



Webinar Report

CLIMATE CHANGE IMPACTS IN THE EUPHRATES AND TIGRIS RIVER BASIN BASED ON THE EU CASCADES REPORT

HYDROPOLITICS ACADEMY (HPA)-TURKEY
23 FEB 2022



Think Forward . Lead Forward



**Climate change, water
and future cooperation
and development in the
Euphrates-Tigris basin**

By André Mueller, Adrien Detges, Benjamin
Pohl, Michelle Helene Reuter, Luca Rochowski,
Jan Volkholz, and Eckart Woertz

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WEBINAR REPORT



**CLIMATE CHANGE IMPACTS IN THE EUPHRATES AND
TIGRIS RIVER BASIN BASED ON THE EU CASCADES
REPORT – WEBINAR 23 FEB 2022**



WEBINAR REPORT

The details of the EU CASCADES (Climate change, water, and future cooperation and development in the Euphrates-Tigris basin) report on the Euphrates-Tigris basin, where climate change and human impacts are intense, was discussed with this webinar. Andre Müller presented the report key findings - recommendations, and Dr. Martina Klimes, Süha Umar, and Dr. Hassan Janabi discussed the report with their very valuable contributions. Dr. Fulya Aydin- Kandemir from HPA moderated the event.

CLIMATE CHANGE IMPACTS IN THE EUPHRATES AND TIGRIS RIVER BASIN BASED ON EU CASCADES REPORT 		Opening by Dr. Fulya Aydin Kandemir (HPA) and Dursun Yıldız (Head of HPA)   14:00 - 14:10	Key Findings and Recommendations by Andre Müller (Msc. Water Science & Governance, Consultant Adelphi)  14:10 - 14:30
CONTRIBUTORS	Dr. Martina Klimes Advisor, Water, and Peace, Stockholm International Water Institute (SIWI) / International Centre for Water Cooperation (ICWC)  14:30 - 14:50	Süha Umar Former Turkish Ambassador to Jordan (Rtd)  14:50 - 15:10	Dr. Hassan Janabi FMR Minister of Water Resources - IRAQ & FMR Ambassador to UN Agencies in Rome, Tokyo, Ankara  15:10 - 15:30



Opening Speech by Director Dursun Yıldız

Distinguished guests, speakers, and participants...

Welcome to the webinar on Water and climate change in the Euphrates-Tigris Basin, the fifth of its kind we at the Hydropolitics Academy of Ankara-Turkey have organized since beginning of the last year.

First, I would like to thank to our distinguish speaker Andrea Müller, contributors Dr. Martina, Ambassador Dr. Janabi and Ambassador Umar and all of you participating to this event.

Today we will be analyzing the effect of climate change on The Euphrates-Tigris basin that has been the cradle of many civilizations throughout the history of mankind. From time to time, as it is speculated, is it likely that the Euphrates-Tigris River system will dry up? Certainly not, but it seems certain that within the next 20 years that the water usage and demand by the riparian states will exceed the supplies. Increased levels of pollution will make the management of the limited supply of Euphrates-Tigris water even more difficult for the nations that rely on it.

Ladies and Gentlemen, At the beginning of this important gathering of experts on water resource management and diplomacy, allow me to highlight some of the topics that we see important at this time of rethinking the steps ahead in our region.

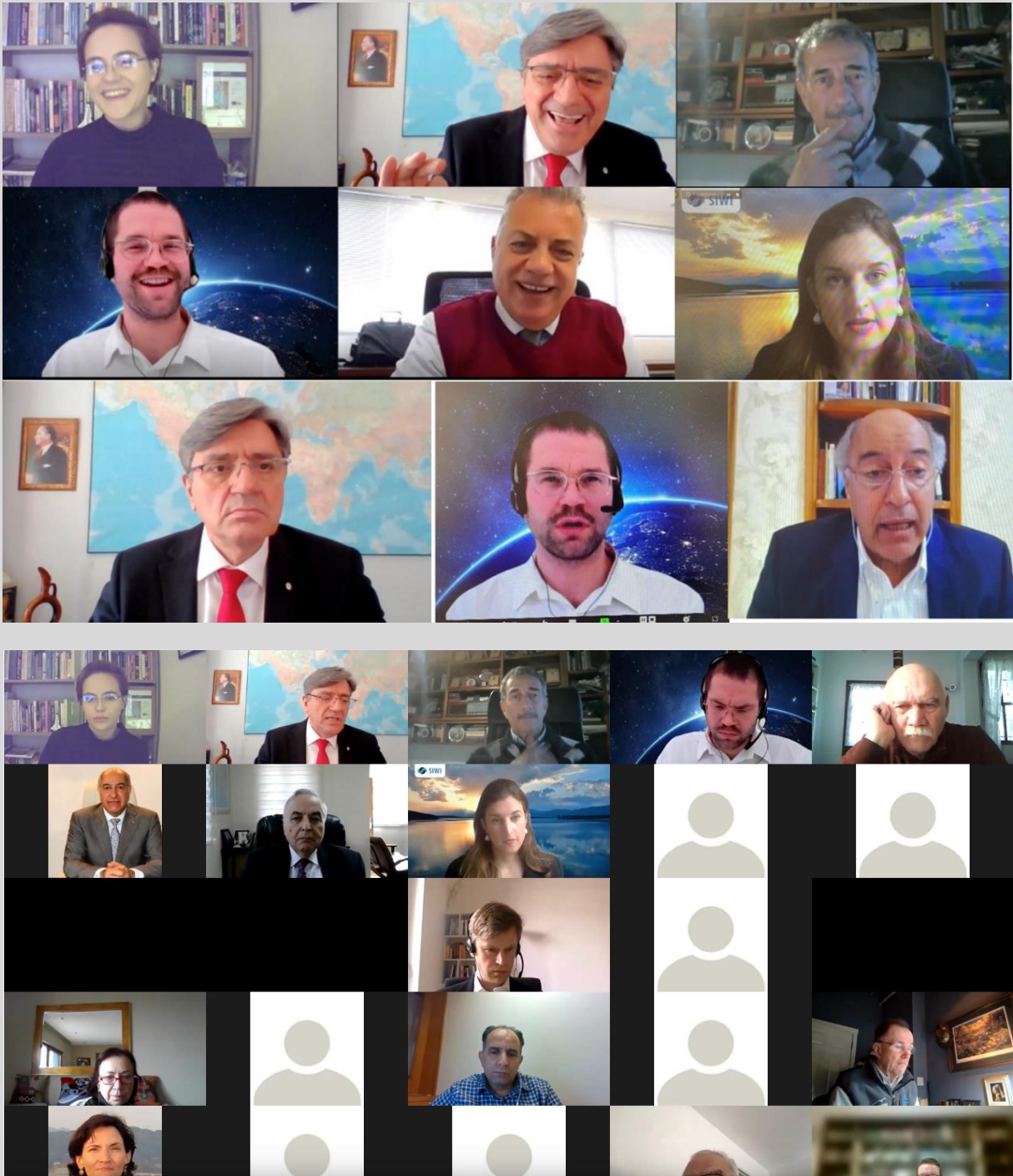
We, at the Hydropolitics Academy believe that the efforts of our bilateral states of the transboundary water resources of our region can only be intensified and given momentum by the activities of the scientific community and the organizations that represent the civil interests of our nations. Our efforts in this regard, should not be discouraged by the fact that our region has a very dynamic structure in terms of political and social relations, that has occasionally led to conflicts between riparian states.

Instead, these facts must make us more willing, to make the best use of the interests of the next generation of our region. We need to help to create shared vision, shared goal, and unity of effort to tackle the problems

I wish you luck, our dear speaker, contributors, and participants in taking benefit of this opportunity and make contributions that may lead to the creation of frameworks for a better future in our region.

Welcome again, and best wishes for a successful webinar.

WEBINAR REPORT

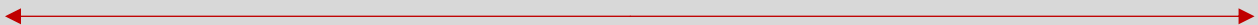


EU CASCADE REPORT PRESENTATION BY ANDRE MULLER



André Müller: MSc. Water Science & Governance

André Müller works as a consultant at Adelphi, specializing in water resources management. He sees an urgent need to drastically lower the growing pressures from human actions and a warming climate on water resources and the ecosystems that provide them. Thus, he dedicates his work to projects that spearhead a sustainable, climate-resilient water management approach.

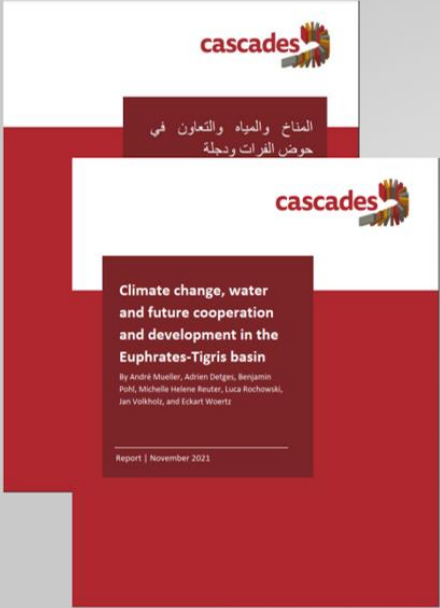


cascades
Cascading climate risks:
Towards adaptive and
resilient European Societies

adelphi

**Climate change, water
and future cooperation
and development in the
Euphrates-Tigris basin**

Presentation of CASCADeS case study
André Müller, adelphi
mueller@adelphi.de





- Present key findings & recommendations
- Bring us on the same page & provide entry points

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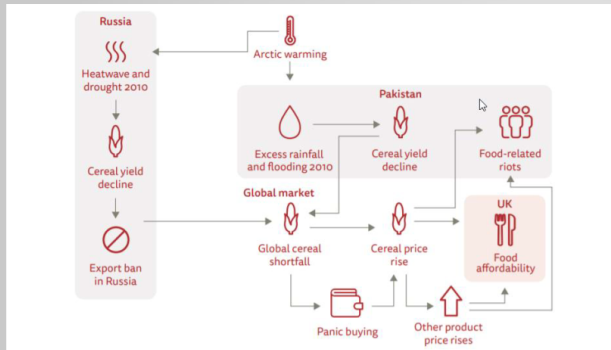
Agenda

- Cascades and the case study
- Climate change and water in the Euphrates-Tigris basin
- Vulnerability and risk assessment
- Adaptation: Status quo and recommendations

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CASCADES PROJECT

Climate change and water



Cascading climate impacts - An example (Hildén et al. 2020)

What is the challenge that CASCADES seeks to tackle?

What is the goal of CASCADES?

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CASCADES PROJECT

Case study on the Euphrates-Tigris basin

Goal: Analyse the impacts of climate change on water resources and socio-economic knock on effects

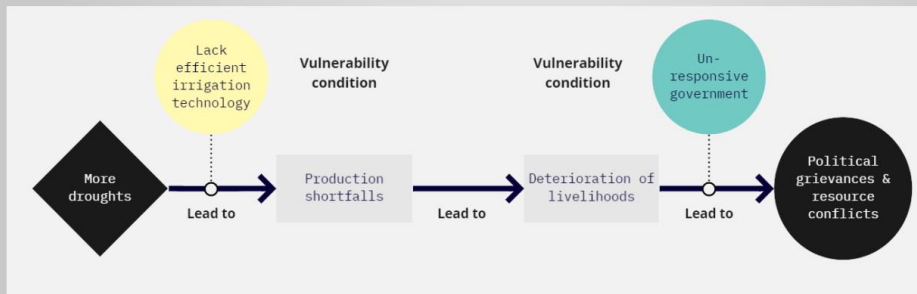
Focus: a) Livelihoods & food security; b) political stability & violence; c) cross-border cooperation & conflict

Method: Scenario-based vulnerability assessment

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VULNERABILITY AND RISK TO CLIMATE CHANGE

The conceptual approach



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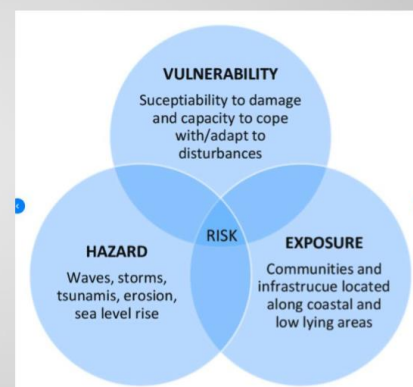
VULNERABILITY AND RISK TO CLIMATE CHANGE

Concepts: Risks & vulnerability

Vulnerability: "The propensity or predisposition to be adversely affected. Vulnerability includes a variety of concepts and elements, including sensitivity or susceptibility to harm and lack of ability to cope and adapt. "

Resilience: "The ability of social, economic, and environmental systems to cope with a dangerous event, trend, or disturbance by responding or reorganizing in ways that maintain their essential function, identity, and structure, while retaining a capacity to adapt, learn, and transform. "

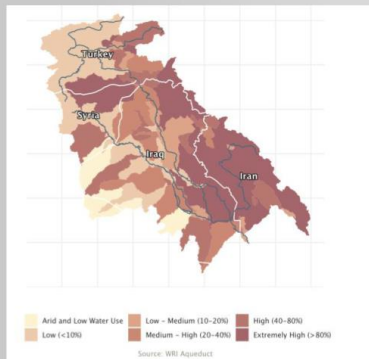
IPCC (2014)



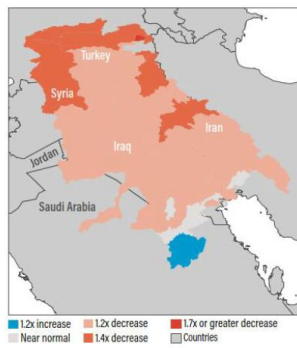
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CLIMATE CHANGE AND WATER

Water endowments and use



Baseline Water Stress in the Euphrates-Tigris basin



Projected Change in Water Supply in the Tigris-Euphrates Basin from Baseline through 2040 (Gleick et al. 2020)

- More than 80% of the population is exposed to high levels of water stress
- Water supplies are on decline
- Water use in Iraq and Syria heavily on the two rivers (>60%), especially agriculture

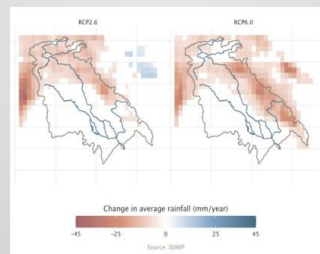
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CLIMATE CHANGE AND WATER

Climate change impacts on hydrology

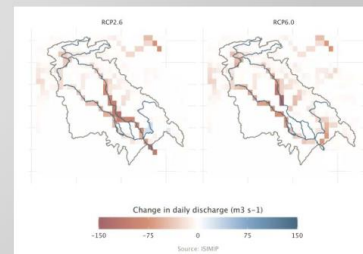
- The region is among the ones most affected by climate change
- Climate change impacts will strongly affect water resources in the basin
- More variable rainfall and rising temperatures are likely to further increase water stress

20-30% less rainfall by 2100



Projected changes in average annual rainfall over the next 30 years

23-28% less discharge in the Tigris and Euphrates

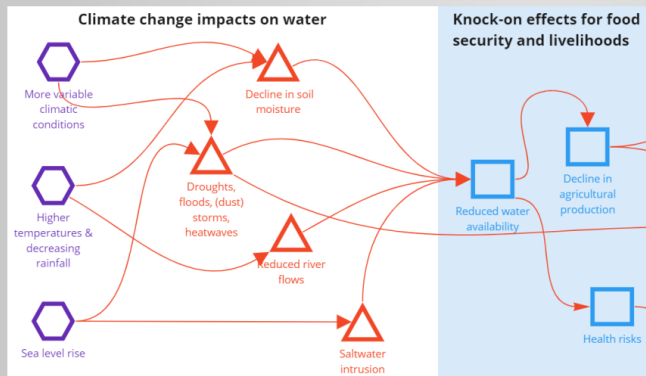


Projected change in average daily discharge over the next 30 years

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CLIMATE CHANGE AND WATER

Climate change impacts on hydrology

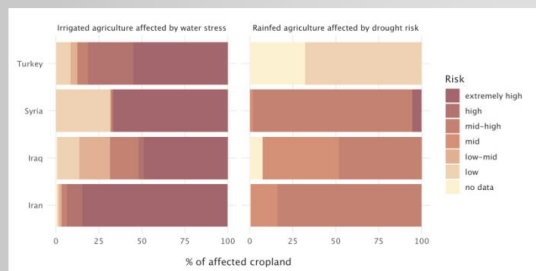


- Changes in **rainfall** volumes and timing, together with higher
- evapotranspiration, reduce river flows, groundwater recharge, and soil
- moisture;
- Reduced **snow cover** and more **abrupt melting**, driven by temperature change and flow dynamics (including flood incidences);
- Altered **river flows** and **rising sea levels**, causing saltwater intrusion into the Shatt al-Arab river system, aggravate water quality challenges;
- Increased frequency and severity of **extreme climatic events** like droughts, heatwaves, and flood-inducing heavy rains.

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VULNERABILITY AND RISK TO CLIMATE CHANGE

Risk I: Livelihoods and food security



Water-related risks for crops in the Euphrates-Tigris basin

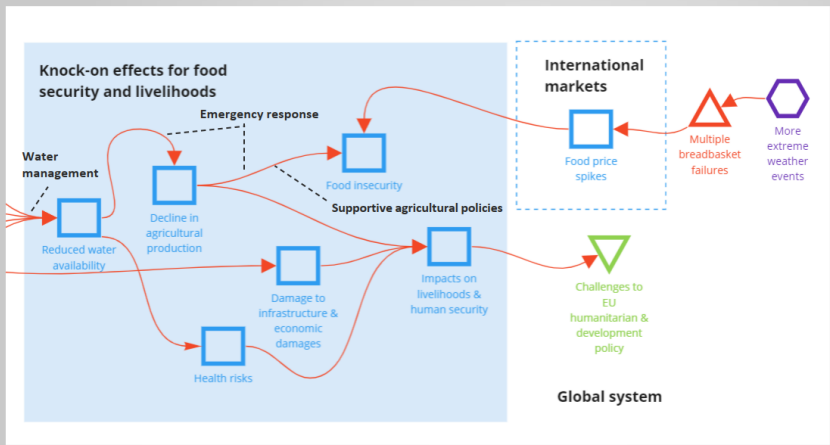
- Water stress and drought risk already threaten a large share of the basin's livelihoods dependent on subsistence farming, livestock rearing or fishing.
- Access to drinking water supply and sanitation is poor, already undermining human health and well-being

**While declining still
ca. 30% of the people
are deployed in
agriculture**

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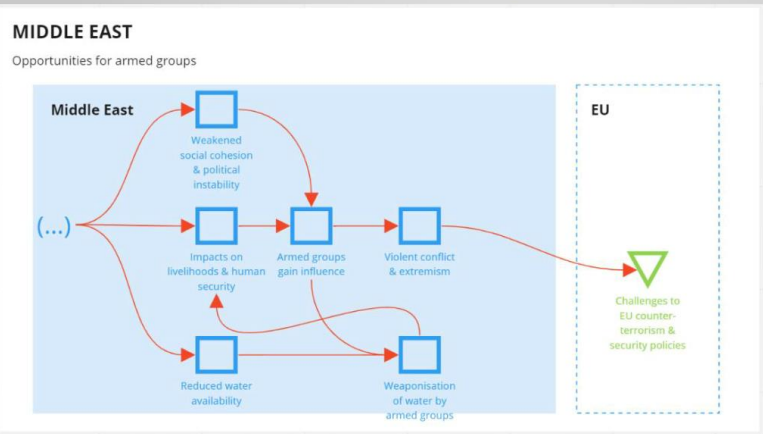
VULNERABILITY AND RISK TO CLIMATE CHANGE

Risk I: Livelihoods and food security



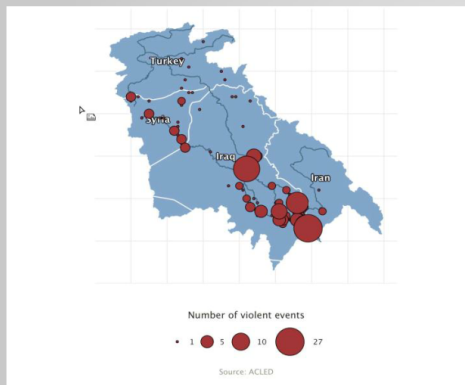
VULNERABILITY AND RISK TO CLIMATE CHANGE

Risk I: Political Stability and Violence



VULNERABILITY AND RISK TO CLIMATE CHANGE

Risk II: Political stability and violence

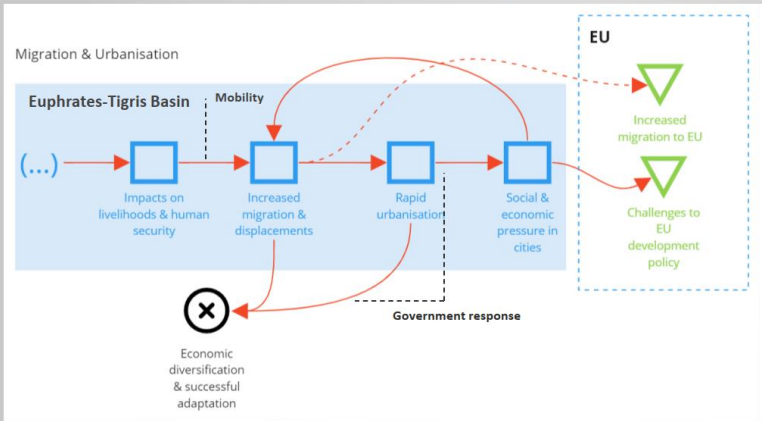


Recent communal violence in the Euphrates-Tigris basin over the past three years

The Euphrates-Tigris basin is affected by internal migration, civil protests against governments, water weaponization, and communal conflicts, all potential sources of political instability and violence that can to some degree be caused by water insecurity.

VULNERABILITY AND RISK TO CLIMATE CHANGE

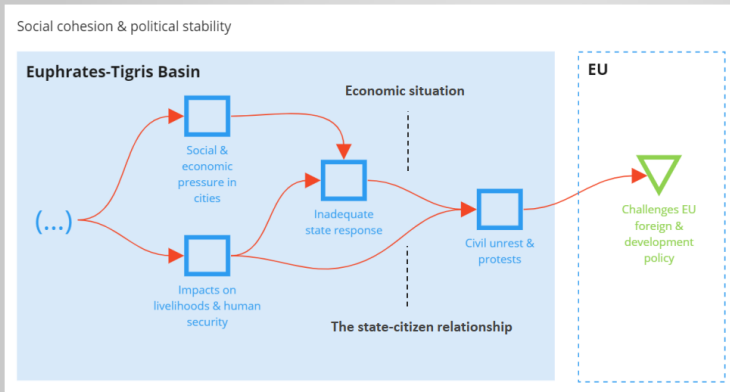
Risk II: Political Stability and Violence



Taxonomy-rel

VULNERABILITY AND RISK TO CLIMATE CHANGE

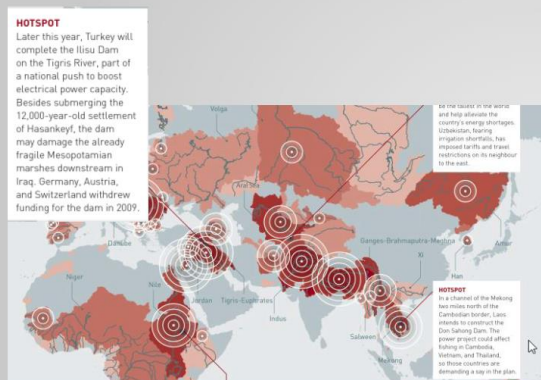
Risk II: Political Stability and Violence



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VULNERABILITY AND RISK TO CLIMATE CHANGE

Risk III: Conflict and cooperation



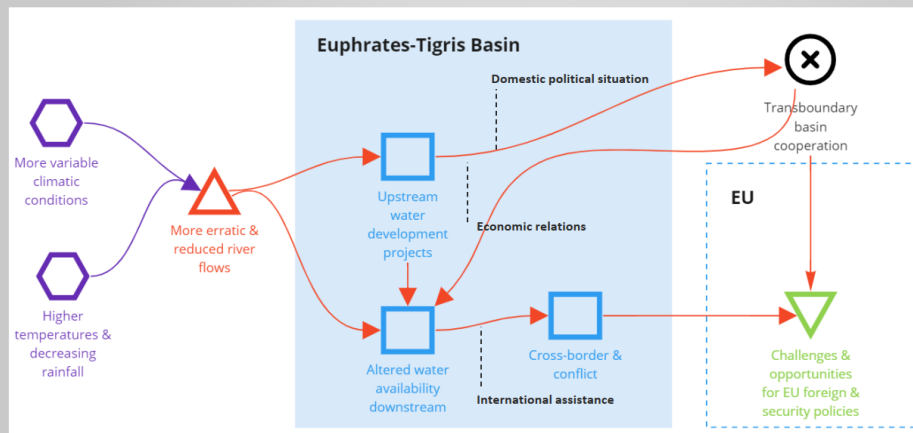
A Map of Conflict and Cooperation (Pohl et al. 2015)

- Institutionalised, permanent cross-border cooperation on water is low
- High risk of transboundary water conflict
- Climate-related water risks as a possible driver of both conflict or cooperation ?

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VULNERABILITY AND RISK TO CLIMATE CHANGE

Risk III: Transboundary conflict & cooperation



ADAPTATION TO CLIMATE CHANGE

Progress

- Some adaptation measures are underway, with large variation between the basin countries, but the **adaptive capacity is insufficient overall**
- Our study also shows that the **enabling conditions** are becoming less supportive (e.g. due to shrinking economies and budgets).
- As a consequence, the **possibilities for mitigating growing water-related climate risks** or taking advantage of the opportunities climate change entails are diminishing.

ADAPTATION TO CLIMATE CHANGE



Recommendations for future adaption & pointers

1. Help individual basin countries reform water management in water-intensive sectors.
2. Help the region devise adaptation options that strengthen overall water security
3. Support the conditions that enable advancements in institutionalised cross-border water cooperation.
4. Help strengthen the water governance system in the riparian countries.

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TYPES OF THE DISCUSSANTS

Süha Umar

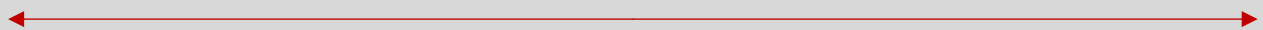
Ambassador (Rtd) Ahmet Süha Umar served at the Turkish Embassy in Buenos Aires as First Secretary; Consulate General in Burgas-Bulgaria as Vice Consul General; Turkish Permanent Representations to the Council of Europe as First Councillor; and NATO and OSCE as Deputy Permanent Representative. He has participated at the Law of the Sea Conference (UNCLOS) as Deputy Head of the Turkish Delegation and as Deputy Chief Negotiator of Turkey in the Treaty on Conventional Armed Forces in Europe (CFE) Negotiations.



He was Head of Turkish Delegation of the Middle East Peace Process, Arms Control and Regional Security Group (ACRS).

He has served as Ambassador of Turkey in Jordan and Serbia and as Director General for Bilateral Political Affairs at the Ministry of Foreign Affairs.

His articles on diplomacy, domestic and world politics and nature conservation have appeared in Turkish dailies and Turkish and foreign magazines. Ambassador Umar has three published books: "Belgrade. Five Hundred Years After."; "Desert Patrol. Jordan Memoirs." and "The Big White Man. Memoirs of A Nature Warrior."



"As we all know what the issues and problems are, we have to focus our attention more into the future than what has happened in the past yet keeping the past always in our minds to show us the way to the future. Let me first mention a simple fact; World is a habitat, and it is a whole. Political or other borders doesn't count. We must keep this in mind when we try to tackle with the problems before us. In other words, we have to cooperate and act as a whole.

When I say "we" I mean the regional countries that are directly involved and interested in the basin we are now discussing, the Euphrates and Tigris basins. I see in the Report that the focusing point is the climate change and how it will affect water issues in the basin. It is also said in the Report that the climate change is not at least for the time being, the most urgent issue. I agree that there are other issues which are more pressing, and that the climate change will play a role on water issue more in the future. So, we must keep this too in mind and be ready to face the challenge. Climate change is a crucial issue for the whole humankind, and we will all feel it's increasing negative effects sooner or later.

There are a couple of points which, I should not say that I disagree, but I have doubts on. One is "outside intervention" or "assistance", whatever you call it. Taking into consideration what has happened in recent past I don't feel fully convinced or relaxed. Outside intervention in this region in the past, mostly produced results that we are not very happy with. Let's take into account the conflict prevention or conflict resolution. The outside interference in the region in this specific case produced totally the contrary and it created more trouble than it has solved.

Another point which I would like to emphasize, and which was also mentioned in the Report is "restoration of wetlands and marshes." This is an

important aspect in my opinion of the water issue in the basin. Wetlands and marshes as those who have prepared this Report and who are now attending this webinar know better than myself, is one of the crucial aspects or one of the crucial elements of water.

The other issue which was also raised in the Report was "trust or confidence building." It is important because it is directly related to another issue: "Cooperation." Cooperation was also very frequently repeated and emphasized in the Report. If you don't have trust or confidence in other party or parties, cooperation becomes very difficult. Cooperation also depends on the political situation in the region. We have to accept that situation now is even worse than it used to be ten or fifteen years ago. Unfortunately, the region once again is in turmoil. The cooperation which was possible let's say between Syria and Turkey in the past or Syria and Iraq or Turkey and Iraq were more feasible and easier than it is now due to the political changes in the region. Let me make myself a bit more clear. The relations between Syria and Turkey at present, due to the factors which I will avoid to deal with in order not to take your time, don't make at least me very hopeful when it comes to cooperation between Turkey and Syria. The same goes for Iraq and Turkey. Still, we have to try to overcome all these difficulties and problems and try to cooperate because this is the only way to tackle with the issue or face the challenges before us including the climate change.

Here, I will come to what Ms. Klimes has mentioned. Yes, Turkey from the very start didn't want outside intervention or third-party intervention in her dealings with the other regional countries as far as the water issue is concerned. We had a good reason for that which it was based, in most cases, on what I said a couple of minutes ago; outside intervention has no proof that it will be useful and/or helpful. This may change, of course. We all know that as Mr. Mueller emphasized, we need at least outside institutional or state

support for financing the huge infrastructure projects for this region. All the countries in the region, including Turkey, will need such support, so this is a tricky issue: It can be very useful, or it can be very harmful. This is the reason why Turkey had always been rather reserved.

Ms. Klimes also mentioned "unofficial get togethers." Yes, this is a good idea. The idea was put into practice in the course of the Middle East Peace Process with success. I was one of those who have started the "Second Track" meetings as we used to call them. This is a useful way of tackling with difficult issues such as water. People when they are out of their official uniforms or titles tend to be more open to discuss issues and find solutions or at least formulate solutions that could be useful for the official bodies.

I agree also that we should not focus only on water. There are other areas where cooperation and acting together may prove to be very helpful in solving water issues too. If my memory is not failing me, Mr. Yıldız will remember that there was one such way of cooperation between Iraq and Turkey. Cooperation in other fields had positive effects on water issues between our two countries. However, if I remember correctly, due to the circumstances of the day, the agreed solutions could not be implemented. (Mr. Yıldız agreed.)

Now I come to my last couple of points.

Just before this meeting Mr. Yıldız sent me a map of Turkey that shows how things were going in our country as far as the

rainfall, snowfall, precipitation, and all other factors related to water issues in the basin. For example, we all know for so long now that we have been,



and we still are discussing taking water from the eastern part of Turkey and bringing it to the west of Turkey where there is a lack of water.

All this kept in mind, I will say something which is known to all of you, but I still want to emphasize it. Turkey being the upriver or source country of the two main rivers, Euphrates and Tigris of this basin may look like she doesn't need others to deal with this issue. This is not true. In my opinion, Turkey also needs full cooperation of all the regional countries in this basin. Even if we forget about other aspects of the issue, we still need to cooperate just to prevent large numbers of people moving from their motherlands to other countries. Mr. Müller rightly emphasized in the Report that lack of water (freshwater, clean water) may cause large numbers of people move/migrate to other countries. This is a huge problem. We knew it from the recent Syrian affair and how it negatively affects receiving countries as we are living with it from the very first days of the conflict. This is why even Turkey needs cooperation without of course forgetting about her national interests. All other countries in the basin too need to cooperate with each other. So, we have to base ourselves on this simple fact that there is only one way to tackle with this issue: Cooperation. There's no other way.

From time-to-time people talk about "water wars". Fighting around or over water will not solve anything but it would make things even worse. There was a reference in the Report which said that war is costlier than cooperation and sharing water or whatever other peaceful means of tackling this issue. This is a statement of the fact which is based on past and sometimes costly experience.

In my opinion and I repeat it whenever I have the opportunity, all the basin countries should always keep in mind that they are the only ones who will solve this problem, face the challenges and that they are the only ones who can do it and should do it. Third party assistance in areas where it is needed

is welcome, but we should not count on third party interference or third-party meddling or whatever you call it. As I mentioned before, it was not helpful in the past. Things may change in the future. I don't know. I cannot tell what will happen in the future, but the past told us that we are the ones who should and will be able to solve this problem. This is what I believe, and I hope others will also share this view.

I agree on the concept that there are risks and opportunities. Risks are known and they may make the regional countries believe in cooperation more than ever. When the risk becomes higher and higher the regional countries in the basin will realize more and more that they have to work together. This is one of the basic findings of the report which I very much agree and praise. The issues are numerous and not easy to solve. Let's take one of them; Destroying Shatt al-Arab and marshes was a big mistake with enormous consequences on environment. I understand that they were restored to some extent but rising sea levels, salinization are still worrying developments to be dealt with properly. We all have to be equally attentive and equally ready to cooperate. Again, I repeat we are not alone so we cannot survive alone. This is important.

On the other hand, it is true that a lot will depend on the political situation in the region. We may be willing to cooperate, but we may not find an interlocutor or the state (or states) ready to do it for many reasons. I don't know for the time being at least how we can overcome this difficulty but again, I repeat we should try to find a way. Hopefully, we will find the ways and means so that the way to cooperation will be fully open.

I repeat that Turkey should be ready to cooperate. In fact, we had always been. The "tri-partite committee" between Turkey-Iraq and Syria and other similar arrangements are examples of our readiness. There are already other examples too of our willingness to cooperate with the other states in the

basin. We have to keep in mind that things are not going in the positive. To the contrary the developments are rather negative unfortunately. We cannot control nature. We cannot dominate nature. I hope that the humankind will realize one day that human beings are not as clever as they believe they are, and they are not as strong as they believe to dominate and change nature in the direction they want it to change. Nature will sooner or later claim what was hers and it will do what is necessary. So, we have to keep this hard but simple fact in mind if we want humankind to survive."

Hassan Janabi



2018 – 2020: Ambassador Plenipotentiary and Extraordinary of Iraq to the Republic of Turkey.

2018-2019: Ambassador, Head of the Department of

International Organizations and Conferences. Ministry of Foreign Affairs, Baghdad. 2016 – 2018: Minister of Water Resources, Baghdad.

2015 – 2016: Ambassador Plenipotentiary and Extraordinary of Iraq to Japan.

2014 - 2015 Ambassador, Head of the Department of Human Rights. Ministry of Foreign Affairs, Baghdad.

2009 – 2014: Ambassador and Permanent Representative of Iraq to UN Agencies in Rome (FAO, WFP & IFAD).

2004 – 2008: Senior Advisor to the Ministry of Water Resources in Iraq.

1999 – 2003: Senior Hydrologist Sydney Catchment Authority.

1994 – 1999: Water Quality Modeler, Sydney Water Corporation.

Frequent guest speaker in major international and UN meetings in the Middle East and beyond, providing insight views on issues related to human and natural resources development in the region. Writer and lecturer on socio-economic development in the Middle East focusing on food and water security, poverty reduction, rural development, water scarcity and ecosystem restoration and preservation.

"I try to like manoeuvre because a lot of things have already been said. So, we know that this is the area where ancient civilization was established and mainly due to the plentiful of water in the valley. In fact, that I the rise and fall of the historical city states in Mesopotamia where link directly to the availability of water or the lack of it. Currently, we are concerned that these major rivers are the subject of in my view the greatest ever threat. Of course, among the reasons is the climate change, although the report still considers climate change impact as minor, but also my view overcontrol and unsustainable utilization of water is the real threat. Of course, all these happening in the absence of implementable bilateral or multilateral agreements for equitable and reasonable use of shared waters. There is some indifference towards the application of the principles of international law in this area. Of course, this contributes to potential conflicts that should be and could be avoided.

Observations indicate the decline of about 25% of rainfall or snow cover in the upper reaches of Tigris and Euphrates rivers. IPCC estimated the reduction in rainfall and snowfall to be between 10% and 60% in the basins. This translates into a similar decline in the flow of rivers. Coupled with increased demand for water due to, inter alia, population growth and economic development, it leads into unfair access to water and obviously represents a real threat to peace and stability.

The combined effect of climate change and uncoordinated operational modes of control structures have led to an alarming decline in the rate of inflows to Iraq. The direct results of this are shrinking green cover and expanding desertification. Average temperatures in Baghdad and southern Iraq have risen by at least 2 degrees Celsius in the last few decades. This means at least 20% reduction in Agricultural productivity of Iraqi soils. Currently 90%

of Iraq's soil, historically the most fertile with abundance of water is affected or threatened by desertification. Two months ago, the government of Iraq undertook drastic measures in response to the diminishing water resources by reducing the cultivated lands by 50%.

The declining rainfall and unsustainable use of water resources exacerbate the problem of water scarcity, causing progressive depletion of life-sustaining land resources and forced migration. Released UN statistics on the numbers of displaced persons and migrants for socio-economic reasons are frightening to say the least. Poverty, war, instability, and the lack of decent means of living resulting from the spread of desertification, and loss of biological diversity are the main reasons behind this mass migration from some Middle Eastern countries including Iraq.

Depletion of water resources destroy land fertility. Impoverished rural population are not capable to adapt to water scarcity and other related hardships. Displacement becomes the only option for most of them regardless of the tragic consequences of this forced migration. Displacement of rural population, usually the food producers, causes a double loss: a decrease in the number of food producers on one hand, and an increase in the number of food insecure population on the other.

Another tragic example of serious deterioration in the environment is the Iraqi delta at the mouth of the Gulf. It is a striking example of the destruction of a freshwater ecology, characterized by the fertility of soil, the dense forests of palm trees, that have turned into lifeless environment due to advancing sea water damaging an ecosystem that had lasted for thousands of years.

At the confluence of the great rivers in Mesopotamia at the mouth of the Gulf the Marshlands of Iraq existed for thousands of years, covering an area of 15,000 square kilometres. In the face of the current water scarcity, and

unprecedented heat waves, this world heritage site is diminishing. Its indigenous population will be tragically scattered if not completely disappeared.

There is also the destruction caused by the terrorist organization Daesh (ISIL) and the damage inflicted on the people and on water installations. Daesh in fact weaponized water and used it in the most horrific way, flooding selected areas, destroying hydraulic structures, occupying dams and reservoirs and so on. Terrorism is thriving on instability, economic and social fragility. The latter contribute to the spread of extremism, vengeance, and revenge.

Rising temperature of Earth's surface is a direct threat to human life. It also magnifies the threats of other familiar risks, increases their complexity and intensity in many regions, and obviously including our region the Middle East, leading to further impoverishment, displacement, food and water insecurity, and violations of human rights, creating situations of instability and conflicts.

The need for regional approach to minimize the Climate Change impact on water availability is vital. It must be based on cooperation and understanding the needs of every riparian country. Unilateral actions on the utilization of shared water create undesirable conditions leading to mistrust and justifiable concern particularly downstream.

There are some good signs of technical cooperation between Iraq and Turkey. It needs to be further enhanced and institutionalized. A 12-years draft of MOU on water between the two countries has finally been approved and is now effective. It is a promising start that needs to be further advanced beyond technical cooperation.

Iraq-Iran water relations have not progressed. In fact, it has worsened despite the validity of the 1975 Algiers Accord between the two countries which

included specific paragraphs addressing the water issues clearly. Nearly all tributaries originating in Iran and flowing to Iraq have now been brought under extensive networks of dams and control structures inside Iran leaving Iraq in an extremely vulnerable situation. Iran showed noticeable disregard towards Iraq's claims.

Back in July 2018 I was honoured to speak to the Security Council during its unprecedented deliberations on climate-related security risks. It was an important step forward by the UN in addressing the new challenges, reducing risks and avoiding potential national, regional and international conflicts.

Further efforts are needed to address this subject. There are so many challenges facing our region. Most of them are transboundary. Unless the responses are regionally coordinated those challenges will be harder to overcome. Obviously national water strategies are prerequisite for any successful development plan, but transboundary problems require transboundary coordinations. Transboundary water must be utilized sustainably. Embarking on establishing more and more control structures is not a solution, particularly under the prevailing and projected hydrological conditions in the Euphrates and Tigris rivers and tributaries. The region needs smart water resources policies and programs based on respect for the environment and aiming at achieving stability and peace.

Embarking on establishing more and more control structures is not a solution. Particularly, under the prevailing and projected hydrological conditions in the Euphrates and Tigris rivers and tributaries. The region needs smart water policies, smart water resources policies and programs based on respect for the environment and aiming at achieving stability and peace. Looking from like an eagle eye to the basin, I can see that Iraq because of the prevailing conditions, political security, and the occupation and what have you, Iraq seems to be the weakest link in this. It is just unfortunate so

in addition to all these problems that we are facing Iraq is the most downstream country and so you cannot in this case make proactive policies and programs; except -you know- trying to agree with neighbouring countries trying to raise the awareness of neighbouring countries as to the impact of their actions in programs downstream, because we need also to remember that this water in the Tigris and Euphrates and tributaries this the entire water over thousands of years used to come to Iraq uninterrupted. Now every drop in the basin is in controlled. Every single drop virtually. This is not an easy on a nation that is struggling with its own sovereignty and independence like in these conditions. These needs to be considered. I probably would mention as discussion with the ambassador; I think the issues of like third party facilitator this is not an intervention in internal affairs of the region.

We support the presence of United Nations other like neutral scientific organizations and good wishers organizations to facilitate, you know, meeting between technical people whatever you call track two or track one thing like that. I don't see this as intervention in our own efforts. it is very helpful or where the channels between Iraq and Turkey for example are open. This is good but also, we need to -for example I met with the former minister of forestry, I met when I was a minister, in one year or one and half year I met him like five times- and during this, right of course, I went to Ankara. He never visited Iraq then. But it's not a big deal. Of course, it would be a good and lovely to have Turkish minister discussing water like in Baghdad and then I noticed myself and really sharp increase in the understanding that this gentleman had on Iraqi issues, and he became very open and as usual I discuss very honestly and openly with my Turkish counterparts' things. I also appreciate that bilateral agreement is more important than any other thing than principles of international law, but this is bilateral agreement of cooperation needs to be based on international law principles. You cannot

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just you know your upper hand lower hand approach issue it has to be on an equal basis and also the principle of cooperation needs to be clear."

Closing Speech by Prof. Dr. Fadi Comair



Fadi Georges Comair is a water diplomat (DWRE) from the American Academy of Water (AAWRE) and international negotiator specialized in the Middle East region. He is a member of the French Overseas Academy of Sciences and Water Academy in France. He graduated from the University of Texas and Harvard University, the Ecole Nationale des

Ponts et Chaussées, and Claude Bernard Lyon I University, with a PhD in Energy. From 1987 to 1993, he was Head of Department at CERIB in France. In 1993, he was appointed Chairman of the Board of the National Authority of the Litani River and subsequently Director General of Hydraulic and Electrical Resources in Lebanon, Director of the Water, Energy and Environment Research Institute at Notre Dame University and was a professor at New York University. He is President of MEDURABLE, an association which works in the field of sustainable development, Honorary President of the Mediterranean Network of Basin Organizations (MENBO), Vice-President of the Euro-Mediterranean Information System on Know-how in the Water Sector (EMWIS) and a member of the UNESCO Commission on Water and Human Establishments. Mr. Fadi Comair is a Chevalier of the National Order of the Legion of Honor and the National Order of Merit.

"I would like to state that throughout my academic and professional life as a water expert and water diplomat I have seen how much water too often has become an element of cooperation and in the MENA region cooperation

is central to all riparian country and a mandatory condition for the riparian countries well-being and environmental sustainability. The challenges are so heavy and the challenges on the Tigris and Euphrates basin were presented by Andre Muller and then I have also recorded some of the very important statement that Andre Muller said, and I will comment on them. I can state by telling a message with three components. First component is that the riparian countries in the Tigris and Euphrates basin (Turkey, Iraqi and Syria) are already living a water nexus crisis. It is not only a water but also and energy, a food ecosystem nexus crisis. I this will continue without acting on both basins by implementing hydro diplomacy and the nexus concept, we will have to face serious problems. The sound message is that the water crisis on the Tigris and Euphrates basins is multi-dimensional aspect could be addressed through the adoption of new priorates such as the one which has been defined by UNESCO IHP when I was a chair of UNESCO IHP within the strategy number 9, which was adopted under my mandate and now as a vice chair representing the Arab region. We have said that we need to implement scientific research and innovation. We need to highlight water education; we need to bridge the data knowledge gap and we need to apply inclusive water management under global changes, and we need of course good governance but this time the good governance should be based on science for mitigation and adaptation and resilience. Why resilience? Because we will be encountering extreme events on the Tigris and Euphrates basin. So, the policy that we need to address is very important and we need to apply is very important which should be based in improving water governance and regional cooperation based on the nexus concept. The last message is that within the IHP UNESCO we have voted a very important resolution. And the three countries, which are represented at the UNESCO council (Turkey, Iraq, and Syria) has voted the resolution that I personally presented, which is the creation of the ECOMED ACADEMY. This is a new initiative for IHP, by

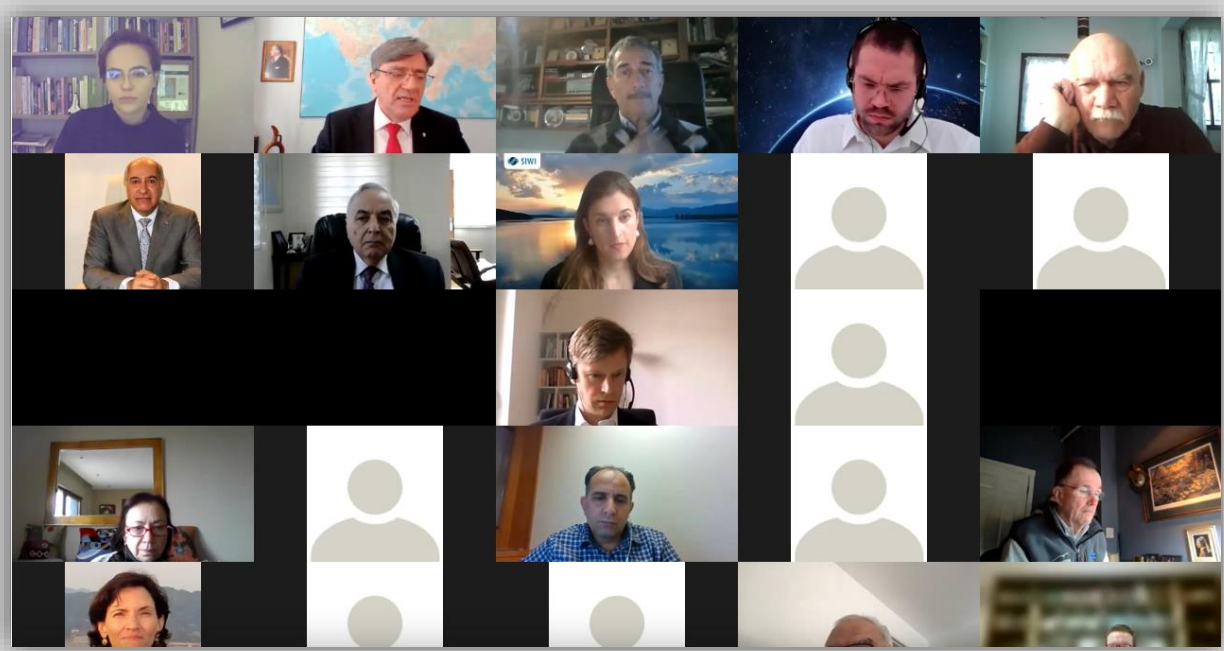
creating the ECOMED academy and this academy will highlight a regional platform to facilitate the riparian knowledge based on development, information exchange and experience sharing for climate impact adaptation strategies. I invite you three countries to join to UNESCO IHP ECOMED academy which has been a platform to highlight all the problems and start work together to achieve water security, climate resilience for the future generation."

Closing the webinar by the moderator, Dr. Fulya Aydin-Kandemir



Fulya Aydin-Kandemir is a scientist who has completed her Ph.D. at Ege University Solar Energy Institute and has academic studies in remote sensing, Geographic Information Systems, and renewable energy. In addition, Dr. Aydin-Kandemir has studies on climate change, land-use changes, and biodiversity models. She is the member of the Hydropolitics Academy & Association (HPA). Aydin-Kandemir was selected as the Environmental Systems Research Institute (ESRI) Young Scholar for her research about Africa's Water Scarcity and Geographic Information Systems-based Solar Desalination Assessments in 2020. Also, her remote sensing analyses of Lake Tuz (Turkey) were selected as Image of the Day by the National Aeronautics and Space Administration (NASA) Earth Observatory on December 16, 2021. Dr. Aydin-Kandemir is a member of the European Cooperation in Science and Technology (COST)'s working groups and is currently a volunteer external lecturer in the Department of Space Sciences and Technologies at Akdeniz University.

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Climate Change Impacts

Zoom

in the Euphrates and Tigris River Basin

Based on the EU Cascades Report



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