analysis, and evidence-driven action. MH collaborates with UNICEF's PAR program, empowering young people to lead grassroots awareness initiatives and consult with stakeholders at local, national, and regional levels. The project emphasizes female participation, ensuring fair representation and addressing the needs of women and girls. The Participatory Action Research (PAR) is the main activity of the 3rd output of the You-Act project.

In addition to PAR, MH focuses on enhancing young people's skills and empowering them to propose solutions for their communities. The project targets individuals aged 10 to 24, offering life skills training and encouraging active participation in advocating for environmental sustainability, including the efficient use of water and green energy. MH promotes inclusivity by involving young volunteers as project consultants and collaborating with government ministries to ensure safe access to learning centers. Furthermore, the project integrates job replacement and seed funding activities to foster innovation and create opportunities for young entrepreneurs, prioritizing green business ideas. Through behavior change campaigns and civic engagement platforms like U-REPORT, MH aims to mobilize young people and communities toward sustainable water management practices and climate resilience.

PARTICIPATORY ACTION RESEARCH (PAR) METHODOLOGY

In order to bring Basrah's youth not only to play an active role in the fight for mitigation of water scarcity and contamination in Basrah, but to study and understand them as well, MH and UNICEF agreed on developing as part of the You-Act project a Participatory Action Research (PAR). Through this method of study, young people

take the lead throughout all its processes in an effort to close the existing gaps and make their voice heard through raising awareness and implementing advocacy action.

Participatory Action Research (PAR) is a unique approach centered on young people researching issues of concern to them and taking action to improve their conditions and those of their immediate communities. The PAR research comprises 4 components: (1) planning, (2) research, (3) analysis and (4) evidence-driven action. For this research, MH has based its work on the UNICEF's PAR program which aims to empower young people to lead grass-roots awareness initiatives at the community level and to hold consultations with key stakeholders at the local, national and regional levels.

The first step of the PAR, as part of the 1st component (1: planning), was the selection of 17 young people to conduct the discussions with the participants to the FGDs and the individual interviews, analyze the data, write the research and engage in related civic engagements. Among those 17 young people, a majority had previously been involved in other UNICEF activities and participated in research on water quality in Basrah Zubair District in 2019. The component (2) research has run from the 15th of June until the 21st of August: 14 Focus Group Discussions (FGDs) and 36 individual interviews were held by the team of 17 trained young researchers. 287 members (researchers and members from the community) took part in those events, 172 of them being males and 112 women. 7 FGDs and 25 individual interviews were conducted in the Department of Youth and Sports' Innovation Lab, and 7 FGDs and 10 individual interviews took place in Zubair district in Mahmood Brekan Youth Center. The question guidelines that led both the individual interviews and the FGDs have been designed by the young researchers together with MH project staff, under the careful supervision of UNICEF. They are the following.

Thematic areas and guidelines for the conduction of the FGDs

THEMATIC AREA 1: Understanding the effects of water scarcity and contamination in young people's communities		
1		What do you see here? What are your thoughts after these videos and pictures?
2		What is happening around water in Basrah in your opinion?
3		How does this relate to our lives? What effects have these issues on our daily life and in the future?
4		Why is this situation of concern for us and our communities?
5		In your opinion, what can we do about it? What can we do to prevent water scarcity and contamination?
6		In your opinion, what are the threats that water scarcity and contamination will bring to our community?
7	1	Why is water considered our most precious resource?
	2	Do you feel we act accordingly?
	3	Why or why not?
8	1	Could water (or the lack of it) spark the next conflicts?
	2	Are you aware of conflicts in your community that arose because of water shortage?
	3	Are you aware of conflicts in your community that arose because of water shortage?
9		What are some of the impacts of water scarcity and security on your community?
10	1	Has water scarcity and contamination in your community changed people's lives?
	2	How, could you elaborate on these?
11		If you had the possibility to choose, what are some actions you will want the respective authorities of the sector/s to undertake to mitigate the effect of water scarcity and contamination?
12		What is the place of spirituality, religion, and culture in the governance of water, and can these be taken into consideration in water management?
13		Why is it important to benefit the contributions of the above mention actors/stakeholders in water management?
14		What structures, actors/stakeholders you think will have a positive impact to contribute towards the mitigation of the water scarcity and contamination?
15		What are some of social behaviors that could be changed that will have impact on water scarcity and contamination?
THEMATIC AREA 2: Young people's positive contribution on water scarcity and contamination in their communities		
1	1	Do you think young people have a voice, an active one in matters of water scarcity and contamination?
	2	If no, is this because of their indifference or because of the authorities'? Can you elaborate on this answer?
2		What are the young people's perspectives on water scarcity and contamination?
3	1	Are there gaps in research on water scarcity and contamination?

	2	Are young people involved in research on this topic?
	3	If no, what do you think are the reasons? If yes, how are young people involved?
4	1	Do you think new technologies have an effect on effective water management?
	2	How can new technologies support water management effectively?
5	1	Are young people aware of the bad consequences of water scarcity and contamination?
	2	Why are or aren't young people aware of the bad consequences of water scarcity and contamination?
6		What are the ways that young people are especially affected by the consequences of water scarcity and contamination?
7	1	Are young people taking actions to improve their conditions and those of their immediate communities in regards to water scarcity and contamination?
	2	Can you elaborate on some actions young people took?
8		Can you as well elaborate on some actions that can be undertaken in the future?
9		What does the rest of the group think? Are there other actions that young people can undertake that we haven't discussed?
10		What support would young people need from authorities, institutions, NGOs to undertake actions on water scarcity and contamination?

Thematic areas and guidelines for the conduction of the individual interviews (IIs)

THEMATIC AREA 1: Understanding the effects of water scarcity and contamination in young people's communities		
1	1	Sex of the participant
	2	Age of the participant
	3	Occupation of the participant
2		What springs to mind when you hear the word 'water'?
3	1	What are all the things that you do in a day that require water?
	2	How much water do you need to use for a day?
4	1	Where does our drinking water come from?
	2	Do you think your friends and family know the source of their drinking water?
	3	Would it make a difference if they knew?
5	1	Does the topic of water contamination, water scarcity, interest you?
	2	Can you elaborate the whys?
6		What do you think about this topic? What is your opinion on this subject?
7		What would you do if water was in short supply?
8		How much water can you store?
9	1	Is water wasted in your community?
	2	In what ways?
	3	Can we reduce waste?
10	1	What does water conservation mean in our community?
	2	Can we contribute to water conservation?
	3	How can you as an individual conserve water?
11	1	Have you heard of cases where people had fallen ill due to causes related to poor water quality?
	2	What are the main impacts of water insecurity on health?
12	1	What will be the implications of global migration and climate warming on the impact of water- and vector born diseases?
	2	How does water challenges force migration?
13		What impact is rapid urbanization, population growth, and industrialization having on water security?
14		What are some actions on these issues of concern that young people can undertake to improve their conditions and those of their immediate communities?
THEMATIC AREA 2: Understanding the positive knowledge of young people on the right to safe drinking water and sanitation		
1		When you think of the human rights do you think that access to water is a human right?
2		Can you name some basic rights in relation to water? (Access to water, the right to clean drinking water and sanitation)
3		Whose responsibility is it to provide people with resources like water?
4		How are water decisions made in our community?
5		Should the government control water usage? If yes, how?

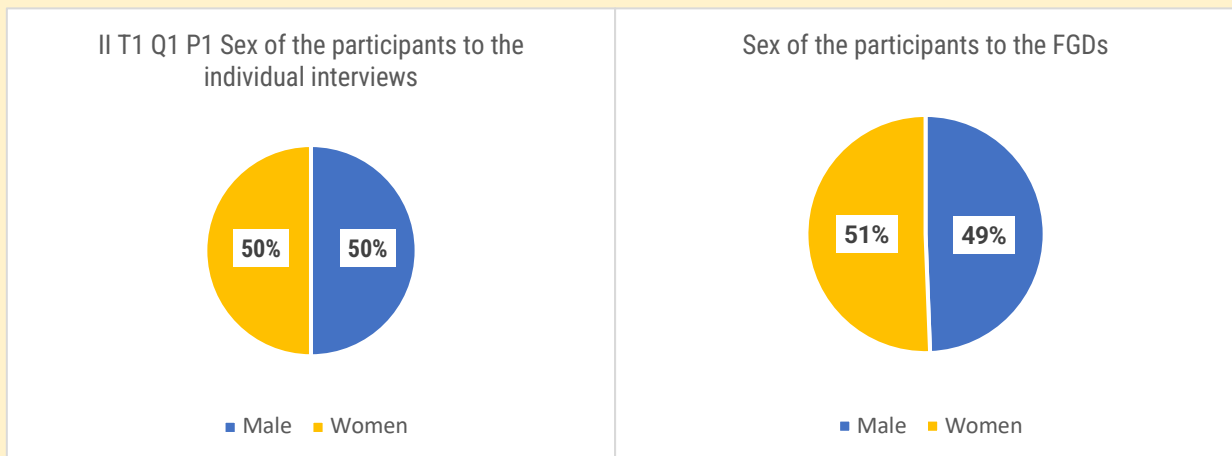
6	What laws, policies, information, and institutions are required to hold polluters accountable for environmental impact?
7	What laws, policies, information, and institutions are required to effectively prevent source pollution?
8	1 Have you heard of water-related social-ecological justice?
	2 What do you know about water-related social-ecological justice actions?
9	What are the necessary institutional changes required to move toward water-related social-ecological justice?
10	What are some ways that young people can share their voices with decision-makers, with whom they seek to work together to address their basic rights to clean water and sanitation?

The (3) analysis of the gathered data, as well as the writing of the final research paper has been conducted between September 2023 and February 2024 by a core-group of 4 young researchers, with the support of the DOYS that provided them with training in qualitative and quantitative data coding and analysis. Finally, as part of the last component of the PAR (4) evidence-driven action, 5 civic initiatives projects related to the PAR findings have been submitted to UNICEF and approved on the 17th of February 2024. Their implementation took place in February and March 2024. Those civic initiatives are:

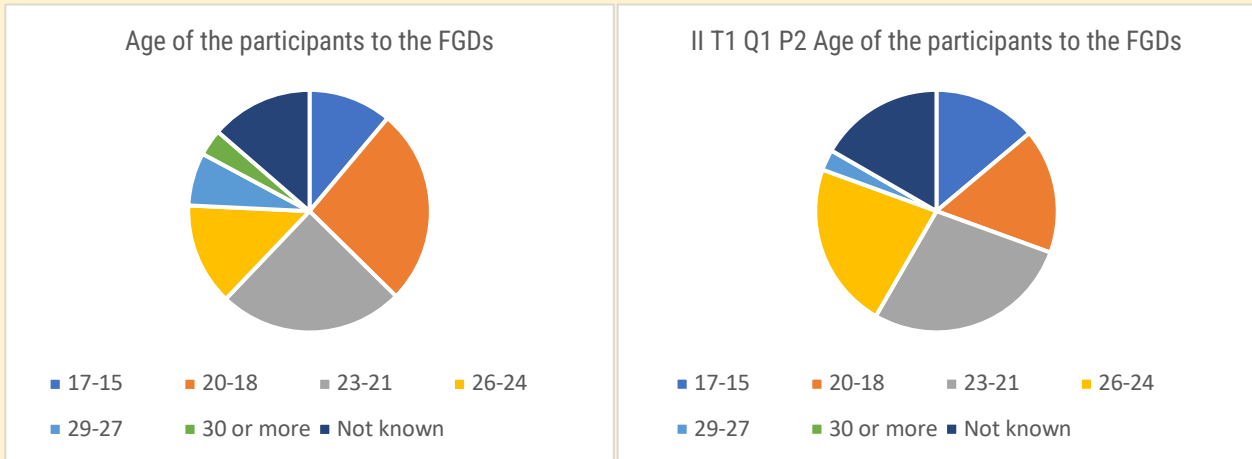
- 1- **Working Group on Green Economy:** Gathering three times a diverse group of members of Basrah’s civil society to discuss and find solutions to specific topics of the green economy in Basrah.
- 2- **Implementation of constructed wetland for industrial wastewater treatment:** Construction and implementation of a natural water purifying mechanism in one of Basra area farms.
- 3- **Green tourism, sustainable Iraq:** Holding a training workshop for 20 students and young graduates from the institute of entrepreneurship in tourism and supporting green tourism in Basrah by preserving natural resources.
- 4- **Supporting the green cover in Basrah:** Targeting one school in the center of Basrah and design for it a simple nursery in the school garden to increase the green cover there. Providing an educational workshop for school students on recycling some school materials or tools.
- 5- **Health guidance:** the participation team, composed of young graduates of pathological analysis, will visit a number of homes in a specific area of Zubair district for the purpose of providing health guidance on the safe use of water purification methods and materials.

Informations about the participants to the FGDs and IIs

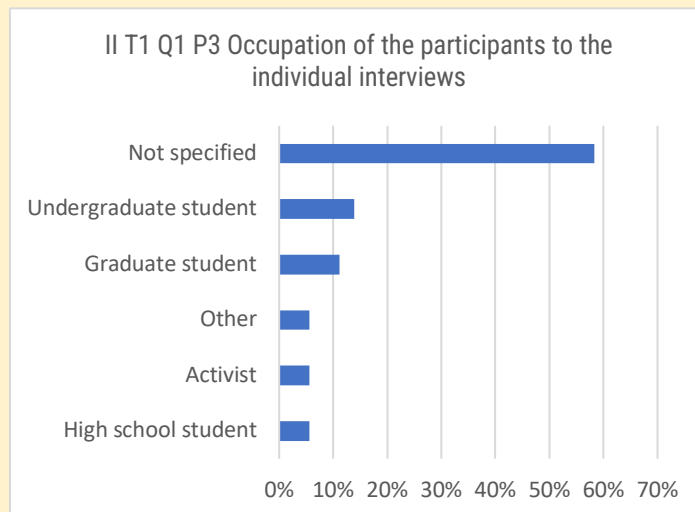
Participants in the individual interviews and FGDs were selected according to their age (between 15 and 30). Gender parity was achieved in both the individual interviews and the Focus Group Discussions, this was not the case in the Focus Group Discussions, which brought together 287 participants compared with 36 for the individual interviews.



All the participants who took part in RAP activities were between 15 and 30 years of age, with a few exceptions that were not statistically significant. In both the FGDs and the IIs, the majority of participants were between 18 and 26 years of age, more so between 18 and 23 in the FGDs and between 21 and 26 in the IIs. Few participants, respectively 14% and 3% in the IIs and 11% and 7% in the FGDs, were aged between 15 and 17 and 27 and 29, at the extremes of the desired ages. It should also be noted that several participants refused to divulge their exact age, 14% and 17% respectively in the FGDs and IIs.



Besides a general idea of the working sector of the participants to the FGDs, we unfortunately couldn't have reliable enough statistics about their occupation so that we could present it here. Similarly, a majority of participants to the IIs did not specify their exact occupation (58%). The rest of the participants to the IIs were overwhelmingly students or schoolchildren, with 14% undergraduate students, 11% graduate students and 6% high school students.



Notes about the structure and research questions

The 3 research questions, that guided the young researchers work throughout the 4-steps Participatory Action Research (PAR), are at the core of the structure of this final PAR study. The research questions that guided the corresponding part of the research will be reminded at the beginning of every of the 7 parts, by adding these boxes under their titles:

- 1 How does water scarcity and contamination affect young people in Basra and their community?
- 2 What is the opinion and level of knowledge of young people in Basra on the problems of water scarcity and contamination?
- 3 What form does and could the involvement of young people in their community take in the fight against water scarcity and contamination?

Each of its 7 parts corresponds to one of the three research questions, according to the following structure.

MAIN FINDINGS		CORRESPONDANT RESEARCH QUESTION
RESULTS FOR THE YOUTH COMMUNITY AND THE WIDER BASRAH POPULATION		
Water is the subject of a discrepancy between the importance the Basrawis attribute to this resource, which is the foundation of life and social stability, and their excessive use of it in their daily lives		2
Not only are the respondents aware of and interested in the issues surrounding water - fundamental to the development of life and social stability - but they are also generally aware of the importance of knowing about this resource in order to preserve it		
A precious resource, water is nevertheless perceived as dilapidated and wasted by the Basrawis, betraying a discrepancy between their words and deeds when it comes to water		
Although access to safe water is a human right, it is a state prerogative whose implementation, legal framework and responsibilities are poorly understood		2
There is an important discrepancy between the shared belief that water constitutes a human right and the fact that the knowledge of the active legal and political framework that regulates water distribution is very low		
Water governance and pollution control are the prerogatives of central government, according to participants, and it is from the State that they expect better laws and public policies		
Water issues are a source of threats and concerns for participants, who worry about the repercussions they could have on themselves and their families firstly, on their community secondly, and finally on their natural environment		1
Around the issue of water, the majority of participants' concerns are of an individual and family nature, focusing in particular on health problems and reduced purchasing power		
Secondly, participants expressed concern about the destabilization of their communities and societies as a result of water issues, particularly through the emergence of new conflicts and tensions		
Better water management in Basrah will require, according to the participants, an intensification of individual voluntarism, aimed in particular at reducing wastage, and a reform of public governance of water resources		3
Individual action was particularly emphasized by participants to address water issues, ranging from reducing the amount of water used personally to raising awareness around oneself		
According to the participants, the public authorities, in the first line of Basrah's water managers, should both improve and extend the water supply and distribution system, as well as share the governance of the resource with civil society actors		
RESULTS FOR THE YOUNG PEOPLE OF BASRAH		
Despite their vulnerability to the consequences of water scarcity and contamination, young people seem to be particularly hampered in their commitment to research and the fight against these problems		1
According to the participants, water issues present risks specific to young people, which should further encourage the authorities to take their voice into consideration for the proper management of water resources		
The awareness and commitment of young people to Basrah's water problems is not unanimous at present		
Insufficient youth participation in water issues research is a source of dissatisfaction for participants		

Focusing on awareness and governance around water, young people's involvement in the struggle must be supported to integrate them into decision-making processes and facilitate volunteer work and innovative projects		2
	In the words of the participants, the current involvement of young people in actions to combat water issues is not perceived positively and as enough by all	
	There are two ways for young people to become more involved: raising awareness among their peers, and getting involved in decision-making processes around water	
	Better support for committed young people from the authorities and civil society would involve opening up decision-making processes, facilitating access to funding and training, and simplifying volunteering	
New technologies, more specifically social media and technological projects, at the heart of youth action against water issues		3
	Social networks, a popular tool for bringing the voice of young people to decision-makers and helping them coordinate their efforts	
	Infrastructures and technological projects as a means of combating and circumventing water issues	

RESEARCH FINDINGS

RESULTS FOR THE YOUTH COMMUNITY AND THE WIDER BASRAH POPULATION

Water is the subject of a discrepancy between the importance the Basrawis attribute to this resource, which is the foundation of life and social stability, and their excessive use of it in their daily lives

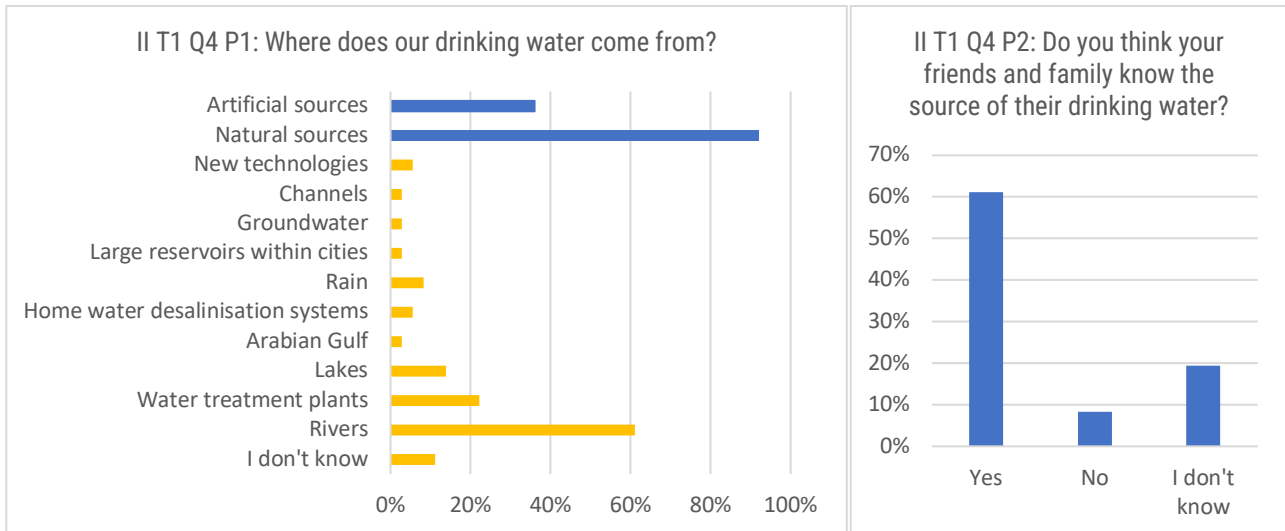
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What is the opinion and level of knowledge of young people in Basra on the problems of water scarcity and contamination?

Water evokes positive images among participants in the individual interviews and FGDs. Of natural origin, it is generally perceived as a resource fundamental to life, which needs to be known and preserved. However, these same participants accused the inhabitants of Basrah of a double standard, in that they are aware of the importance of water, but do not implement the necessary measures to preserve it in their daily lives.

Not only are the respondents aware of and interested in the issues surrounding water - fundamental to the development of life and social stability - but they are also generally aware of the importance of knowing about this resource in order to preserve it

First and foremost, participants in the individual interviews were overwhelmingly aware of the natural origin of the water they consume. When asked about the origin of their water, the majority answered "natural source" (92%), far more than "artificial" (36%), which is in line with reality, since the city's two main water sources are the Al Badaah fresh water canal and the R-Zero pumping station, both of which originate in the Tigris and Euphrates rivers (UNICEF, 2019). More specifically, 61% thought first and foremost of rivers (Tigris, Euphrates, Chatt-el-Arab), 14% of lakes and 8% of rain; among artificial sources, "water treatment plans" were mentioned most often (22%) and "water desalination systems at home" (6%). Not only did participants demonstrate their knowledge of the origin of their water, but 61% of them also claimed that those around them shared this knowledge, compared with just 8% of participants who claimed that their friends and family didn't know where their drinking water came from.



Notes about the way of reading the data

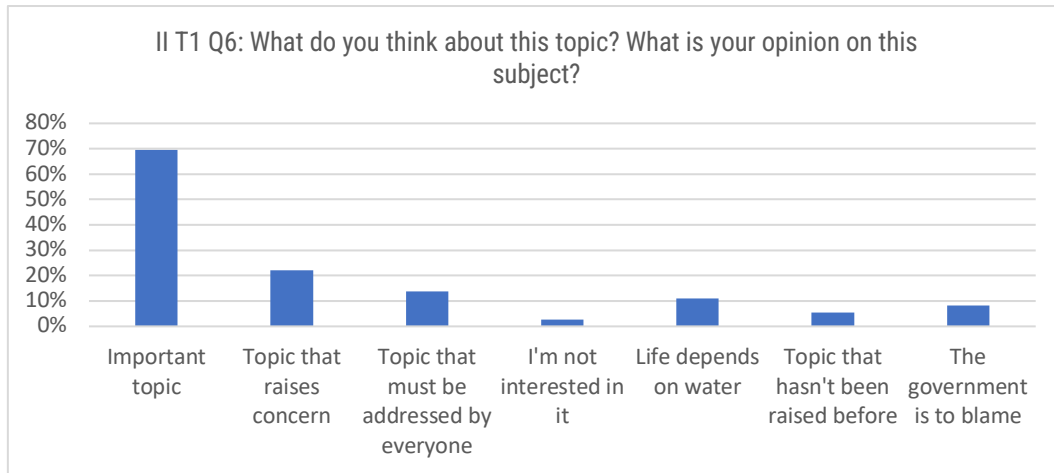
Two things must be taken into consideration while considering the data through the research :

- The questions will be referred to according to this model : "FGD T2 Q7 P1" or "II T1 Q8". This indicates the precise question in the following way : FGD/II indicates the type of data gathering method implemented, T1/T2 the thematic area, Q1/Q2... the number of the question and finally P1/P2... the part of that question. All of those are referred in the guidelines for FGDs and IIs.
- The different percentages never add up to 100%, because some participants/groups indicated multiple answers, while others didn't give any that could be referred to in research. The bars in the chart indicate the percentage of participants/groups that indicated that specific answer among the total number of participants/groups (we'll talk about participants for the IIs, and groups for the FGDs).

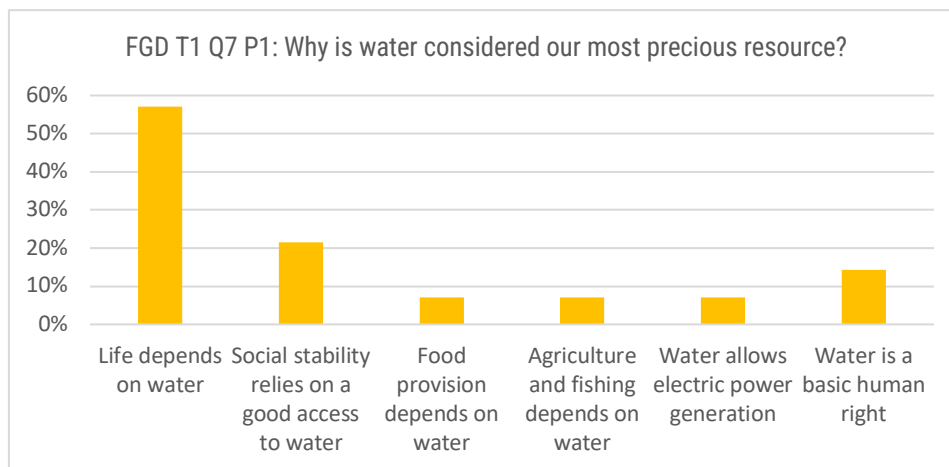
Similarly, a majority of participants in the individual interviews (44%) said that if people knew the origins of their drinking water, it would make a difference, although a sizeable minority of 19% disagreed¹. This in itself demonstrates the importance that Basrawis attribute to the theme of water, particularly since the 2018 crisis that saw at least 118,000 people hospitalized for symptoms that appeared as a result of exposure to poor quality water (HRW, 2019). Indeed, "It is important" was by far the first sentiment expressed by participants in the individual interviews when asked their opinion on the subject of water scarcity and contamination (69%). The most common responses after these also betrayed a concern underlining the importance of the threat that this issue can represent, with 22% of participants declaring that they were "concerned" and 14% that it was a problem that needed to be "addressed by everyone". Similarly, the overwhelming majority of participants in the individual interviews said they were interested in the subject of water pollution (92%), confirming the centrality of this issue in the lives of Basrah's inhabitants².

¹ II T1 Q4 P3: Would it make a difference if they knew? (Where does our drinking water come from? Do you think your friends and family know the source of their drinking water? Would it make a difference if they knew?)

² II T1 Q5 P1: Does the topic of water scarcity interest you?



Yet if a majority of participants attribute such importance to the theme of water, it seems to be mainly because people are aware of the centrality of water in the formation and perpetuation of human life. Indeed, this is a remark that participants repeatedly put forward, whether in individual interviews or in FGDs. Thus, "water is central for life" was the answer most often given by participants in individual interviews (39%) to the question "what springs to mind when you hear the word 'water'?", ahead of "water contamination" (36%) and "water shortage and desertification" (31%)³. Even more significantly, a majority of participants argued that it was because "life depends on water" (61%) that the subject of water scarcity was of particular interest to them, far ahead of the second argument that "health depends on clean water" (19%)⁴. Participants in the FGDs also supported a similar position, arguing that if water was generally considered the most precious resource, it was because "life depends on water" (57%). In second place we find another argument, restricting the speculative framework to a social one, stating that "social stability relied on good access to water" (21%). The following responses are even more sector-specific, stating in turn that "food provision depends on water" (7%), "agriculture and fishing depend on water" (7%) and that "water allows electric power generation" (7%).



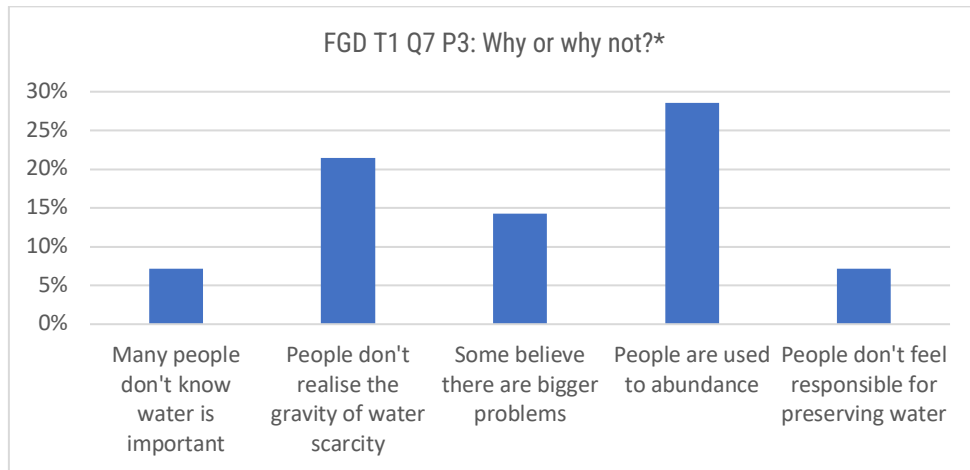
A precious resource, water is nevertheless perceived as dilapidated and wasted by the Basrawis, betraying a discrepancy between their words and deeds when it comes to water

Although the participants were generally convinced of the importance of water, as barely demonstrated, the predominant feeling remains that the people of Basrah don't take the measure of it and don't act according to

³ II T1 Q2: What springs to mind when you hear the word 'water'?

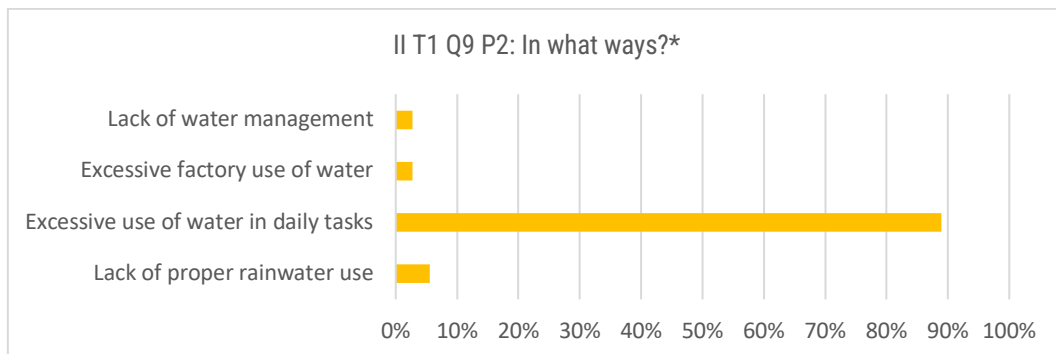
⁴ II T1 Q5 P2: Can you elaborate the whys? (Does the topic on water contamination, water scarcity interest you? Can you elaborate the whys?)

this conviction. Thus, after explaining why they thought water was our most precious resource, 71% of participants answered "no" to the question "do you feel we act accordingly"⁵, and 0% answered "yes". To elaborate, the majority of FGD participants stated that "people are used to abundance" (29%), or that "people don't realize the gravity of water scarcity" (21%). These responses support two different positions: the first seems to indicate a discrepancy between the words and actions of Basrawis - most of whom are aware of the problems of water scarcity and contamination, as seen above, but act as if in a bygone era of abundance - and the second denies that Basrawis are even aware of the problem, or at least of its gravity. Note that a position such as "some believe there are bigger problems" was also supported by 14% of participants, thus relativizing the place that water conservation efforts should take in the lives of local people.



*The full question being : In different scientific articles, in school books, water is considered the most precious resource. Why is water considered our most precious resource? Do you agree? Do you feel we act accordingly? Why or why not?

This discrepancy between words and deeds in relation to the water problem - or even the denial or relativization of the seriousness of water scarcity and contamination - is particularly evident in relation to wastage. The majority of participants in the individual interviews declared that water was wasted in their community (83%), compared with only 11% of participants who supported the negative view⁶. And the vast majority of participants were not referring to the dispersion of water in the drains, of the order of 45% in Basrah (UNICEF, 2019), but rather to "excessive use of water in daily tasks" (89%), with the most common examples being "cleaning cars", "watering plants" or "leaving taps on". Only small minorities of participants pointed to other causes of resource wastage, such as "lack of proper rainwater use" (6%, two participants), or "excessive factory use of water" (3%, only one participant).



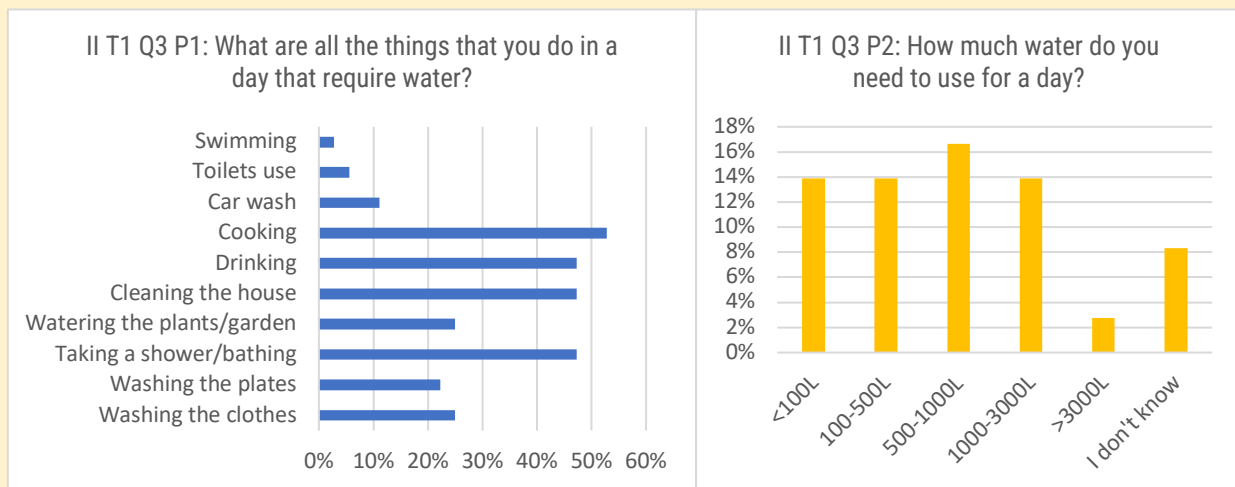
*The full question being : Is water wasted in your community ? In what ways ? Can we reduce water waste ?

⁵ FGD T1 Q7 P2: Do you feel we act accordingly? (In different scientific articles, in school books, water is considered the most precious resource. Why is water considered our most precious resource? Do you agree? Do you feel we act accordingly? Why or why not?)

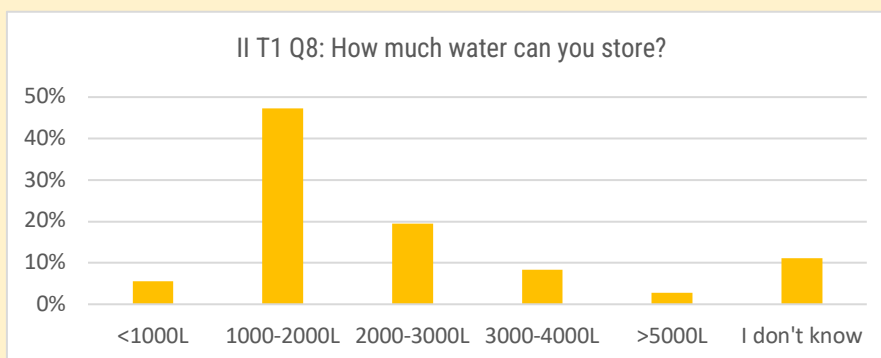
⁶ II T1 Q9 P1: Is water waste in your community?

Details of participants' water consumption

First and foremost, several questions enabled us to find out about the daily use of water by participants in the Focus Group Discussions (FGDs) and individual interviews. A majority of respondents to the individual interviews stated that they used between 500 and 1000L of water per day (17%): 14% respectively stated that they used between 100 and 500L of water per day, and between 1000 and 3000L. 8% of participants said they didn't know their daily usage volume. This water is very largely used for cleaning and personal consumption, since 100% of participants said they dedicated it daily to these two uses, whether for cooking (53%), drinking (47%), washing (47%), cleaning (47%), laundry (25%), dishes (22%) or the car (11%). Several participants also said they use water daily to water their plants (25%).



The majority of participants therefore consume slightly less water than they can store, since 47% of them, the majority proportion, said they could store between 1000 and 2000L of water at home, which effectively corresponds to the volume of the cisterns mainly used by Basrah residents. The remainder, in descending order, said they could store between 2000 and 3000L of water (19%), the volume of two cisterns or an alternative storage system, 3000-4000L of water (8%) or, less significantly, less than 1000L (6%). It should also be noted that 11% of participants said they didn't know how much water they could store at home.



Although access to safe water is a human right, it is a state prerogative whose implementation, legal framework and responsibilities are poorly understood

2

What is the opinion and level of knowledge of young people in Basra on the problems of water scarcity and contamination?

Water is almost unquestionably a human right for participants in the FGDs and individual interviews: but in practice, few of them have a good knowledge of the Iraqi legal and institutional system as a local that is supposed to concretize this UN-recognized human right. They remain convinced, however, that it is the prerogative of the state, and above all the central state, to give them access to this resource, including by taking new, more coercive and innovative measures.

There is an important discrepancy between the shared belief that water constitutes a human right and the fact that the knowledge of the active legal and political framework that regulates water distribution is very low

In regard to the right to access safe water, international law is clear: "safe and clean drinking water and sanitation is a human right essential to the full enjoyment of life and all other human rights" as voted in 2010 by the United Nations General Assembly (UN General Assembly, 2010). Consequently, the Human Rights Council adopted in April 2011 access to safe drinking water and sanitation as a human right (UN Human Rights Council, 2011), meaning that accessing 1. Sufficient; 2. Safe; 3. Acceptable; 4. Physically accessible and 5. Affordable water constitutes in regard to international law a right to life and to human dignity. And the participants in the individual interviews didn't disagree, as 100% of them said they "believe that access to water is a human right"⁷.

More specifically, when confronted with the details of water-related rights, they emphasized the importance of "access" to water (79%) and the importance of it being "healthy and clean" (57%), thus unintentionally insisting on points 4 and 2 (physically accessible and safe) of the characteristics of UN law⁸. It should be noted that the right of access to water, which also constitutes Sustainable Development Goal (SDG) no. 6, does not yet exist in Iraqi legislation, as is the case in other countries⁹.

Beyond the generally shared conviction that free access to water is a human right, however, participants demonstrated a widespread lack of knowledge of the laws, public policies and institutions supposed to guarantee this right by protecting and distributing water resources. Thus the prevailing response to the two questions "what laws, policies, information and institutions are required to hold polluters accountable for environmental impact?"¹⁰ and "what laws, policies, information, and institutions are required to effectively prevent source pollution?"¹¹ was in both cases "I don't know" (75% for Q6 and 61% for Q7). The rest of the responses, which were particularly scattered, generally called for better public information on the environmental impact of public policies, and greater accountability on the part of public authorities in this area. The trend in responses does, however, seem to be in the direction of a call for greater intervention by the authorities in water management and pollution reduction.

This apparent ignorance of public policies, laws and institutions active in water management extends to the concept of social-ecological justice, which brings together the concept of "social justice", defined as "the just distribution of rights, opportunities and the fruits of economic growth among the individuals of a society" (Barozet, Sainsaulieu, Cortesero, & Mélo, 2022) (UN DESA, 2006), and that of "environmental justice", i.e. "equal access between individuals in a society to environmental protections and benefits" (NRDC, 2023). Indeed, only 6 of the 36 participants in the individual interviews (17%) claimed to be aware of this concept when asked "have

⁷ II T2 Q1: When you think of the human rights do you think that access to water is a human right?

⁸ II T2 Q2: Can you name some basic rights in relation to water? (Access to water, the right to clean drinking water and sanitation)

⁹ 2/3 of UN-recognized states recognize the right to water and sanitation (UN Water, 2019).

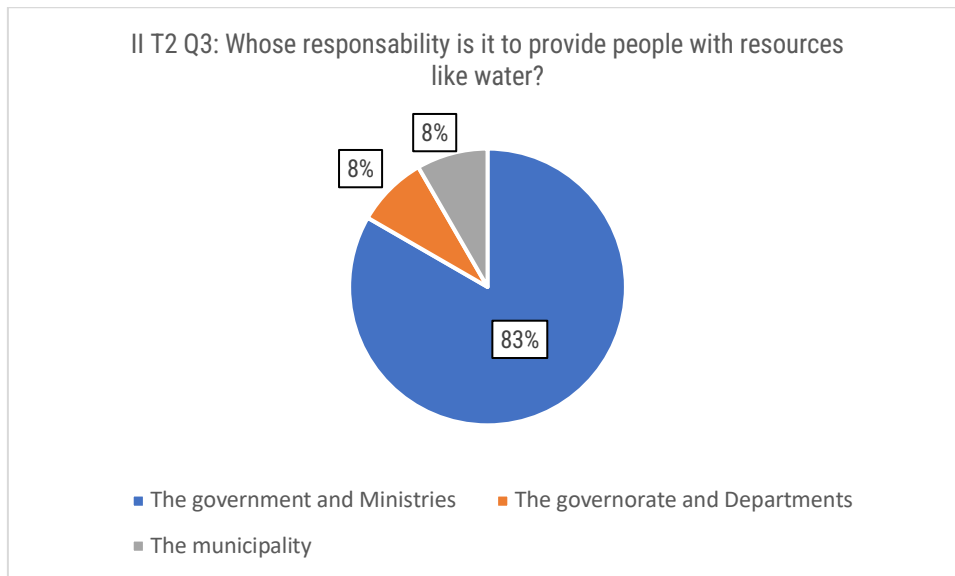
¹⁰ II T2 Q6: What laws, policies, information, and institutions are required to hold polluters accountable for environmental impact?

¹¹ II T2 Q7: What laws, policies, information, and institutions are required to effectively prevent source pollution?

you heard of water related-ecological justice?"¹². And when asked about their knowledge on the subject¹³, responses were rather scattered: three participants highlighted the concept as aiming to "distribute water fairly" (8%), while another mentioned "equal treatment of individuals when implementing water-related policies" (3%), and yet another mentioned "Law n°27 about the protection and improvement of the environment" (3%)¹⁴.

Water governance and pollution control are the prerogatives of central government, according to participants, and it is from the State that they expect better laws and public policies

This unfamiliarity with, or even disinterest in, the legal mechanisms for protecting the environment and delivering water may stem, at least in part, from a widespread conviction that these are state prerogatives, and that it should not fall to the individual to be active in them. This is the leitmotif that emerges when participants are asked "whose responsibility is it to provide people with resources like water? All the answers concerned the public sector - no mention was made of private operators or social and associative actors - and the vast majority referred to central government (83%) rather than regional (8%) or municipal authorities (8%). Thus, the central government is overwhelmingly blamed for the inefficiency of Basrah's water distribution system, which is confirmed by a general lack of confidence in the national government, more serious than in local government according to surveys (National Democratic Institute, 2019) : approval of the governorate's actions is significantly higher than that of the government. It should also be noted that although Basrawis' satisfaction with their water access system remains low, it is steadily increasing, with 74% of Basrah residents declaring in 2019 - less than a year after the 2018 water crisis - that the supply of basic services in their city was improving (+36% compared to October 2018).



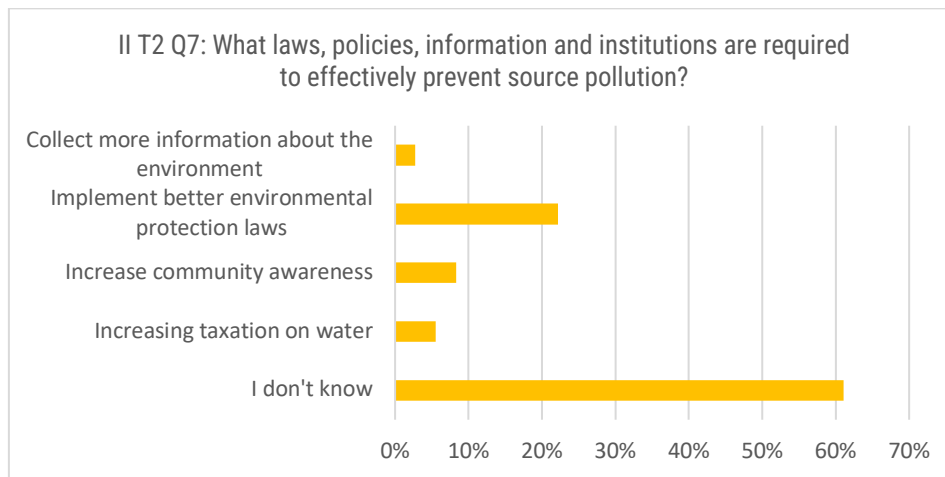
Similarly, the predominance of central government action prevailed when participants were asked what public action should be taken to prevent water pollution at source. While an overwhelming majority of participants answered "I don't know" (61%) to the question "what laws, policies, information, and institutions are required to effectively prevent source pollution?", 22% answered "implement environmental protection laws", which would

¹² II T2 Q8 P1: Have you heard of water-related social-ecological justice? (Have you heard of water-related social-ecological justice? What do you know about water-related social-ecological justice actions?)

¹³ II T2 Q8 P2

¹⁴ Passed in 2009, this founding law aims to improve and to protect the environment by handling the damages, protecting the public health and the natural resources: it notably establishes a national Council and regional sub-councils referring to the Ministry of Environment, responsible for these matters. Among other objectives, it aims to regulate the discharge of effluents whether they are domestic, industrial or agricultural, to protect the water resource (UNEP, 2009).

be the responsibility of the central authority, far ahead of a local solution such as "increase community awareness" (8%). It should also be noted that two participants (6%) were in favor of "increasing taxation", again referring to a national framework. Finally, we note that the majority of participants responded "spread awareness about the concept" (28%) when asked "what are the necessary institutional changes required to move toward water-related social-ecological justice?"¹⁵, thus answering outside the framework of the question, since it did not deal with institutional change but with a social and community initiative. This is undoubtedly a direct consequence of the fact that, as the majority of participants were not familiar with either the institutions in charge of water or the concept of social-ecological justice, they probably didn't fully understand the question, or were at any rate unable to answer it, as the high "I don't know" rate (58%) would also tend to prove.



The institutional and legal framework for water governance in Iraq

Since the adoption of the 2005 Constitution, Iraq is governed as a federal structure with power shared between the federal Government and the regions and governorates. This power-sharing became a fundamental principle of Iraq's water management and government structure, and the Law 21 of 2008 activated this decentralization process by devolving some ministries' functions to the governorates, among which water governance (WPS, 2022). The latter can be defined as "the political, social, economic and administrative systems that determine, regulate and influence the use and management of water resources" (SIWI, 2022), and is shared in Iraq between various bodies : the Ministry of Water Resources (MoWR), of course, but the Ministry of Finance (MoF) as well, and the Ministry of Planning (MoP), Ministry of Environment (MoE), Ministry of Health (MoH) and last but not least the Ministry of Municipalities and Public Works (MoMPW) (JICA, 2015). While the MoWR oversees the development of water resources and the infrastructure projects, the MoMPW plays a key role as it is in charge of strategizing, budgeting and implementing centrally funded projects.

No overarching national water law is in force currently – in spite of multiple unsuccessful projects – but multiple plans and strategies provide guidance for water management decisions: this is the purpose of the 2014 Strategy for Water and Land Resources in Iraq (SWLRI), that sets our core principles for water management between 2015 and 2035. This is the strategy that established the water quotas as the core principle of water allocation: negotiated between the central government and the governorates through the Provincial Development Plans (PDPs), these quotas are set along decisions for infrastructure projects and financial objectives.

Though in a 2022 publication by the Water, Peace and Security organization (WPS) and the Clingendael institute, two main structural challenges limiting the ability of the system to address pressing issues in the water sector have been identified. Firstly, an insufficient implementation of the water allocation system and

¹⁵ II T2 Q9

chronical underfinancing hampers the MoWR ability to pursue most-needed infrastructural projects. The ministries inability to lead a proactive policy and the population's clinging the inefficient watering practices in agriculture undermines the logic of the SWLRI, and heightens tensions between governorates. Secondly, the dysfunctional decentralization and limited support for local authorities prevents them organically from addressing local issues that are often widely studied and recognized. Indeed, despite decentralization having the potential to improve service delivery, its effectiveness has been undermined by unclear regulation and responsibilities' sharing (Fleet, 2019): the governorates often in facts lack autonomy, power, resources and human capacity to carry out strategic projects.

Water issues are a source of threats and concerns for participants, who worry about the repercussions they could have on themselves and their families firstly, on their community secondly, and finally on their natural environment

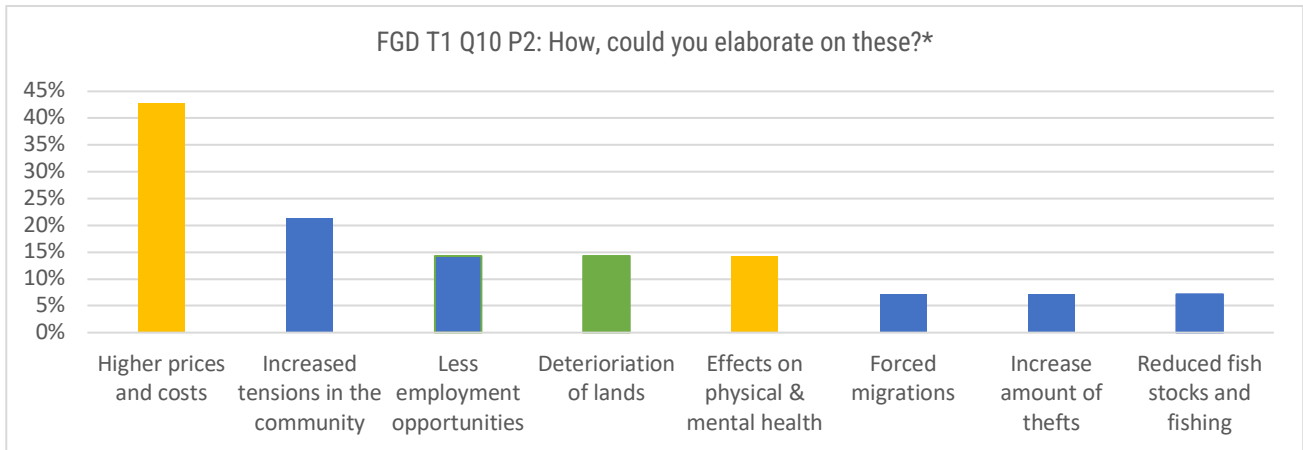
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How does water scarcity and contamination affect young people in Basra and their community?

Water scarcity and contamination are not only factors of concern for the future, but if we are to believe the participants, are factors behind changes that are already taking place. Thus, 64% of FGDs participants answered "yes" to the question "has water scarcity and contamination in your community changed people's lives?"¹⁶, against a minority of "no" answers (29%). The consequences most mentioned by FGD participants and individual interviewees, in descending order of occurrence, are threefold: individual and family consequences - illness, death, price rises - consequences for the community and society, and finally consequences for the environment in general.

Thus, when participants were asked to elaborate on "how has water scarcity and contamination in your community changed people's lives?", following on from the previous question, the majority of responses crystallized around "higher prices and costs" (29%), referring to being forced to buy bottled water, which would itself increase in cost. This response, represented in yellow on the graph, is of an individual nature: participants are thinking about the repercussions of the water issue on their own or their household's purchasing power. The answers shown in blue correspond to community or social responses, and are generally the second most mentioned after individual responses: this is the case of "increased tensions in the community" (21%) or "less employment opportunities" (14%), through which participants express a fear of a threat to Basrah society. Finally, in a third category, we find responses linked to the destruction of the environment, in this case "deterioration of lands" (14%). We'll see that this pattern repeats itself almost invariably when we ask participants about the potential consequences of water scarcity and contamination.

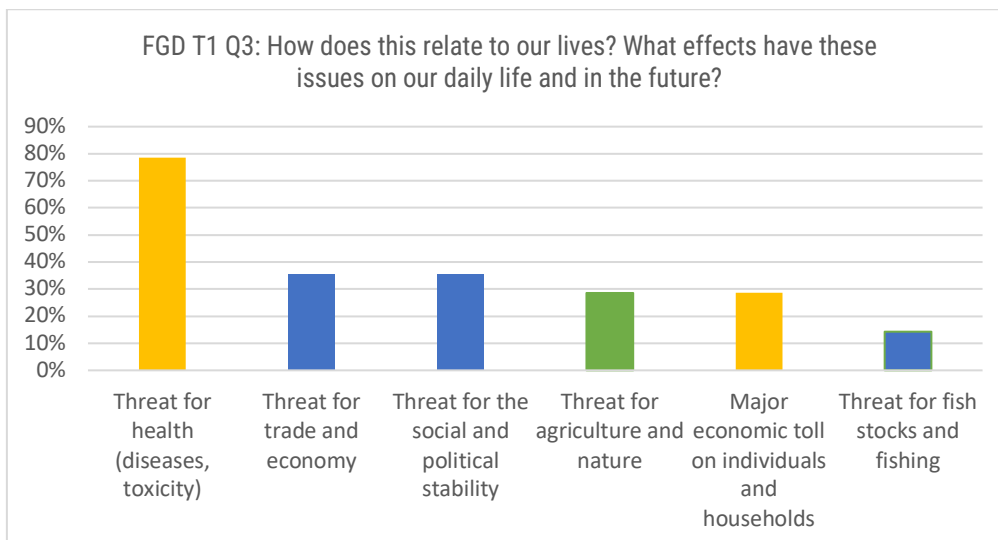
¹⁶ FGD T1 Q10 P1

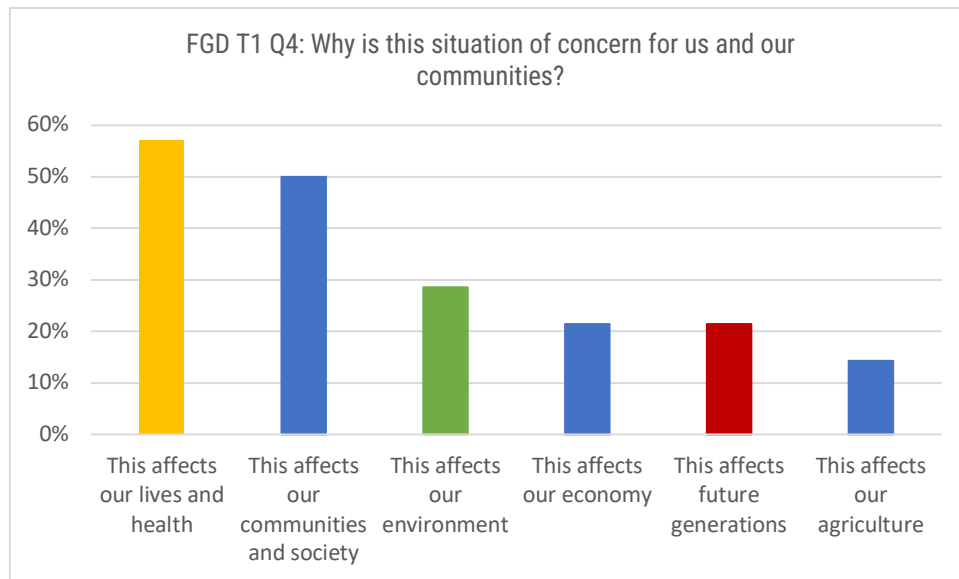


*The whole question being : Has water scarcity and contamination in your community changed people's lives? How, could you elaborate on these?

Around the issue of water, the majority of participants' concerns are of an individual and family nature, focusing in particular on health problems and reduced purchasing power

Individual concerns thus appear to be the primary source of worry linked to water scarcity and contamination for participants in the individual interviews and especially the FGDs. And among these, concerns for their health hold a majority place, a fact to which the events of 2018 are probably linked. "Threat to health" was the main concern (79%) for FGD participants in terms of the effects of water issues on their daily lives and their future. In detailing their responses, groups mentioned the illnesses that can be caused by ingesting or coming into contact with unsuitable water, as well as its intrinsic toxicity in the event of pollution. Further on in these effects, we also find the fact that it is also "a major economic toll on individuals and households" (29%), representing another category of individual - or family - concern regularly mentioned by the groups. "This affects our lives and health" (57%) is also the answer most regularly given by participants to the question "why is this situation of concern for us and our communities?", demonstrating that participants attribute community and social importance to an individual phenomenon, such as falling ill, if it ever recurs on a large scale. In other words, even the specifically individual consequences of water scarcity and contamination problems end up having a social impact if they affect enough people at once, as they did during the 2018 crisis.



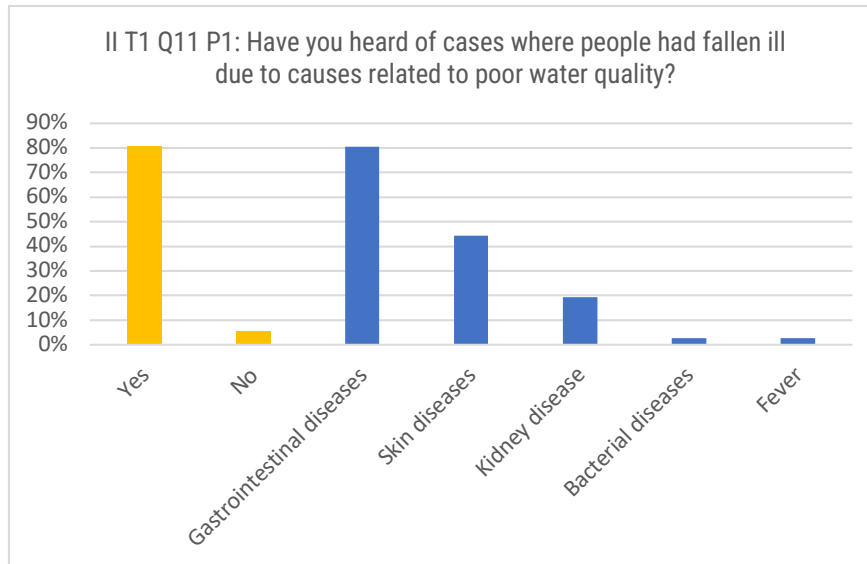


It's also worth noting that the same order of concerns can be found once again, both in terms of the general consequences and the consequences for the respondents' communities. Individual concerns come first (especially health), followed by concerns for society and the community (the economy, social and political stability), and lastly concerns for the environment¹⁷. Finally, we note the appearance of a fourth category in FGD T1 Q4, represented by few participants but betraying a regularly evoked concern: concern for "future generations" (21%, 3 participants), which we will henceforth represent in red.

Coming back to health problems, which are once again the primary concern of participants when it comes to water, it's not unfounded insofar as 81% of them said they had experienced cases in which people had fallen ill due to poor water quality, against only 6% maintaining the opposite. All 81% mentioned "gastrointestinal diseases", while 44% said they had experienced "skin diseases" and 19% "kidney diseases". This shows that this concern is based on a sensitive experience of the participants, who are worried that the same thing could happen to them as to some of their relatives or acquaintances. Moreover, 17% of participants stated that the greatest impact of water insecurity on health was "death", clearly betraying a concern that goes even beyond health problems¹⁸.

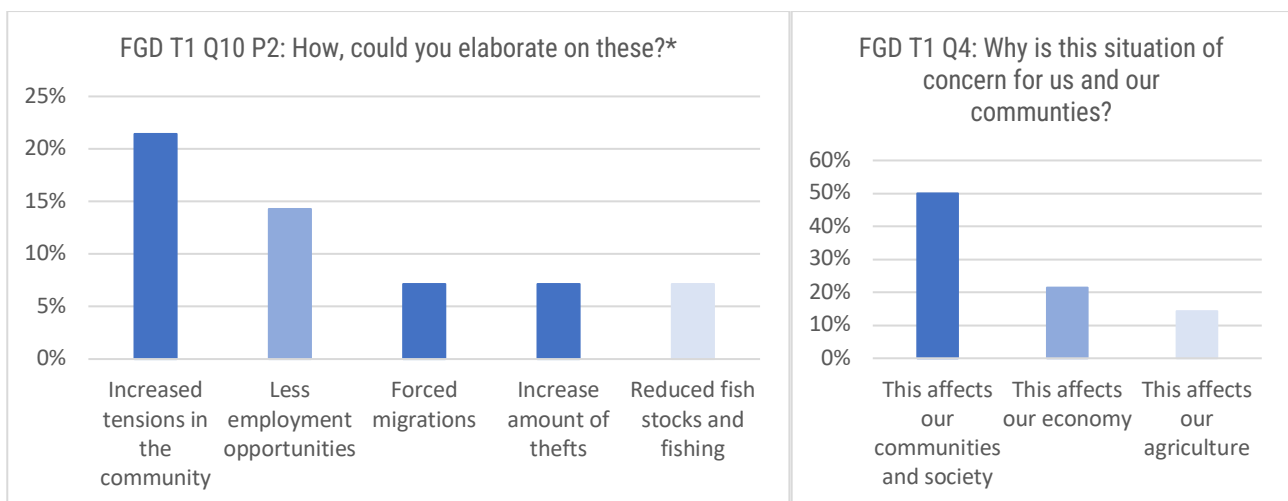
¹⁷ It should be noted, however, that for some participants, concern about land destruction seemed to stem not from an attachment to environmental preservation as such, but from concern about the consequences this might have for agriculture, which would place their response in the second category of pro-concern (blue). However, the team of young researchers had to guard against over-interpretation, and decided to combine these responses into a separate category (green) when the answers were ambiguous, and to separate them - as in FGD T1 Q4 - when participants clearly referred to the environment as such or to agriculture as an economic activity.

¹⁸ II T1 Q11 P2: What are the main impacts of water insecurity on health?



Secondly, participants expressed concern about the destabilization of their communities and societies as a result of water issues, particularly through the emergence of new conflicts and tensions

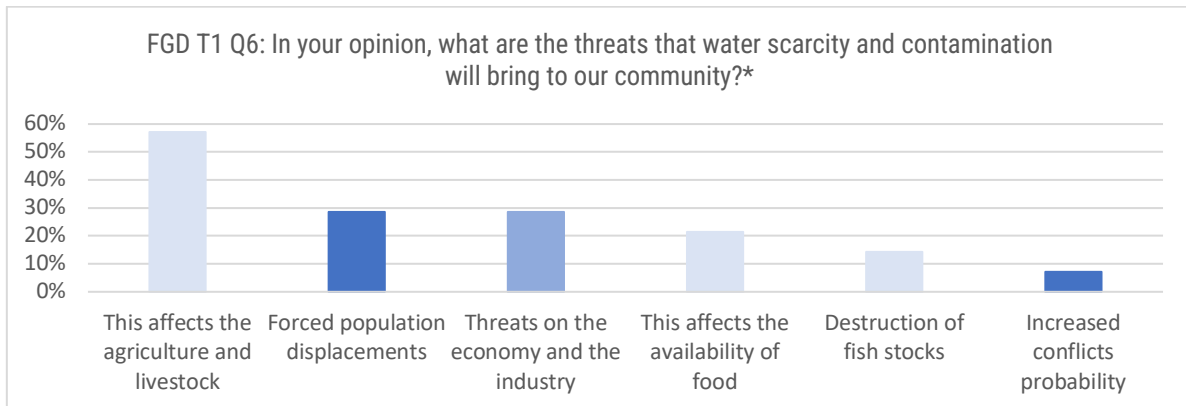
After individual concerns, the threats most often pointed to as a consequence of water issues are those affecting community and society. These are of three main types, in decreasing order of importance according to the participants: dangers to social stability, dangers to the local economy and dangers to the food supply (agriculture and fishing). From all the questions on the subject of threats to the community from water issues, a trend emerges that shows a decreasing importance of these three social issues for participants. If we go back to the questions previously mentioned, such as FGD T1 Q10 P2 and FGD T1 Q4, and remove all the answers not related to consequences for the community and society (all the answers that were not represented in blue), this becomes even more apparent if we institute a new color code for these three threats: dark blue for social stability, medium-dark blue for the economy and light blue for the food supply.



*The whole question being : Has water scarcity and contamination in your community changed people’s lives? How, could you elaborate on these? Only society/community answers are showed.

A greater detail of the participants preoccupations for their community can be observed at question FGD T1 Q6, as the participants clearly mentioned “agriculture and livestock” (57%), “the availability of food” (21%) and “fish stocks” (14%) as three distinct matters. Interestingly, this question tends to invert the pattern of answers we perceived previously, putting the worries about “the agriculture and the livestock” (57%) first and “increased

conflicts probability" (7%) last. However, this isolated pattern and the fact that it came last might indicate that the participants, after having been asked several times close questions previously, were trying to find new answers or stress other points in their previous answers to avoid repeating themselves.



* Only society/community answers are showed.

Finally, participants were generally supportive of the idea that water could be at the heart of conflicts and tensions in the near future, and this issue seemed to be their main concern ("increased tensions" in FGD T1 Q10 P2). Thus, 43% of FGD participants said that "water (or the lack of it) could spark the next conflicts", with only one participant arguing the opposite¹⁹, the others refraining from giving a clear answer on the subject. Interestingly, 71% of participants had heard of conflicts that had already arisen in their community due to water shortages²⁰. It is therefore relatively surprising that only a minority of participants, having already observed such events, demonstrate that they could happen again in the future: this could possibly be due to the gradual increase in Basrawi satisfaction with their water distribution service (National Democratic Institute, 2019), contrary to the trend of worsening effects of climate change on the Basrah region. The conflicts mentioned by participants were mainly "conflicts among farmers in agricultural areas" (43%), references to "2018 events" (36%), and less significantly "conflicts in the marshlands" (14%) and "conflicts between two regions" (14%).

Better water management in Basrah will require, according to the participants, an intensification of individual voluntarism, aimed in particular at reducing wastage, and a reform of public governance of water resources

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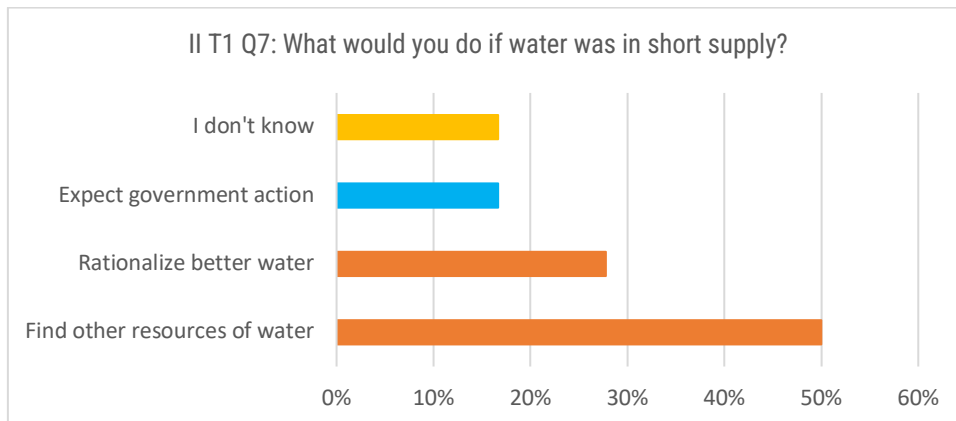
What form does and could the involvement of young people in their community take in the fight against water scarcity and contamination?

While participants seemed unanimously convinced of the need to combat water issues because of the threats they represent, they were more divided as to how to go about it. It's fair to say, however, that over and above government intervention in better resource management, participants identified above all the fundamental importance of individual action in reducing household waste. This was particularly evident when participants in the individual interviews were asked "what would you do if water was in short supply?". While 17% of participants pointed out that they would expect government intervention first (in light blue), the majority of participants answered "rationalize better water" (28%) or mentioned various other individual solutions for obtaining more water (50%) such as "extra water storage" (25%) or "drill wells" (19%), highlighting the fact that for them, the

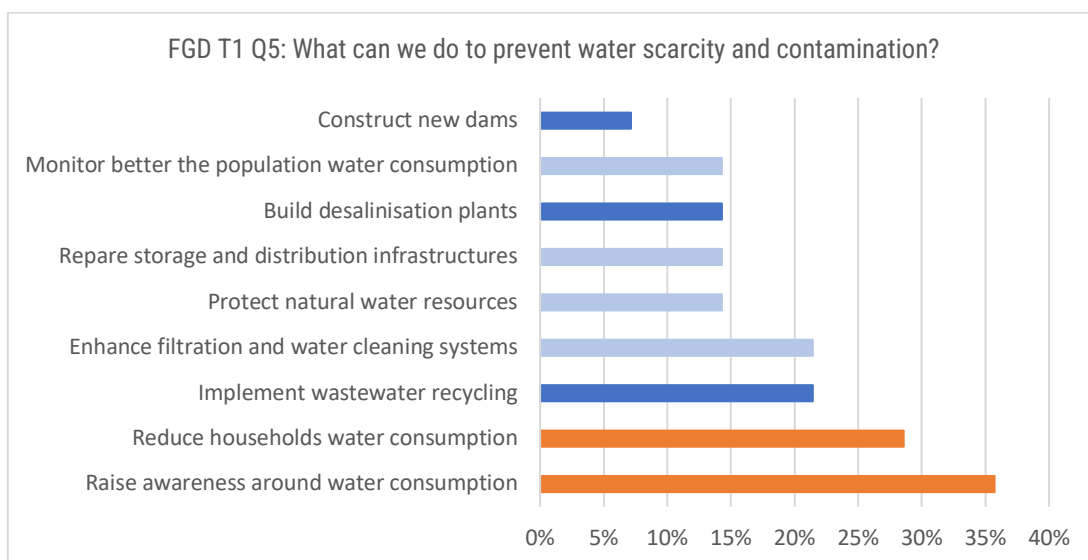
¹⁹ FDG T1 Q8 P1: Could water (or the lack of it) spark the next conflicts?

²⁰ FGD T1 Q8 P2: Are you aware of conflicts in your community that arose because of water shortage?

problem of water resources is first and foremost one of access, which needs to be resolved at individual and family level.



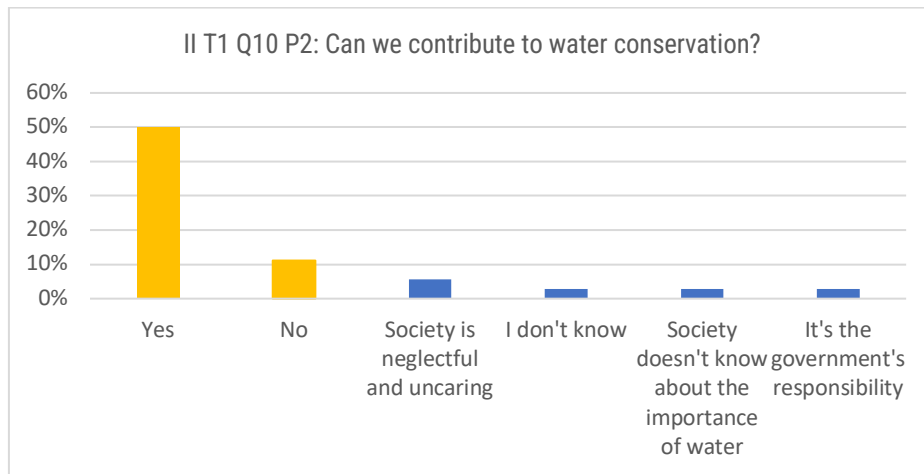
The same trend emerges when participants are asked "what can we do to prevent water scarcity and contamination?". The most common responses were for individual action, i.e. "raise awareness around water consumption" (36%) and "reduce household's water consumption" (29%). We'll see below that these are the two actions favored by participants on numerous occasions. And all the answers that follow concern government investment (blue), whether to improve the current water distribution system (light blue) or to implement new water creation, conveyance and filtration systems that don't currently exist (dark blue). The most common responses were "implement wastewater recycling" (21%), "enhance filtration and water cleaning systems" (21%), "protect natural water resources" (14%), "repair storage and distribution infrastructures" (14%), "build desalination plants" (14%), "monitor better the population water consumption" (14%). Firstly, we'll look at the way in which participants emphasized individual action in the fight against water issues, with particular emphasis on awareness and reducing wastage. Secondly, we'll look at participants' expectations in relation to state interventionism or other stakeholders (CSOs, cultural and religious actors, etc.).



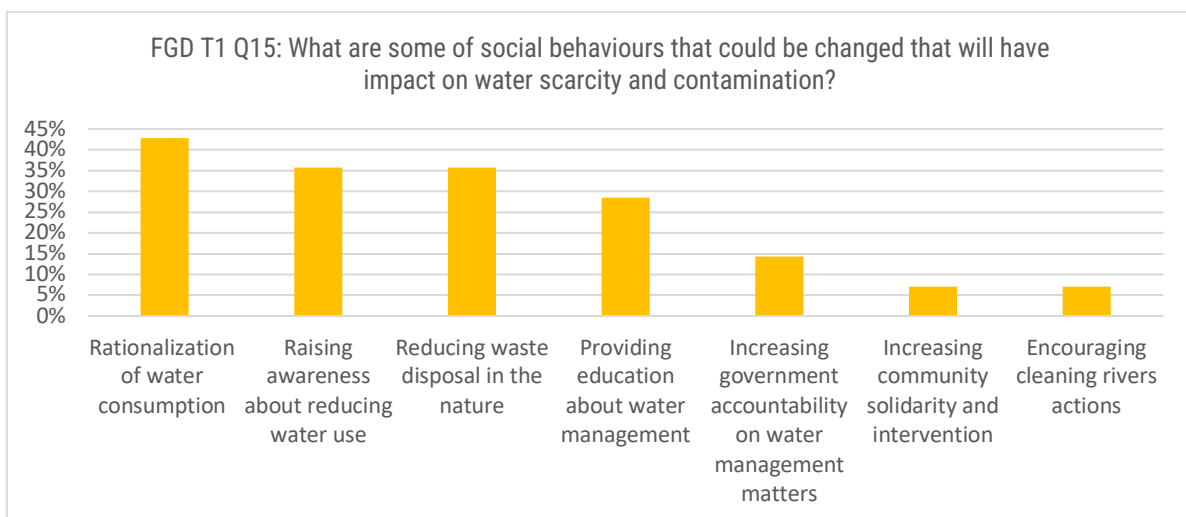
Individual action was particularly emphasized by participants to address water issues, ranging from reducing the amount of water used personally to raising awareness around oneself

The majority of participants emphasized individual action in favor of water conservation, more than any other form of state, private or associative interventionism. Thus, when participants were asked "can we contribute to

water conservation?", 50% answered "yes" and only 11% said "no", preferring government intervention (3%, 1 participant) or declaring that "society is neglectful and uncaring" (6%, 2 participants).



And among the individual actions to be taken to reduce the impact of water scarcity and contamination, the actions recommended by participants almost always follow the same trend. Rationalization of water consumption" was recommended by 43% of participants, followed by "raising awareness about reducing water use" by 36%. In the many questions asked of participants relating to individual action, as we shall see below, it is these two actions that stand out most significantly, and in particular the need to reduce individual and family consumption, reflecting participants' awareness of the importance of individual voluntarism in combating the growing scarcity of water resources. The other solutions proposed to combat water scarcity and contamination in social behavior are in line with these two main ideas: "reducing waste disposal on the nature" (36%) is in line with the idea of combating individual water waste, while "providing education about water management" (29%) is in line with the idea of increasing awareness. The other, less popular ideas are, however, more original: "increasing government accountability on water management" (14%), "increasing community solidarity and intervention" (7%) and "encouraging cleaning rivers actions" (7%) all call for greater intervention by individuals in civil society, to give it sufficient weight to carry out impact actions and dialogue with the authorities.



Reducing consumption and combating waste are at the forefront of individual action against water scarcity and pollution

Thus, reducing water consumption is the solution most favored by participants in individual interviews and FGDs to combat water scarcity, more than any other. For the majority of participants, water conservation is a priority for their community, which means reducing consumption and therefore individual voluntarism, with 42% of participants in individual interviews stating that water conservation meant "reducing water consumption" for their community²¹. Similarly, when asked "What would you do if water ran out?"²², a majority of participants answered "conserve water better" (58%), more than alternative solutions (25%) such as "increase water storage" (25%), "drill wells" (19%), "find alternative water resources" (2%). Only 17% of participants answered "expect government action", confirming the centrality of action and individual responsibility for Basrawis in water management, as mentioned above. Better conservation of the water used daily necessarily involves eliminating waste, which the majority of participants felt was possible: 42% of them answered "yes" to the question "can we reduce waste?"²³, the other participants tended to answer in the affirmative too, but by other means. And to achieve this goal of reducing waste, awareness is the preferred approach: "increase awareness campaigns" was the most frequently mentioned means, with 31%, ahead of a range of technological and infrastructural solutions (8%) such as "repair damaged pipes" and "install water meters".

Raising awareness in the community is also a field of action favored by participants, although it actually achieves the same objective as reducing individual consumption

Awareness is in fact the second area on which participants placed particular emphasis, encouraging people to do more to combat water scarcity themselves. Thus, "raise awareness around water consumption" (36%) was the most frequent response to the question "what can we do to prevent water scarcity and contamination?" in FGD T1 Q5, already mentioned above. Similarly, it was also the response most given to the question "how can you as an individual conserve water?"²⁴ with 61% of responses, just ahead of "use an optimal amount of water" (58%). Participants' responses are thus divided between these two themes, although the injunction to reduce personal consumption does seem to be a priority action compared with raising awareness, since it is in first place in the responses given in FGD T1 Q15 - "rationalization of water consumption" (43%) and "raising awareness about reducing water consumption" (36%) - as in II T1 Q7, where "conserve water better" was put forward by 58% of participants in response to the question "what would you do if water was in short supply?". Note, however, the interchangeability of these two actions, insofar as raising awareness among Basrah society represents, among other things, a way of getting individuals to reduce their water consumption, which brings together the final objective of both types of action.

According to the participants, the public authorities, in the first line of Basrah's water managers, should both improve and extend the water supply and distribution system, as well as share the governance of the resource with civil society actors

Beyond individual interventionism, however, participants mentioned a whole range of government and civil society actors as likely "to have a positive impact to contribute towards the mitigation of the water scarcity and contamination". These can generally be divided into two groups. The most prominent group concerns all state actors (in blue below), ranging from the federal to the municipal level, via the regions or governorates. As mentioned earlier, it was more central institutions that participants attributed the real capacity to have an impact on water issues: three ministries thus head the most frequently mentioned institutions - "Ministry of Water

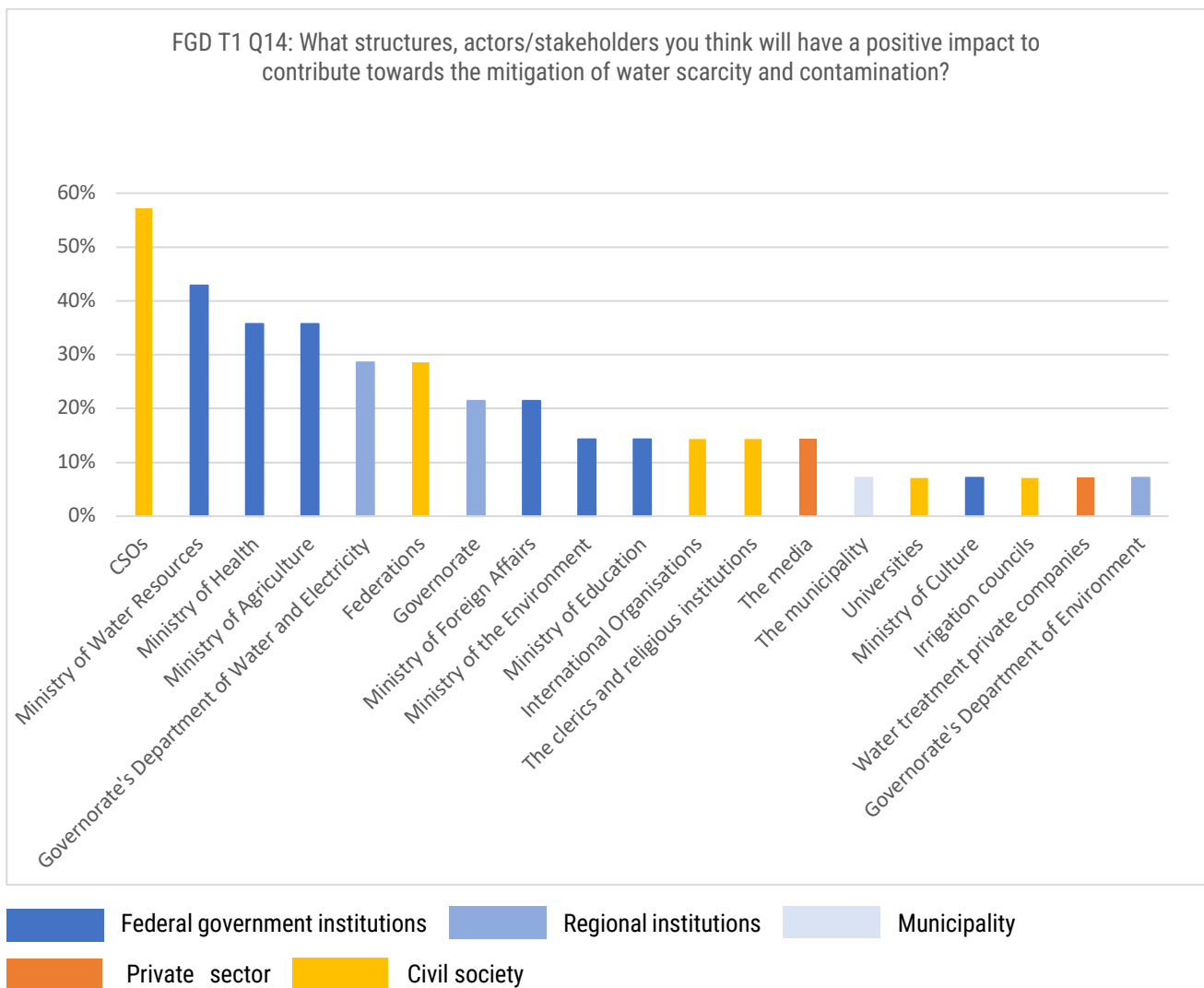
²¹ II T1 Q10 P1

²² II T1 Q7

²³ II T1 Q9 P3: Can we reduce waste? (Is water wasted in your community? In what ways? Can we reduce water waste?)

²⁴ II T1 Q10 P3

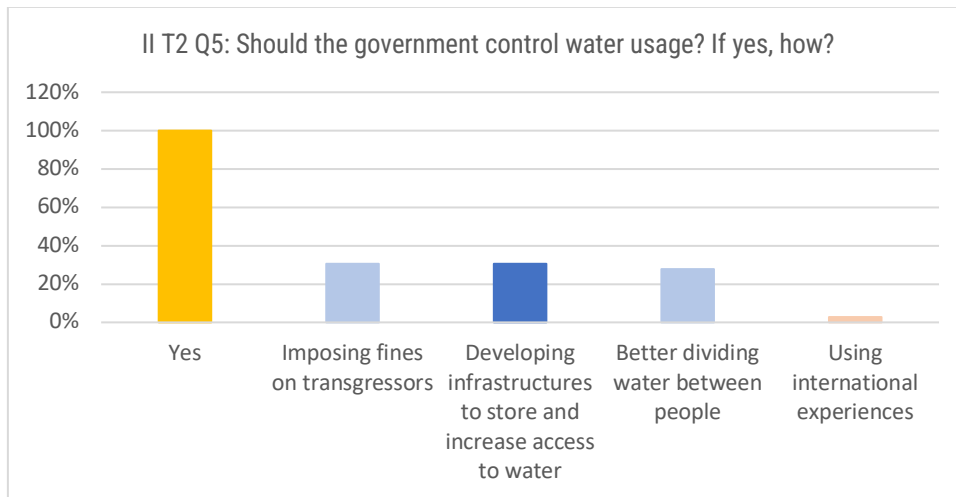
Resources" (43%), "Ministry of Health" (36%) and "Ministry of Agriculture" (36%) - and three others hold the middle ground, namely the "Ministry of Foreign Affairs" (21%), "Ministry of the Environment" (14%) and "Ministry of Education" (14%). It seems that the other administrative levels are less confident in their ability to have an impact, since "Governorate's Department of Water and Electricity" was only mentioned by 29% of participants, despite an obvious direct link with the issues in question, not to mention the "municipality", which was only mentioned by one participant. As far as civil society (in yellow) is concerned, participants seem to have a high level of confidence in its ability to make a difference to water issues, since "CSOs" was the answer most frequently given by participants (57%). Participants also seemed confident in the ability of trade unions to act, with 29% mentioning "federations", and to a lesser extent in the ability of "international organizations" (14%) and "clerics and religious institutions" (14%) to act, given their power to influence. The private sector seems unlikely to provide answers to water issues, since the impact of "the media" and "water treatment companies" (respectively 14% and 7%, i.e. 2 and 1 participants) was only marginally discussed.



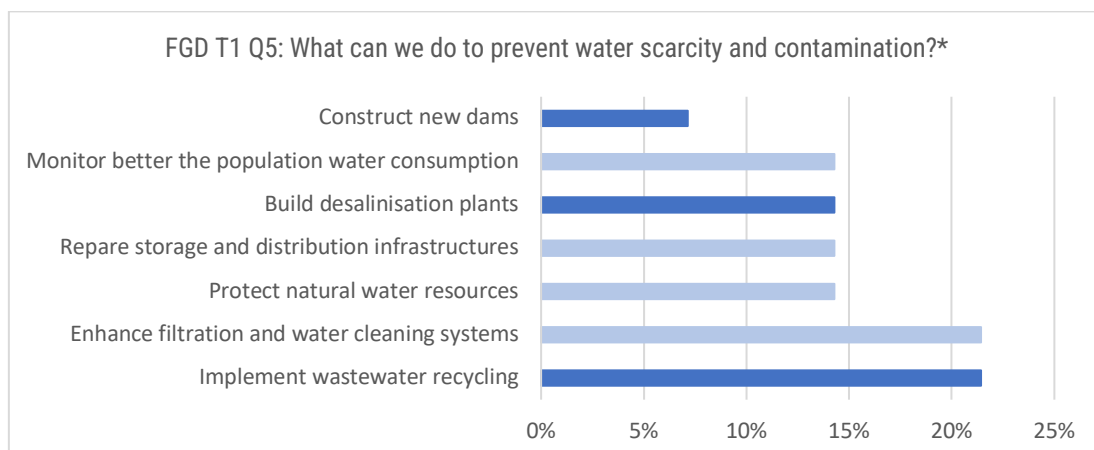
In line with the scaling of participants' confidence in the actions of these institutions, we'll first see what actions participants expect their institutions to take, before looking at the impact that civil society, and especially religious and cultural institutions, might have in the eyes of participants.

On the front line of water issues, the government should focus on improving the current water distribution system, diversifying its sources of supply and overhauling its system of public governance

In II T2 Q5, all the participants in the individual interviews were in favor of the government controlling water usage, betraying a consensus around a major takeover of the public authorities around the water problem in Basrah. However, participants were divided on the question of how this should be done. Overall, two major trends for action emerged from the stakeholders' responses: a demand for overall improvement of the current system for collecting, transporting and distributing water, and a demand for the development of new water recovery and extraction solutions. Thus, 31% and 28% of participants respectively answered "imposing fines on transgressors" and "better dividing water between people" to the question "should the government control water usage? if yes, how?". These participants want the current infrastructural and legal system governing water distribution to be rebalanced and enforced more firmly. On the contrary, 31% of other participants emphasized the importance of "developing infrastructures to store and increase water", indicating a perception of the water problem as one of access to the resource, and not of its management: access to more water would solve water issues more easily than repairing the current delivery system.



This distinction can also be drawn from participants' responses to the FGDs, in particular to question FGD T1 Q5, already mentioned above. Among the responses concerning public action, and without it being possible to distinguish exactly which trend is in the majority, participants proposed, to improve the current system, "enhance filtration and water cleaning systems" (21%), "protect natural water resources" (14%), "repair storage and distribution infrastructures" (14%), "monitor better the population water consumption" (14%). Others, in favor of diversifying water sources, suggested "implement wastewater recycling" (21%), "build desalination plants" (14%) or "construct new dams" (7%).



*Only public-action related answers showing.

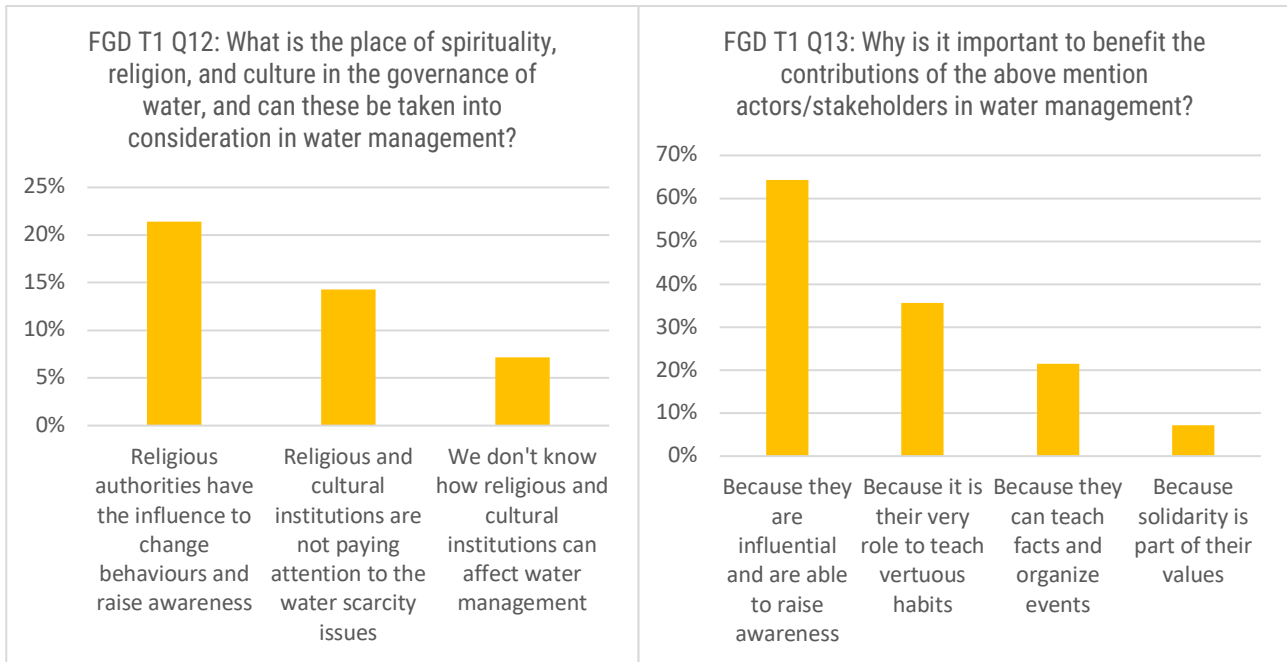
Finally, more generally, among the actions that FGD participants would like to see their authorities undertake, as requested in FGD question T1 Q11, "better coordination of public institutions with civil society" (14%) and "better research and understanding" (7%) figure prominently, new ideas not mentioned previously, alongside "better water distribution among citizens" (7%). Although these ideas received little support, they are nevertheless interesting in that they form the basis of a third category of proposals, no longer focused on improving or extending the technical system for delivering water, but crystallizing this time around a rethinking of the system of administrative and political governance of the resource.

Although civil society is generally considered to be a key player in the solution to water issues, participants distinguished between CSOs, whose action is widely acknowledged, and cultural and religious institutions, whose impact on water issues is less obvious

Beyond public institutions, which have an obvious impact on water management in Basrah, it is particularly interesting that participants spoke of civil society as an actor able to participate in solving the city's water issues: let's recall that "CSOs" were thus the answer most given (57% of participants) to the question "what structures, actors/stakeholders you think will have a positive impact to contribute towards the mitigation of water scarcity and contamination?"²⁵, alongside "federations" (29%) and "international organizations" (14%). Similarly, when participants were asked "if you had the possibility to choose, what are some actions you would want the respective authorities of the sector/s to undertake to mitigate the effect of water scarcity and contamination?", many answers, even if paradoxically erroneous - since they did not concern authorities - concerned civil society, betraying the importance of the latter in public water management for participants. Examples include "increase pressure on the government", "better international coordination to find solutions" and "more religious education to encourage rationalizing water consumption". Similarly, the most frequent response to this question was "better coordination of public institutions with civil society" (14%), demonstrating that for a proportion of participants, even a minority, the involvement of civil society in water management alongside public authorities would have a beneficial impact on the latter's efficiency.

The role played by cultural and religious institutions was also highlighted by participants, albeit in a secondary manner. Thus, 14% of FGD participants mentioned "clerics and religious institutions" among the institutions likely to have a positive impact on mitigating water scarcity and contamination, and 21% of participants stated that "religious authorities have the influence to change behaviors and raise awareness" in response to the question "what is the place of spirituality, religion, and culture in the governance of water, and can these be taken into consideration in water management?". Similarly, 64% thought that we should benefit from the contributions of these religious and cultural actors because "they are influential and able to raise awareness" and 36% because "it is their very role to teach virtuous habits". It should be noted, however, that these arguments were debated by the participants, and there was no consensus on the ability of the religious and cultural world to influence water management in the right way. For example, 2 participants felt that "religious and cultural institutions are not paying attention to the water scarcity issues" and one participant even declared that he "don't know how they can affect water management".

²⁵ FGD T1 Q14



RESULTS FOR THE YOUNG PEOPLE OF BASRAH

Despite their vulnerability to the consequences of water scarcity and contamination, young people seem to be particularly hampered in their commitment to research and the fight against these problems

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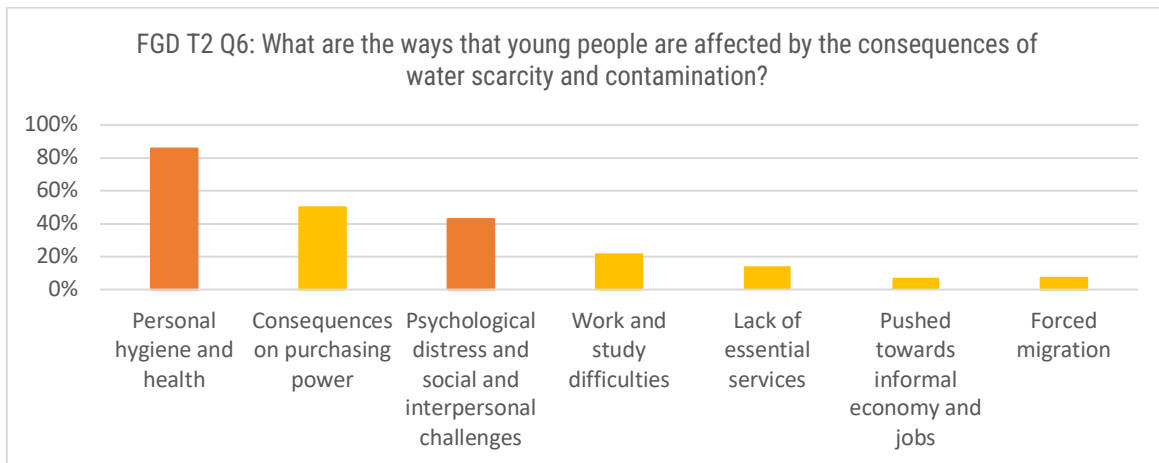
How does water scarcity and contamination affect young people in Basra and their community?

According to participants in the FGDs and individual interviews, young people are at the forefront of the consequences of water scarcity and contamination, as these come on top of the needs characteristic of their age. While this should give particular weight to their voice on the issue, it is still hampered by the lack of support from the authorities and, more significantly, by young people's own awareness of water issues. Undermined by more pressing needs, not all young people are fully aware of the seriousness of the problems facing Basrah, according to the participants: and this is reflected in their inability to take part in the city's water issues research processes, in which they remain under-represented.

According to the participants, water issues present risks specific to young people, which should further encourage the authorities to take their voice into consideration for the proper management of water resources

While young people are affected overall by water scarcity and contamination, according to FGD participants, they seem particularly vulnerable in certain specific respects. When the groups were asked "the ways in which young people are affected by the consequences of water scarcity and contamination", it is interesting to note that the responses follow a distinct pattern from that already studied concerning the consequences for the general population (prioritizing individual, economic/social and environmental consequences). While the ways in which water scarcity and contamination affect young people are similar, they have the particularity of being concentrated around the individual. These can be classified into two major groups: the most prominent of which

is the impact on health (orange), while the second covers risks to young people's purchasing power and economic activity (yellow). Health consequences are thus represented by "personal hygiene and health" (86%) and "psychological distress and social and interpersonal challenges" (43%), with founding a family being the most frequently mentioned. It's interesting to note that psychological health problems, hitherto marginally mentioned when dealing with the general consequences of water scarcity and contamination, take priority for participants when thinking about young people. Among the second category of consequences, concerning young people's professional and economic lives, we find concerns already mentioned earlier: this is the case of "consequences on purchasing power" (50%) - referring to the impact on young people's purchasing power of the obligation to buy bottled water - as well as "lack of essential services" (14%) and "forced migrations" (7%). It should be noted, however, that when talking about young people, participants highlighted the danger that water issues could have on their "work and study" (21%), more significantly than when talking about the population as a whole.



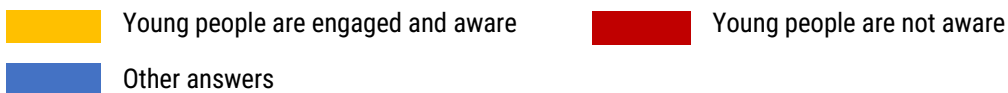
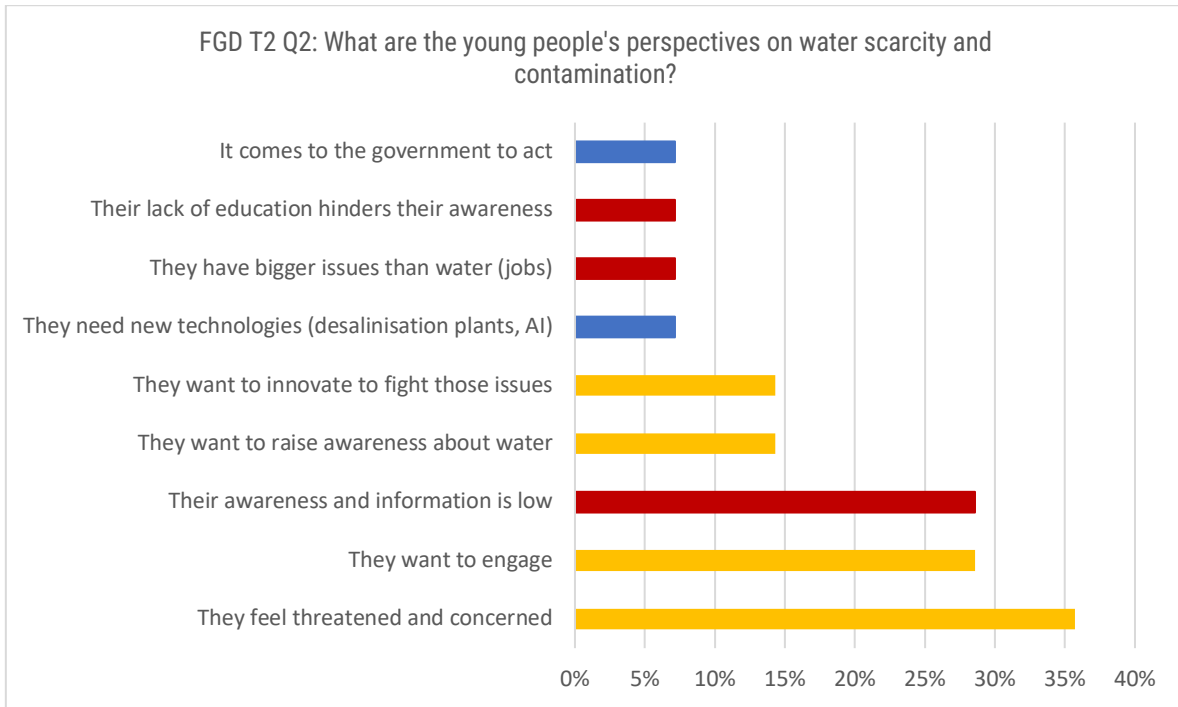
The fact that young people are particularly affected by the consequences of water scarcity and contamination gives particular importance to their voice on the issue. This is reflected in the question FGD T2 Q1 P1 "do you think young people have a voice, an active one in matters of water scarcity and contamination?", to which 93% of participants, all but one, answered "yes", with no one arguing the contrary. When asked to expand on their views on what limits young people in making their voices heard²⁶, Most participants stressed that "their action is limited by the authorities leniency and lack of support" (29%), while others pointed out that "their action is limited by their lack of awareness" (14%). The responsibility of the authorities thus seems more important according to the participants than the fact of excluding the voices of young people, even if the latter's guilt around their lack of understanding of water issues is also mentioned.

The awareness and commitment of young people to Basrah's water problems is not unanimous at present

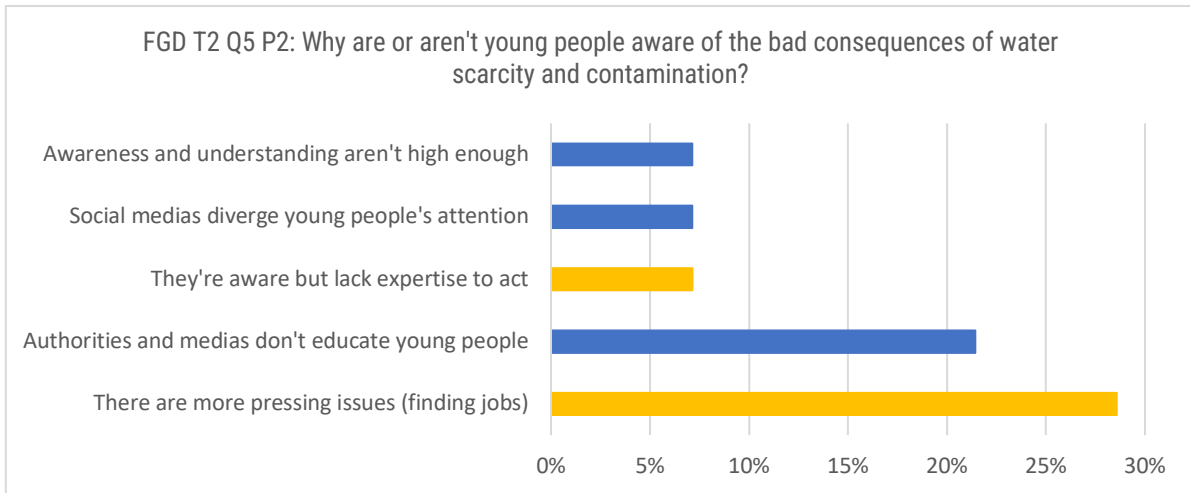
Although they felt that young people's voices were important, not all participants were convinced of their commitment and concern about water issues. The FGD T2 Q5 P1 question highlights this division between FGD participants: while 43% of participants answered "yes" to the question "are young people aware of the bad consequences of water scarcity and contamination?", a strong minority of 29% answered "no" and 21% said that only "some people" are aware. This trend was echoed at other points in the discussions, showing that while a slight majority of people supported the idea of young people being engaged and concerned about water issues, a sizeable minority of participants maintained that information and awareness among young people is not sufficiently high. This was reflected in question FGD T2 Q2, which asked "what are the young people's perspectives on water scarcity and contamination?". Respectively 36% and 29% of participants said that "young

²⁶ FGD T2 Q1 P2

people feel threatened and concerned" and "young people want to engage", with some others declining their approval of young people's commitment and concern into actions in which they engage: "they want to raise awareness about water" (14%), "they want to innovate to fight those issues" (14%). But 29% of participants nevertheless maintained that "their awareness and information is low", in stark contrast to the rest of the responses and showing that young people's commitment to and awareness of water issues is not unanimous. Finally, in blue, we note the disparate appearance of certain responses invoking the responsibility of public authorities or the need to use new technologies to solve these problems, bypassing the question of young people's commitment.

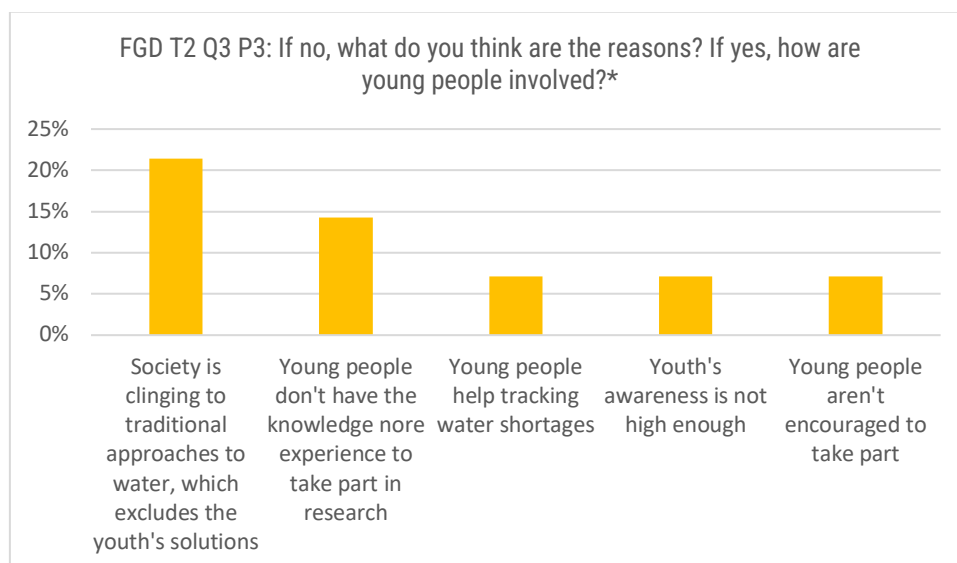


However, the reasons why young people are not sufficiently aware or active in the fight against water issues can be traced back to several sources, according to FGD participants. The reason most often cited, and already mentioned earlier, is the economic argument: "there are more pressing issues (like finding jobs)" for young people today in Basrah (29%). More than a lack of awareness, this argument points to a lack of action, which could nonetheless coexist with widespread knowledge of water issues (arguments in yellow). This is also the case with "they're aware but lack expertise to act" (7%), asserting that young people, even if they wanted to act, would be limited by their insufficient technical knowledge. Other arguments, represented in blue, deny young people both awareness of the problem and willingness to act. This is the case with "authorities and medias don't educate young people" (21%) and "social medias diverge young people's attention" (7%), both of which shift the blame to an external entity, i.e. the media and social media. Finally, it's interesting to note that despite the fact that this question was open-ended, leaving participants free to argue that young people are or are not aware and engaged, all of them decided to find arguments for the negative. This reinforces the strong division around this question demonstrated above.



Insufficient youth participation in water issues research is a source of dissatisfaction for participants

The case of research on water scarcity and contamination is emblematic, in line with the groups' testimonies to the FGDs, of the exclusion of young people from water activism. First and foremost, 71% of groups argued that "yes", there were gaps in research on water scarcity and contamination, against only one group arguing the opposite²⁷. And 43% of the groups also replied that "no", young people are not involved in research on this topic, with only 14% stating that they are satisfactorily involved²⁸. A majority tendency to assert that water research processes in Basrah exclude young people too much thus emerged. When asked "if no, what do you think are the reasons? if yes, how are young people involved?", responses ranged from the exclusion of young people by traditionalist research processes (21%) to the questioning of young people's experience and knowledge as insufficient, and therefore preventing them from playing a useful role in research (14%). One group also asserted that "young people aren't encouraged to take part", in line with this exclusion. Only one group put forward an example of action taken by young people in research on water contamination and shortage in Basrah, such as "young people help tracking water shortages", demonstrating in spite of itself the prevalence of the idea that groups do not at all take part in research at present, and a fortiori in the fight on the ground against water issues.



²⁷ FGD T2 Q3 P1

²⁸ FGD T2 Q3 P2

*The full question being: Are there gaps in research on water scarcity and contamination? Are young people involved in research on this topic? If no, what do you think are the reasons? If yes, how are young people involved?

Focusing on awareness and governance around water, young people's involvement in the struggle must be supported to integrate them into decision-making processes and facilitate volunteer work and innovative projects

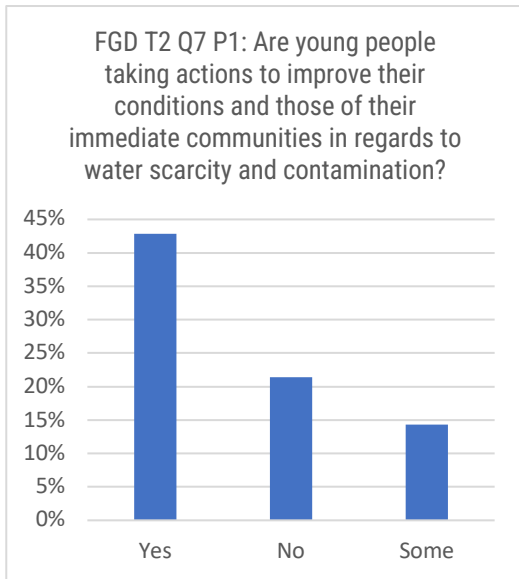
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What is the opinion and level of knowledge of young people in Basra on the problems of water scarcity and contamination?

Particularly concerned by water issues, as seen above, young people are not particularly aware of the details, according to participants in FGDs and individual interviews. And this is reflected in their commitment to the fight against these issues, which is not unanimously supported: only a small majority of participants feel that young people are active and committed to this issue. However, the participants were able to list several interesting avenues of action for young people to take more decisive action in the future, focusing in particular on two themes: raising awareness among their peers and integrating decision-making processes around water. Finally, the authorities and civil society, responsible as we saw earlier for sidelining young people, were also the subject of several recommendations to facilitate young people's involvement, ranging from rebuilding the sharing of water governance with young people to direct support for their projects and initiatives.

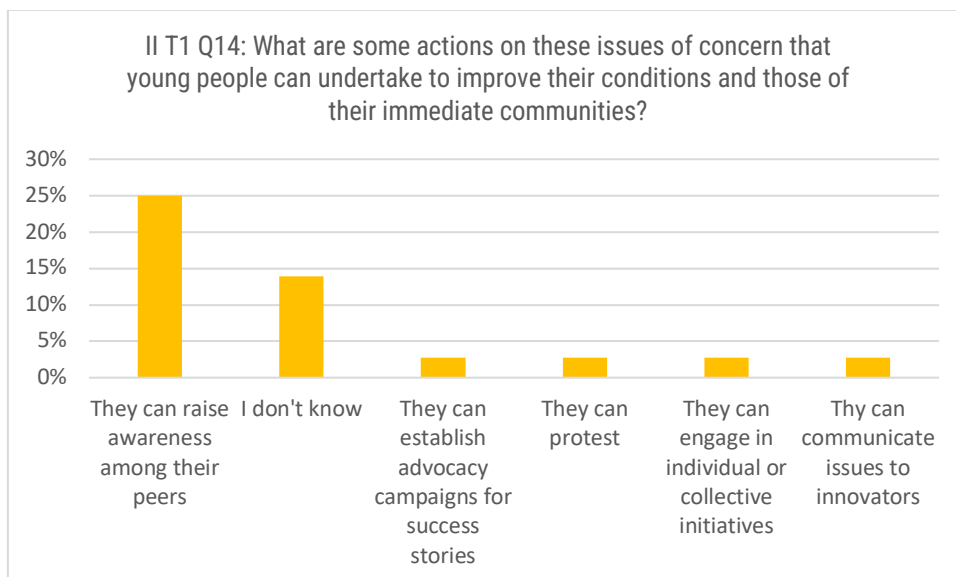
In the words of the participants, the current involvement of young people in actions to combat water issues is not perceived positively and as enough by all

FGD participants were divided on the question of whether young people are already taking part in actions to "improve their conditions and those of their immediate communities in regards to water scarcity and contamination". Indeed, while 43% of the groups answered "yes", 21% said the opposite, demonstrating that young people's current involvement in action to mitigate the problems of water scarcity and contamination is not unanimous. It should also be noted that 14%, or 2 groups, answered "some", reinforcing this mixed assessment of young people's commitment, which is nonetheless positive overall. The next part of question FGD T2 Q7 P2, asking them to elaborate further on the actions that young people had taken to their knowledge, nevertheless highlighted several interesting categories of action in which young people in Basrah would have been involved. These appear to be particularly active at community level, with 57% of groups reporting knowing young people involved in local initiatives (dark blue). In addition, a large proportion of participants talked about commitments that could be carried out individually, outside an association or CSO (light blue), such as "raising awareness and advocating for action" (43%), "keeping track of the community well-being and reporting issues" (29%) and "implementing water saving actions everyday" (14%) (although this does not mean that these actions were necessarily carried out outside the organized framework of an initiative). The multiplicity of examples of the types of action taken by Basrah's young people to combat water scarcity and contamination puts the previous assessment of youth involvement drawn up by the FGD groups into perspective.

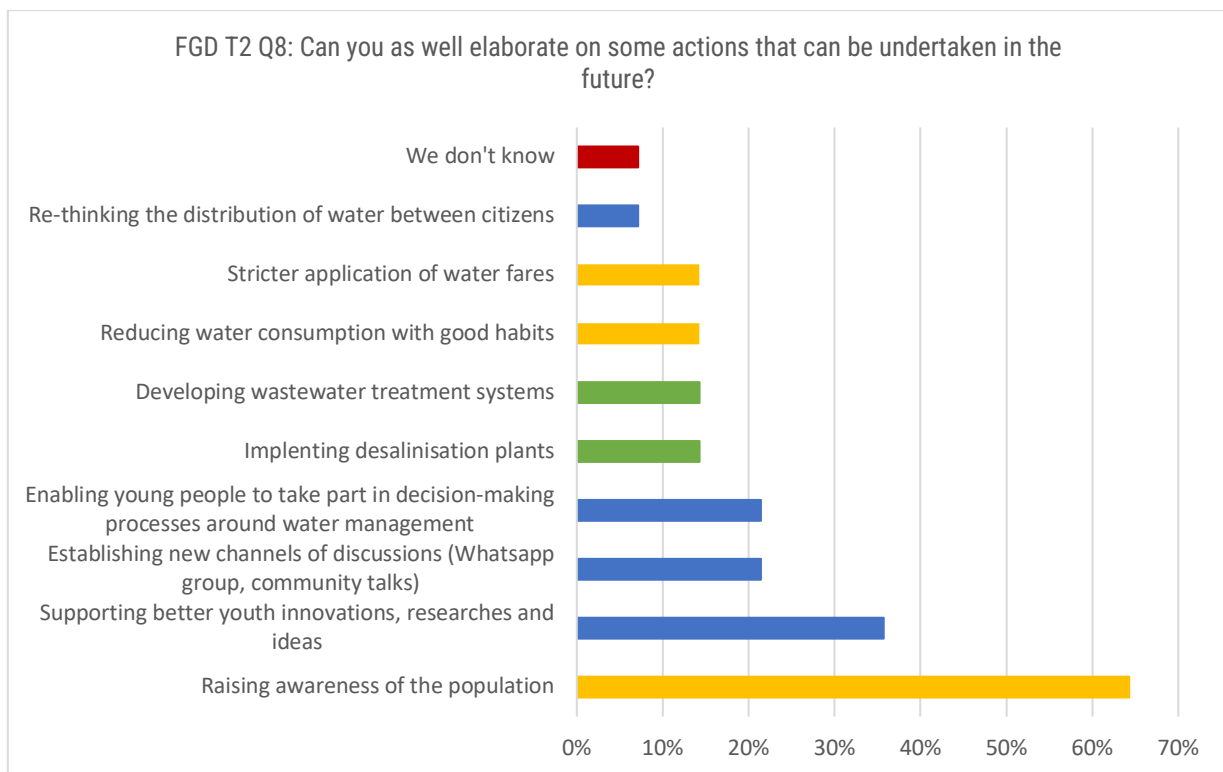


There are two ways for young people to become more involved: raising awareness among their peers, and getting involved in decision-making processes around water

Yet, as demonstrated above, the participants remain convinced that young people have a voice and a role to play in the fight against water issues, and they suggested several courses of action for them. Already when the FGD groups were asked to give their opinion on the ability of young people to make their voices heard, several proposals had emerged: "they can report the situation on social medias" and "they can render the authorities responsible" were both mentioned by 21% of the groups, with two groups even proposing respectively "they can innovate to create new methods and solutions" and "they can engage in research". Participants in the individual interviews had largely similar suggestions of their own, highlighting the importance of young people getting involved in "raising awareness among their peers" (25%). The other proposals, mentioned by one participant each, include ideas such as "they can establish advocacy campaigns for success stories", "they can protest", "they can engage in collective and individual initiatives" and "they can communicate issues to innovators". It's worth noting that raising awareness, which was already at the heart of the action that participants would have liked to see citizens take - as seen above - should likewise hold a fundamental place in youth actions. Finally, the high rate of "I don't know" (14%), which may betray uncertainty or a lack of interest in the issue, is worth noting.



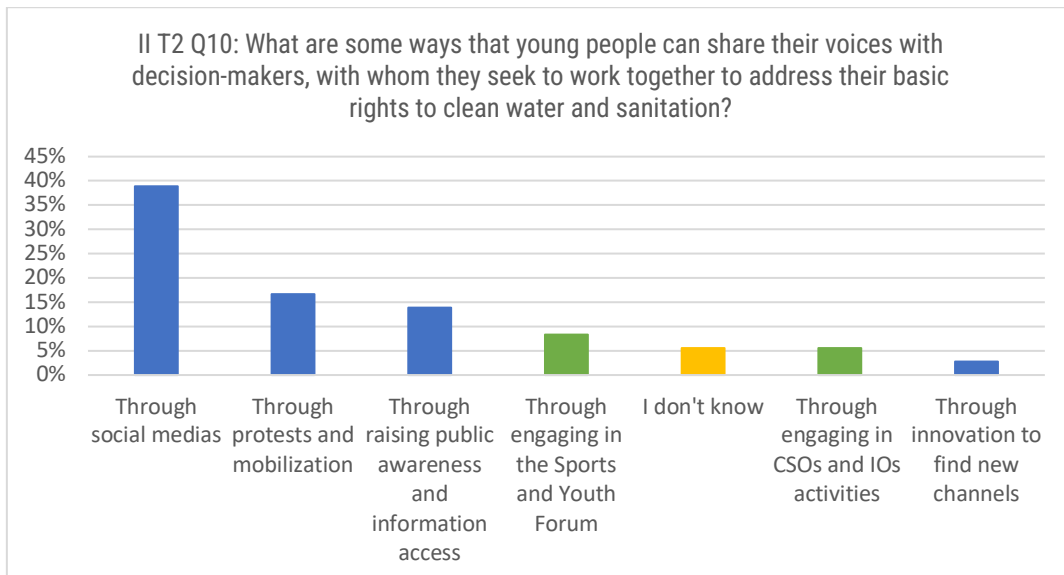
The same pattern, but more developed, can be seen in the FGD groups' answers to the FGD T2 Q8 question, such as "can you elaborate on some actions that can be undertaken in the future? The importance of "raising awareness" is again demonstrated by the prevalence of this response among the groups (64%). Although this was the most frequently mentioned proposal, this was not the case for the rest of the answers concerning an improvement in the water conservation habits of Basrah's inhabitants (in yellow in the graph): the following answers "reducing water consumption with good habits" (14%) and "stricter application of water fares" (14%) were only mentioned twice each. More often highlighted were responses concerning a reform of the water resource governance model and better inequality for young people (in blue). 36% of the groups thought that the authorities should "support better youth innovations, research and ideas", while 21% suggested "establishing new channels of discussions (WhatsApp groups, community talks)" and "enabling young people to take part in decision-making processes around water management". Finally, several groups put forward technical solutions (in green) to water management problems, in which it would nevertheless be complex for young people to play a direct role, such as "implement desalination plants" (14%) and "develop wastewater treatment systems" (14%). These responses aside, we can conclude that, in the view of the participants, youth involvement should above all involve two main axes: involvement in social awareness around water issues, and entry into decision-making processes.



- New ways of sharing water governance between youth and decision-makers
- Technical & infrastructural solutions
- Overall population better habits and awareness
- We don't know

Beyond action, the research team wanted to look at how young people today are able, and ideally should be, to take part in decision-making processes around water management: this already appeared to be a central issue in the question of youth engagement in the previous question. Question II T2 Q10 therefore prompted participants in the individual interviews to express their views on "ways that young people can share their voices with decision-makers, with whom they seek to work together to address their basic rights to clean water and sanitation". Interestingly, the majority of participants responded by invoking "social media" (39%), associating young people with a tenfold capacity to use these means of communication to influence their peers. The other

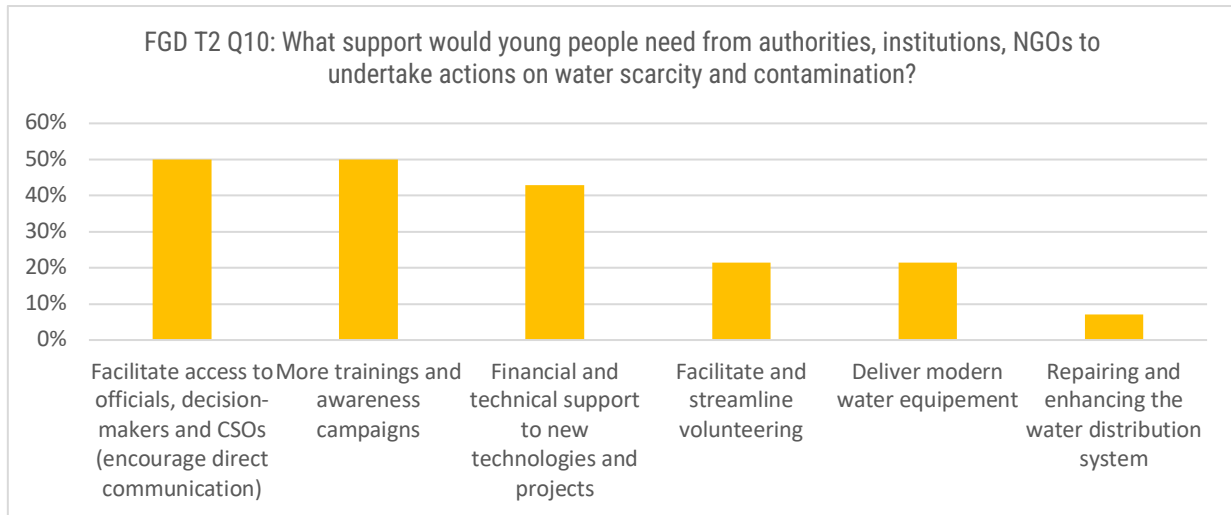
means of influence mentioned were more traditional: "through protests and mobilization" (17%), "through raising public awareness and information access" (17%), "through engaging in the Sports and Youth Forum" (8%, 3 participants) and "through engaging in CSOs and international organizations activities" (6%, 2 participants). The majority of participants seem to be asking young people to develop new means of communication to make their voice heard in the governance of water resources (new means of communication are represented in blue); few participants seem to trust or know the traditional means of communication represented here in green, i.e. the Youth and Sports Forum and the CSOs and IOs Basrawis. "Through innovation to find new communication channels" was a request made directly by one of the participants.



- New ways of dialoguing with the decision-makers
- Traditional ways of dialoguing with decision makers
- I don't know

Better support for committed young people from the authorities and civil society would involve opening up decision-making processes, facilitating access to funding and training, and simplifying volunteering

However, it would be difficult to get young people involved at all the levels described above (governance, awareness, infrastructure) without the support of the authorities currently responsible for water management: public authorities and CSOs. Yet the FGD groups' responses to the question "what support would young people need from authorities, institutions, NGOs to undertake actions on water scarcity and contamination?" provided a number of interesting avenues to explore. The most popular answers given by participants were "facilitate access to officials/encourage direct communication" (50%), thus reproducing the demand already expressed for a reform of water governance methods. Next came the requests for "more trainings and awareness campaigns" (50%) and "deliver modern water equipment" (21%), as well as "repair and enhance the water distribution system" (7%), all of which call for direct intervention by the authorities to tackle the problem of water and, in particular, water wastage, possibly through increased awareness among young people. Finally, two responses actually suggest ways in which the authorities can empower young people to take action against water issues: "financial and technical support to new technologies and projects" (43%) and "facilitate and streamline volunteering" (21%). These responses refer to the barriers to entry for young people wishing to implement a project or become directly involved, namely the problem of access to funding, the problem of human capital (insufficient technical knowledge) and the problem of accessibility to volunteering.



New technologies, more specifically social media and technological projects, at the heart of youth action against water issues

3

What form does and could the involvement of young people in their community take in the fight against water scarcity and contamination?

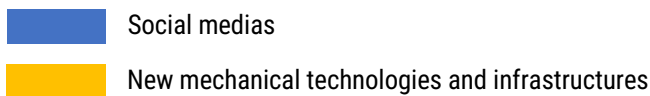
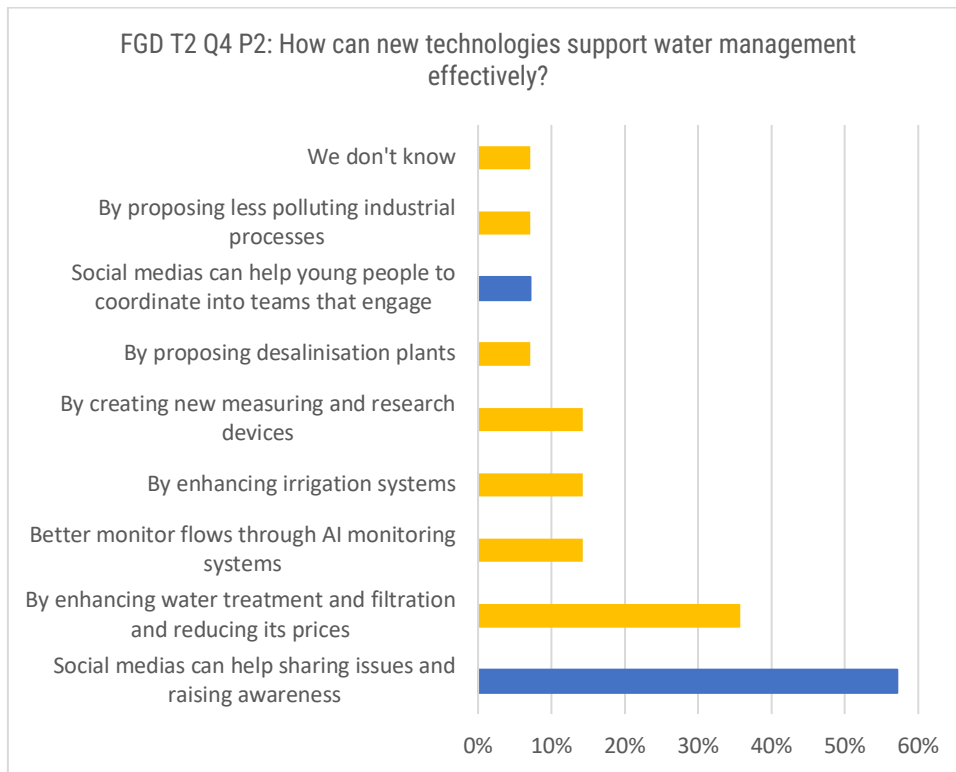
Beyond the above-mentioned proposals made by participants in the individual interviews and FGDs to improve young people's involvement in the fight against water issues in Basrah, it is important to note the confidence that all participants seem to attribute to new technologies, whether digital or mechanical. Almost unanimously (93%), the FGD groups declared that "new technologies have an effect on effective water management"²⁹; Just as responses calling for greater use of new technologies were regularly heard as the discussion turned to various proposals for mitigating water issues. Here, however, we can distinguish between a call for greater use of social networks, particularly attributed by participants to young people and their capacity for action, and a call for more massive use of new water extraction, conveyance and management infrastructures.

Social networks, a popular tool for bringing the voice of young people to decision-makers and helping them coordinate their efforts

As the answers to question II T2 Q10 had already shown, "social media" are at the heart of young people's fight against water issues for the participants: indeed, they were the means of action most often mentioned (39%) to enable young people to make their voices heard in decision-making processes. There are several reasons for this, detailed in the answers to the FGD T2 Q4 P2 question, such as "how can new technologies support water management effectively? The first is that "social medias can help sharing issues and raising awareness" (57%), with participants considering the powerful public display dimension of social networks, capable of attracting the attention of public authorities; and the second is that "social medias can help young people to coordinate into teams that engage" (1 group), addressing here the coordination facilitation dimension that social media also present. It should also be noted that the use of social networks was regularly recommended throughout the FGDs

²⁹ FGD T2 Q4 P1: Do you think new technologies have an effect on water management effectively?

and individual interviews: "advocate on social medias" and "report local issues on the social medias" are solutions that were proposed no less than four times, twice in the FGDs³⁰ and twice in the individual interviews³¹.



Infrastructures and technological projects as a means of combating and circumventing water issues

Alongside social media, several infrastructure projects and the use of new technologies were mentioned by participants throughout the FGDs and individual interviews. For example, in response to question FGD T2 Q4 P2, the groups alternately mentioned that superior technologies could help to "enhance water treatment and filtration and reduce its prices" (36%), "better monitor flows through AI monitoring systems" (14%), "enhance irrigation systems" (14%). A large proportion of participants thus demonstrated their belief that high-tech support for filtration, distribution and irrigation systems could be a factor in better water management. Secondly, it should be noted that one participant suggested building "desalinization plants" (one participant); this refers to a proposal regularly put forward by participants in FGDs and individual interviews, namely that of circumventing the problem of water supply by increasing available resources through the construction of new dams³² and desalination plants³³ in the Arabian Gulf.

New infrastructures projects in Basrah

Decades of underinvestment in Basrah governorate's water facilities – pumping stations, water sanitation plants – has contributed to generate the social crisis that we know today and that peaked in the summer of

³⁰ FGD T2 Q1 & FGD T2 Q4

³¹ II T2 Q9 & II T2 Q10

³² FGD T1 Q5; II T2 Q5

³³ FGD T1 Q5; FGD T2 Q2; FGD T2 Q4 P2; FGD T2 Q9; II T1 Q4

2018, as previously explained. If the problem exceeds the decaying infrastructure, the lack of implementation of Iraq's regulatory framework prohibiting public and private untreated waste in the waterways contributing vastly to the local pollution, this probably remains the most visible and thought-to origin of today's water issues. The 12 conventional water treatment plans are not fully completing their scope by not removing the contaminants: their low capacity enables them to provide 24 hours-a-day water to only 30% of the town's population (JICA, 2008). The private network of reverse osmosis companies, that proliferated in the hollow gap left behind by the public inactivity, is not overseen by an adequate regulatory force. The extension and the updating of the water distribution network has not been properly implemented, which encouraged whole areas to tap illegally into it: 300.000 residents are in spite of that still not connected to the water and sewage network. (HRW, 2019).

The 2018 water crisis seems to have however played its role of wake-up call. In 2019, the UNDP with support of the USAID has, as part of the Iraq Crisis Response and Resilience Program, launched several infrastructural projects aiming to enhance the water distribution and sanitation network in Basrah. So far, nine water treatment plants in Shatt al-Arab, Al-Qurna and Abi al-Khaseeb districts have been completed, serving 149.000 people (UNDP, 2023). Renovated in 2023, the Al-Hussein water complex has also seen its rehabilitation completed and now brings potable water to more than 30.000 people, after having ceased any activity during three years due to its outdated and damaged equipment. Several projects of water desalinization plants have also been announced next to the Arabian Gulf, supposed to reach a production capacity of one million liters per day and fill the water needs of Faw Port and part of Basrah (Zawya, 2023).

CONCLUSIONS FOR EVIDENCE-DRIVEN ACTION

MAIN FINDINGS AND ACTION PATHS

From all the opinions, experiences and ideas expressed by the participants in the FGDs and individual interviews, we can draw up a precise action guideline linking each main finding of the research to the conclusions of youth initiatives in the city of Basrah. Each main finding is linked to one of the three questions that guided the research as expressed in the introduction. These were as follows:

1. How does water scarcity and contamination affect young people in Basrah and their community?
2. What is the opinion and level of knowledge of young people in Basrah on the problems of water scarcity and contamination in their city and governorate?
3. What form does and could the involvement of young people in their community take in the fight against water scarcity and contamination?

QUESTION	MAIN FINDINGS	IDEAS FOR YOUTH ACTION
2	Not only are the respondents aware of and interested in the issues surrounding water - fundamental to the development of life and social stability - but they are also generally aware of the importance of knowing about this resource in order to preserve it	<ul style="list-style-type: none"> • Disseminate a sense of urgency about water issues on a personal scale and through involvement in civil society, based on the argument that water is essential to human survival. • Disseminate awareness of the fact that water is always a natural resource (rivers, rain, groundwater, sea) and that no technology can create it out of nothing.
2	Considered as a precious resource, water is nevertheless perceived as dilapidated and wasted by the Basrawis, betraying a discrepancy between their words and deeds when it comes to water	<ul style="list-style-type: none"> • Slightly modify your habits and implement in your daily life a precise set of actions to easily reduce your water consumption (turn off sleeping tech, take shorter showers, don't pollute wastewaters...) as described in the UN's Lazy Persons's Guide to Saving the World (UN, 2015).

2	There is an important discrepancy between the shared belief that water constitutes a human right and the fact that the knowledge of the active legal and political framework that regulates water distribution is very low	<ul style="list-style-type: none"> To inform themselves and their peers about the laws and regulatory mechanisms that are supposed to guarantee a continuous, clean water resource for the people of Basrah. Learn about foreign experiences and success stories to find ideas for improvements that can be implemented locally.
2	Water governance and pollution control are the prerogatives of central government, according to participants, and it is from the State that they expect better laws and public policies	<ul style="list-style-type: none"> Get to know the Iraqi hierarchy of institutional responsibilities around water, to determine which institutions (ministry, department, region) would be most effective in increasing popular pressure to achieve decisive results.
1	Around the issue of water, the majority of participants' concerns are of an individual and family nature, focusing in particular on health problems and reduced purchasing power	<ul style="list-style-type: none"> Learn about and raise awareness of best practices for procuring, conserving and consuming water to protect your health and the health of your loved ones. Door-to-door initiatives to raise one's community awareness on how to safely purify and drink water.
1	Participants expressed concern about the destabilization of their communities and societies as a result of water issues, particularly through the emergence of new conflicts and tensions	<ul style="list-style-type: none"> Actively advise and support Basrah's governorate farmers and gardeners to transit towards more eco-friendly and efficient water usages and watering practices. Monitor and report to water authorities one's community variations of quality of water to help public and CSOs management of the water distribution system. Engage in conflict mediation at the community level to mitigate water scarcity and contamination effects on social stability.
3	Individual action was particularly emphasized by participants to address water issues, ranging from reducing the amount of water used personally to raising awareness around oneself	<ul style="list-style-type: none"> Raise awareness at the family or community level around the good everyday practices to save water in cleaning the car, cleaning the house, washing the clothes, watering the garden... Monitor and report the industrial and company's waste of water (on the social medias) to increase pressure on the entrepreneurial stakeholders.
3	According to the participants, the public authorities, in the first line of Basrah's water managers, should both improve and extend the water supply and distribution system, as well as share the governance of the resource with civil society actors	<ul style="list-style-type: none"> Increase political pressure on the responsible public authorities around the water issues by engaging in local initiatives, public monitoring and research, public debate and decision-making. Launch new channels of public-decision sharing and exchange environments around the topic of water, to promote new shares of water that reflect better human needs. Ask for an increased engagement of cultural, educational and religious actors around the topics of water scarcity and contamination : organize exhibitions, conferences, charity events...
1	According to the participants, water issues present risks specific to young people, which should further encourage the authorities to take their voice into consideration for the proper management of water resources	<ul style="list-style-type: none"> Research and advocate the specific consequences that water scarcity and contamination has on youth, through increased budgetary pressure, increased psychological distress, working and studying hardships...
1	The awareness and commitment of young people to <i>Basrah's</i> water problems is not unanimous at present	<ul style="list-style-type: none"> Through far-reaching and high-visibility public engagement and public advocacy of engagement, show the importance and size of the youth engagement in the fight against water scarcity and contamination.

1	Insufficient youth participation in water issues research is a source of dissatisfaction for participants	<ul style="list-style-type: none"> • Collaborate with university and CSOs sponsored researches in Basrah around water scarcity and contamination (as the PAR) to train in scientific data collection and analysis. • Use class research projects (high school & university) to research one specific small-scale problem related to water issues, and advertise results online and to the civil society.
2	In the words of the participants, the current involvement of young people in actions to combat water issues is not perceived positively and as enough by all	<ul style="list-style-type: none"> • Demonstrate youth engagement in water issues mitigation by increasing visibility of personal actions in water consumption optimization and community-level initiatives.
2	According to the participants, there are two ways for young people to become more involved: raising awareness among their peers, and getting involved in decision-making processes around water	<ul style="list-style-type: none"> • Require from public authorities a major attention towards youth initiatives, ideas, projects and voices, as well as a better financial and technical support. • Ask for the establishment of more efficient channels of discussion between stakeholders: public authorities, private water companies and local population (WhatsApp groups, community talks...).
2	Better support for committed young people from the authorities and civil society would involve opening up decision-making processes, facilitating access to funding and training, and simplifying volunteering	<ul style="list-style-type: none"> • Streamline volunteering by advocating majorly simple and result-oriented actions at the community-level: making volunteering easier and comprehensible would help young people joining it. • Besides diversifying communication channels with officials and increase awareness, ask for public-led trainings of community members on how to monitor local water equipment and share the resource to prevent conflicts.
3	Social networks constitute a popular tool for bringing the voice of young people to decision-makers and helping them coordinate their efforts	<ul style="list-style-type: none"> • Share online individual efforts and community initiatives to mitigate water issues. • Report online any problem with the water distribution network, with water contamination or with water consumption (especially companies consumption) to increase pressure on authorities and guilty stakeholders.
3	Infrastructures and technological projects count as means of combating and circumventing water issues	<ul style="list-style-type: none"> • Help inventing, developing and implementing new technological solutions to fair water distribution, to water waste and contamination.

EVIDENCE-DRIVEN CIVIC INITIATIVES

As part of the 4th step of the Participatory Action Research (PAR), which is “evidence-driven action”, the young researchers have taken action under the form of 5 evidence-driven civic initiatives conducted with the knowledge gathered in the research and with the technical and financial assistance of UNICEF as part of the You-Act project.

Civic initiative n°1: Working Group on Green Economy

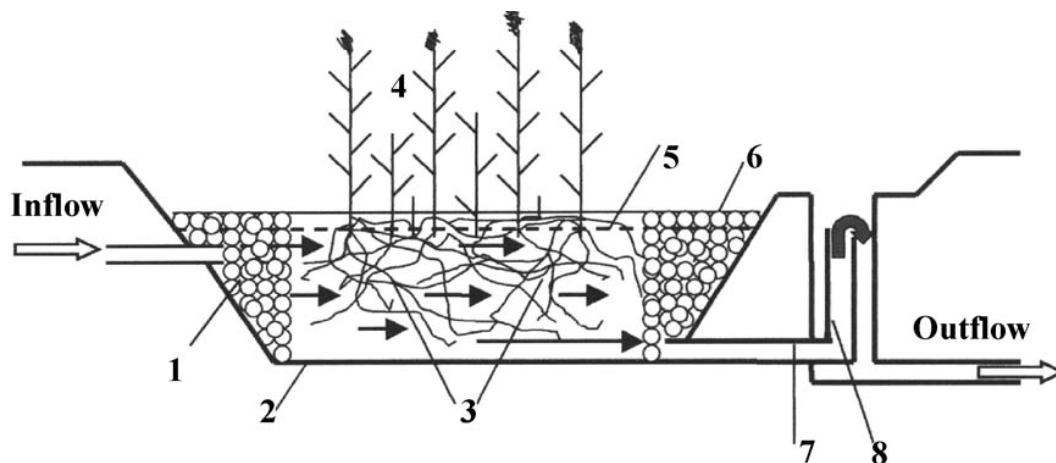
The Working Group on Green Economy (BWGE) has been constituted on the basis of the participants to the two FGDs on Green Economy conducted as part of the policy-brief research, another activity of the You-Act project of MH and UNICEF. It's an expert exchange group on the theme of the green transition of Basrah's economy towards a greener functioning. The participants are civil society workers, either engineers, entrepreneurs or local authorities' workers who have previously taken part in various MH activities. The BWGE gathered three times to

discuss three different topics among the six that constitute green economy according to the Green Economy Coalition (GEC, 2020)³⁴: water management, waste management and renewable energies.



Civic initiative n°2: Implementation of constructed wetland for industrial wastewater treatment

The core idea of this initiative is to implement in one farm of Basrah's governorate a constructed wetland (CW), an engineered system that has been designed to reproduce the natural processes happening inside wetland vegetation and soils (specific microbial assemblages) to purify reduced amounts of wastewater and rendering it good for new farming and watering usages. The functioning of this mechanism primarily revolves around the usage of the plant *Azolla pinnata*, particularly efficient in pollutant reduction. Already engineered, the system is waiting for a voluntary farm to be found to be implemented and put in usage.



Civic initiative n°3: Green tourism, sustainable Iraq

The idea of this initiative was to hold a training workshop at the Tourism and Hotels Institute in the city of Baghdad for 20 students and young graduates from the institute of entrepreneurship in tourism. Overall, the initiative aims at supporting green tourism in the city of Basrah by teaching how to preserve natural resources

³⁴ Renewable energies, green buildings, sustainable transportation, water management, waste management, land management.

from an institutional point of view, especially water, and offering a touristic tour in the Basrah Cultural Museum as well as other prominent touristic places and sites.



Civic initiative n°4: Supporting the Green Cover in Basrah

The idea of this initiative was to design a simple plant nursery to assemble it in one school garden to increase locally the plant cover, this in cooperation with a volunteer agricultural engineer graduate or student of the College of Agriculture, Department of Horticulture. The assembling has been the occasion of a one-day training and teaching experience for the school's students about horticulture, the maintenance of green lands and the preservation of the green cover.



Civic initiative n°5: Health guidance

This initiative's team, with the participation of female volunteers graduated with pathological analysis, visited a number of homes in a specific area in Al-Zubair district, Basrah, for the purpose of providing health guidance on the safe use of water purification methods and materials, especially for daily home use by housewives. They distributed home first aid kits as well for sickness cases due to the consumption of polluted water and referred 10 medical cases for treatment in cooperation with Al-Zubair General Hospital in the district.

CONCLUSION

In conclusion, this Participatory Action Research (PAR) has highlighted thanks to the work of a very active team of young researchers multiple important realities and facts believed to be the reality by the population of Basrah, and especially its youth. First of all, the study highlighted the paramount importance that Basrawis attribute to water resources, considered to be the foundation of life and an inalienable human right. Lack of water is generally seen as a major source of concern, likely to affect them personally in many ways. However, participants also pointed to their communities' excessive use of water, and showed little knowledge of the administrative and legal system governing water in their neighborhoods, towns and governorates. In their view, better water management in the future will require greater individual voluntarism coupled with reform of water governance. Particularly vulnerable to the repercussions of water scarcity and contamination, young people are perceived as quite powerless in the face of these threats, hampered in their action by a number of economic and institutional factors: their commitment and their voice deserve, according to the participants, to be supported to improve water governance. However the participants brought forward a certain number of actions young people could take to tackle water issues in Basrah, make their voice better heard and take part to decision-making processes in their community. We hope that these actions, ranging from personal commitment to reduce water consumption and fight water pollution to engaging at the community level in innovation and water infrastructures rehabilitation projects, will constitute the basis of future youth actions in the future of Basrah and of al-Zubair district. We hope as well that this study will give the momentum necessary for other Participatory Action Researches (PAR) to be launched in Basrah with new focuses, extending and enriching the findings on water scarcity and contamination : green economy, greening rural areas or eco-tourism could all be sectors in which youth could play a major role both in researching and acting.

BIBLIOGRAPHY

- Barozet, E., Sainsaulieu, I., Cortesero, R., & Mélo, D. (2022). *Where has social justice gone?*
- Fleet, M. (2019). . Decentralization and its Discontents in Iraq. *Middle East Institute*.
- GEC. (2020). *The 5 Principles of Green Economy*.
- HRW. (2019). *Basrah is Thirsty: Iraq's Failure to Manage the Water Crisis*.
- JICA. (2008). *Basrah Water Supply Improvement Project*.
- JICA. (2015). *Report on Data Collection Survey on Water Sector in Southern Iraq*.
- National Democratic Institute. (2019). *NDI Poll: Iraqis welcome improved security and social cohesion, but discontent with government undermines stability*.
- NRDC. (2023). *The Environmental Justice Movement*.
- SIWI. (2022, July). *Water governance*. SIWI.
- UN. (2015). *The Lazy Person's Guide to Saving Water*.
- UN DESA. (2006). *Social Justice in an Open World*.
- UN General Assembly. (2010). *Resolution A/RES/64/292*.
- UN Human Rights Council. (2011). *Resolution 16/2*.

UN Water. (2019). *UN-Water GLAAS 2019: National systems to support drinking-water, sanitation and hygiene - Global status report 2019.*

UNDP. (2023). *Water complex rehabilitated by UNDP and USAID provides safe drinking water for over 30,000 people in Basrah.*

UNEP. (2009). *Law No. 27 of 2009 on the protection and improvement of the environment.*

UNICEF. (2019). *Multi-Tiered Approaches to Solving the Water Crisis in Basrah, Iraq.*

WPS. (2022). *Water Governance in Iraq.*

Zawya. (2023, August). *Iraq to build water desalination plant in Basrah. Zawya.*