
Effectiveness of current policy frameworks in mitigating climate-induced risks relating to human security and conflict - case study on Israel and the occupied Palestinian Territories

Contract number:	SSH-CT-2010-244443
Work Package:	WP4
Partner responsible:	Ecologic Institute
Deliverable author(s):	Haran Bar-On and Christiane Gerstetter
Planned delivery date:	
Actual delivery date:	3 September 2012
Dissemination level:	Public

Abstract

The following text is a case study on policy-frameworks in Israel and the occupied Palestinian Territory (oPT) which are relevant for addressing water-related impacts of climate change that could have negative impact on human security and conflict. The effectiveness of these policy frameworks is analysed, based mainly on interviews with Israeli and Palestinian experts.



Acknowledgement

The authors would like to thank the interviewees who participated in this study - their contributions have been invaluable. Interviewees' contributions were in a personal capacity and not on behalf of the institutions to which they are affiliated. Furthermore, the conclusions of this report are the responsibility of the authors and do not necessarily represent the views of the interviewees.

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1. Introduction

This case study report presents – in a joint report – the results of our research on Israel and the occupied Palestinian Territory (oPT). Presenting them in a joint report is pertinent in light of the very close connection between both entities in terms of water resources management.

We begin with presenting the water-related impacts of climate change in Israel and the oPT. We first deal with the likely physical impacts of climate change, based on existing studies. As these physical impacts are more or less the same for both Israel and the oPT, we present them in a joint section (section 2.1.1). Subsequently, we discuss the likely water-related impacts of climate change on human security and conflict in Israel and the oPT respectively. As these are (objectively) likely to be different in Palestine and in Israel given the different socio-economic and political status of these countries, and there are in addition different views in both sides on these impacts, we discuss these impacts in separate sections for both entities (section 2.1.2). In a next step, we discuss the awareness in both sides on the matter (section 3). We then proceed to discuss the joint policy framework and its effectiveness in mitigating climate-induced risks to human security and negative impacts on conflicts (section 4.1). Subsequently, the Israeli and Palestinian policy frameworks are discussed separately (section 4.2). In section 5 we summarise stakeholders' demands and expectations concerning the policy framework, from both sides. We present conclusions in Section 6.

The case study builds on the conceptual framework and terminology outlined in the main report. However, a specific characteristic of this study is that water - the sector which is projected to be most affected by climate change in this region - is also a contested political issue between Israelis and Palestinians. This controversy has also spilled over into the academic debate.¹ Against this background, the following report adopts a narrative approach. Narratives are stories, depicting reality through certain frames or glasses, which can be personally or socially constructed. In political science, the narrative approach focuses on how knowledge is constructed and used, in order to set political agendas, and mobilize collective action (Shenhav 2006).

We find the narrative approach essential for researching the water reality in Israel and the oPT. To begin with, what in other contexts may be considered “objective facts” (e.g. hydrological data), in the case of Israel and the oPT becomes frequently part of political narratives and the hydro-political agendas of different parties.² Furthermore, we were less interested in being arbiters of the “objective” truth, but rather in how the different narratives shape political agendas and the policy-making process. We thus summarize and report on the narratives of the two sides, without seeking to establish what are the “real” facts. When we quote a source for certain figures or facts, we mostly do so in the context of these narratives. However, the

¹ See for example Zeitoun, 2008 and the criticism of his work by Tal, 2009. For publications on water in the Israeli-Palestinian context that clearly take an “Israeli” perspective see Gvirtzman 2012, for observers taking a “Palestinian” perspective see Selby 2003 and Mizyed 2009. Obviously there are also publications taking a more “neutral” or “middle” position, including some co-authored by Israelis and Palestinians, see for example Weinthal/Marei 2002 or Feitelson et al. 2012.

² See on the politicised use of figures in the Israeli/Palestinian context Alatout 2000.

narrative approach does not apply without qualifications. There are certain aspects which we deal with in this report that are by and large not controversial between the two sides, notably the projected physical impacts of climate change in the region and the basic features of the existing joint policy framework on water. These aspects are described without resorting to the narratives of both sides. .

Typically, a Palestinian narrative tends – and this is obviously a very simple and broadly cut description – to be characterized by a focus on the Israeli occupation as the main cause of water scarcity in the oPT. In contrast, the typical “Israeli” narrative tends to focus on lack of political will or capacity of the Palestinian Authority as the main causes for water problems in the oPT. Obviously, Palestinians would disagree among themselves about some aspects of the “Palestinian” narrative, and so would Israelis with regard to “their” narrative. Positions and wider narratives may change over time.³ Moreover, it should be noted that when we use terms such as “Palestinian narrative” or “Israeli narrative” this does not mean that the “Palestinian” narrative, will always and exclusively be endorsed and conveyed by Palestinians – people from elsewhere, including from Israel, sometimes also adhere to these narratives. The same is true for the “Israeli” narrative. However, we found that certain views tended to be held by more interviewees on the Palestinian side, and some others more by interviewees on the Israeli side. By using terms such as “Israeli” or “Palestinian” narratives we do not mean to convey stereotypes, contend that “all Palestinians think alike” or “all Israelis behave alike” or deepen existing divides, but just point to difference in views on the issues discussed here that we have found to be by and large rather consistent when talking to people on both sides, and people from the outside working on these issues.

It should be noted that the narratives are often different not only in content, but also in length or in character. These differences sometimes reflect differences in, e.g. how important an issue is perceived to be; other times, these differences occur due to methodological limitations (e.g. how an issue was dealt with during the interview). Thus, much caution should be taken when comparing the two narratives.

2. Background

2.1 Water-related impacts of climate change

2.1.1 Physical impacts

Climate change models for the Middle East need to be treated with a degree of caution with a view to the fact that grid sizes are rather large when compared to the small and varied territory of Israel and the oPT (Mimi/Mason/Zeitoun 2009, p. 10) and given the varied topography of the

³ For example Lautzen/Kirshen 2009, p. 193 note that “that there exist differences in approach between the Palestinian Water Authority (PWA) and other organizations within the Palestinian National Authority... It should also be noted that the current position has been altered from the position of the Palestinian Authority in the Camp David/Emmitsburg discussions in July of 2000. While the Emmitsburg discussions focused more on Palestinian water rights as derived from needs, this position determines water rights as derived from land.”

region (Black et al. 2010). However, there seems to be wide consensus that in terms of water, something is likely to change to the worse.⁴

Israel and the oPT are already reporting climatic changes which have an impact on their water sectors. For example, in the oPT, the average precipitation between 2002-2010 has decreased by 12% compared to the historic average (UNPD 2010). Similarly, the Israel Water Authority reports that average fresh water supply has decreased from an average of 1,600 MCM/year in 1973-1992 to an average of 1,400 MCM/year in 1993-2009, a decrease of 12.5% (pers. communication, Israel Water Authority, Oct. 2011). These reports coincide with other scientific studies, which show a dominant negative trend in precipitation in the Mediterranean over the past 50 years (Trondalen 2009, p. 7). Such impacts are predicted to be further exacerbated in the future, according to the IPCC scenarios. Notably, Trondalen (2009) compiles a series of studies which modeled climate change impacts on the Middle East. One study concludes that under B2 scenario of the IPCC, average temperatures in the northern upper Jordan basin are likely to increase by 4.5°C by 2071-2100, compared to 1961-1990 levels. In the same time, mean annual precipitation will decrease by 25%. Other studies show even more severe trends in temperature increase or reduced rainfall. Israel's Second Communication Report to the UNFCCC reports that according to the A1B scenario of the IPCC, average temperature in Israel and the Palestinian territories is expected to rise by 1.5°C by 2020 and 3.5-5°C by 2100, compared to 1960-1990 levels. In addition, a 10% decrease in precipitation is predicted by 2020, and by 2050 precipitation is projected to decrease by 20% (Israeli Ministry of Environmental Protection 2010). Another expected change in the area's climate is the shift in precipitation patterns, with more extreme rainfall events (rather than prolonged seasonal rain) and higher intervals between wet and dry spells. All of these changes indicate a tendency towards a more arid climate (Ibid; Trondalen 2009).⁵ Other climate change impacts influencing the water sector include sea level rise and the increased frequency and severity of floods. Overall, it is estimated that the above mentioned stressors will reduce water availability by about 25% in 2070-2099, in comparison with 1961-1990 levels (ibid, p. 76).

It should be mentioned that both Israel and the oPT are considered to be already now in 'absolute water scarcity', with annual water availability per capita of 300m³ in Israel and 240m³ in the oPT (Görlach et al. 2011a; 2011b).⁶ Water availability depends on two main sources, both which will be significantly affected: groundwater and surface water.

Groundwater currently accounts for about 73% of the water supply in the oPT, and for about 63% of the natural water supply in Israel (or 48% of the total water supply, taking into desalination and treated wastewater). Groundwater recharge is expected to decrease due to a variety of causes, such as: increased probability of intense and short rainy events leading to floods, soil erosion and decreased infiltration; changes in the upper layers of soils, which will

⁴ For a detailed review of the literature on climate change impacts in the Middle East see Trondalen 2009.

⁵ For different scenarios, see Lautz/Kirshen 2009, p. 195ff.

⁶ FAO (2007) indicates that regions with water supplies below 1,700 m³ per capita experience water stress, below 1,000 m³ per capita experience water scarcity and below 500 m³ absolute scarcity.

decrease filtration (e.g. plant cover, increased salinity); and increased evaporation and transpiration (Mimi and Abu Jamous, 2010). In addition, sea level intrusion is expected to cause a retreat of the coastal aquifer. An estimated loss of 16.3 MCM of water of each kilometer along the coastal plain is predicted, as a result of a potential rise in sea level of 50 centimeters (Golan-Engelko & Bar-Or, 2008). In the Gaza strip, for example, the coastal aquifer is already highly exploited, with extractions almost twice as high as the natural replenishment rate (Weinthal et al. 2005).

Climate change will also influence surface water supply, especially in Israel. Even under moderate climate change scenarios, the annual flows of rivers are expected to decrease by 40-70% (Golan-Engelko & Bar-Or, 2008, p. 10). The flow of the upper Jordan River, for example, is expected to decrease by 29%-73% by 2100 (Trondalen 2009). In Israel, this could entail a significant reduction in the water volume of the Sea of Galilee, which contributes to about 30% of the country's water supply (ibid).

In addition to impacts on the water sector, climate change will also impact the agricultural sectors in Israel and in the oPT. For example, reduced precipitation and reduced water availability in the soil is expected to increase overall water demand for crop irrigation in Israel by 20%. In fact, many crops which are currently rain-dependent will become irrigation-dependent (such as cotton), making some of them economically non-profitable. Climate change is also expected to impact crop production, through the reduction in fruit and vegetable yields, shortening of the productivity season of pastureland, damage to the nutritional value and shelf life of agriculture produce, and emergence of new pests and pathogens (Israeli Ministry of Environmental Protection 2010, p. 78-80). In sum, despite the above mentioned uncertainties, a variety of studies do show that climate change impacts could affect both water availability and food production in Israel and the oPT. The implications of these physical impacts will now be discussed.

2.1.2 Impacts on human security and conflict

This section will address the impacts of climate change on human security and conflict in the Israeli and Palestinian context respectively.

Israel

Impacts on human security and conflict in Israel will be discussed on two levels: a) impacts relating to Israel's external environment; b) impacts relating to Israel internal affairs. The former relates to Israel's relations with its surrounding countries, and distinguishes between direct and indirect impacts on conflict and cooperation with these entities.

Impacts relating to Israel's external environment

Direct impact on conflict and cooperation

Most of Israel's water resources are cross-boundary, and thus allocation and management of joint water resources has always been an issue in its foreign relations. For example, in the peace agreement between Israel and Jordan (1994) the countries have agreed on how to divide their shared water resources (namely the Yarmouk and the Jordan rivers), including an Israeli commitment to provide Jordan with additional supply of 50 MCM of water annually.⁷ Similarly, the Interim Agreement between Israel and the Palestinian Authority (1995) sets guidelines for water extraction from various sources, including an Israeli commitment to supply the Palestinian Authority with additional water (28.6 MCM/year in the interim period, 1995-2000).⁸ Since climate change will reduce water availability in the region, some stakeholders are concerned that this will reduce the ability to meet water agreements and create potential conflicts over shared water resources (Freimuth et al. 2007).

However, the policy makers and water experts who were interviewed for this study do not consider this a significant threat. An indicator in this regard is that the issue does not seem to be very much on the political agenda of Israeli external relations. This is evident from an interview with a representative of the Prime Minister Office, who is centrally involved in strategic planning:

I do not see that there are late night discussions on how the water crisis will impact the relationship with Jordan, and maybe only marginally how it might impact the relationship with the Palestinians (pers. communication, PM office, Sep. 2011).

To begin with, as described below, Israel's dependency on natural water resources is constantly decreasing, with the increased capacity to supply water through water reuse and desalination. As such, Israel is not so much dependent on its neighbors for solving its water problems. Hence, the dominant discourse in Israel does not perceive water as an obstacle for cooperation or peace building.

In general, Israel has a positive attitude towards solving the water problems, since having peace is more important than water. Water is not a threat to Israel anymore. The scenario of water wars, in general, is not so relevant anymore. So climate change – with its long-term and incremental impact – is not perceived as a threat in this regard (pers. communication, Valerie Brachya, Sep. 2011).

Furthermore, Israeli water experts and governmental officials tend to see water as a technical problem, of supply and demand, for which technical solutions can be applied. According to their view, solving current conflicts over water, particularly with the Palestinian Authority, can be achieved through technical solutions for increasing water supply in the oPT, such as increased use of treated wastewater and desalination. In 2007, the amount of reused treated wastewater

⁷ Peace Treaty Between the State of Israel and the Hashemite Kingdom of Jordan, October 1994. Source: official website of the Israeli Parliament http://www.knesset.gov.il/process/docs/peace-jordan_eng.htm

⁸ Israeli-Palestinian Interim Agreement on the West Bank and the Gaza Strip, Annex III: Protocol Concerning Civil Affairs, September 1995. Source: official website of the Israeli Parliament http://www.knesset.gov.il/process/docs/heskemb4_eng.htm

in the oPT was 10 MCM/year, only 3% of the total water supply in the oPT, with virtually no water supplied from desalination (FAO 2007; FAO 2009; PCBS 2009). Such solutions are becoming feasible and affordable, and, according to the interviewed Israeli officials, Israel is highly motivated to assist the Palestinian Authority to implement these solutions, and to reduce the pressure over the shared natural water resources (pers. communication, Israel Water Authority, Oct. 2011).

Israeli water experts, who have participated in previous peace negotiations with the Palestinian Authority, claim that once the parties are engaged in negotiations, water is the easiest element to solve in the conflict. Therefore, it has always been dealt with separately from other affairs:

In general, the whole conflict over water has totally lost proportion – water is the easiest part to solve in the conflict. Solutions are out there, and they are simple and not expensive. It is all a matter of political will (pers. communication, Former Israeli Water Commissioner, Oct. 2011).

However, these experts also acknowledge that water is an element of the political bargaining between Israel and the Palestinian Authority, and most likely, it will not be solved before the parties come to an agreement, that resolves other fundamental issues which are at the heart of the conflict (borders, security, Jerusalem, etc.) (pers. communication, Former Israeli Water Commissioner, Oct. 2011).

Indirect impacts on conflict, cooperation and human security

The second level of potential threats to human security involves indirect impacts, i.e. impacts of climate change on countries in Israel's geographical surroundings. This can refer to Israel's neighbouring countries, such as Jordan, which is one of the most water-scarce countries in the world, and has a rather high level of vulnerability to climate change (Freimuth et al. 2007, pp. 17). In this regard, Israel and Jordan are currently planning the construction of a conduit which will transfer water from the Red Sea, most of which will be desalinated and transferred to Jordan. According to one plan, this conduit could supply Jordan with as much as 570 MCM/year, and another 270 MCM/year to Israel and the Palestinian Authority (Beyth 2007, 368). Besides increasing water security, the purpose of the Red Dead Conduit is to promote peace building and cooperation between all three entities, thus contributing to the overall security of the region (Fiedler, 2011). This is very much in Israel's interest. Israel currently maintains good relations with the Hashemite Kingdom of Jordan, and stakeholders in Israel expressed their concerns regarding the stability of this regime, particularly in face of external stressors such as decreased water availability or influx of refugees, which could be exacerbated by climate change (pers. communication, JI, Sep. 2011).

Another concern expressed by a number of interviewees, involves climate change impacts on African countries, which could create mass movements of refugees northward, who will eventually attempt to enter into Israel (pers. communication, JI, Sep. 2011; FoEME, Aug. 2010). Starting from 2007, Israel has already experienced a large wave of refugees from Sudan and Eritrea, which are seeking shelter in Israel due to the ongoing unrest in their countries. As a signature of the 1951 UN convention on Refugees, Israel is obliged to grant the refugees Asylums

Status. In 2011, there were more than 45,000 Asylum seekers from Sudan and Eritrea in Israel (Israel Population and Immigration Authority, 2012). Despite some integration efforts, the legal status of these refugees in Israel is still unsettled (e.g. with regard to employment rights), making them vulnerable to exploitation and marginalization (Natan, 2010). Furthermore, lack of governmental control and residents' discontent with the settlement of refugees in their neighborhoods, have led to a number of violent hostilities.⁹

To the extent that this phenomenon will recur in the future, in the face of conflicts attributed to resource scarcity which is exacerbated by climate change, interviews mentioned that this could pose a potential threat to Israel (pers. communication, PM office, Sep. 2011; FoEME, August 2010). However, discussions on this topic remained quite vague, and there seems to be much uncertainty in Israel regarding the significance of this threat, or the means for adapting to it.

Impacts within Israel

Overall, according to the interviewed stakeholders, climate change is not seen as a threat to water related human security and conflict in Israel. Three main arguments are made to support this claim: Israel has already developed alternative means of increasing its water supply, it has a low dependency on domestic food production, and compared to other stressors, the relative impact of climate change is marginal. We will describe each of these arguments in turn.

First of all, stakeholders claim that Israel has had to deal with water scarcity and insecure supply from its very existence, and due to its economic and technological capacity, it developed means of increasing its water supply (pers. communication, JI, Sep. 2011; PM office, Sep. 2011). Today, Israel is considered a global frontrunner in dealing with water scarcity – it sets the record in re-using treated wastewater, with 82% of the wastewater reused for irrigation (Ministry of Environmental Protection, 2010). In addition, Israel supplies 300 MCM/year from desalination, almost 40% of its municipal and industrial water use. Israel further plans to increase this capacity to 750 MCM/year by 2020, supplying 80% of the municipal water use.¹⁰ Coupled with the target of treating 100% of its wastewater for irrigation purposes (Central Bureau of Statistics, 2006), Israel will nearly double its water supply by 2020, compared to the available natural resources. As such, Israel is much less vulnerable to further changes in water availability which could result from climate change.

This leads to a significant change in the water discourse in Israel – water is no longer seen as a limited resource, but rather as a commodity, which can be supplied as long as Israel has the available financial resources:

“Water is not connected anymore to climate change or security; it is connected to price.”
(pers. communication, Jerusalem Institute, Sep. 2011).

⁹ For example, see: African residents in south Tel Aviv targeted by second firebomb attack in two weeks, Ha'aretz newspaper, 6 May 2012,

<http://www.haaretz.com/news/national/african-residents-in-south-tel-aviv-targeted-by-second-firebomb-attack-in-two-weeks-1.428469>

¹⁰ <http://www.water.gov.il/Hebrew/WaterResources/Desalination/Pages/default.aspx>

Second of all, water is not connected presently to food security in Israel. Israel currently imports most of its primary products, and climate change is not expected to impact food security in Israel any more than it is going to impact other developed countries importing most of their primary products. Agriculture is a rather small economic sector in Israel, contributing to less than 2% to its GDP and accounting for about 2% of employment, and actors attribute the preservation of this sector for symbolic reasons (e.g. the Zionist identity¹¹). Furthermore, water for agriculture can be supplied from treated wastewater, a source which is expected to increase as long as there is population growth (pers. communication, JI, Sep. 2011).

Third, a number of stakeholders stressed that Israel currently faces a much more severe challenge than climate change with regard to meeting its water demands, namely an annual population growth of 2%. This challenge currently outweighs the long-term and incremental reduction in water availability which will result from climate change (estimated at 0.25% annually until 210, see above), particularly due to decreasing share of natural water resources in the water supply (pers. communication, Former Israeli Water Commissioner, Oct. 2011; PM office, Sep. 2011).

Overall, the interviewed stakeholders think that Israel has developed and is well on its way to further developing a sufficient adaptive capacity to natural variances in water availability, making it quite resilient to climate change impacts on the water sector. This is not to say that water-related human security problems do not exist in Israel, but rather that they stem from state policies, and not from climate change impacts. This is well exemplified in the case of the Bedouin population.

Water-related human security problems in the Bedouin population¹²

According to Israeli official statistics, 100% of the population in Israel has regular piped water supply on premises (WHO/UNICEF 2010a,b). However, this excludes unrecognized villages – mostly Bedouin villages in the Negev¹³ – which are not entitled to state-provided basic municipal infrastructure, including water and sewage. The Goldberg Report (Goldberg Committee, 2008) estimates, based on a statement from the Ministry of Interior, that in 2007 62,487 people in Israel lived in unrecognized Bedouin settlements, which lack basic infrastructure such as access to drinking water and connection to wastewater. The yearly report of the Association for Civil Rights in Israel even estimates that 80,000 civilians lived in ‘unrecognized’ settlements without basic services and infrastructure in 2007 (Görlach et al. 2011b).

¹¹ Zionism was very much identified with the values of settling and working the land, which were perceived to be instrumental for securing Jewish presence in the territory in Israel’s early years. Hence, in the first few decades of Israel’s existence, agriculture played a key role, economically, politically and in terms of shaping Jewish identity (Lipchin 2007).

¹² It is important to mention that other parts of the Arab population in Israel also suffer from problems of access to water, such as some northern Arab villages which are having difficulties to pay their water bills, and are sometimes faced with penalties (such as temporal shut down of their water supply) (pers. communication, Adalah, Oct. 2011). However, this paper will focus on the Bedouin population, because in this population water related human security issues are most severe, and because this population settles on an area most vulnerable to climatic changes.

¹³ Negev is a region in the Southern part of Israel with a desert climate.

The government of Israel recently published a plan for the unrecognized villages, which includes recognition of 11 villages, as well as plans to relocate the rest of the population living in unrecognized villages and integrate them into recognized ones. According to governmental plans, the newly recognized villages will receive the full range of municipal services, including regular water supply. Those villages settling on land with agricultural purposes will also be entitled to water allocations for agriculture, according to the Israeli Prime-Minister's Office (pers. communication, PM office, Sep. 2011).

Government officials emphasize that cases where Israel refrains from supplying the Bedouin population with water do not result from an objection of the water authorities or constraints in water supply, but rather because of the internal conflict with the Bedouin population over the recognition of land (pers. communication, Ministry of Interior, Sep. 2011).¹⁴ Similarly, non-governmental stakeholders claim that lack of water security in the unrecognized Bedouin villages is primarily related to the land problem, which is created through state policies geared by political motives, and has little overlap with problems of natural water availability (pers. communication, Adalah, Oct. 2011).

Currently, only a small (and diminishing) fraction of the Bedouin population maintains its traditional farming-nomadic livelihoods, while the majority of the population is going through a process of urbanization, integration in the market and modernization of their lifestyles. As such, the direct reliance of the Bedouin population on direct access to natural resources, including water, has decreased significantly, and instead this population relies much more on the state and the market to provide it with basic needs, including water (pers. communication, Researcher at Ben Gurion University, Sep. 2011). This too implies that state policies, and not climate change, are responsible for both problems and solutions for water related human security in the Bedouin population.

oPT

As a background to the following summary of interviews it should be noted that Palestine is a developing country. It had, in 2011, a per capita GNI of 2656 US\$, and was ranked 114 out of 187 countries in the UN human development index,¹⁵ with the Gaza Strip undergoing a prolonged humanitarian crisis.

The question how climate change will impact water availability in the oPT, and as a corollary human security and conflict, cannot be discussed outside the context of the Israeli occupation of the West Bank and the Israeli control of the borders of the Gaza strip from which Israel withdrew in 2005. According to figures by the Palestinian Negotiation Affairs Department (NAD), Israel utilizes approximately 86 percent of available shared fresh water resources

¹⁴ The main conflict between Bedouins and the state of Israel is over the recognition of land. In principle, Bedouins would like to receive recognition over most of the land they have settled, while the government's recent plans are to provide recognition for about half of the population, while the other half will have to relocate to recognized villages (Goldberg Committee 2008).

¹⁵ International Human Development Indicators, Occupied Palestinian Territories, <http://hdrstats.undp.org/en/countries/profiles/PSE.html>

(including groundwater resources and surface water resources), and the Palestinians less than 14%, which the NAD contrasts with the fact that the “great majority of the areas where the various aquifer basins are fed, or ‘recharged’, lie within the oPt”.¹⁶ Concerning groundwater resources, the 2009 World Bank report¹⁷ on the Palestinian water sector reports a roughly similar figure at least for ground water use, saying that “Palestinians abstract about 20% of the “estimated potential” of the aquifers that underlie both the West Bank and Israel” (World Bank 2009, p. v). The World Bank reports that in 2008 the amount of water available to residents of the West Bank was lower than was the case in the period before signing the Interim Agreement (World Bank 2009, p. 12). For the Jordan Valley, the Israeli human rights organisation B’Tselem reports that the number of Palestinian agriculture wells has decreased to less than half as compared to pre-1967; in addition the wells are less deep than the Israeli ones (B’Tselem 2011, p. 21).

According to the Palestinian Central Bureau of Statistics (PBS) 91% of households in both the West Bank and Gaza were connected to the water supply network in 2011, with a slightly higher percentage in Gaza (PBS 2011, p. 17). However, the supply is highly irregular in many areas, and for many households receiving water only once a week is the norm, rather than the exception. In terms of per capita water use, Amnesty International reports that actual household use of water averages about 70 litres per capita and per day in the West Bank, which compares to about 300 litres in Israel (Amnesty International 2009, p. 3); the World Bank arrives at an even lower estimate of 50 litres per capita/day (World Bank 2009, p. v).¹⁸ Both figures are below the 100l minimum which the World Health Organization expects individuals to require to be able to safely satisfy all their personal water consumption and hygiene needs (Howard/Bartram 2003). About 50% of Palestinian households claim quality problems concerning the drinking water they are supplied with (World Bank 2009, p. v). Palestinian households are paying on average about 8% of their income for water, twice the globally accepted standard (World Bank 2009, p.vff.). Within Palestine, the quality and quantity of water supply varies widely, between Gaza and the West Bank (with the situation in Gaza generally much worse) and between richer, urban areas and poor rural areas (pers. communication, C. Messerschmid). Thus, water-related aspects of human security are very much an issue in Palestine today already. The reasons for that are, obviously, contested between Israelis and Palestinians, with the Palestinian narrative pointing to the Israeli occupation and restrictions it brings for water allocation and management as the main reason, and the Israeli narrative pointing to poor internal management by the Palestinian authorities.¹⁹

¹⁶ Negotiations Affairs Department, Water, <http://www.nad-plo.org/etemplate.php?id=179&more=1#1>

¹⁷ It should be noted that at least the Israeli government is highly critical of this report, see the statements at World Bank, Response to the Water Restrictions Report, <http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/MENAEXT/WESTBANKGAZAEXTN/0,,contentMDK:22174947~pagePK:141137~piPK:141127~theSitePK:294365,00.html>

¹⁸ A figure of 63l day is given by Lautze/Kirshen 2009, p. 192.

¹⁹ As noticed in the introduction, these are obviously generalisations and the terms “Palestinian” and “Israeli” narratives do not mean that the real-world proponents and advocates of each of these narratives necessarily have the respective nationality. For example, a contribution co-authored by a Palestinian adviser to the Palestinian Water

In the West Bank (oPT), agriculture is still the main source of livelihoods of rural communities, many of which are still dependent on traditional practices of harvesting rainwater or pasture-raised farming (Mimi and Abu Jamous 2010). The oPT also has a high dependency on agriculture for food supply, and approximately 18% (Mizyed 2009, p. 2016) of the population is estimated to be employed in this sector, making it particularly vulnerable to the impacts of climate change (Görlach et al. 2011a). Irrigated agriculture in the West Bank makes up only a very small part of the entire agricultural area; however, its share in the overall production as well as the overall use of water is much larger (Mizyed 2009).

Water scarcity in the oPT and its causes

Comparing current figures on water allocations to Israel and Palestine to climate change projections makes clear that the potential reduction in water quantities available that Palestinians could face as a consequence of climate change is small, as compared to what they could gain from an agreement on a more equitable allocation of water with Israel (see notably the figures in Messerschmid 2012, p. 9). This is a context about which Palestinian interviewees were all very vocal. Generally, they all considered that climate change and its potential impacts on water, and consequently conflict and human security must be seen in the context of existing water relations with Israel.

All interviewees on the Palestinian side pointed out that they expected the reduction of water availability resulting from climate change to be less important than the restrictions resulting from the current water allocation policy of the Israeli government or said that political restrictions were equally important. This statement was expressed with varying degrees of intensity:

“They [the Israelis] minimize the water, they restrict the Palestinians from having more water from different sources. They do not allow us to use our groundwater resources, they do not allow us to develop the resources, they do not give us any access to Jordan water. I do not know whether you want to see it as part of climate change, but I here referred to man-made reasons behind water shortage in the Palestinian territories.” (pers. communication, PWA).

The strongest statement was probably the following:

“climate change is a tiny additional challenge for the Palestinian economy or social fabric of society. It will probably hit the ones that are already worst hit hardest, but again, they get already 100 hits everyday from something else. This will be another, the 101st hit. So it's very dangerous to single out climate change as a factor and by that actually forgetting the real impact, the damages, economy, social fabric, everything in Palestinian society, not least the water sector. The biggest challenge to the water sector is the occupation.” (pers. communication, C. Messerschmid)

Authority concluded that, *inter alia*, political nepotism and corruption are hindering the further development of the Palestinian water sector, Klawitter/Barghouti 2006.

Climate change, water and conflict

Nonetheless, interviewees did link climate change to the Palestinian-Israeli conflict in different ways. A first view and/or expectation voiced was that climate change would make water scarcer and that the conflict with Israel would thus be exacerbated:

“Whenever I have only one glass of water, and two are competing for this glass, it can only be mine or yours. So the conflict will become more severe.

... Climate change increases the conflict, we expect this not only here, but also in Jordan, Egypt, Turkey. The next war in the region will be over water resources, this is well-known in the whole area. Maybe you have heard about pro-peace initiatives, how water should enhance peace and not conflict. But this is not the reality, the opposite is true. ... Think tanks are telling us that water should enhance peace in the region, but I don’t believe in this.” (pers. communication, UNFCCC Focal Point, Environment Quality Authority)

This statement is interesting in that it explicitly rejects the idea that the necessity to share scarce resources would enhance cooperation.

Another interviewee framed the relationship in a more multi-dimensional manner:

“Climate change per se is not going to be responsible for leading to instability. But if you put all the puzzles together, the more people have health issues, the more people have lower standards of living, that would lead to more conflict. It will create more fertile ground for people to be violent and upset. If you talk about regional stability, your main concern is to make sure that people on both sides have a fair standard of living. If it is not fair this is when you cannot move forward. If we want to make people accept a permanent status agreement on water and waste water and all other issues, we have to ensure that people have access to their basic rights to water and sanitation (pers. communication, NAD)

Others hold the view that Israel is or will be using climate change as a pretext to allocate less water to Palestinians. Thus, climate change in this was not seen as a “real” problem for either Palestinians or Israelis, but as something being instrumentalised by the dominant side, Israel:

“Israel doesn’t tire to pronounce that climate change hits the Israeli economy and water sector very badly and of course again the very sheer existence of the country is in danger and so on. And of course Israel is already engaging in changing the agenda for negotiations with Palestinians backed on this climate change. Climate change is a big wind in the back of the Israeli and the way the international discourse is carried out these days” (pers. communication, C. Messerschmid)

Interestingly, the converse relationship, i.e. Palestinians using climate change as an argument vis-à-vis Israel to receive more water, was less frequently mentioned. Only one interviewee said that

“...Palestinians are already slightly, slightly starting to use it [=climate change, addition C.G.]”(pers. communication, C. Messerschmid)

Another statement on conflict related less to the relationship between Israel and Palestine as a relationship between occupier and occupied, but to a relationship between developed and developing country:

“However, if there is less rainfall because of climate change, this will mean increased Israeli control. They will have relevant technologies and try to sell them to the Palestinians.” (pers. communication, JWC)

Internal conflicts, e.g. between different Palestinian communities, were not readily identified by most interviewees on the Palestinian side as a major issue. They generally only addressed it when explicitly asked about internal conflicts. Even then, views diverged. Some, e.g. the UNFCCC focal point voiced the view that there was no such thing as internal conflict over water among Palestinians. Other interviewees mentioned specific places in the West Bank with internal conflicts over water (pers. communication, PARC). Remarkably, the only non-Palestinian interviewee on the Palestinian side said:

“You would expect much more infighting and much more violence, clashes and so on, between the affluent and the have-nothings, you find less than you would expect. You do find them, and it’s no surprise at all. You have the conflicts between the cities and the rural areas, with a huge gap of delivery services. all these conflicts are on a very fertile breeding ground under the occupation, because the occupation a) hits all of the society’s access to water and b) hits different members very differently, arbitrarily..... ground also for conflict. Again, it’s less than I would have expected. We had demonstrations against the PA in refugee camps that were hit down violently by the PA, demonstrations for water.” (pers. communication, C. Messerschmid)

It may be speculated that the fact that he was much more outspoken about internal conflicts than the Palestinian interviews could indicate that there is certain reluctance among Palestinian interviewees to talk about internal conflict, in particular to an outsider. However, a possible explanation for the relative absence on water-related conflicts among Palestinian was given by one interviewee who stated that

“ all people think that our first conflict is with the Israelis, but if this is resolved, another phase of conflict among Palestinian will be faced.” (pers. communication, PARC).

However, not everyone agreed:

“I don’t think that we will have this internal problem [of communities fighting over water]. Our problem is with the Israeli side. If we had full control over our water resources, we would be able to manage our water.” (pers. communication, UNFCCC focal point)

Finally, one of the interviewees related the Israeli-Palestinian conflict, internal Palestinian conflict and water governance, by stating that the second Intifada²⁰ had led to a situation where the Palestinian Authority was weakened and therefore could not control the illegal drilling of wells in the West Bank by Palestinians. Such additional wells led, however, at least in one case to

²⁰ The second Intifada was a massive protest movement against the Israeli occupation in the Occupied Palestinian Territories, roughly between 2000 and 2005.

a situation where existing wells had less water, which in turn produced conflict between farmers and communities in the region (pers. communication, Palestinian Water Authority).

Climate change, water, human security and conflict

With regard to the impact of climate change on human security, water relations with Israel were again seen by all of the interviewees as a decisive factor.

“If the Israelis did not have their hands on our water resources, we would not have a problem with water, we would have enough water for Palestinians to live on it for years.”
(pers. communication, UNFCCC focal point)

To conclude, while people did identify human security-related impacts of climate change, they never did so without mentioning the Israeli occupation as a factor limiting their access to water already under present conditions.

In addition, interviewees identified several additional dimensions along which they expected climate change to further impact human security. First and foremost, Palestinian interviewees regularly mentioned the impact of climate change on agriculture, and hence, food security.

“When we talk about the impact of climate change on water resources, we talk about agricultural production, either rain-fed or irrigated which is the main source of life and income for most of the Palestinians. Climate change will therefore impact food security and food production. It will impact the life of all Palestinians in this regard.” (pers. communication, UNFCCC focal point)

Food security was seen by many as an issue, in terms of income generation of farmers by the interviewees. Thus, several interviewees commented that yields had decreased in some areas which had led at least some farmers to leave their lands and move to the cities (pers. communication, UNFCCC focal point, Environment Quality Authority; PARC). Only one interviewee expected that climate change could also have a positive impact as new crops could possibly be cultivated (pers. communication, Institute of Environmental and Water Studies).

Moreover, several interviewees also mentioned “water security” as an issue. This related both to the quantity and quality of water available

“Mainly, in many clusters of the West Bank, people start to suffer from shortage of water resources. And people also complain about the water quality. As I mentioned, when you have a huge decline in water levels, there will be an increase in salinity, and a decline in quality.” (pers. communication, Palestinian Water Authority)

However, it should also be noted that the most common terminology used by interviewees was not “water security”, but “water rights”. This is exemplified by the following statement:

“We are suffering from the possible impact of climate change and Israeli arbitrariness on using their authority over water resources, to deprive Palestinians of their water rights.”
(pers. communication, PARC)

3 Awareness

This section will consolidate the main findings regarding awareness of climate change impacts on water related human security and conflict, relating both to actors' awareness and actors' assessment of public awareness and how these issues feature on the social and political agenda.

3.1 Israel

In general, the interviewed stakeholders seemed to have a high level of awareness of climate change impacts on the water sector. Nearly all interviewees (15 of 16) were aware of climate change, and most actors could describe its impacts on the water sector, although actors were not sure if immediate impacts – such as recent droughts – can be attributed to climate change. Water experts had a particularly high awareness of past measurements and future assessments of climate change impacts on the water sector, and their relative weight compared to other, non-physical stressors (e.g. demographic change). Overall, Israel seems to have quite a high capacity for modeling climate change impacts on its water sector.

Stakeholders assessed that in general, climate change does not feature on the political agenda as a significant threat to the water sector. In addition, stakeholders were skeptical with regard to whether linkages between water and human security or conflict feature on the political agenda:

“I am a member of all forums which conduct long term strategic planning on civilian matters – they deal with renewable energy, water capabilities, but not with human security issues or conflicts arising from lack of water – that is not on the agenda.” (pers. communication, Prime Minister office, Sep. 2011).

Interestingly, stakeholders from NGOs working with either the Bedouin population or the Palestinian population on water related issues, state that awareness to water related impacts on human security are too low. They claim that this is reflected in poor media coverage and the absence of political debate on the matter, which is seen to partially results from the conservative political orientation of the ruling coalition (pers. communication, B'tselem, Oct. 2011; Researcher at Ben Gurion University, Sep. 2011; Adalah, Oct. 2011).

Hence, the framing of the linkage between water and human security or conflict seems to be highly linked to the political orientation of different stakeholders in Israel. Some stakeholders state that the discourse of water security is not relevant anymore, since Israel has means of increasing its water supply, and so do Palestinians. These stakeholders claim that water is being 'securitized' for political purposes – namely supporting the Palestinian claim over their 'water rights' – whereas in practice, water issues can be solved outside of the security or conflict related debate (pers. communication, JI, Sep. 2011; Israel Water Authority, Oct. 2011; Former Israeli Water Commissioner, Oct. 2011).

3.2 oPT

The interviewees all were aware of climate change being discussed, but a rather high number of them expressed that they were not sure whether it actually existed, and whether recent drought years were part of long-term climatic variations or can attributed to climate change. One

interviewee linked this “climate skepticism” to the fact that there had always been a high degree of climatic variability in the region (pers. communication, Institute of Water and Environment Studies). However, not everyone shared this skepticism. Asked about the effects of climate change, reduced precipitation (leading to less ground-water recharge) was mentioned as an important issue by most interviewees; interviewees also referred to changes in seasonal patterns, extreme weather events, temperature increase and intensity of precipitation as relevant possible consequences of climate change. By contrast, sea-level rise was not mentioned.

Interviewees expressed doubt about whether there was broad awareness about climate change in the Palestinian society. One interviewee indicated that climate change was considered a “luxury issue rather than a direct day-to-day issue that touches the lives of people” and that “people talk about it more like scientific fiction, a new fancy issue” (pers. communication, Institute of Water and Environment Studies). One interviewee also indicated that climate change had been brought to the political agenda in Palestine mostly by external interventions, notably that of the UNDP. She noted an initial reluctance among Palestinian policy-makers to address climate change, which was seen as diverting attention from the “real issues”, i.e. the Israeli occupation (pers. communication, UNDP-PaPP).

By contrast, all interviewees pointed out that there was a very high degree of awareness about water issues; several interviewees pointed out in slightly different words that “every Palestinian child knows that water is scarce” and that “farmers may not be aware of climate change, but they can feel drought”. One interviewee also pointed out that water conservation was part of the Palestinian cultural heritage (pers. communication, PSU). Generally, climate change in Palestine is also mainly perceived in terms of access to and quality of water; other potential impacts such as sea level rise in Gaza were hardly mentioned by interviewees.

The Palestinian discourse on water (and hence implicitly on climate change) is framed in “political” terms in that Palestinians discuss it in terms of rights, fairness of water allocation etc., rather than as a technical issue to be solved. Water is also very much discussed as a humanitarian issue, in particular by NGOs²¹, and as a human right issue. One interviewee also implied that Palestinian policy-makers portrayed the issue deliberately as a humanitarian one at the international level, rather than framing it in terms of the conflict with Israel (pers. communication, UNFCCC focal point, EQA). There are obviously close links between discussing water in terms of “human security” and as “humanitarian” issue; in both cases the focus is on individuals and their well-being.

4 Policy Framework

This section will describe and analyze the policy frameworks for addressing the above mentioned climate change impacts on water related human security and conflict. These include both: a) joint policy framework, established by Israel and Palestinians in the interim peace agreement in 1995; b) separate policy frameworks in each entity. Each section will begin with a

²¹ See for example the website of the campaign “Thirsting for justice – Palestinian rights to water and sanitation”, <http://www.thirstingforjustice.org/new/>

short overview of the policy framework, followed by an analysis of its effectiveness in mitigating climate change impacts on water related human security and conflict.

4.1 Joint policy framework

4.1.1 Description

The current joint policy framework relevant for the management of water resources in Israel and Palestine originated in the Israeli-Palestinian Interim Agreement on the West Bank and the Gaza Strip (1995), which followed the Oslo accords (1993), the first peace treaty to be signed between the parties. There is not joint framework on climate change. In the following, we therefore focus on the joint framework on water.

The Interim Agreement was initially agreed upon for a period of five years, during which the parties were meant to negotiate the terms of a permanent agreement. One of its core elements was dividing the oPT into three areas: areas under Palestinian security control and civil administration (Area A), referring mainly to the large Palestinian cities; areas under Israeli security control and Palestinian civil administration (Area B); and areas under Israeli control and administration (Area C). The Interim Agreement included a chapter on civilian affairs, which has an article on Water and Sewage (Article 40). The failure of the Camp David Summit in 1999, marked the breakdown of the negotiations over the permanent agreement. A year later, the Second Intifada erupted, taking the area into five years of turbulence. Up until today, the parties have failed to resume negotiations over the permanent agreement. Thus, the rules contained in the Interim Agreement govern, until today, the water relations between Israel and Palestine.

Article 40 settles the terms of managing the joint water resources between Israel the Palestinian Authority in the West Bank, which include the three mountain aquifers of the West Bank (Northern, Western and Eastern Aquifers) (see Figure 1).²² The agreement recognizes the Palestinian water rights in the West Bank, which should be settled in the permanent agreement. It also acknowledges the duties each side have in preserving the joint water resources, such as preventing harm to water resources, including those utilized by the other side and cooperation in various matters.

The article assesses the water needs of the Palestinians (at 118 MCM/year) at the time the agreement was concluded and their future needs (at an additional 70-80 MCM/year). Besides maintaining existing quantities of utilization, both sides commit to increasing water supply in the oPT from a variety of sources, and this includes 28.6 MCM/year which will be supplied by Israel.

²² The Palestinian Authority already received full authority for managing water resources in the Gaza Strip, under the Gaza-Jericho Agreement (1994). However the Interim Agreement includes agreements on transfers of additional water to Gaza.

Finally, the agreement establishes a Joint Water Committee (JWC), in charge of managing all water and sewage related issues in the West Bank.²³ The JWC is comprised of an equal number of representatives from each side, and all its decisions must be reached by consensus. Thus, the JWC needs to give approval for the drilling of wells and the construction of any water-related facilities (e.g. supply networks or waste water treatment plants) in the West Bank by either of the two parties. In addition, in Area C (which is about 60% of the West Bank), approval of the Israeli Civil Administration is needed for water projects.

4.1.2 Effectiveness to mitigate impacts on HS and conflict

This section will discuss the effectiveness of the joint Israeli-Palestinian framework in water allocation and management of joint resources, with a view to mitigating water related impacts of climate change on human security and conflict. Although this joint framework was not meant to address projected impacts of climate change, it was meant to address current needs of Israelis and Palestinians, taking into account existing water resources. Thus, an analysis of this framework could shed some light on its relevance and effectiveness for dealing with exacerbated water scarcities resulting from climate change. To date, there is no joint Israeli-Palestinian framework on climate change.

Palestinian narrative

Palestinians and those supporting their view are generally highly critical of the current framework for allocating and managing water. For example, the NAD states in a 2010 non-paper that

“several recent third party assessments including the latest reports by the World Bank, Amnesty International and UNEP, have concluded that the Oslo II Agreement/Annex III/ Appendix I/Article 40 on water has not resolved nor improved fresh water access in Palestine. On the contrary, the way it has been implemented by Israel has served as a tool to obstruct water development in Palestine.”²⁴

Similar views were expressed by some of the interviewees.

More concretely, the Israeli side is criticized for rejecting, in the Joint Water Committee or as part of the approval procedures of the Israeli Civil Administration for areas C projects, most proposals for water-related projects coming from the Palestinian side. This criticism is shared by some Israeli NGOs (see Knesset 2011, p. 11) and the World Bank (2009).

²³ See Israeli-Palestinian Interim Agreement on the West Bank and the Gaza Strip, Annex III: Protocol Concerning Civil Affairs, Art. 40 and Schedule 8, online at http://www.knesset.gov.il/process/docs/heskemb4_eng.htm. See for a description of the water-related aspects of the Interim Agreement: The Knesset Research and Information Center, Israeli-Palestinian Cooperation on Water Issues, 2011, <http://www.knesset.gov.il/mmm/data/pdf/me02767.pdf>.

²⁴ PNA NAD, Water Non-Paper, 2010, p.3, <http://www.nad-plo.org/userfiles/file/Non-Peper/Water%20Non-Paper%202010.pdf>

Palestinian representatives on the JWC said that they did not consider the JWC an example of “cooperation” over water. Rather, they said there was no “real cooperation” and that Israel continued to be in control. Almost all of the interviewees stated a view – in different formulations – that Palestinians, under the current framework, did not “get their water rights” and Israel was taking Palestinian water.

With a view to policies which could prevent negative impacts of climate change on human security or conflicts over water, this means that few projects, which could contribute to these aims, in fact get implemented on the ground.

Israeli narrative

According to Israeli stakeholders, there are a number of flaws in the joint policy framework which make it inadequate for managing Israel’s and the Palestinian Authority’s shared water resources.

First and foremost, both governmental and non-governmental stakeholders claim that de facto, there is no joint policy framework. Sixteen years have passed since the 5-year interim agreement was put into force, and although it is often used as the main point of reference for the joint management of shared water resources, it clearly lacks the capacity of doing so. Instead, water management of shared resources is based on ad-hoc decisions, which are often determined by the political situation at the time (pers. communication, Israel Water Authority, Oct. 2011; B’tselem, Sep. 2011). This often implies a lack of transparency, coherence and professionalism in managing shared water resources. Nearly all interviewed stakeholders assessed that this situation will not be solved before there is a permanent peace agreement between the parties, since water cannot be detached from other, more fundamental aspects of the conflict.

To illustrate this point, a number of interviewed stakeholders who served as governmental water officials stressed that in the last 16 years Israel has offered a number of ad-hoc solutions which could improve water scarcity in the oPT. However, stakeholders claim that these proposals have fallen on deaf ears in the Palestinian Authority.²⁵ For example, Israel offered to connect Gaza to the desalination plant in Ashkelon, and with the help of US-AID, a pipeline has been constructed to the Gaza Strip. According to one proposal, the PA would buy desalinated water at the price of EUR 0.59 per m³, which could save Palestinians costs on buying water containers and reduce the overexploitation of the coastal aquifer in Gaza.²⁶ However, so far the Palestinian leadership in Gaza has refrained from utilizing this option (pers. communication, Former Israeli Water Commissioner, Oct. 2011). Another example is an Israeli proposal to construct a desalination plant near Hadera, which would supply desalinated water to the West Bank. Despite the halt in negotiations, Israel designated a plot of land for the desalination plant in its National Master Plan, and an economic feasibility assessment has been conducted. The

²⁵ One proposed explanation was that accepting such solutions would mean a formal acceptance the status quo, such the occupation of the West Bank or the siege over the Gaza Strip.

²⁶ Prices converted from NIS, annual average 2000-2009 prices, Bank of Israel database: <http://www.bankisrael.gov.il/deptdata/mth/average/avergh.htm> [Hebrew]

proposal was submitted to the Head of the Palestinian Water Authority in 2005, but so far the Israeli Water Authority claims to have received no response (pers. communication, Israel Water Authority, Oct. 2011; JI, Sep. 2011).

Israeli water officials further state that Palestinians are not realizing possible measures for increasing water supply in the West Bank, such as utilization of the Eastern Aquifer or reuse of treated wastewater (pers. communication, Israel Water Authority, Oct. 2011; Former Israeli Water Commissioner, Oct. 2011). The Interim Agreement states that the Palestinian side will increase the utilization of the Eastern Aquifer in order to increase its water supply, but a number of Israeli reports state that this option has not been fully realized yet (Israel Water Authority, 2009). Furthermore, Israeli water officials presented in the interviews protocols of the JWC, where numerous wastewater treatment plants have been authorized, in accordance with Palestinians demands (e.g. that they be constructed in areas C, disconnected from Israeli settlements and allowing low standard treatment in the early stages). However, officials claim that the majority of these projects have not been implemented (pers. communication, Israeli Water Authority, Oct. 2011).

Israeli water officials claim that in general, the Palestinian Authority has a negative attitude towards the Interim Agreement and often refrains from fulfilling its side of the agreement, making cooperation difficult (pers. communication, Former Israeli Water Commissioner, Oct. 2011; Israeli Water Authority, Oct. 2011).

Other stakeholders in Israel explain that the Interim Agreement weakens the Palestinian Authority's ability to manage its water resources independently. For example, the agreement requires that all water projects in the West Bank be authorized by the JWC, thus making Palestinians dependent on Israel for the authorization of any water project. Other constraints, such as limited administrative control over large parts of the West Bank (i.e. Areas C) or limited financial resources, further hinder Palestinians' capacity to implement water projects. Finally, stakeholders claim that there is a high level of mistrust among Israeli and Palestinian water officials, and even reports on basic data – such as water consumption per capita in the west bank – are perceived as means of political manipulation (pers. communication, B'tselem, Sep. 2011).

To conclude, according to Israeli stakeholders, the current policy framework does not have the capacity to mitigate water related impacts on human security in the west bank, and does not seem to be a successful venue of cooperation between Israel and the Palestinian Authority. This is not to say cooperation is not taking place – on the contrary, the JWC and the Joint Technical Committee (JTC) continued their operations even at times of violent conflict (i.e. the Second Intifada), and when other cooperation schemes ceased to function (pers. communication, Israeli Water Authority, Sep. 2011). However, the absence of a permanent agreement on shared water resources makes water management in the oPT a victim of internal and bilateral politics, thus creating little prospects for the implementation of water projects which could significantly alleviate water scarcity.

Figure 1: Aquifers in the West Bank



4.2 Separate policy frameworks

This section will discuss separate policy frameworks for mitigating climate change impacts on human security and conflict in Israel and in the Palestinian Authority.

4.2.1 Israel

Israel's adaptation policy is still in its infancy. In 2008, the Ministry of Environmental Protection published the first official report which assesses Israel's vulnerability to climate change, and sets recommendations for adaptation measures. In addition, following a governmental decision, in 2011 the Israeli Climate Change Information Center (ICCIC) was established, which acts as climate change knowledge hub. The ICCIC aims at identifying consequences of climate change in the various sectors, and propose national policies for each one. Its first report was published in September 2011 (Israeli Ministry of Environmental Protection 2011).

However, all matters concerning management of water resources, including the corresponding climate change impacts, are handled by the water management institutions, namely the Israeli Water Authority. As mentioned in section 02.1.2 (impacts within Israel), interviewees held the view that Israel already has a high capacity in dealing with climate change impacts on its water sector, and climate change is not seen as a threat in this regard. It was also mentioned that Israel has to deal with much more acute stressors on its water sector (e.g. demographic growth), which drive policies towards increasing resilience irrespectively of climate change. These policies include increasing water supply from desalination and treated wastewater (see section 2.1.2: impacts within Israel), as well as policies to increase efficiencies in the municipal, industrial and agricultural sectors.

One of the significant reforms in this regard, was the establishment of an independent Water Authority in 2007, which concentrated under one roof all responsibilities for managing Israel's water sector (formerly dispersed among seven governmental ministries). This has increased the effectiveness of water management, and enabled the adjustment of water prices so that they reflect the full costs of water (from extraction to treatment), leading to a reduction in municipal water consumption (pers. communication, Former Israeli Water Commissioner, Oct. 2011). In addition, the municipal sector is going through a reform for transferring water authorities from municipalities to private corporations. At least partially, this reform assists municipalities which formerly faced problems in allocating budgets to water management, and increases incentives for investing in infrastructure (Kan and Kislev 2011).

It should be mentioned, that in Israel all water resources are considered state property, and as such, the government exclusively administrates water. This allows the government to "design long-run nationwide investments in infrastructure and extraction from water resources under the scarcity and uncertain natural enrichment characterizing the Israeli climate" (Kan and Kislev 2011, pp. i). However, this policy also led to several conflicts with sectors of the population which were not accustomed to this centralized model. Before the establishment of the state of Israel, rural communities used to manage their own water resources, which became prohibited once water resources were nationalized. This created a problem, for example in the unrecognized Bedouin villages which were also not entitled for municipal water services (see impacts on Bedouin population in Chapter 2.1.2 above). In principle, the state offers these villages an alternative – i.e. moving to recognized Bedouin towns, where they would be eligible to municipal services, including water. However, for these Bedouins this alternative entailed giving up their traditional livelihoods and way of life, which includes autonomous ownership of one's land and its resources. As a result, part of the Bedouin population living in unrecognized

villages is 'hanging on to its' land, even at a high risk of poverty (pers. communication, Regional Council for the Unrecognized Bedouin Villages, Sep. 2011).

Indeed, stakeholders claim that Israel's development policies have weakened the Bedouin population, decreasing their ability to sustain themselves and creating a sense of dependency (on the state) and helplessness. In many cases, increased poverty and unemployment caused Bedouins to turn to illegal occupation (pers. communication, Bustan, Sep. 2011). This created conflicts both within the Bedouin population (e.g. between those who received recognition and those who did not), as well as between the Bedouin population and the state (pers. communication, Researcher at Ben Gurion University, Sep. 2011).

To conclude, the case of the Bedouin population in Israel exemplifies a certain tension, between development policies – including water policies - and the protection of human security. State policies in Israel are well on their way for securing water supply, even in face of reduced availability due to climate change. Israel has a centralized governance model for managing its natural resources, which enhanced its capacity for designing long-term and robust solutions to water scarcity. At the same time, this centralized approach created negative impacts on the human security of sectors of the population which would not adapt to it, in many cases forcing them to give up their land and livelihoods. In the case of the Bedouin population living in Israel, a greater resilience to the impacts of climate change may not imply an improvement of their human security.

4.2.2 oPT

The Palestinian Authority has adopted policies both on climate change and water.

Climate change is a relatively new topic in Palestinian official politics, a fact that one of the interviewees attribute to the fact “that there is a long list of priorities in this country, it is more about getting basic needs of water and basic needs of sanitation” (pers. communication, Institute of Environmental and Water Studies). The central strategy on climate change is the “Climate Change Adaptation Strategy and Programme of Action for the Palestinian Authority”.²⁷ It was developed in 2008/2009 by a small team of external consultants in cooperation with the Palestinian Environmental Quality Authority and the support of the UNDP-Programme of Assistance for the Palestinian People (UNDP-PaPP). A series of stakeholder workshops was conducted in the process. The Adaptation Strategy identifies adaptation needs and specific adaptation measure, most of which related to water or agriculture; the Strategy also contains suggestions on how to mainstream climate change into Palestinian policy-making. A national committee on climate change with representatives of different ministries has been established. Climate change is also mentioned in the Environment Sector Strategy as well as the strategies for the water and the energy sectors (pers. communication, UNFCCC focal point, EQA). An integrated climate change programme for Palestine is still under development.

However, so far the Adaptation Strategy has, at most, been implemented very partially. Some interviewees criticized that they had not been adequately informed about it (pers.

²⁷ Online at <http://www.undp.ps/en/newsroom/publications/pdf/other/climatechange.pdf>

communication, Institute of Environmental and Water Studies) or had not been involved enough in its making (pers. communication, PWA). Stakeholders also had a perceived lack of capacity to implement it (pers. communication, Institute of Environmental and Water Studies). Also, the UNFCCC focal point expressed that some Palestinian ministries held the view that it was too early to address climate change (pers. communication), arguably making it difficult to address climate change in an integrated way.

While measures relating to climate change have only recently become part of the Palestinian policy framework, this is different for the water sector. The Palestinian Water Authority was established in 1995 as body with competence for regulation and implementation. In addition, the National Water Council was created as a legislative body, but this organ has never really fulfilled its function (Klawitter/Barghouti 2006).

A National Water Policy was adopted in 1995, a Water Resources Management Strategy in 1998 and a Water Law in 2002. In recent years, a reform plan for the sector was adopted, which is still at the initial phase of implementation (Tamimi 2011a). Besides the PWA, other ministries, e.g. the Ministry of Agriculture, also deal with water-related issues.²⁸

Municipalities are formally responsible for any water-related service delivery including water supply; water is received either from West Bank Water Department or from private or PWA managed wells. Specific utilities exist in some larger locations, such as Ramallah or Bethlehem (Klawitter/Barghouti 2006; World Bank 2009). Besides the activities going on at the official policy level, numerous water-related activities have also been undertaken by international donors, and local NGOs. It has been observed that the percentage of expenditures on water and sanitation per person by governmental and non-governmental donor organizations in Palestine is among the highest in the world (Klawitter/Barghouti 2006, p. 9).

In general, interviewees did by and large not comment very much on the implementation of the domestic framework on water within Palestine; one exception was the PWA which indicated:

“We try to formulate sub-actions to address climate change, but we cannot implement them all, due to several reasons. Staff capacities, lack of money, social reasons – some people will accept solutions from your side, but others won’t. ... If you come to one area, where some people use very fresh water from a certain source, and the other use brackish water... and tell the people who use fresh water, come on guys ... let’s mix the fresh and the brackish water to have acceptable water quality for all. They say, no. ... Also, we face some problems with people to choose the best point [for a well] from a hydrological point of view. ... Sometimes it’s private land, and sometimes the owners refuse, and say, I don’t want a well here in my land, this is my land.” (pers. communication, Palestinian Water Authority)

Third-party evaluations of the Palestinian water sector, notably the 2009 World Bank report, arrive at the conclusion that the water sector in Palestine is extremely fragmented, making integrated management very difficult. Moreover, a lack of investment in the sector has been noticed (World Bank 2009; Tamimi 2011, p. 4).

²⁸ Tamimi 2011a, p. 3.

To an extent, this may change if the reforms provided for in the water sector reform plan are adopted. This plan, if implemented, is expected by local observers to “positively impact the water sector” and “produce remarkable results with strong legal and institutional arrangements”. However, it has also been noted that the plan is based on some assumptions that are not entirely realistic (Tamimi 2011). Altogether, the current state of the sector coupled with the restrictions resulting from the Israeli occupation make it unlikely that a more effective implementation of the existing internal policy framework alone would be able to mitigate the climate-induced risks to human security.

5 Expectations and demands

The following section will address stakeholders’ expectations with regard to how the above mentioned policy frameworks can be improved.

5.1 Israeli narrative

Stakeholders’ expectations in Israel can be divided into three categories: a) expectations regarding the joint policy framework; b) expectations for mitigating water related impacts on human security in the Bedouin population; and c) additional expectations for improving the adaptive capacity of the water sector in Israel.

5.1.1 Expectations regarding the joint policy framework

First and foremost, stakeholders in Israel stressed that in order to end the day-to-day disputes over shared water resources, Israel and the Palestinian Authority must reach a permanent agreement, which will settle the main issues of the conflict, including water. The final agreement should settle the water rights of the Palestinians in the West Bank, and set guidelines for allocation of shared water resources (pers. communication, Israel Water Authority, Oct. 2011). Some stakeholders stressed that this allocation should not be based on fixed amounts, but on flexible mechanisms which can adapt to changes in water availability (e.g. due to climate change) and water needs (e.g. population growth) (pers. communication, B’tselem, Sep. 2011).

Second, some stakeholders stress that on the long run, no entity in the Middle East will be able to rely only on its natural water resources, and all countries will have to invest in water projects for increasing supply (through wastewater treatment and desalination). Because some countries have limited access to the sea (e.g. Syria, Jordan or the Palestinian Authority), the most efficient solution would be to construct regional water systems which will transfer desalinated water from coastal countries to countries with limited or no coastline: e.g. an Israeli-Palestinian-Jordanian system, a Lebanese-Syrian system, etc. A pioneer initiative in this regard, is the Red-Dead conduit (see section 2.1.2). This will change the rules of the game, because it will reduce significantly the pressure over shared natural water resources and the probability of disputes over who owns which water. Stakeholders claim that Israel is starting to internalize this approach, and the National Master Plan already includes a designated area for building a water system which will serve the West Bank with desalinated water (pers. communication, JI, Sep. 2011; Former Israeli Water Commissioner, Oct. 2011).

Stakeholders further expect that until there is a permanent agreement, both sides should carry out immediate solutions to alleviate water scarcity in the West Bank. These include: wastewater treatment, either through the construction of new plants, or by connecting Palestinian settlements to existing infrastructure; desalination; and improving water efficiencies in the West Bank (e.g. decreasing water losses) (pers. communication, Israel Water Authority, Oct. 2011; Former Israeli Water Commissioner, Oct. 2011; B'tselem, Sep. 2011).

As with regard to the international community, stakeholders expressed two main expectations: financial support and political interventions. With regard to the first, stakeholders expect the international community to assist countries in the Middle East to invest in large-scale water systems (one example is the World Bank funding for the Red-Dead Conduit, assessed at several billion USD). Stakeholders also expect that the international community will provide similar assistance to African countries in order to improve their adaptive capacity to climate change, thus reducing the probability of water conflicts resulting in mass immigration of refugees (pers. communication, JI, Sep. 2011).

As with regard to the second, political intervention, stakeholders expressed diverging opinions. One stakeholder expects the international community to intervene in order to get Israel and the Palestinian Authority to reach a permanent agreement which will resolve the ongoing water conflict. Such an intervention could be facilitated by a more robust international legal framework for managing cross-boundary watercourses (compared to the existing framework, which has no teeth) (pers. communication, B'tselem, Sep. 2011). Other stakeholders claim that currently, both sides are preoccupied with 'winning points' in the international debate, dragging water management into the broader political bargaining game between Israel and the Palestinian Authority in the international arena. Under these terms, some Israeli stakeholders see the intervention of the international community as rather unconstructive (pers. communication, Israel Water Authority, Oct. 2011).

Hence, as water management of shared water resources in the West Bank is highly politicized, any international intervention in this context is bound to be politicized too. Even donor support to the construction of wastewater treatment in the oPT is considered as an indirect support of the occupation, since these projects have to comply to some extent with Israeli water policies in the West Bank (pers. communication, B'tselem, Sep. 2011). Under these conditions, expectations from the international community highly dependent on the political orientation of the parties involved.

5.1.2 Expectations for mitigating water related impacts on human security in the Bedouin population

In this context, stakeholders' expectations had little to do with mitigating impacts related to climate change. As mentioned earlier, water related impacts on human security in the unrecognized Bedouin villages result from the ongoing dispute between the Bedouins and the state of Israel, not because of climate change. On the contrary, state policies could increase Bedouins' resilience to climate change (by securing water supply), but will have other trade-offs in terms of human security (e.g. loss of traditional livelihoods). Thus, stakeholders' expectations relate to recognition of land in the unrecognized villages, increased participation of Bedouins in

development plans for their villages, more support of community based approaches for empowering the local population, etc. (pers. communication, Bustan, Oct. 2011).

Regarding water, stakeholders expect allocation of water for agriculture, which is currently non-existent in the Bedouin villages. Several stakeholders claim that there is a high level of motivation among Bedouins to adopt modern agriculture as a means of livelihood, but the state is not providing the required support for realizing this option (pers. communication, Researcher at Ben Gurion University, Sep. 2011). This touches upon Bedouins wish to feel as equal citizens:

“The Bedouins demand recognition as agricultural villages, like other agricultural Jewish villages in the Negev. Bedouins also have a right to water and agriculture. We expect that the state supply water as it supplies water to Jewish people, and that a Bedouin farmer will feel as an equal citizen. We demand that the state allocates a Bedouin farmer the water he deserves – an amount that he can sustain himself from.... We are open to industrial agriculture, with the employment of water-efficient practices. That will also create a sense of citizenship and belonging to the state.” (pers. communication, Regional council for unrecognized villages, Sep. 2011).

State officials, on their side, claim that the new governmental plan for partial recognition of the unrecognized villages includes recognition of land with agricultural purposes, and its holders will be eligible to water allocation for agriculture in the future (pers. communication, PM office, Sep. 2011). Clearly the realization of this option remains to be seen.

5.1.3 Additional expectations on national policies

Finally, some stakeholders claim that Israel’s policies for alleviating water scarcity are too focused on increasing supplies, and that further development of policies for decreasing demand and improving water efficiencies is needed, in order to reach a sustainable water balance. In the agricultural sector, this could entail diversion to more water-efficient crops; in the domestic sector, this could entail deployment of low-tech water-efficient technologies (such as gray-water reuse systems), or increasing financial incentives for reducing water consumption (e.g. increasing the number of water tariff blocks) (pers. communication, IUED, August 2010; FoEME, August, 2010). The point that Israeli policies should much more strongly focus on demand-side measures was also made by the only interviewee on the Palestinian side that commented on the matter (person communication, C. Messerschmid).

Stakeholders further claim that desalination cannot be viewed as a ‘magical solution’ to alleviating Israel’s water scarcity, since it has certain trade-offs, such as high energy demand. Instead, desalination should be viewed as a last resort, after other available means of increasing efficiencies in the water sector have been utilized (pers. communication, SPNI, August 2010; IUED, August 2010).

5.2 *Palestinian narrative*

Among interviewees, there were slightly diverging views on the extent to which there is, under the existing circumstances, much potential for domestic Palestinian policy measures to reduce

potential negative impacts of climate change on human security and conflict, or, in more general terms improve the Palestinian policy framework on water and climate change.

Some interviewees expressed doubts about whether, under the conditions of an ongoing Israeli occupation and the restrictions that it brings, much improvement of the domestic policy framework was possible, or, should even be demanded. One of the most poignant statements was the following:

“You cannot conserve what you do not have. Nationally, I cannot see what could be done more. Obviously the issue we have is of water quantity and water quality. We might be able to do more on the issue of water quality once the water is actually within our national water distribution systems. ... The line authorities have actually put in place a water reporting system and have worked on issues of leakages and have come forward a long way.. I think nationally you could do a lot after you reach your fair and equitable allocation.” (pers. communication, NAD).

However, others did not find the scope of action of Palestinian actors to be quite as limited. Expectations and demands directed at policy-makers at the national level included taking measures to assist farmers when faced with droughts, enforcing the existing internal framework on water more effectively, and ore strongly involve all relevant stakeholders and ministries in action on climate change. It is noticeable that many of the policy options identified in the Palestinian Adaptation strategy were not mentioned by interviewees.

As regards demands and expectations towards the international level, the single main demand and expectation was not specific to either climate change or water, but was that international actors should put pressure on the Israeli government to accept that a “model of joint and fair management, based on international law, does actually work” (pers. communication, NAD), based on experiences in other regions of the world. A further demand was funding, in particular against the background of the fact that with Palestine being a non-state and thus no Party to international environmental agreements, the PA is barred from accessing certain international environmental funding sources. Demands were also voiced for capacity-building, information exchange and technology transfer. Other than that, there was a notable absence of any expectations for the international level; for example, none of the interviewees expressed that the international legal framework on climate change or negotiations going on at the UNFCCC would have any significance for the Palestinian context. One interviewee even said expressly that they did not have many demands directed towards the international level and that guidance documents coming from the international level were only of little help, given that adaptation measures needed to respond to the local context (pers. communication, PWA).

Concerning the international framework, most interviewees asserted that Palestinians should get “their water rights” or “access to their water”. This, in their view, had priority over water from “non-conventional” sources, notably desalination:

“They [the Israelis] said, we have four desalination plants in Israel. We said, OK, but you have the largest quantity of ground water resources, you control more than 85%. Give us our water rights for these three aquifers and Jordan river, then we can talk about non-conventional water resources.” (pers. communication, Palestinian Water Authority)

The most elaborate statement regarding the joint framework came from an advisor to the Palestinian Negotiations Affairs Department who stated that the future agreement on the matter should be based on the principles of international water law; with a view to climate change, allocations should be based on percentage allocation relative to the safe yield in a given year, rather than absolute figures. Moreover, international involvement in a joint water management body was also suggested (pers. communication, NAD).

6 Evaluation of results

The following section presents the main results, based mainly on stakeholder interviews conducted in Israel and the oPT, as well as complementary literature review.

6.1 Climate change impacts on water related human security and conflict

With regard to the physical impacts of climate change, Israel and the oPT have experienced in the past and are further expected to experience in the future a decrease in their natural water availability, which can be partially attributed to climate change impacts (with a rather high degree of uncertainty). Indeed, reduced water availability and changes in precipitation patterns is the single most important impact of climate changes regarding both entities.

Both in Israel and in the oPT climate change impacts on the water sector seem to feature low on the political agenda (although more so in the oPT than in Israel). Water related impacts on human security in the West Bank or the hydro-conflict between Israel and Palestine generally feature quite high on the political agenda in the oPT, and comparably low in Israel.

Overall, both in Israel and in the oPT, climate change is not perceived as a significant threat to human security, since other – non-physical, political factors – are perceived to have a much greater influence. However, the Palestinian and Israeli narratives tend to have different explanations for this claim: According to the Palestinian narrative, the Israeli occupation and control over the shared water resources is the major cause of insufficient water supply. By comparison, less reference was made by interviewees on the Palestinian side to the role of internal factors (e.g. institutional capacity). However, water-related aspects of human security (including insufficient supply of water to some parts of the population and food security) are of much greater concern in the oPT than in Israel at present,²⁹ which also translates into greater concern of the additional impacts of climate change. This is different for Israel, where water-related human security issues are of relevance only for specific population groups, such as the case of the unrecognized Bedouin villages in Israel.

Concerning the likely impact of climate change on the Israeli-Palestinian conflict, Israeli interviewees did not perceive climate change to be a likely source of conflict or a factor contributing to the conflict with the Palestinians altogether, since: 1) both entities would face water stress anyhow, with non-physical stressors (e.g. demographic growth) having a more

²⁹ Feitelson et al. 2012, p. 244 also conclude that Palestinians are much more vulnerable to climate change than the Israeli side.

acute and immediate impact compared to climate change) and 2) artificial means are available for increasing water supply (i.e. desalination and wastewater treatment). These have already reduced significantly Israel's dependency on natural water resources, and Israel argues that a similar approach can be applied in the oPT. On the Palestinian side, some perceive that climate change may exacerbate the existing conflict over water with Israel; this argument comes in two forms: More frequently, an argument was made that Israel was deliberately using climate change as an argument to counter Palestinians' demands for a higher water allocation.³⁰ However, it was also mentioned that as natural resources become scarcer conflict over them is likely to intensify.

With regard to internal conflicts, interviewees did not point to any water-related conflicts within Israel that would be likely to be exacerbated as a result of climate change. Within Palestine, some interviewees pointed to a few conflicts over water among Palestinian communities, also expressing that these may currently be less overt than in a situation where the conflict with Israel did not exist. If water allocations to Palestinians were to be substantially increased as part of a permanent peace agreement with Israel, it could be expected that as overall water supply in the oPT would increase, such internal conflicts would be reduced, because there would be more water. In any case, climate change does not appear to be the determining factor regarding water-related conflict either between the parties, or regarding the – rather infrequent – water-related internal conflict.

Thus, with regard to climate change impacts on water conflicts, our study does not support the thesis that climate change as such is likely to exacerbate the existing Israeli-Palestinian conflict, such as stated by Brown/Crawford (2009) for the Middle East at large. Nor does it support the thesis that climate change will act as a “threat-multiplier” exacerbating tensions between Israelis and Palestinians, such as stated by Freimuth et al. (2007, p. 4). Instead, our findings are closer to the findings of Feitelson et al. (2012), who assume that climate change is unlikely to exacerbate the conflict between Israel and the oPT. This assumption is based on calculations showing that even under the most extreme climate change scenarios, and taking in account population growth, there will be sufficient water supply if technological solutions (such as desalination and water re-use) will be implemented.

However, our research also does support the finding that climate change becomes intertwined and entangled with the existing political conflict and narratives, and may thus have an impact at least at prolonging or exacerbating a climate of mutual distrust and accusations between parties in conflict (Brown/Crawford, p. 15). Our research also is consistent with the finding by Selby/Hofmann (2011) that within politically contested environments, the most important causal pathway is not from environmental scarcity to conflict, but instead from conflict to environmental stresses and vulnerabilities.

³⁰ Feitelson et al 2012, p. 252 note that “Israel is less likely to forgo its control over abstractions from the Western Mountain aquifer due to climate-change scenarios. This is reflected in the Israeli official argumentation, where the use of a lower average annual recharge is related to climate change”.

6.2 Effectiveness of current policy framework in addressing the issues

6.2.1 The joint framework

The main part of the joint policy framework for managing shared water resources is the Interim Agreement signed by the parties in 1995 for a 5-year period. Since then, the reality on the ground has changed significantly, and no permanent agreement has been negotiated. There is no other shared policy-framework in place that addresses more specifically climate change and its impacts. Hence, it is the effectiveness of that framework for addressing human security and conflict issues that is of relevance in the present context. The effectiveness of this framework will be assessed using a policy cycle approach.

With regard to agenda setting and policy formulation, the perspectives of official policy-makers, and to a lesser extent academics and NGO representatives, on the joint policy-framework and its role in efficiently managing joint water resources are very much determined by whether they belong to the Israeli or the Palestinian side; in other words, strongly diverging narratives can be observed. While both sides tend to agree that the joint policy framework is insufficient with a view to ensuring a fair allocation and efficient water management of joint water resources (and hence with regard to preventing negative impacts on human security and conflict), they tend to give diverging reasons for it, and hence they propose very different solutions for improving it.

Notably, the discourses on both sides are quite different in character: While on the Israeli side water scarcity in general, and climate-induced water scarcity in particular, are considered to be “technical” issues which can be solved through technological means (notably desalination and improved wastewater treatment), the Palestinian discourse is much more political, relying strongly on notions such as “water rights” or “fair allocation”.³¹ While Palestinians do not necessarily reject technological solutions, they mostly prefer to see them as a second step, once their political demands relating to freshwater have been met. Obviously, these divergent narratives are, to a large extent, a result of the existing political conflict, which has led to a high level of suspicion and mistrust on both sides, with even the most fundamental matters (such as water data) becoming an issue of ongoing disputes. Both sides acknowledge, that water problems will only be resolved as part of an all-encompassing peace agreement, together with other fundamental issues of the conflict. Thus, the existing political conflict and the narratives accompanying it, which is not mainly water-related and not caused by climate change, prevents the formulation of adequate policies in the light of climate change.³²

Part of the mistrust which was created between the parties has to do with the poor implementation of the current policy framework. Both the Interim Agreement and its

³¹ A similar observation was made by Weinthal/Marei (2002). Interestingly, an increasing awareness about climate change does not seem to have changed the picture at all.

³² Weinthal/Marei 2002 have previously come up with a similar conclusion referring only to water issues in general, but without taking climate change into account.

established institutions (namely the Joint Water Committee, or JWC) do not efficiently provide comprehensive, long-term solutions to the water problems in the West Bank. According to the Palestinian narrative, the Joint Water Committee is one of the major obstacles for implementing water projects in the West Bank, as water projects are continuously rejected due to (unjustified) security considerations. According to Israeli officials, the JWC has authorized a number of water projects that could alleviate water stress in the oPT (e.g. wastewater treatment plants), but these are not implemented, either due to lack of capacity or due to conflicting political interests in the Palestinian Authority. Here, it becomes clear that an existing (political) conflict indeed is a major factor preventing the implementation of an existing policy-framework in a way that is likely to bring maximum environmental and social benefits in the long run.

All in all, our research thus supports statements in the existing literature that the existing conflict is an important – even though not the only – factor preventing the formulation and implementation of certain water-related policies that could provide solutions to existing water problems and thus effectively address climate-induced risks to human security (Brown/Crawford 2009, p. 10; Kramer 2008, p. 31; Feitelson et al. 2012, p. 253; Tamimi/El Hassan 2011).

6.2.2 Separate policy frameworks

The Israeli framework seems to be rather effective in mitigating climate change impacts on the water sector. For example, the agricultural sector relies almost entirely on treated wastewater, and by 2020 nearly 80% of municipal water use will be supplied from desalinated water. However, cases of mal-adaptation also exist, for example in the unrecognized Bedouin villages, which are being forced to integrate into a centralized system for managing natural resources (i.e. land and water). This integration diminishes their ability to practice traditional livelihoods (including traditional ways of adapting to climatic changes), leading to poverty and loss of social structures. Moreover, Palestinians often consider the fact that the water needs of the Israeli population tend to be fully met as a factor contributing to the water insecurity of parts of the Palestinian population.

With regard to the Palestinian policies on climate change and water respectively, it can be observed that while ambitious on paper, implementation lags behind. This has a variety of causes, including the fact that climate change has only recently become part of the Palestinian political agenda and certain actors are hesitant to fully embrace it as a relevant topic, lack of capacity, lack of coordination among different actors, and lack of funding. However, the space for policy-making by the responsible political bodies within Palestine and non-state actors is considerably limited by the Israeli occupation; thus, the shortcomings in implementation can certainly not be attributed to these internal factors alone.

6.3 Stakeholders' expectations and demands from a future policy framework

In the following we present stakeholders' expectations and demands using once again the policy-cycle approach. It should be noted at the outset that stakeholders hardly express any

specific demands relating to climate change, but mostly focus on water management at large. This reflects the general view – to be found on both sides – that climate change is only a minor issue as compared to the already existing water scarcity (Israel perspective) or the problems resulting from the existing overall policy framework on water (Palestinian perspective).

Concerning the stage of agenda-setting/policy formulation, people from both sides expect that a permanent peace agreement will solve the fundamental political issues that are controversial between the two parties, including water issues. There are diverging views on the role of the international community in this regard, with, Palestinians for example demanding that third countries should pressure Israeli to agree to a future allocation of water in line with principles of international water law. However, the diverging narratives on water issues and how they could be solved– a largely technical one on the Israeli side, and a more political one on the Palestinian side – may make arriving at such a solution difficult. However, some interviewees have also indicated that the water issue may be relatively easier to solve in final status negotiations than other issues. Israeli stakeholders also propose that investments should be made in regional systems, which through desalination would provide secure water supply to various Middle Eastern countries.

Concerning an improved implementation of the current framework, both sides tend to demand that certain projects should be implemented on the ground to prevent a deterioration of joint water resources and improve water availability in the West Bank. However, the views on what projects should be carried out and what are inhibiting factors diverge. For example, from the Israeli side, there are demands that the Palestinian side should improve waste water management. Palestinians, by contrast, tend to request the drilling of more wells that could be used by Palestinians and the approval of other projects they have suggested to the JWC.

Concerning demands directed at the international level, funding, capacity-building and technology transfer for Palestinians are three frequent demands relating to water management and the implementation of water projects in the Palestinian territory.

Concerning the Israeli policy framework, demands are being made both by Israelis and Palestinians that demand-side management should be improved, as current policies are focused on increasing supply. On the Palestinian side, demands relate to better enforcement of the existing framework, more re-use of waste water and other specific policies; however, mostly the fact that Palestinian policy-makers have very little space for autonomous policy implementation is stressed.

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List of interviewees

Israel

Youvel Arbel, Friends of the Earth Middle East (FoEME)

Yeshayahu Baror, Chief Scientist Israel's Ministry of the Environment

Valerie Brachya, Jerusalem Institute

Raed Bustan, Sustainable Community Action for Land and People

Eran Feitelson, Professor in Geography and Public Policy at the Hebrew University of Jerusalem

Avi Heler, Ministry of the Interior

Eyal Herovani, Betsalem

Mr. Meir, Professor, Ben Gurion University

Baruch Nagar, West Bank Department, Israel Water Authority

Nir Papa, Society for Protection of Nature in Israel (SPNI)

Ehud Praver, Office of the Prime Minister

Shimon Tal, Israel Water Union

Ibrahim Wakili, Head of Regional Council for Unrecognized Villages

Arye Wanger, Israel Union for Environmental Defence (IUED)

Sawsan Zahara, Adalah

Miki Zaide, Israel Water Authority

oPT

Official, Negotiations Affairs Department, Palestinian Authority

Abdel Gharfour, Palestinian Water Authority

Nidal Katbeh, Environmental Quality Authority

Nidal Mahmoud, Institute of Environment and Water Studies

Clemens Messerschmid, independent hydrologist, Ramallah



Rima Abu Middain, UNDP

Abdul Latif Mohammad, Palestinian Agricultural Relief Committees (PARC)

Abeer Al Butmeh, Palestinian Environmental NGOS Network, PENGON -Friends of the Earth Palestine

Two Palestinian representatives of the Joint Water Committee