



**Permanent Mission of the Hashemite Kingdom
of Jordan to the United Nations and other
International Organizations**

**Office of the Co-ordinator of OSCE Economic
and Environmental Activities**

Participatory Workshop on Environment and Security Issues in the Southern Mediterranean Region

Amman, Jordan, 18-22 June 2012

Workshop Report

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Executive Summary

The Participatory Workshop on Environment and Security Issues in the Southern Mediterranean Region was initiated by the Office of the Co-ordinator of OSCE Economic and Environmental Activities (OCEEA) in co-operation with the Permanent Mission of the Hashemite Kingdom of Jordan to the United Nations and other International Organizations, and was facilitated by the Institute for Environmental Security (IES). It was opened by the Secretary General of the Ministry of Environment of Jordan and the Secretary General of the OSCE and attended by 50 participants, including representatives from 4 OSCE Mediterranean Partners for Co-operation, 5 OSCE participating States, NGOs, numerous international experts as well as representatives from the OSCE Secretariat.

During four days, which included a field-trip to environmental hotspots, participants identified a number of environmental issues that may impact security and were able to map them in an easily understandable format, thus allowing the formulation of a number of concrete recommendations.

Altogether participants agreed that the Mediterranean region is a highly vulnerable area in terms of environment and security linkages, due to its climatic and topographic features and the cross-boundary dimension of the Mediterranean Basin. While its cultural and economic diversity offers great opportunities for development, the region also represents an area that poses potential for social and political instability. Enhanced co-operation at the political, economic and environmental level is necessary to secure sustainable development of the region as a whole.

With regard to **water scarcity and land degradation**, participants welcomed the OSCE lessons learned on promoting models of trans-boundary co-operation, which could serve as an example for the region and be used as a case study in eventual future meetings. During discussions on finding ways to alleviate **water scarcity**, it was pointed out that desalination plants should only be built after thorough environmental impact assessments have been made. In order to reduce the negative effects of fossil fuel used as power generation for such plants, which is today's practice, it was proposed to look for solutions in the solar energy sector. Furthermore, **water saving methods** present a large potential and would be highly beneficial to the many countries in the region, in particular regarding the capture, treatment and re-use of waste water for agriculture. Those countries who have longstanding experience in this regard, were encouraged to further exchange views and lessons learned from their national policies, experiences and information and awareness raising campaigns. This would allow other countries to address and overcome the reluctance and skepticism of farmers who often consider the use of such water unsuitable for agriculture.

On the **environmental implications of climate change**, participants agreed on the need for enhanced collaboration and co-operation. North-South but also South-South co-operation were argued to be essential, especially in enhancing climate change **adaptation policies** and programs. The **transfer of technology** and latest know-how was seen as one way for collaboration where more developed nations can help their Southern neighbors. It was also stressed that it is essential to share experience in the areas of **institutional set-up and establishing legal mechanisms**. Countries in the region should enhance co-operation with a view to achieve common understandings on adaptation to climate change, even if higher-level political co-operation lacks behind. Co-operation needs to include **collaborative research**

between institutes and universities within the region and with Northern institutes and research centers.

Regarding environmental implications of **energy and security policies**, countries will need to incorporate the issue of energy security into their national security concepts. A clear recommendation was that Mediterranean governments need **assistance with regard to lobbying** with the EU and other donors in order to be able to build renewable energy projects in the region. Participants supported that the members of **Trans-Mediterranean Renewable Energy Cooperation** (TREC) are in regular contact with national governments and private investors, with the aim of communicating the benefits that may be obtained from the cooperative use of solar and wind energy and promoting specific projects in this field. Another recommendation suggested the promotion of **a mechanism to improve the use of gas resources** in the region.

On the **role of civil society**, participants supported enhanced stakeholder dialogue and concerted action which would lead to a shared vision between local communities and governments, so they both understand their respective roles and responsibilities concerning the management of natural resources. A number of country representatives suggested that **NGOs would greatly benefit from enhanced training**, in particular on fund raising and management. It was also pointed out that recent negotiations in the **framework of the Arab League** have led to an agreement to give civil society a stronger role. Countries have agreed to set up a framework for co-operation among civil societies in different Arab countries with the hope that a text supporting the work of civil society will be approved by the Ministers of Environment of the Arab League in 2013.

As to specific recommendations regarding **the role of the OSCE**, a number of concrete proposals for future involvement of Mediterranean partners in OSCE activities were made. On **water**, the OSCE transboundary experience could be shared by giving support for **legislative development**, in particular on the **creation of bilateral water commissions** as well as with regard to **technical support for monitoring water quality**.

On **climate change**, one could consider expanding the ENVSEC project on climate change and security to the Mediterranean region. Efforts should be made to ensure funding in order to complete the project on climate change scenarios in the Mediterranean region.

Regarding **energy**, it was proposed that if future OSCE meetings, such as the Economic and Environmental Forum, will address the topic of environmental footprint of energy production, transportation and consumption, the **Mediterranean partners for co-operation should play an active role** in the Forum process through concrete involvement. Participants welcomed the OSCE proposal for organizing **round tables on sustainable energy**. They also encouraged the organization of **study visits** on renewable energy legislation, operation and technology.

On **civil society** it was suggested that Mediterranean partners be invited as observers to OSCE events, in particular those related to the Aarhus Convention and to Aarhus Centers, in order to learn about the Convention and to consider its relevance for countries of the South Mediterranean region.

Annotated Agenda

Participatory Workshop on Environment and Security Issues in the Southern Mediterranean Region

**Kempinski Hotel Amman, Jordan
18-22 June 2012**

AGENDA

Monday, 18 June 2012

16.00 – 17:00 Opening Session

Moderator:

Mr. Goran Svilanović, Co-ordinator of OSCE Economic and Environmental Activities

- **H.E. Ahmad Qatarneh**, Secretary General of the Ministry of Environment, Jordan
- **H.E. Ambassador Lamberto Zannier**, Secretary General of the Organization for Security and Co-operation in Europe.

Statements by Delegations

17:00 – 18:00 Session I: Region in Focus. Main Environment and Security Challenges

- *The Mediterranean Region has been identified as one of the most vulnerable areas in terms of environment and security linkages. Due to its climatic and topographic features, as well as the cross-boundary dimension of the Mediterranean Basin, intermixed with cultural, political and economic diversity, the region represents an area that poses potential for social and political instability, with repercussions that also affect European countries and neighboring regions. Furthermore, energy security is an important element on the political and economic agenda of the Southern Mediterranean countries, who are not only important exporters of oil and natural gas, but have also vast potential with regard to the development of renewable energy sources, thus affecting future energy security policies in the region and beyond.*

Moderator:

Mr. Ronald A. Kingham, Director, Institute for Environmental Security (IES)

Keynote Speaker:

- **Mr. Munqeth Mehyar**, Chairperson and Jordanian Director, Friends of the Earth - Middle East

Discussion

18:00 - 20:00 **Welcome Cocktail hosted by Mr. Goran Svilanović, Co-ordinator of OSCE Economic and Environmental Activities**

Tuesday, 19 June 2012

09.00 – 10:30 **Session II: Water Scarcity and Land Degradation– Identifying the Causes and Looking for Solutions**

- *According to the UNEP Blue Plan Programme, water resources in the region are limited and unequally shared in time and space. The southern countries have only 13% of total resources. Increasing demand for water and increasing pollution through pesticides or nitrate contents leads to pressure on the water resources, thus to changes in the water regime, drop in underground water table levels and depleted resources.*
- *Much of the region is semi-arid and subject to seasonal droughts with high rainfall variability. Also human activities have substantially contributed to further degradation of land. High population densities in certain areas results in heavy concentrations of industry and intensive agriculture thus put even more pressure on the soil. To a great extent poor agricultural practices lead to overgrazing and soil salinization. In addition, the use of fertilizers, pesticides and contamination by heavy metals continues to undermine the quality of the region’s soils.*

Moderator:

Mr. Ikaros Moushouttas, Senior Advisor, IES / Former Member of the Policy Planning and Early Warning Unit in the Council of the European Union

Speakers:

- **Mr. Gidon Bromberg**, Director, Friends of the Earth - Middle East
- **Eng. Ali Subuh**, Assistant Secretary General for Technical Affairs, Ministry of Water and Irrigation of Jordan
- **Mr. Yakov Livshitz**, Hydrological Service, The Israeli Governmental Authority for Water and Sewage

Discussion

10.30 – 11.00 Coffee/Tea break

11.00 – 12.30 **Session III: Environmental Implications of Climate Change**

- *The IPCC’s Fourth Assessment Report (Summary for Policy makers) states that “there is also high confidence that many semi-arid areas (e.g. Mediterranean Basin) will suffer a decrease in water resources due to climate change” and examples of some projected regional impacts for Africa range from decrease of up to 50% of agriculture yield by 2020, to raising sea level with an adaptation cost calculated at 5 to 10% of Gross Domestic Product.*

Moderator:

Dr. Nasser Yassin, Faculty of Health Sciences at the American University of Beirut / Fellow and Beirut Representative, IES.

Speakers:

- **Eng. Rania Abdekaleq**, Environmental Ministry of Water and Irrigation of Jordan
- **Dr. Nadim Farajalla**, Associate Professor at the American University of Beirut

Discussion

12.30 – 14.00 Lunch Break

14.00 – 15.30 Session IV: Environmental Implications of Energy and Security Policies

- *Security policies and measures may have positive or negative impacts on the environment. While military activities often present risks for the environment and human health, decommissioning obsolete ammunition stocks also offers an opportunity to diminish potential environmental damages. Energy security is usually included in national security policies and it might have a strong effect on the environment, precisely in the Southern Mediterranean, the choice of the main energy mix might span from nuclear energy and its potential waste and security management problems, to oil and gas exploration with its inherent environmental risks, but also to the development of new renewable energy sources.*

Moderator:

Mr. Marc Baltes, Senior Advisor / Vienna Representative, IES

Speakers:

- **Mr. Haitham Aladaieleh**, Assistant Secretary General for Technical Affairs, Ministry of Environment of Jordan

Discussion

15.30 – 16.00 Coffee/Tea Break

16.00 – 17.30 Session V: The Role of the Civil Society

- *The role of civil society in shaping policies and in participating in decision making processes has become more relevant than ever also in the environmental context. It is important to recognize and support civil society involvement at the earliest stages of projects involving the sustainable management of natural resources and in the formulation and implementation on policies affecting environment and security at all levels – local, national and regional.*

Moderator:

Mr. Ronald A. Kingham, Director, IES

Speakers:

- **Eng. Fidaa Haddad**, Regional Office for West Asia, International Union for Conservation of Nature - Jordan

- **Mr. Munqeth Mehyar**, Chairperson and Jordanian Director, Friends of the Earth - Middle East

Discussion

Wednesday, 20 June 2012

09.00 – 09.30 Session VI: Mapping Exercise Methodology

Moderator/Speaker:

Mr. Philippe Rekacewicz, Cartographer and Fellow, IES / Journalist, Geographer and Cartographer, Le Monde diplomatique, Paris

Mr. Matthias Beilstein, Cartographer, Zoi Environment Network

09.30 – 10.30 Mapping Exercise: Challenges and Opportunities.

10.30 – 11.00 Coffee/Tea break

11.00 – 12.30 Mapping Exercise

12.30 – 14.00 Lunch Break

14.00 – 15.30 Mapping Exercise (continued)

15.30 – 16.00 Coffee/Tea Break

16.00 – 17.30 Session VII: Main findings of the Mapping Exercise

Moderator:

Mr. Philippe Rekacewicz, Cartographer and Fellow, IES / Journalist, Geographer and Cartographer, Le Monde diplomatique, Paris

Discussion

Thursday, 21 June

All day - Visit to Environmental Hotspots

- Zarqa River Project
- Phosphate Hills Area at Zarqa Governorate

Friday, 22 June

09.00 – 10.30 Session VIII: Closing Session: Recommendations and the Role of the OSCE

Moderator:

Ms. Desiree Schweitzer, Deputy Co-ordinator of OSCE Economic and Environmental Activities

Speakers:

Mr. Marc Baltes, Senior Advisor / Vienna Representative, IES

Discussion

Opening Session

Opening remarks by HE

Ahmad Al Qatarneh

Secretary General of the Ministry of Environment – Jordan

in the opening of the

Participatory Workshop on Environment and Security Issues in the

Southern Mediterranean Region

Amman – Jordan 18-22 June 2012

Your Excellencies,

Dear Distinguished guests,

It is my pleasure to be here today for the opening of such an important and dynamic gathering of experts and visionaries, aiming to discuss the security implications of environmental degradation and the scarcity of natural resources in our region.

This is not an academics issue that draws the attention of research only, but also policy makers in this region who are facing the reality of responding to the challenges of the environment, climate change and natural resources in political and economic decision making processes.

Our region is going through a deep transitional period with political and economic challenges shaping new forms of political powers and ways of governance. Many of the current and future challenges in the region will be driven by environmental causes such as the need for secure supplies of energy, the acquisition of affordable water resources and the need to deal with the impact of climate change and pollution.

Environmental security cannot be achieved by one country alone but only through cooperative measures built on trust and sustainable policy options. The Southern Mediterranean area is rich in history and culture and that positive past lead sometimes to cases of conflict that cannot be resolved only by political measures. The need to share our resources in a more fair way should drive our efforts to break political barriers for the benefit of our societies.

This is however, easier said than done. It will need visionary leaders at all ends of each “shared resource” conflict to come together and think of practical ways to reach agreements despite all the rapid changes that are open to all outcomes in this region.

Jordan under the leadership of HM King Abdullah II has always been a believer in supporting regional security and has linked theory with practice in many cases. Through its membership in the Arab league, the UN and many other forums, Jordan has always sought to reach security through peaceful measures and bringing all conflict parties together. Jordan believes in the right of all countries and societies to enjoy the full sovereignty on their own natural resources but at the same time it supports mutual agreements to maximize the benefits of sharing transboundary resources to enhance security at all levels.

At the heart of environmental security issues in this region lies the need to provide the Palestinian people with their right of governance and ownership of their water resources and energy security. All international agreements and guidelines on protecting the natural rights of people under occupation should be applied. Regional security will be highly strengthened once a sustainable and peaceful resolution to the Palestinian issues is reached that guarantees a full-fledged independent Palestinian state that enjoys sovereignty over all its natural resources. This has always been the position highlighted by HM King Abdullah II in his global and regional efforts in pursuing sustainable and just peace for all parties in the region, especially the Palestinians.

I welcome you again to Jordan and wish you all the best in your important discussions.



Organization for Security and Co-operation in Europe

**Participatory Workshop on Environment and Security Issues in the Southern
Mediterranean Region
18-22 June 2012**

Opening Remarks
OSCE Secretary General
Ambassador Lamberto Zannier

Minister,
Excellencies,
Ladies and Gentlemen,

It gives me great pleasure to be here with you today at the opening of the participatory workshop on environment and security. Let me start by thanking the Hashemite Kingdom of Jordan for hosting this event. I take this interest as a very good sign.

The main purpose of my visit is to explore venues for increased practical co-operation between the OSCE and Jordan. I am sure that the fruitful discussions I am having with Jordanian Senior Officials during my stay and the outcomes of this workshop will provide useful inputs.

The OSCE Mediterranean Partnership is rooted in the conviction that security in the OSCE area is inextricably interconnected with security in the Mediterranean. This principle was stated already in the CSCE/OSCE founding document adopted in Helsinki in 1975. It was clearly reiterated at the Astana Summit in 2010 and again at the Vilnius Ministerial Meeting in 2011, where the OSCE leaders expressed their commitment to further enhance the Partnership, in particular by sharing experiences and enhancing practical and result oriented co-operation.

The OSCE Mediterranean Partnership is about working together to address shared challenges through dialogue and co-operation.

The topic of this workshop is particularly fit for this purpose, as it is only by working together, across borders and regions, that we can effectively address environment and security challenges, exchanging our experiences and learning how to co-operate more efficiently.

Excellencies,
Ladies and Gentlemen,

As His Excellency Mr. Ahmad Qatarneh, Secretary General of the Ministry of Environment mentioned in his opening address just a few moments ago the purpose of this workshop is to explore the links between Environment and Security.

I would like to begin with adding some perspective on the starting point of this meeting, often referred to as the “Valencia follow-up project”.

Back in December 2007, the OSCE, in co-operation with the NATO Public Diplomacy Division, organized a workshop on "Water Scarcity, Land Degradation and Desertification in the Mediterranean region, and its Environment and Security Aspects”.

Attended by policy makers, scientists and experts from the Mediterranean region, the meeting assessed the links between water scarcity, land degradation and desertification while it also looked at related security aspects. It facilitated an exchange of views on which specific role the OSCE, NATO and other organizations could play in fostering environment and security in the Mediterranean region.

The meeting also happened within the right context: just a few weeks before this workshop in Valencia, the OSCE had approved a Ministerial Declaration on Environment and Security underlining that environmental cooperation is fundamental to diminish tensions and, eventually, to prevent conflicts.

The OSCE Mediterranean Partners repeatedly expressed their desire to provide a follow-up to the outcomes of the Valencia meeting. In 2009, under the Kazakh Chairmanship of the Mediterranean Contact Group, OSCE participating States and Mediterranean Partners agreed to enhance co-operation in the area of environmental challenges to security.

A process of participatory drafting of a project on environment and security issues followed, lead by two consecutive Chairs of the Mediterranean Contact Group, Lithuania in 2010 and Ireland in 2011. The views and requests by the Mediterranean Partners were given primary consideration to ensure full ownership and relevance of the project.

It has been a long learning process, through which Mediterranean Partners and participating States could discuss and work together in devising a joint activity aiming at achieving concrete results in addressing a shared challenges.

Ladies and gentlemen,

The aim of this expert workshop is two-fold.

- First, we would like to identify the environmental issues that may have an impact on security, as well as environmental implications of security policies.
- The second purpose of the workshop is to map, through working groups, potential areas of conflict as well as existing examples of co-operation.

Topics to be discussed are ranging from water management and land degradation to climate change and energy security. And even if the issues of water management and

land degradation have not lost their relevance we have to expand the list of environment and security linkages today and include the topics of climate change and energy security.

The link between climate change and security has been increasingly acknowledged. The special session of the Security Council last July on this topic is one of the most prominent examples of this development. Like climate change, energy security policies can be a factor for stability or a cause for conflict and mistrust. What the OSCE as the world's largest regional security organization can offer in this respect is a platform for dialogue and cooperation which is uncontested.

There is one last point I would like to focus on, and that is the role of civil society in shaping policies and in participating in decision making processes which has become more relevant than ever also in the environmental context. In recognition of this fact, the OSCE, for the past years, has been supporting the implementation of the provisions of the so-called Aarhus convention, the UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters. As a result of this engagement a network of 38 Aarhus centres in 11 countries in the OSCE region has been successfully set up.

Ladies and gentlemen,

Today's workshop aims at delivering concrete results. The maps and the recommendations that will be produced will hopefully turn out to be useful tools for sharing information and facilitating the understanding of the challenges and opportunities the region is facing in connection to environment and security.

During these next days we will share the OSCE experience on various environment-related issues with you, for instance on trans-boundary water management in Central Asia, Eastern Europe and the Southern Caucasus, on the promotion of renewable energy or on the support to the Aarhus Convention.

To sum it up, our objective for this expert workshop is to move from a checklist of theoretical links of environment and security to the identification of potential or existing challenges in this field and to identify possible solutions through enhanced cooperation.

Let me once again express my gratitude to our host, the government of Jordan, as well as to the governments of Spain and Belgium for their support to the project. With this I wish you fruitful discussions and a successful meeting.

I thank you for your attention and wish you interesting and fruitful discussions.

Session Reports

Session I Region in Focus. Main Environment and Security Challenges

Keynote Speaker:

Keynote Address of Munqeth Mehyar

President and Jordan Director, EcoPeace / Friends of the Earth Middle East Participatory Workshop on Environment and Security Issues in the Southern Mediterranean Region

Your Excellency's, dear guests thank you for this honor granted to me and my organization to address this distinguished audience bringing together professionals from academia, government, civil society and think tanks on this most important occasion.

The background paper prepared by the Institute for Environmental Security well sets the scene for the relationship between environmental issues and the broader issues of national security. In my presentation this afternoon I aim to touch on the concrete examples of environment degradation and security concerns that I have witnessed in my own life time and through the privileged perspective that I have come to gain through the regional organization FoEME, that I co-lead with my Palestinian and Israeli partners

As a kid growing up in Jordan, one of my great passions was the sea and hence I would regularly head down to Aqaba our only coast line, to snorkel and later scuba dive, thrilled by life forms and marine diversity of our unique coral reefs. After graduating from the US and coming back to Jordan in the early 1980s, I took my first vacation in Aqaba. I was devastated to see the amount of degradation that had happened to the coral reefs and the marine life in the short years that I was away. Aqaba had grown from a small fishing village to a major port for export and import of goods to Jordan. There were now four different large commercial ports in place. Of particular concern was a phosphate loading station that was leading to a thin cover of phosphate dust over the sea, increasing nutrient levels in the water and reducing water clarity, negatively impacting the coral reefs. The economic benefits to the country were clear – the need for jobs, new livelihoods but why at the expense of the environment. By the early 1990s the regional peace process was the topic of the day and Jordan was preparing itself to benefit. Tourism was on the top of the agenda and thousands of new hotel rooms were being proposed for Aqaba to welcome the tourist dollar. After the signing of the Peace Treaty with Israel, being one of the first Jordanians to visit Eilat and witnessing the poor state of the coral reefs on the Israeli side, I was fearful that the marine ecosystems in Aqaba were destined for the same fate of those of Eilat – almost completely destroyed.

Today almost twenty years later much due to scientific Aqaba – Eilat exchange, civil society cross border campaigning and brave political leadership of the Aqaba Environment Commissioner many good management practices were introduced to better handle the new environmental pressures facing Aqaba. The thousands of hotel

rooms were indeed built, but new technology to greatly reduce phosphate dust was installed and management practices such as requiring local instructors to lead all tourist dives to the reef have served to reduce the human impacts on the fragile reef, despite increased pressures. While far from perfect, Aqaba's reefs are still far healthier than those of Eilat – lessons were not only learnt – they were implemented.

From the security perspective Egyptian, Jordanian and Israeli training took place and investment in equipment made, to respond to potential oil spills and ship accidents that could even involve oil tankers. All sides came to understand that they shared a common interest in both seeking to prevent an oil spill and if it was to occur to respond professionally in a manner that would minimize impact. The economic benefit experienced from rapid rise in tourism also highlighted the vulnerability of all three sides to oil spills from any one side, that in turn led to meaningful cooperation.

So why couldn't the early success of environment and security cooperation experienced at the head of the Gulf of Aqaba be sustained and expanded to many other areas of shared environmental concern? The Water Authorities of Jordan and Israel might point to the Water Committee that continues to meet until today, implementing the water arrangements of the Jordan Israel Peace Treaty as another example of ongoing cooperation with an environmental and security angle. Israeli water authorities here present would further point to the Joint Water Committee Israeli Palestinian as another successful model.

I would argue these examples are very much the exception however. Trilateral cooperation with Egypt over the Red Sea fizzled out by 1998 as soon as the Peace Process started to sour. The Palestinian Water Authority publicly describes the Joint Water Committee as a vehicle of continued Israeli domination of their water. Apart from cooperation of water application between Israel and Jordan very little is left of the warm peace envisioned – with water allocation having little to do with environmental sustainability.

The lower Jordan River, turned in to a sewage canal under the mindset of conflict, has little improved since the peace process of the early 1990s. New dams and increased diversion of fresh water reduced flows to just 2% of historical levels. Only in these last few years have we seen investments made in removing sewage from the river, much due to NGO pressure, but commitment to return some fresh water flows to the river still meet the objection of water authorities. Palestinians continue to have no access to the river due to Israeli military control and could hardly benefit from the poor state of the river even if they did have access.

The Dead Sea is still rapidly shrinking – this year averaging a drop of close to one and a half meters in depth, up from an average of just over a meter in years past. New evaporation ponds were built with government approval on the Jordanian side of the Dead Sea and the Dead Sea Works on the Israeli side is seeking to similarly further increase pond size negatively impacting the Dead Sea. Very expensive and environmentally questionable technological solutions such as the proposed Red Dead Conduit have been studied but the public release of reports are constantly delayed, highlighting the vulnerability of big ticket item solutions.

While talk and plans for more sustainable use of scarce water resources abound, recent reports commissioned by FoEME and produced by local economists speak to Israel being better able to manage and conserve over 500 mcm annually, Jordan 300 mcm annually and even Palestine 90 mcm, all at prices less than the marginal cost of water, if more realistic water pricing was advanced, protectionist policies removed, leakage drastically reduced, grey water reuse encouraged, etc etc, etc. Imagine close to 900 mcm available in the region to alleviate water scarcity particularly in Palestine and Jordan and for the common needs of nature. Sadly, Middle East politics mixed with internal political interests prevent these policies moving forward.

On the more positive side improved membrane technology has considerably reduced the cost of seawater desalination allowing for the more wealthy countries like Israel or through donor support in Gaza, to invest in this new source of fresh water. While vulnerability to prolonged draught, due to climate change, is somewhat diminished, the environmental impacts of desalination, increased air pollution, CO2 emissions, coastal and marine impacts of the release of brine are largely ignored. For poor countries and in particular the most poor and vulnerable populations with in these countries the cost of desalinated water is still beyond reach and the further disparity created could just as likely lead to more animosity between the countries as it could to increased water supply.

The failure of the Israeli Palestinian peace process to move beyond the interim stage is certainly partly the cause for the failure of the government led environment / security cooperation witnessed at the head of the Gulf of Aqaba in the early years to be duplicated and even sustained; it is however not the whole story. The public on all sides have certainly lost faith in any goodwill of the other side and government leadership has not risen sufficiently to meet the challenge. In this context, at street level, cooperation has come to be seen as collaboration – benefiting only the 'other' side. On government level Arab – Israeli cooperation takes place in secret, away from public lime light, sadly only strengthening the leadership of the more vocal minority of the street who seek to end any cooperative efforts contrary to the broader interest of the public.

Unsustainable practices and policies, be they in water, land use or energy are widespread throughout the region and indeed all over the Mediterranean without reference or relevance to the Israeli occupation of Palestinian lands and the Golan Heights. While the continued occupation is a prime cause for Palestinian suffering and non-cooperation between Arab states and Israel, the issue has little relevance to the Arab Spring or to climate change induced drought perhaps contributing to civil unrest in regions of Syria, resulting in major security concerns for the region, including refugees and displaced persons pouring into Jordan and Turkey, leading to an even more acute water stress and land degradation in the case of Jordan.

It is the experience of FoEME that a deeper understanding of the common threats and lost opportunities of unsustainable practices both caused by conflict and occupation but also due to unsustainable management of natural resources across the board is at the heart of advancing both peace and the environment. These days here together in Jordan present a rare opportunity to debate, discuss and perhaps start identifying what steps must urgently be taken to reduce immanent environmental threats and how the

interdependent nature of our shared environmental resources and especially water could be the catalyst for peace building and not a vehicle of domination. Civil society and FoEME in particular has developed through programming for increased education and advocacy, both top down with political leadership and bottom up community action that we seek to share in later sessions of this conference. I am absolutely certain that it will take courage and leadership on all sides to meet the challenges we face – cooperation between government, NGOs, academia and others. After close to nearly two decades of work on this issue I remain more certain than ever that we have no other alternative but to do so.

Shukran - Thank you

Session II

Water Scarcity and Land Degradation– Identifying the Causes and Looking for Solutions

Workshop participants agreed that water is life, and the right to safe drinking water and sanitation, is increasingly being considered as a human right in the last few years, since the UN Human Rights Council with its resolution of 28 September 2011, takes the discussion a step further by calling on States to ensure enough financing for sustainable delivery of water and sanitation services. The World Health Organization (WHO) considers that a quantity of 50 to 100 liters per person per day is needed to ensure the most basic needs are met without health concerns.

With Jordan and Israel being classified amongst the ten most water stressed countries in the world and the general characteristic of the south-eastern Mediterranean region's geophysical and climatic setting of aridity and variable precipitation, it was no surprise that the issue of water dominated the discussions from day one and in all sessions. In the words of one participant, "today we can sleep at night without money or without oil, but we can lose our sleep with the thought of living without water". In this session, the three speakers addressed the water challenges in the region in general and from a national point of view, aiming at defining the nature of scarcity, water security and protection, while at the same time trying to demonstrate local/national efforts to deal with the problem and provide sustainable water supplies and usage for the population and the nature.

The relativity of water scarcity and the importance of viable sustainable cooperation agreements:

From the discussion it was clear that scarcity is relative, and it depends not only on the precipitation and the access to natural water sources but also on the usage of water in different areas. This kind of scarcity was classified natural while of equal importance is "politically created scarcity" in the case of trans-boundary sharing of water and through competition between states in accessing, managing and using the precious commodity. To this effect the importance and sought benefits of bilateral and regional agreements were addressed though the content of some existing agreements was criticized as being more politically driven and reflecting political power arrangements rather than providing a pragmatic approach and solutions for equitable and sustainable sharing mechanisms.

Examples of how politics can influence, create or accentuate scarcity were given from the area with references to Art.40 of the Israeli –Palestinian Oslo II agreement, the Nile Basin Initiative, and the case of Euphrates where the lack of any dialogue between the riparian countries is one source of political strife and could lead to problems in the future. Although views diverged as to the willingness or even the feasibility of dependence on neighbors for water supply, with some participants claiming that sustainable supply of water cannot be an issue left to the discretion and goodwill of neighbors, others stressed the necessity of cooperation and the reinforcement of such agreements in the interest of an overall regional sustainable water management system.

During the discussion a recent anecdote of Palestinian President Abas was quoted whereby reportedly he suggested that the PA could propose to rent a coastal plot from Israel for the purposes of building a desalination plant that would serve West Bank water needs. Apparently already since 2009, some of the water of the desalination plant near Hedera allocates some

percentage of its production to the PA. The discussion over trans-boundary management agreements showed that the idea that water cooperation could build peace bridges and sustainable water management can act as a catalyst for peace is one that still needs to evolve in the region. The OSCE lessons learned on promoting models of trans-boundary cooperation could be set as an example and put into perspective for the region as a case study in eventual future meetings.

The importance of local management of water resources and the need for increased levels of awareness on the importance of saving water:

Looking at the root causes of the problem of water scarcity would be the only way to find solutions while accepting and learning to live with the climatic and geophysical conditions of the area and adapting to them is a key factor in the process. Precipitation levels cannot be manipulated, but environmentally sustainable use of water can provide better water management and living conditions for everyone in the region.

The need to reinforce actions for sustainable use of water resources was stressed repeatedly during the discussion and participants provided information on current national and regional projects. The controversial issue of desalination occupied a large part of the discussion, focusing on one hand at the important benefits this technology can provide and on the other, the cost and unsustainable environmental practices that it entails, with its fossil fuel hungry energy needs and CO2 emissions as well as the strain it poses to the environment. Suggestions were made that it is crucial that desalination plants should be used on last resort basis, in years of drought for example. Suggestions were made in order to counter act the negative effects of fossil fuel use for the running of such plants which is today's practice, to look for solutions in the solar energy sector, since the area is so rich in sunshine. To this effect the importance of careful and comprehensive analysis of desalination projects was put forward as an imperative for environmentally sustainable practices.

Experts mentioned that the capture, treatment and re-use of waste water for agriculture is one of the ways participant countries actively use as a method of water saving. Three world leaders on capture, treatment and re-use of waste water around the table, Tunisia, Israel and Jordan exchanged views and lessons learned from their national policies and experiences such as the approaches followed for overcoming the reluctance and skepticism of their farmers to use such water believing it unsuitable for agriculture. Examples of information and awareness campaigns from the governments and cooperation with donors for the choice of the right crops were cited.

The role of Agriculture as an economic driver and the counter argument as to its role in the efforts of saving and sustainably managing water was a subject of exchange of ideas that proved that there is a lot of ground for discussion on the issue that could be of benefit to the whole of the Mediterranean region and the relations between the countries of the basin. As an example, in Jordan, 70% of water resources go for agriculture while agriculture only represents 3% of GDP. This fact indicates the need to rethink the role and practices of agriculture.

Slovenia, submitted a Statement entitled "Water Security and Sustainability", which is part of the workshop background material and can be found on the IES website.

Session III

Environmental Implications of Climate Change

The expert from the Ministry of Water and Irrigation in Jordan presented an overview of the environmental implications of climate change in the Middle East and North Africa highlighting that the temperature has increased in the region in the last 30 years between 0.5 and 1.5 degrees Celsius and is expected to increase by 6 degrees by the end of this century. This would be accompanied by an increase in the frequency and intensity of heat waves, change in the pattern volumes and precipitation intensity and expected increase in floods and draughts. Such scenario would bring enormous pressures on an already resource scarce region. In particular, climate change is expected to primarily affect precipitation, temperature and potential evapotranspiration, and, thus, is likely to effect the occurrence and severity of droughts and flash floods resulting in severe economic and environmental conditions. Highlighting the Jordan action towards climate change, Ms. Abdel-Khaleq explained the adaptation activities that Jordan is engaged in including those related to water resource management.

The expert from the American University of Beirut highlighted in his presentation the implications of climate change on the MENA/Arab region. He showed that based on studies undertaken in Lebanon, there has been a reduction of about 20% of precipitation with an observed increase in the severity and frequency of the storms, increase in evapotranspiration and an increase in the occurrence and frequency of droughts. Such severe changes have led to increase in forest fires and to reduction in surface and ground water quantity and quality. He argued that if no action is taken especially in regard to adaptation policies, there could be a swell in public health risks, conflict over diminishing resources and potential migration. The pressure from climate change will indeed exacerbate the existing environmental and livelihood vulnerabilities.

Following the presentations, discussions focused on the potential impact of climate change on countries in the region. In particular, the pressure of climate change, it was argued, could be felt by an increased flow of environmental refugees, the effect on quality and quantity of water resources and soil degradation and its impact on agriculture and consequently on food security.

The flow of **environmental and climate refugees**, some participants argued, will increase leading to a number of negative social, political and economic consequences at both sending and receiving ends. In Israel, for example, 60,000 refugees have settled in the last six years coming from Sudan and Ethiopia. This is exerting a lot of pressure and inducing conflict between refugees and host communities. Conflict is on competition over resources but also on cultural acceptance of those refugees. Within the countries, environmental pressures are forcing people to displace into urban areas. In Syria, it was highlighted that around 500,000 have moved from North-eastern parts of the country into cities in the last 5 to 10 years because of drought.

The impact of climate change on **the quality and quantity of water** was highlighted by participants (This has built on the discussion in session II). Climate change, it was emphasized, would lead to considerable reduction in water resources and in river flows affecting countries such as Jordan, Israel and Palestinian Territories. The impact of climate change on **soil and agriculture** was another dimension that was brought up in this session. Soil degradation and water salinity would be felt very much in many countries in the region

challenging their food security. As a consequence, food security may emerge as a serious issue.

The subject of **collaboration and co-operation** was raised in the session. North-South but also South-South co-operation was argued to be essential especially in enhancing climate change adaptation policies and programs. The transfer of technology and latest know-how was seen as one way for collaboration where more developed nations can help their Southern neighbors. It was also stressed that it is essential to share experience in the areas of institutional set-up and establishing legal mechanisms. Countries in the region can collaborate to establish common understandings on adaptation to climate change even if higher-level political cooperation is not yet fulfilled. Co-operation needs to include collaborative research between institutes and universities within the region and with Northern institutes and research centers.

Session IV Environmental Implications of Energy and Security Policies

The session was introduced by the moderator who underlined that while energy security represents a cornerstone of world governance and is on top of the international political agenda, it is also of particular importance for the South Mediterranean region. It underpins not only economic growth, but also the ability of states to alleviate poverty, improve social welfare and secure their political independence. Access to energy is essential to the functioning of modern societies and countries rely on vast energy supplies to fuel everything from transport to communication, from security to health delivery systems. At the same time, competition for energy resources, the politicization of energy delivery and threats to energy infrastructure can create instability.

Evolving risks and challenges to energy will strongly influence relations between Southern Mediterranean States in the decades to come. Governments will be facing new challenges and they can no longer be certain that existing national energy policies will provide secure access to energy resources, will cope with the increasing energy demand while limiting energy dependence, and will protect them against energy depletion. Countries will need to incorporate the issue of energy security into their national security concepts.

The Mediterranean region is expected to face several energy and climate challenges which will prove essential for the development, economic welfare and stability of the region in the long-term. The challenges that lie ahead are multiple: securing energy supply, meeting growing energy needs in most efficient ways, fostering rational use of resources, optimizing synergies between producers, consumers and transit countries, and ensuring a sustainable future.

Energy security is thus a key concern and challenge for the Mediterranean countries, as well as for the EU. Many of the EU's existing and new energy partners in the Mediterranean are endowed with important energy resources, including solar and wind, and offer a big potential for the improvement of energy security. These partners' exploitation and massive deployment of renewable energy resources will depend on implementing and effectively pursuing policy support. It will also require considerable investments, the establishment of a harmonized legislative and regulatory framework, strengthened institutional capacity, improvement in knowledge transfer and capacity building in energy technologies, and an improved business climate.

Interdependency is at the heart of energy security. It was stressed that in order to address common future challenges and improve their energy security the EU and its neighbors in the Mediterranean must intensify their efforts. The EU can help its partners develop their potential so that they can significantly contribute to the EU energy security. Implementation of investments, especially in energy infrastructure, of common interests in the Euro-Mediterranean region is vital.

Several initiatives are already under way to foster co-operation. Healthy and stable relations between the EU and its neighbors in the Mediterranean, as well as the quality of the dialog between all stakeholders involved in energy must remain a priority. A secure energy future can only be achieved if relations between stakeholders are based on the principles of transparency, common responsibility, mutual benefit, confidence, respect, fair competition and non-discrimination with commitments and actions. A clear recommendation was that Mediterranean Governments need assistance with regard to lobbying with the EU and other donors in order to be able to build renewable energy projects in the region.

Mr. Haitham Aladaieleh, technical adviser to the Secretary General of the Ministry of Environment of Jordan, outlined the challenges, achievements and trends his country is facing. His Ministry seeks to maintain and improve the quality of Jordan's environment, conserve natural resources and contribute to sustainable development through effective policies, strategies, legislation, monitoring and enforcement and by mainstreaming environmental concepts into all national development plans.

Jordan is facing the challenges of scarcity of natural resources, increasing natural population growth and increased migration flows, with consequences for water and energy and degradation of agricultural land, in addition to the impact of global climate change. The exploitation of nature to provide the elements of growth and development has already led to severe environmental degradation. The gradual decrease of the level of the surface of the Dead Sea is an environmental as well as an economic challenge which needs to be addressed. Projects such as the Red-Dead Sea project and desalinization projects need in-depth assessment studies before being implemented.

Jordan has a keen interest to develop renewable energy, underpinned by a new energy law passed in 2007 and which comprises incentives for investment in renewables. One participant considered that water and energy in the South Mediterranean region should play the same role as coal and steel did in the 1950's and which led to the European integration process and become the cornerstone for cooperation, peace and economic prosperity.

Key in promoting renewable energy in the region is the DESERTEC Concept for Energy, Water and Climate Security of the Trans-Mediterranean Renewable Energy Cooperation (TREC). TREC was founded in September 2003 at the initiative of The Club of Rome, the Jordanian National Energy Research Center NERC and the Hamburg Climate Protection Foundation (HKF), with the aim of achieving fast climate, energy and water security by a joint effort of the EU-MENA regions. The core of TREC is an international network of scientists, politicians and other experts in the development and implementation of renewable forms of energy. The members of TREC, approximately 60 in number (including His Royal Highness Prince Hassan bin Talal of Jordan), are in regular contact with national governments and private investors, with the aim of communicating the benefits that may be

obtained from the cooperative use of solar and wind energy and promoting specific projects in this field. Regional DESERTEC networks disseminate the ideas in their home countries.

Another recommendation suggested the promotion of a mechanism to improve the use of gas resources in the region. While there are large amounts of natural gas to be exploited, there is a lack of legal frameworks which would allow a coordinated exploitation. The recent discovery of substantial natural gas fields in the eastern Mediterranean might however prompt countries to look at the region in a new light. Joint exploitation of resources may change the political situation for the benefit of the whole region. However, disputes over maritime borders and sovereignty remain on the agenda and could probably only be solved through international arbitration.

Session V

The Role of the Civil Society

The moderator introduced the session which focused on the relationships between civil society and governments, both within and between countries. The role of civil society in shaping policies and in participating in decision making processes has become more relevant than ever also in the environmental context. It is important to recognize and support civil society involvement at the earliest stages of projects involving the sustainable management of natural resources and in the formulation and implementation on policies affecting environment and security at all levels – local, national and regional.

The IUCN representative elaborated on how local communities can help in solving environmental problems by using their local and regional knowledge. As an example, she cited IUCN's regional water and dry land program (REWARD), which aims at developing a regional planning and management program for watershed ecosystems and river basins, including practical participation methods for local communities.

Environmental governance is crucial for the interaction between the State and citizens: it needs rules and laws, institutions, processes and principles. The interaction is necessary during the decision making as well as the implementation process. Such processes need to be built on sustainable resource management, without forgetting economic and social aspects. IUCN conducted an in depth analysis of local communities' land and natural resources use, in order to identify how they act and interact with these resources, including gender specific use and access. Based on this information, IUCN's interventions aim at enabling local governments to understand the needs of local communities, while, at the same time, enabling local communities to participate in decision making processes. Building ownership of civil society and local communities towards natural resources is an important element, so that they feel accountable towards natural resources and help to protect them through sustainable use for the next generation. Stakeholder dialogue and concerted action leads to a shared vision between local communities and governments, so they both understand their roles and responsibilities concerning the management of natural resources.

In Jordan and Sudan IUCN promotes projects for restoring land for increased livelihood through the concept of **hema**. Through the hema system, local communities protect the surrounding land, rehabilitate and revive the use of indigenous plants, manage grazing and thus have a long term benefit from the local natural resources. The concept is also used to prevent conflicts of interest around environmental hotspots and involves local communities in decision making.

The representative of Friends of the Earth Middle East (FoEME) pointed out that civil society has the power to change situations and can have real influence in decision making processes. FoEME concentrate very much on the issue of shared water resources. According to him, the region (Jordan, Israel, West Bank and Syria) is very much integrated as far as water resources and aquifers are concerned. It is such a small region that people must share resources. Unfortunately the region has often witnessed a mentality of "grab it before your neighbor does." The water flow of the Jordan River stops just before it reaches the Jordanian border since 98 per cent of its water is diverted for agricultural and/or industrial use before reaching Jordan. This has dramatic consequences for the Dead Sea which has shrunk enormously in the last few years. FoEME understands the need for economic activity but does believe that a balance needs to be found in order to achieve sustainable development around the Dead Sea.

In Jordan, potash is the second largest industry, employing 5,000 people. The same is true in Israel. But this exploitation needs to be done in a sustainable way. Furthermore, every year the Dead Sea loses one meter of water and in 2011 there was a record loss of 1.5 meters.

The Oslo Accords have foreseen a distribution of water on an 80/20 ratio. As a result, the Palestinian population does not have enough water to sustain itself and tries to compensate the shortage by placing water tanks on rooftops to catch rain water, which in many cases is structurally dangerous. Jordan tries to compensate by recycling sewage and waste water for agricultural purposes.

FoEME started to work on a water accord that would allow a better deal for water distribution. FoEME will lobby governments to ameliorate the situation for the Palestinians. An Israeli – Palestinian bi-lateral Commission and a Water Mediation Board has been formed to come up with an agreement that will satisfy both parties and that will be perceived fair by all. FoEME started a project called “Good Water Neighbor”, dealing with local communities in border regions. FoEME works with Israeli, Palestinian and Jordanian local communities. Each two-pair communities continually exchange information and try to help each other and address their environmental and water problems. These projects have turned out to be extremely successful. In order to empower these local communities FoEME has started a project to bring parliamentarians into contact with some of these local communities, to see what is being done and to train the local communities in how to address the local and central governments. FoEME also started to highlight the specific strength of the local community in order to empower them. FoEME has also started Green Parks. The Good Water Neighbor schemes work with municipalities and schools. This scheme increases trust and confidence between Israeli, Palestinian and Jordanian communities, is thus of great international interest and could eventually lead to a Peace Treaty supported both at governmental and local level.

During the discussion one participant pointed out that in Lebanon there is a strong civil society. This is connected to the Lebanese political system, which does not engage in many aspects of society. During war, civil society has also taken up an important role in humanitarian activities. Now civil society has developed further, but not yet to the level of influencing policy making processes. Civil society is quite active on environmental issues such as conserving ecosystems, ecotourism and sustainable development projects at the local level.

It would therefore be important to establish national platforms between civil society, local communities and the government in order to discuss and share information and opinions. They can also be used for capacity building for all participating parties, including government officials. The platforms can help to influence policy at national level in the form of steering committees from different ministries.

It was highlighted that in Tunisia, civil society plays a very important role, especially after the revolution. There are more than 400 NGOs dealing with environmental issues and they play an important role: first, they work on awareness-raising and they develop programs for schools. Second, they help to solve certain conflicts between the government and local communities, especially concerning issues that have led to environmental degradation, often related to older projects that have been conducted without consulting local communities. Some companies, especially industries, have problems continuing after the revolution because they are constantly depleting the environment and the role of civil society in those cases is to

play an intermediary role between the local communities and these industries. But NGOs often lack appropriate funds to play this important role. It would therefore be useful if NGOs could be trained on fund raising and management.

As workshop participants mentioned, Egypt faces similar problems with regard to secure funding and appropriate training of NGOs. Another problem is governance in NGO projects. Local public participation expresses very well a democratic spirit that can be implemented at the local level. Decisions should not be taken by government alone but must also involve the local population. The spirit of the Arab Spring can be used to solve climate change problems and transboundary pollution.

As far as Jordan is concerned, different Ministries have recently engaged into close co-operation with NGOs, channeling small grants they received from donors towards these NGOs. Since 2003 the Jordanian Ministry of Environment created by law an Environment Impact Assessment Committee, to conduct EIAs on all projects, whether they be government or private projects, in order to reduce the impact of these projects on the environment, such as land degradation and to protect natural resources around the project. The Ministry of Environment also created an environmental protection fund in 2008 for all small scale projects related to the environment.

It was pointed out that it is important to mention the role of the Arab League when dealing with environmental issues and sustainable development. The Ministers of Environment meet under the Economic Council of the Arab League, and decisions will be translated to the environmental sector. These issues will be discussed at Summits of the Arab League.

Recent negotiations in the Arab League have also led to an agreement to give civil society a stronger role. Arab countries have agreed to set up a framework for co-operation among civil societies in different Arab countries. It is hoped that a text supporting the work of civil society will be approved by the Ministers of Environment of the Arab League in 2013.

With regard to water distribution between Israel and the Palestinians, one participant pointed out that 80 per cent of the mountain aquifer is in Israel. In his opinion Palestinians extract a lot of water by illegal wells and take water from pipelines. Also, there are no flow meters on Palestinian wells, so it is not clear how much water is really pumped. Therefore it is also not certain how much of the water used has been paid for. Furthermore there is no incentive to save water and to use treated waste water. The speaker responded that given that the West Bank and Palestine are occupied, it is the responsibility of the occupier to keep things in perspective and in accordance with international laws. If there is sewage flowing from the occupied zone it is Israel's responsibility and if there is a shortage of water for the Palestinians, it is also Israel's responsibility. In his opinion, the Palestinians get less than their humanitarian share of water.

FoEME gave a proposal on shared water to the governments of Israel and Jordan to be discussed in the Shared Water Committee; however the shared water mentioned by the Shared Water Committee only talks about water on the Palestinian side and does not include water on the Israeli side. That means that Israel can pump, put in new wells and does not require the permission of the Palestinian side, while any project on the West Bank requires the permission of both. The FoEME proposal stipulates that all shared water must be managed by

both parties. The fact that all projects on the West Bank also need Israeli military approval further slows all projects on the West Bank seriously down.

It was pointed out that Israel has published a report with all water points between the Mediterranean and the Jordan River, which is available on request.

The Aarhus Convention

The moderator introduced the Aarhus Convention (Convention on Access to Information, Participation in Decision Making and Access to Justice in Environmental Matters), which is a very key international instrument concerning the participation of civil society. It deals with access to information, public participation in decision making, and access to justice in environmental matters and asked one of the experts to briefly highlight the main aspects of the convention.

While the Convention applies to countries under the United Nations Economic Commission for Europe (UNECE) it is also open to other interested UN members, and could therefore also be of particular interest for Southern Mediterranean countries. The OSCE is very strong at promoting the convention and has opened in several OSCE states so-called Aarhus Centers. There people can get all the legal and other necessary information needed in case there is a political decision which they think is against international accepted standards. Aarhus Centers offer the possibility to organize public hearings on different issues. This is one of the offers the OSCE can bring to the table, the expertise in setting up these centers, in case one of the partners needs assistance in that direction.

The Cartographic Exercise within an Environment and Security Perspective

Cartographic images help us to identify more clearly the linkages between environment and security, and also help to highlight the regions where the combination of these two issues (i.e. in terms of pollution and potential conflict) shows a potentially worrying situation, needing attention and action. We are particularly interested in detecting geographical concentration of situations potentially hazardous both for human health and environment.

But to produce a map that “speaks” - showing priority problems of a region in a simple manner - requires a logical cartographic methodology. The ‘mapping exercise’ can therefore be described as a two phase process:

Phase 1 involves a consultation process with experts from national governments (ideally a combination of representatives from sectors such as the environment, natural resources, agriculture, foreign and internal affairs, health, defense and national security) plus experts from academia and civil society. Together they should try to agree on assessment results which will include national and regional priorities and ‘hot-spots’ where i) action is needed to reduce/ eliminate security risks which concern environment-related problems, or where ii) environmental co-operation can strengthen overall co-operation and dialogue between countries and communities.

More specifically, the objective is to identify on maps, within a region, the geographical location of all areas of concern, where the people and the environment are severely endangered and where a potential environment and security risk exists. This phase requires the mapping exercises to be quite generalized (using radically simplified maps) and also interactive (applying overnight changes). The drafted maps have to reflect as much as possible all the inputs of the participants.

What do we map? Participants are asked to identify security issues (such as internal tensions between ethnic groups or disputes over land managements, natural resources, etc. or external tensions between neighboring countries) which have a direct impact on the environment and environmental issues which have direct consequences for security whether international security, economic security, human health or other aspects of human security.

Phase 2 involves a more in-depth assessment (research) of selected ‘areas of concern’, identified during Phase 1 of the process. It involves work at a larger scale and investigations ‘in the field’ with a strong involvement of both governmental and non-governmental local partners. Phase 2 focuses in particular on transboundary areas identified as areas of concern.

For this workshop only phase 1 techniques were involved and in a two-step process.

The facilitators asked the participants to each draw by hand on simple maps where only basic features are represented such as coastlines, borders, main rivers, cities, etc. Then they were to represent their perception of important environmental and security issues at various scales (of their own choice). They could use any means for drawing the maps, as long as they provided a clear key (or legend) explaining the corresponding symbols. A synthesis map is done by the facilitator on a whiteboard prepared with large maps. Progressively, an image emerges

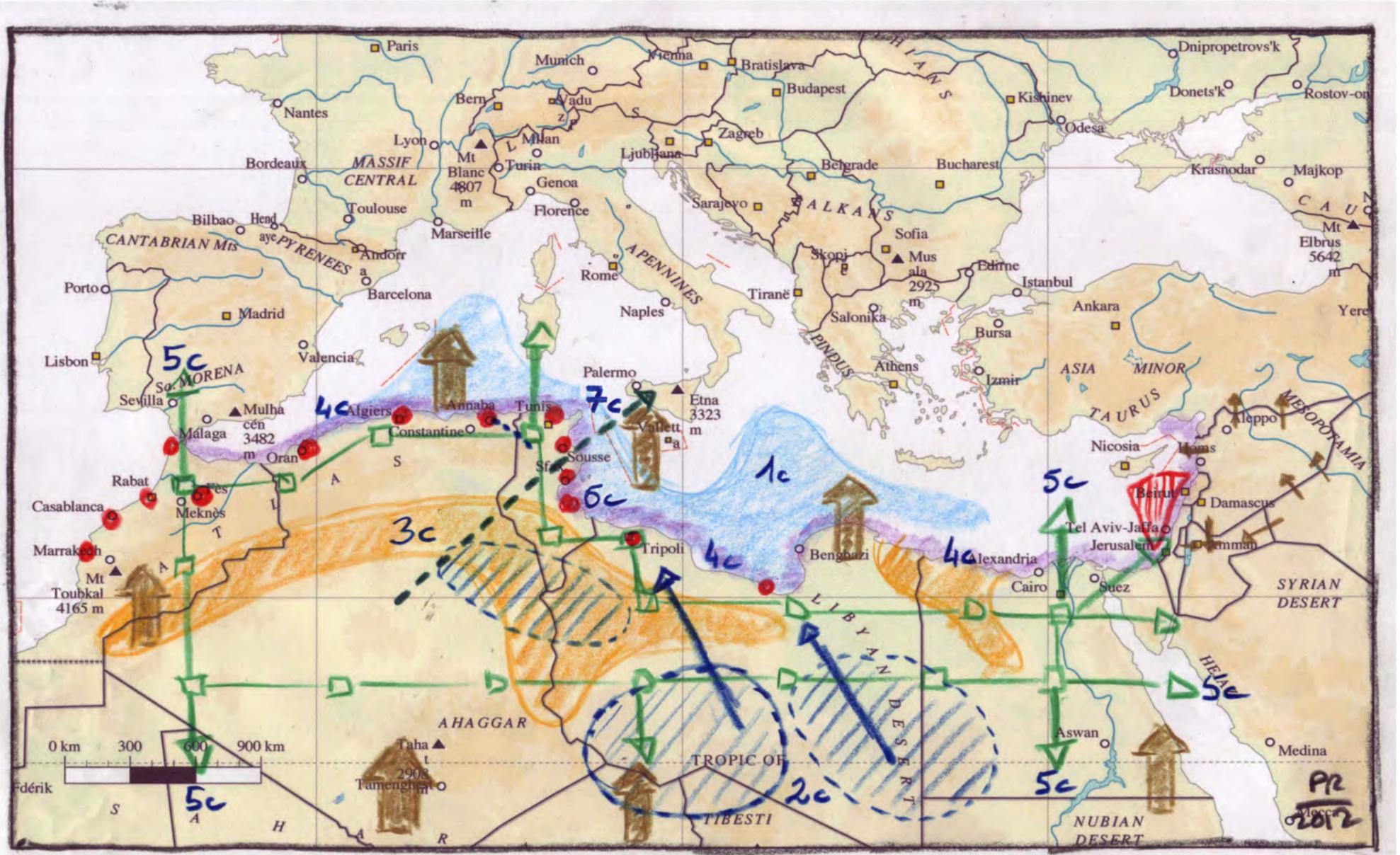
showing a concentration of various concerns in one specific area of the region, or one specific concern in a large part of the region.

Secondly, the session concludes with the elaboration of a final regional map where the participants help the facilitators, in an interactive manner, to aggregate, order, sort, and find a typology between all the issues put on the whiteboard during the ‘national’ approach. The main idea is to pinpoint major transboundary problems deserving immediate attention, and which could become a case for bilateral or multilateral co-operation. Ideally, such maps should also highlight issues related to the enforcement of existing bilateral and multilateral agreements and issues related to planned agreements.

Needless to say, of course, this exercise is strictly speaking not scientific. It is considered more as a “cartographic brain storm” than a precise assessment of the environmental and security situation in a country or a region.

The maps produced as a result of this exercise depict the perception that participants have about the location of the ‘hot issues’ in their geographical environment. In this respect, this category of maps can be considered to be somewhere between “mental maps” and “communication maps”, simplified to make problems better understood by an audience of non-specialists – they are, in fact, often called **perception maps**. As such, the elements appearing on the maps relate to empirical knowledge not necessarily backed-up with hard facts. Participants may exaggerate the importance of certain phenomena, underestimate the importance of others, misplace elements, lack knowledge of specific issues or even opportunely “forget” to represent some sensitive issues.

But, most importantly each participant should feel a sense of “ownership” of the maps so that they can be used in the future as a basis for further discussion and debate. Ideally, the maps are documents which can help stimulate some form of cooperation process. In fact, participating in the exercise is in itself a way for people coming from different starting points to listen to and understand different perspectives and to build mutual confidence contributing to increased cooperation in the future.



- Overfishing
- Coastal pollution
- Desertification and soil degradation (intense)
- Transboundary aquifer overexploited
- Surface water problems: Medjerda River
- Desertec project (renewable energy production)
- Algerian gas pipeline toward Europe
- Extraction of water in fossil aquifers
- Industrial pollution
- Energy related conflict (extraction of gas)
- Main migration flows
- Main refugees flows (linked to conflicts)

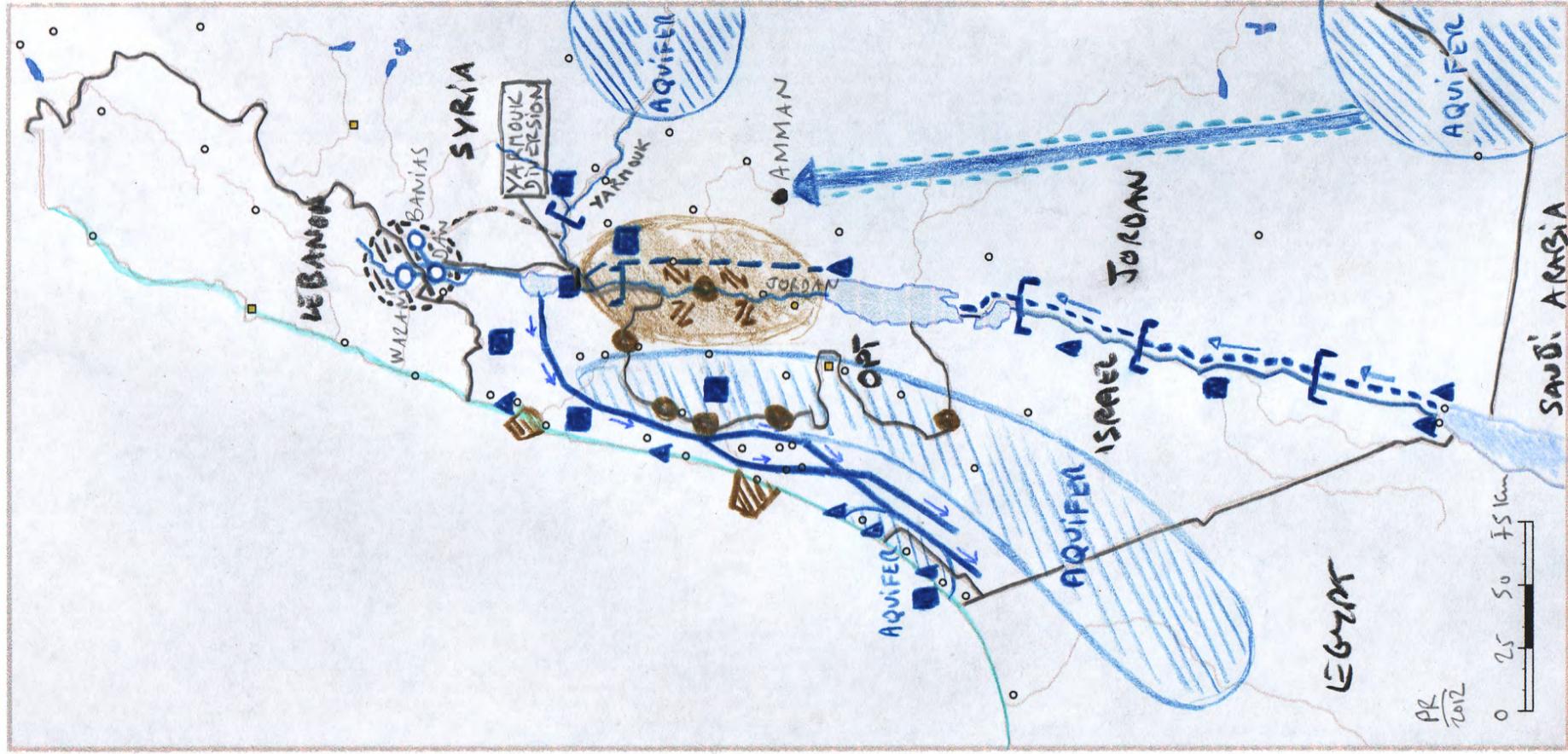
South Mediterranean: Water Issues, Energy and Land Degradation

- 1c. Overfishing in Southern Mediterranean waters
- 2c. Water extraction from fossil aquifer in Libya
- 3c. Large area severely damaged with desertification and land degradation (link with climate change)
- 4c. Coastal pollution (chemical, biologic, eutrophication)
- 5c. Desertec project integration in North Africa with links to Middle East, Gulf countries and Europe
- 6c. Pollution due to mining or industrial activities (red dots on the map)
- 7c. Potential hazards due to transport of oil and gas in extremely vulnerable environment

Human Migrations

- Middle-East: important flow of refugees due to conflicts (from Iraq to Syria, Jordan and Turkey, From Syria to Jordan, Turkey and Lebanon, from West-Bank/Palestinian territories to Jordan, Europe and America)
- Middle-East: refugee camps management in Jordan, Syria, Lebanon, OPT and Gaza. South Mediterranean area: important migration pressure on North Africa from Sub-Saharan countries as well as Eastern African countries
- Rural exodus (from countryside to urban areas) due to land degradation

1. WATER ISSUES



Shared aquifer

Over-extraction

Fragmentation, main dams

Israeli National water carrier

Planned Jordanian water pipeline

Existing or planned desalination plants

Water pollution

Supply with polluted water and extraction of water

Transboundary sewage problem

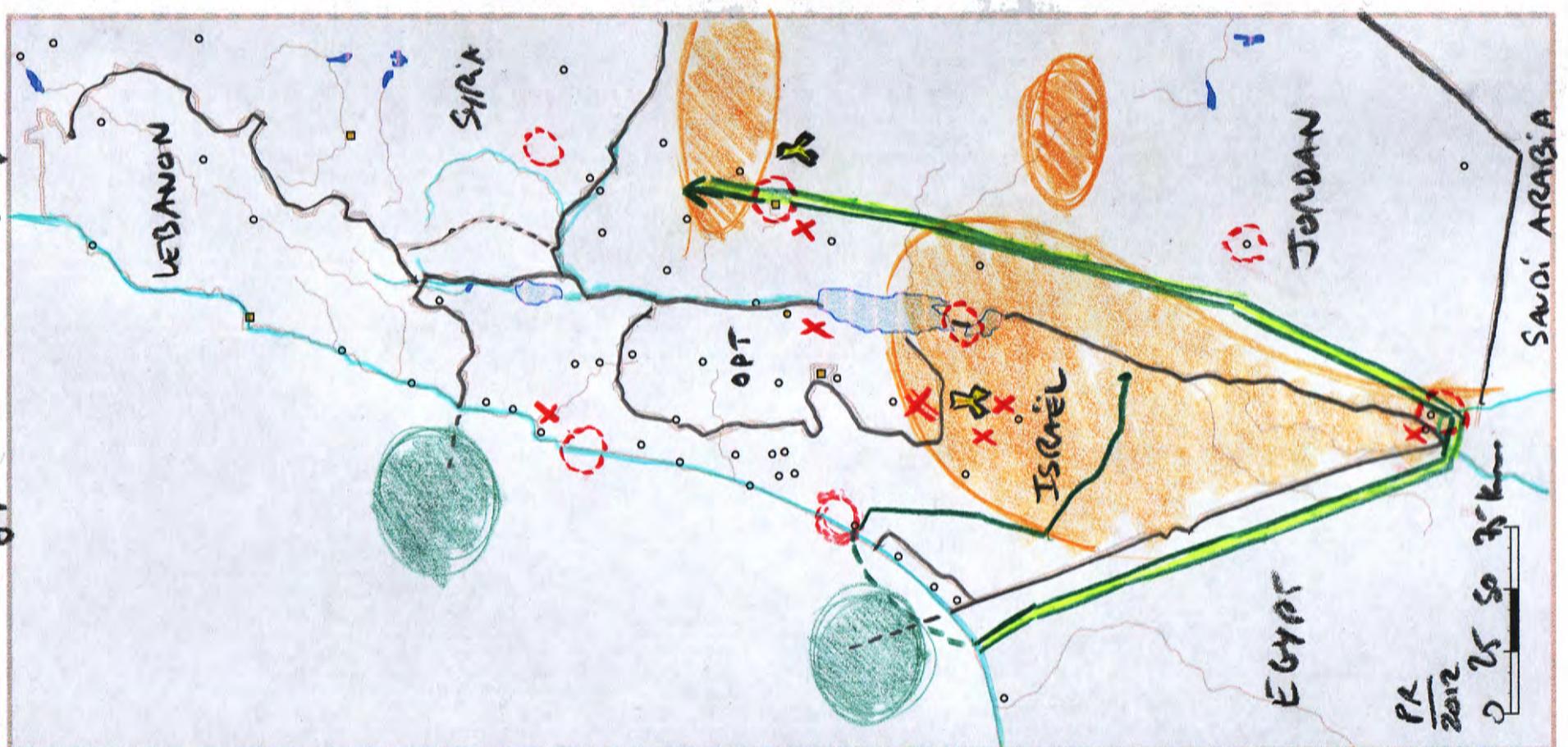
Pollution by untreated sludge

Dispute over water sources

Red Sea - Dead Sea Canal

King Abdullah Canal

2. Energy and Industry



== Arab gas pipeline

--- Connection

— Israeli gas pipeline

Disputed gas field

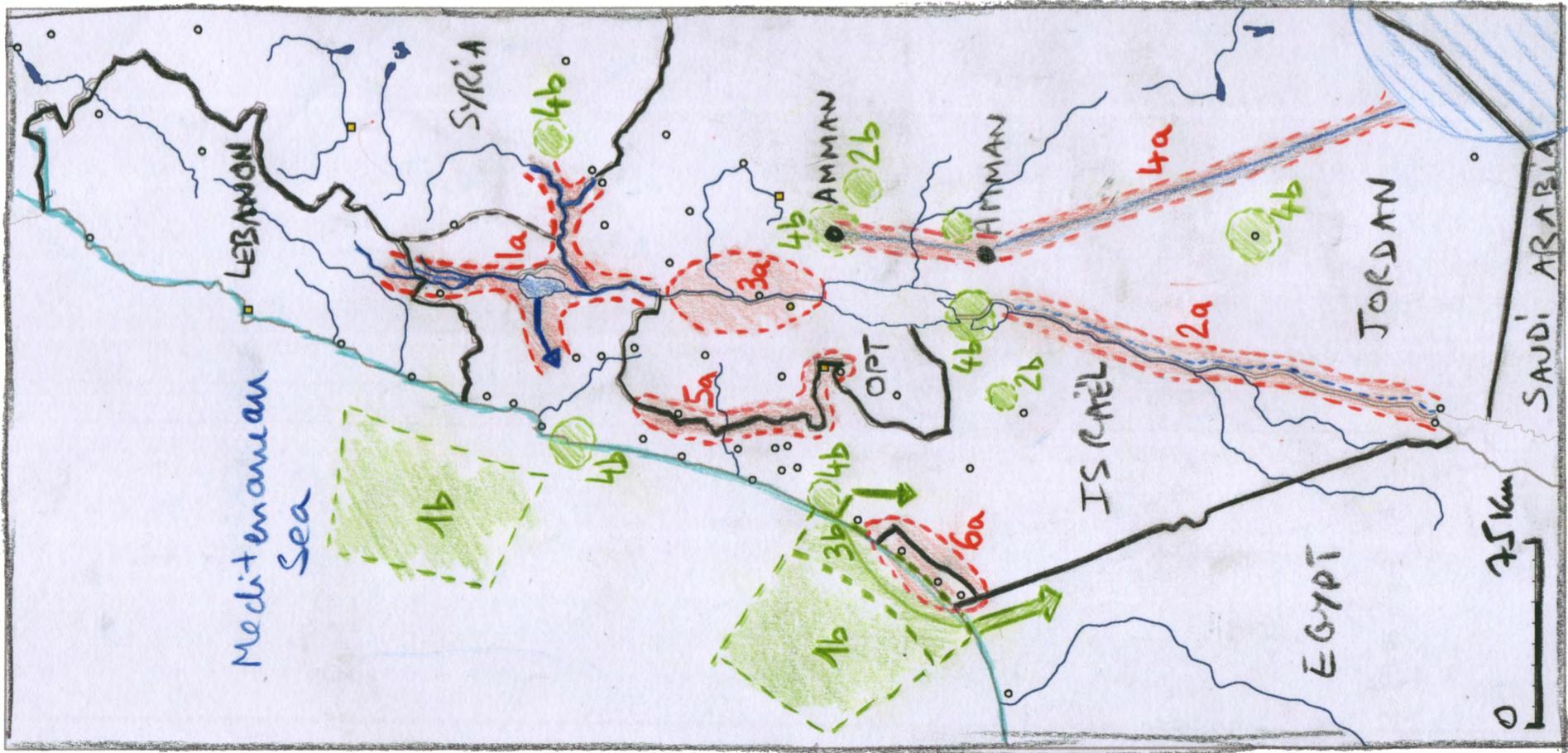
High potential for solar energy

Proposed location for nuclear power plant

Existing or projected industrial area potentially hazardous for the environment

Hazardous waste

3 - Synthesis



Middle-East Water Issues

- 1a. Dispute around fragmentation or control of rivers which are direct tributaries of the Jordan river (control of Dan, Wazani and Baniyas sources, dams over Yarmouk River and diversion of Yarmouk waters) and over-withdrawal of water from Lake Tiberias to supply the National Water Carrier of Israel
- 2a. Large water transfer from Red Sea to Dead Sea
- 3a. High level of pollution – soil and water – on each side of the Jordan River between Lake Tiberias and Dead Sea
- 4a. Water extraction and transport from the Disi fossil aquifer to Amman
- 5a. Pollution on each other side of the Israeli / Palestinian territories due to lack of waste water treatment plants
- 6a. Highly polluted aquifer in Gaza

Middle East Energy and Industry Issues

- 1b. Potential dispute over share and extraction of gas in eastern Mediterranean (Egypt / Israel / Gaza and Israel / Lebanon / Cyprus).
- 2b. Projects to develop nuclear power plants (Israel and Jordan).
- 3b. Possibility to (re)connect the gas pipeline Israel / Jordan and/or connect it to the Arab Gas Pipeline
- 4b. Existing or projected industrial area potentially hazardous for the environment

The above maps were produced as reference aids only. The boundaries and names shown and the designations used on the maps do not imply official endorsement or acceptance by the OSCE.

Session VIII

Closing Session: Recommendations and the Role of the OSCE

The moderator explained that the recommendations from the workshop will be taken up in the OSCE in two concrete ways: on the one hand at the political level through intergovernmental discussions among delegations and, on the other hand through the OSCE secretariat and in particular the OCEEA which can transform some of the recommendations into concrete projects for beneficiary countries. The CoEEA will present the report of the workshop to the OSCE participating States and Mediterranean partners for co-operation and the results could possibly flow into future OSCE documents, thus ensuring that these important issues will be further considered at the political level and will hopefully influence future policy making, both at the intergovernmental and at the national level.

As to specific recommendations regarding **the role of the OSCE**, a number of concrete proposals for future involvement of Mediterranean partners in OSCE activities were made:

On **water**, the OSCE transboundary experience could be shared by giving support for legislative development, in particular on the creation of bilateral water commissions as well as with regard to technical support for monitoring water quality. Participants welcomed the OSCE lessons learned on promoting models of trans-boundary co-operation, which could serve as an example for the region and be used as a case study in eventual future meetings.

On **climate change**: one could consider expanding the ENVSEC project on climate change and security to the Mediterranean region. Efforts should be made to ensure funding in order to complete the project on climate change scenarios in the Mediterranean region.

On **energy**: it was proposed that if future OSCE meetings, such as the Economic and Environmental Forum, will address topics such as environmental footprint of energy production, transportation and consumption, the **Mediterranean partners for co-operation should play an active role** in the Forum process through concrete involvement. Participants welcomed the OSCE proposal for organizing **round tables on sustainable energy**. They also encouraged the organization of **study visits** on renewable energy covering legislative issues, operation and technology.

On **civil society**: Mediterranean partners could be invited as observers to OSCE events related to the Aarhus convention and in particular with regard to Aarhus centers, in order to learn about the Convention and to consider its relevance for countries of the South Mediterranean region.

The Deputy Co-ordinator of OSCE Economic and Environmental Activities closed the meeting by thanking the Hashemite Kingdom of Jordan for hosting the event, as well as all participants and experts for their active contribution towards a fruitful workshop.