



RESEARCH REPOSITORY

*This is the author's final version of the work, as accepted for publication following peer review but without the publisher's layout or pagination.
The definitive version is available at:*

<https://doi.org/10.1080/24694452.2019.1613954>

Ide, T. and Tubi, A. (2020) Education and environmental peacebuilding: Insights from three projects in Israel and Palestine. *Annals of the American Association of Geographers*, 110 (1). pp. 1-17.

<https://researchrepository.murdoch.edu.au/id/eprint/59908>

Copyright: © 2019 by American Association of Geographers
It is posted here for your personal use. No further distribution is permitted.

Education and Environmental Peacebuilding: Insights from Three Projects in Israel and Palestine

Tobias Ide

(Georg Eckert Institute, Brunswick, and Department of Geography, Hebrew University of Jerusalem)

Amit Tubi

(Department of Geography, Hebrew University of Jerusalem)

Abstract:

Environmental peacebuilding has attracted great scholarly and political interest in recent years, but little knowledge is available on the interface of education and environmental peacebuilding. This void is unfortunate given the importance of education for peacebuilding and the wider “educational turn” in human geography. This study represents the first systematic analysis of the role of education activities in the context of environmental peacebuilding. We establish a theoretical framework and analyse the education activities of three environmental peacebuilding projects in Israel and Palestine based on 45 interviews conducted between 2010 and 2018. The findings reveal that the projects mostly aim to create trust and understanding, but that activities related to an improvement of the environmental situation and to the cultivation of interdependence take place as well. Despite a number of significant problems – primarily the tense political situation and local resistance – the education activities successfully catalyse processes of building everyday or local peace, at least among the participants. An impact of such projects on formal conflict resolution is possible, but remains uncertain. The findings also show that environmental cooperation can spill-over and that contested processes of depoliticisation and neoliberalisation can, at least to a certain degree, be utilised to positively affect environmental cooperation, education and peacebuilding.

Key words:

climate change; environment; peace; Middle East; security

Introduction

Environmental degradation is on the rise in almost all regions of the world due to climate change, unsustainable consumption, inadequate governance structures and rapid urbanisation. Scholars as well as policy makers are hence increasingly concerned about the security implications of environmental change, including issues of conflict and migration (McDonald 2013; Methmann and Oels 2015). In this context, the concept and practice of environmental peacebuilding is receiving increasing attention (Krampe 2017; Ogden 2018). According to a widely used definition, “[e]nvironmental peacebuilding integrates natural resource management in conflict prevention, mitigation, resolution, and recovery to build resilience in communities affected by conflict” (Environmental Peacebuilding Initiative 2017).

Environmental peacebuilding refers to a wide set of practices, including the inclusive management of natural resources, the provision of sustainable livelihoods, the mediation of environment-related disputes, and the build-up of trust and understanding through intergroup cooperation on shared environmental issues (Dresse et al. 2018). These practices are particularly important in conflict and post-conflict societies, for instance because fighting activities cause environmental destruction, environmental governance institutions are typically dysfunctional due to insecurity and lack of funding, and ecosystem services are vital to provide livelihoods (including for former and potential combatants) (Conca and Wallance 2009; Kirsch and Flint 2011). Consequentially, elements of environmental peacebuilding have been applied by UN agencies, international donors, national governments, NGOs and local communities in conflict and post-conflict situations (Jensen et al. 2015).

Research on environmental peacebuilding is starting to catch up with the field’s practical relevance (see Ide 2018b for a review). Recent cross-case studies indicate that environmental

cooperation reduces the likelihood of military disputes between states (Barquet, Lujala, and Rød 2014) and even increases the chances for the improvement of mutual relations (Ide 2018a; Ide and Detges 2018). On the intra-state level, there are also several studies claiming that the provision of sustainable livelihoods through resource management and that building trust by cooperating on joint environmental challenges had a number of positive effects on peacebuilding processes, for instance in the Democratic Republic of Congo (Burt and Keiru 2011), Iraq (Aoki, Al-Lami, and Kugaprasatham 2011) and Ghana (Bukari, Sow, and Scheffran 2018). Other scholars, in contrast, claim that environmental peacebuilding has been largely unsuccessful in cases like Cyprus (Akçalı and Antonsich 2009), Kosovo (Krampe 2016) and Israel/Palestine (Reynolds 2017).

While the available literature covers a number of relevant processes and context factors (Dresse et al. 2018), there is a notable absence of studies exploring the role of education in environmental peacebuilding. Several authors argue that peace education should integrate environmental issues, either because environmental degradation can cause violence or because it undermines positive peace (e.g., Amster 2014; Naoufal 2014; Wenden 2014). But these studies do not deal specifically with environmental peacebuilding. Similarly, Ali and Walters (2019) discuss the role of environmental education for peacebuilding, but mostly focus on joint outdoor experience as a tool for democracy learning.

We suggest that a closer focus on education in the context of environmental peacebuilding is important for a number of reasons. The first being that recent research has convincingly demonstrated “the crucial role education plays in promoting sustainable peacebuilding” (Novelli, Lopes Cardozo, and Smith 2017: 15). Second, human geography has seen an “educational turn” in the past decade (Waters 2017: 279). The available literature has done an important job in highlighting the complex manner in which education is embedded in wider spatial and social contexts, but it predominantly focusses on problematic (e.g., militarisation, gentrification) rather than positive dynamics (such as peacebuilding) (Nguyen, Daniel, and Huff 2017). Finally, while

geography has traditionally been more focused on war and violent conflict, analysing the drivers and dynamics of as well as the obstacles to peacebuilding adds to the emerging research on geographies of peace (Megoran 2011). Yet with very few exceptions (e.g., Schoenfeld et al. 2015), little work has been done on the intersections between education and environmental peacebuilding in this field (McConnell, Megoran, and Williams 2014).

Our study represents the first systematic analysis of education in the context of environmental peacebuilding. In the following section, we delve deeper into the debates mentioned here to conceptualise the role education activities can play in environmental peacebuilding processes. Afterwards, we empirically analyse three environmental peacebuilding projects that have explicit education activities in the context of the Israeli-Palestinian conflict: the Good Water Neighbors project, the Migrating Birds Know No Boundaries project, and the Arava Institute for Environmental Studies. We then present and discuss our main findings and examine their contribution to current theoretical debates. The paper concludes by drawing several insights for further research and practice on environmental cooperation, peacebuilding and education.

Education and Environmental Peacebuilding

The term peace is multifaceted (Koopman 2011), however, it is important to distinguish between two broad understandings of peace for the purpose of this study. Peace can refer to the cessation of major hostilities, either through external enforcement or through agreement between high-ranking decision makers from both sides. The reasons for such formal peace are complex and include domestic political changes and economic considerations as well as external interests and pressures, among other factors (Rasler, Thompson, and Ganguly 2013). Structures of education, such as (un-)equal distribution of education services along ethnic or political lines, can be relevant for formal peace, mostly in intrastate and economically less developed contexts (Kuppens and Langer 2016). By contrast, the impact of education processes – broadly defined as a set of

structured activities that serve to acquire knowledge and skills – on this kind of peace is at best minor and indirect.

The second understanding of peace comes from the recent literature on peacebuilding, which highlights the importance of local or “everyday” forms of peace. While external intervention and political agreements might (temporarily) halt the conflict on the macro-level, they provide few safeguards against the continuation of local violence and the re-eruption of hostilities in the near future (Autesserre 2009). Everyday encounters between members of hostile groups as well as more conscious efforts of reconciliation, joint commemoration and bringing marginalised perspectives to the fore can undermine polarising narratives and hence pave the way for a locally grounded and sustainable peace (Autesserre 2014; Mac Ginty 2014). In line with this, Woon (2017) and Marijan (2017) highlight the significant, yet still limited agency of youths to facilitate peacebuilding in everyday contexts. Practices (or activities) of formal education (e.g., in schools or universities) and informal education (e.g., in the context of youth clubs or NGO activities) might well contribute to this latter form of (everyday) peace (Bajaj 2015). They can do so, for instance, by teaching each groups’ narratives to the other and by arranging meetings between students from different conflict parties (Smith Ellison 2014; Zembylas and Bekerman 2013).

In this context, one should be aware that formal and everyday peace are not two entirely distinct spheres. Geographers have demonstrated in various contexts how the dynamics of peace and conflict on the (inter-)national scale can impact peace at the local scale (this issue is discussed in further depth in section 4.2), but also how everyday forms of peace might influence more formal peace processes (Ide 2017; Williams 2013). Similarly, the literature on mediation and diplomacy considers ‘track III’ activities (involving NGOs and grassroots movements) important as they can boost support for and increase the inclusiveness of peace processes (Böhmelt 2010; UNDP 2017). So while the impact of education activities at the macro-scale of peace negotiations is negligible in the short-term, they can contribute (along with many other processes

and initiatives) to the creation of a societal climate supportive of sustainable reconciliation in the long-term. In the words of Davies (2010: 496): “Education can build resilience and opportunities for individuals, but it does not on its own create peace.”

Our study specifically explores the role of education processes and activities in the context of environmental peacebuilding. A recent review outlines four mechanisms through which environmental cooperation may contribute to peacebuilding (Ide 2018b): (i) It improves the environmental situation, thereby sustaining livelihoods and reducing the likelihood of environment-related conflicts. (ii) It creates trust and understanding between conflicting groups working together on environmental challenges. (iii) It reveals interdependencies between groups, which may be deepened through the spill-over of cooperation. (iv) It builds institutions that can serve as communication channels and tools for conflict resolution.

Education can be relevant for all four of these mechanisms:

- (i) Improving the environmental situation: Education can support the environmental security of vulnerable groups, for instance by enabling them to access insurance systems, promoting techniques for water and soil conservation, and increasing resilience against “natural” disasters (Fielke and Bardsley 2014; Haynes and Tanner 2015). This can contribute to peacebuilding by reducing tensions over natural resources. An enhanced environmental situation that enables more secure livelihoods also increases the opportunity costs of joining a violent group (Barnett and Adger 2007).
- (ii) Creating trust and understanding: Environmental issues are often framed as positive-sum games encompassing low politics¹ that are well suited to bring groups of adversaries together. Such meetings go beyond merely making contacts, and enable the participants to work together on shared challenges (Ali 2011). Joint environmental workshops and classes, if designed in a conflict sensitive way, are well-suited to facilitating such cooperation (Paulson 2015) and can further processes of resisting dominant narratives and stereotypes (Nasie, Diamond, and Bar-Tal 2016).

- (iii) Cultivating interdependence: Environmental peacebuilding theory has long speculated that a sense of shared environmental challenges increases the willingness to work together (Ide 2017) and creates feelings of commonality (Conca and Dabelko 2002). Education is well suited to promoting environmentally interdependent subjectivities and imagined transnational environmental spaces (Koch 2015; Waters 2017). Joint environmental education efforts may also lead to spill-over effects that promote further interdependence and cooperation, for instance when consultations between ministries of education result in the establishment of youth exchange programmes (Krotz 2007).
- (iv) Building institutions: There are several examples of environment-related institutions involving high-ranking decision makers from hostile states, such as the Indus Basin Commission (Zawahri 2011) or the Trifinio Plan (Miranda, Slowing Umaña, and Raudales 2010). We are not aware of any case to date where such influential institutions have been established for any kind of environment-education nexus. However, joint efforts to improve environmental education could facilitate the establishment of broader institutions in the education sector, such as textbook commissions or joint advisory boards (Durand and Kaempf 2014). Such institutions would go beyond education processes and activities as they are parts of education structures, but are nevertheless discussed in this study.

While we contend that these are the mechanisms through which education can support environmental peacebuilding, we do not (yet) make any claims about the prevalence and effect of these mechanisms in practice. Furthermore, it is important to note that education practices can also play a role in the continuation and intensification of conflicts (Novelli and Higgins 2017; Schlosser 2017), e.g. due to placing responsibility for environmental problems with the other side.

Below, we will shed further light on the role education can play in environmental peacebuilding, including potential problems and pitfalls, by drawing on the framework elaborated in this section. In order to do so, we empirically analyse three environmental peacebuilding

projects in the Israeli-Palestinian context. Before presenting the results of the empirical analysis, we briefly explain the methods and data used.

Methods and Data

For the empirical study, we selected three environmental peacebuilding projects with education components in Israel and the Palestinian West Bank (all three involve Jordan as well, but this study focuses only on the Israeli-Palestinian context).

The first project is the *Good Water Neighbors* (GWN) project run by the NGO EcoPeace.² It identifies communities in Israel and Palestine that share a joint body of water (often a river or an aquifer). GWN then utilises a mix of advocacy work at national level, policy consultation between the mayors of the respective communities, and grass roots work with adults and youths in the community to promote cooperation and environmental protection. The grass roots activities include the training of so-called water trustees, young people who learn (mostly in a classroom context) about the drivers and solutions of water problems in their region and who eventually meet their counterparts from the other country during a joint youth camp (Figure 1). In addition, EcoPeace provides training seminars for teachers (Djernaes, Jorgensen, and Koch-Ya'ari 2015; Ide 2017).

Figure 1 in here

The second project is called *Migrating Birds Know No Boundaries* (BKNB), which aims to preserve migratory and stationary birds in Israel and Palestine.³ In order to do so, it lobbies decision makers, provides nesting opportunities, and educates farmers and school students about the importance of bird protection. Recently, it has focussed on barn owls as biological pest controllers (Figure 2). The project has an explicitly stated peacebuilding objective by aiming to

promote cooperation between Israelis and Palestinians and especially between farmers, educators and scientists from both communities (Leshem 2017; Roulin et al. 2017).

Figure 2 in here

Third, the *Arava Institute for Environmental Studies* (Arava Institute), located on the southern tip of Israel, offers undergraduate and postgraduate degrees in environmental studies.⁴ Its student body comprises of young people from Israel, Palestine and other countries. The students learn about the environmental challenges of the region as well as about ways to address and manage those challenges, but they also build understanding and personal relationships by learning and living together (see Figure 3). Recently, the institute also became active in promoting cross-border environmental cooperation projects between Israel and Palestine (Schoenfeld et al. 2015; Zohar, Schoenfeld, and Alleson 2010).

Figure 3 in here

These three projects were selected for a number of reasons. They operate in the same context characterised by an intractable conflict, a setting that is particularly challenging and important for peace-related education activities (Nasie, Diamond, and Bar-Tal 2016). Further, the projects address different issues (water, wildlife conservation, environmental management) and different audiences (school students, university students, farmers) through both formal and informal education, hence allowing us to draw broader inferences. The projects are also among the (if not the) largest environmental peacebuilding initiatives currently active in the region.

The main data source of this study is 45 semi-structured interviews conducted by the first author in 2010, 2013 and 2018. Conducting interviews during different periods allowed us to examine changes over time, especially with regard to the broader political, economic and

environmental situation. Table 1 provides an overview of the interviews conducted and shows, for instance, that the largest numbers of interviewees were activists and staff members from the Good Water Neighbors project. A similar number of Israelis (23) and Palestinians (22) were interviewed. The interviews were tape-recorded and transcribed where appropriate. We also drew on the existing literature concerning the projects and referred to publicly available project reports for this analysis.

INSERT TABLE 1 HERE

Table 1: Overview of the interviews conducted

Findings

We present our findings in three steps. Firstly, we discuss whether and how the four environmental peacebuilding mechanisms outlined above are used in the education activities of the three projects studied. We also provide a glimpse of the impact they have. A more comprehensive impact assessment is not possible because any impact made by education activities on peace is long-term and diffuse (and hence hard to measure) (Davies 2010) and because no comprehensive access to the projects' alumni was possible due to privacy restrictions. In the second step, we highlight the problems faced by activities concerned with education for environmental peacebuilding in the context of intractable conflicts. Finally, we discuss our key results in the context of wider debates on peacebuilding, education and environmental security.

Mechanisms and Impact of Education for Environmental Peacebuilding

Our findings show that the education activities under study draw on three of the four environment peacebuilding mechanisms discussed above, although some of them (*creating trust and understanding*) are more frequently used than others (*improving the environmental situation and cultivating interdependence*).

The first environmental peacebuilding mechanism we discuss is *improving the environmental situation*. This mechanism is clearly used by all three projects, although interview partners rarely referred to it explicitly as a means for peacebuilding. BKNB, for instance, aims to increase barn owl populations through developing educational materials for school children, by placing nesting boxes, and through joint seminars with Israeli and Palestinian farmers that facilitate knowledge transfer and inform farmers about owl conservation. Barn owls act as biological pest controllers and can therefore improve farmers' yields (Roulin et al. 2017). Similarly, in the context of their school and community activities, GWN has established several rainwater collection and greywater re-usage systems to increase local water availability, especially in the West Bank.

These activities do not reduce environment-related tensions between the two sides. There is very little conflict over farming and bird conservation between and Israel and Palestine. Water relations certainly are tense, but are embedded in confrontational national discourses and considerable structural inequalities regarding water access (Fröhlich 2012; Selby 2013). Small-scale water infrastructure projects have only a very limited impact in this context.

However, education that improves the environmental situation as well as several side effects of such education activities may result in positive effects on livelihoods (Smith Ellison 2014). This effect is especially relevant in Palestine, which faces low levels of economic development and high unemployment rates. Examples from the three projects under study include (i) BKNB's training activities designed to use barn owls as biological pest control, (ii) formal environmental studies degrees awarded by the Arava Institute, and (iii) informal education embedded in or related to GWN's environmental education activities, such as (green) business training courses for girls and pedagogical trainings for teachers. Improved livelihoods and better economic prospects, in turn, are widely recognised to raise the opportunity costs for participation in violent activities (Barnett and Adger 2007).

Some preliminary evidence suggests that education for environmental peacebuilding contributes to improving livelihoods and reducing hostilities, at least on the limited scale at which

the projects under study operate. During a meeting in the southern West Bank (15/03/2018), for instance, farmers who participated in the BKNB project reported that their fields suffer less damage from rodents now and that their overall level of satisfaction from their livelihoods has increased. Similarly, many alumni of the Arava Institute “have [prestigious] positions in the region” (interview Arava Institute, 16/04/2018).⁵

The second environmental peacebuilding mechanism, *creating trust and understanding*, is most frequently used by the education projects under study. GWN’s youth camps, for example, “bring together students who have learned the same things. During these meetings, the students get to know each other, but we also frequently speak about water” (interview Ein Gedi, 08/04/2018). The Arava Institute also aims to raise empathy and mutual understanding between Israelis and Palestinians who “study and live together [...] for at least an intense three-month period” (interview Arava Institute, 15/04/2018).

According to the interview partners, environmental issues are well suited to create trust and understanding within a conflictive context because they (i) constitute a common interest and (ii) are less contested than other issues (e.g., the status of Jerusalem, Israeli settlements in the West Bank, and Palestinian refugees’ right of return). In the words of a GWN staff member: “When you have very bad political conflict, you need to find an issue that connects the parties” (interview Jerusalem, 17/04/2018).

The education activities of all three projects hence go beyond the contact hypothesis⁶ as Israelis and Palestinians not only meet, but also learn (and live) with each other (Novelli, Lopes Cardozo, and Smith 2017), especially at the Arava Institute. The large majority of the 45 interviewees were optimistic that such joint activities promote mutual understanding between the participants. In the words of a staff member of the Arava Institute (who also explicitly refers to the intertwinement of different scales and tracks of peacebuilding):

“We are building a new generation of people that are able to communicate across barriers [...] I think one of the problems why there is no peace process at the

moment, besides the lack of a diplomatic channel, is that the Israeli public and the Palestinian public do not interact [...] Peacebuilding is people to people engagement and this is what we are doing” (interview Arava Institute, 15/04/2018).

Based on several encounters with young people currently or previously exposed to the GWN education activities and the Arava Institute’s environmental studies programme, the authors can confirm that participants do build mutual understanding, question stereotypes, and become aware of structural inequalities. For instance, one of GWN’s water trustees, an Israeli pupil from a very conservative background, explained:

“Water is important, and good neighbours are as well [...] And they [Palestinians] do not have it. They could wake up one day and not have water [...] I was shocked when I realised that this is really how they live [...] They need to drink and take a shower” (interview Gilboa, 06/05/2013).

Similarly, an Israeli principal whose school participates regularly in the GWN education programme emphasised that “[f]or kids, meeting with Palestinian kids was very important [...] to learn about what they feel and what they think” (interview Jerusalem, 13/05/2013). Further, a Palestinian teacher confirmed: “This affected my students” (interview Bethlehem region, 02/05/2013) because during the meetings, the students realised that Israeli youth have similar concerns and interests (including environment-related ones). Education for environmental peacebuilding activities hence provided “alter-childhoods” (Kraftl 2015: 219) with a stronger focus on joint environmental learning and mutual interactions for over 1,000 students (Arava Institute) and around 9,000 pupils (GWN).⁷

But while the interviewees (in line with the impressions the authors gained during their field work) highlight the role education for environmental peacebuilding can play in promoting everyday or local peace, they remain sceptical regarding its impact on formal peace (for instance in the form of an Israeli-Palestinian peace agreement). Some project staff members and activists argue that the projects’ alumni can act as mediators and thereby broaden the impact, for instance

by setting a more positive societal climate for peace. They are hence optimistic that bottom-up, track III initiatives can have an impact on peace processes at larger scales (UNDP 2017). But a majority of the interviewees believe any extended effects to be unlikely until there is significant advancement in the formal peace process, hence illustrating the dependence of local peace processes on (inter-)national scale negotiation dynamics (Megoran, McConnell, and Williams 2016). This finding is well in line with scholarly claims that education activities are more likely to impact everyday and local forms of peace (Bajaj 2015; Smith Ellison 2014), and that environmental peacebuilding locks in existing processes of reconciliation rather than initiating new ones (Ide 2018a).

Cultivating interdependence is the third mechanism through which education can contribute to environmental peacebuilding. Two processes are relevant here. On the one hand, highlighting „cross-border environmental issues can generate a sense of common regional identity” (Barquet 2015: 15) and produce an impression of shared affectedness. This is taking place in the contexts of each of the three projects under study. All 45 education practitioners interviewed, as well as the alumni we met, strongly emphasised transnational environmental problems, shared vulnerabilities and common responsibilities. As the education guidelines of GWN state:

“Israel, Jordan and Palestine straddle a limited geographic area comprised of shared water basins [...] In our arid climate, all the watersheds are subject to water stress which will become exacerbated in the future [...] demonstrating] the importance of cooperation among neighbors, despite political borders, if we are to protect our water sources” (Lipman Avizohar and Backleh 2013: 30-31, 101).

The aim of such education activities, and one in which they partially succeed, is to discursively produce joint, transnational “scales of meaning” (Towers 2000: 26). Several other studies on GWN (Djernaes, Jorgensen, and Koch-Ya’ari 2015; Ide 2017) and the Arava Institute (Schoenfeld et al. 2015) also record this effect. As one interviewee explained, when referring to drought, desertification and other regional environmental challenges:

“It is a big threat to the region [...] So here, we found there is a real common interest [...] You see that the ecological aspect is a cross-border interest of the people and that we can live together, we can live in peace” (interview Tel Aviv, 28/03/2018).

However, as with *creation of trust and understanding* (mechanism 2), the impact of *cultivating interdependence* is mostly limited to the rather small group of people who actually participate in the projects and to everyday/local forms of peace.

On the other hand, once environmental interdependence is recognised, existing education activities can trigger follow-up cooperation. While the environmental security literature is rather sceptical regarding these spill-over effects (Aggestam and Sundell 2016), our study finds some evidence to support such claims. Two examples illustrate this: Based on the competences, networks and insights gained when administering the environmental studies program, the Arava Institute launched its Track Two Initiative in 2016. This initiative brings together decision makers and former high-ranking politicians as well as researchers and technical experts in order to promote cross-border cooperation on environmental problems. Currently, for instance, it aims to install solar panels around Gaza’s waste water treatment plant to prevent sewage spills during power outages (which, in turn, affect the Mediterranean coast of both Gaza and Israel). The spill-over process is highlighted by a staff member from the Arava Institute:

“When we launched the initiative, this was always in our mind: How do we take the lessons we have learned from working with students and academics and transfer them to the political level” (interview Arava Institute, 16/04/2018).

The second example pertains to the BKNB project. In the context of this project, joint research and education activities facilitated meetings with members of the armed forces in Israel and Jordan. The armed forces, in turn, agreed to coordinate the preservation of abandoned bunkers as nesting places for birds, hence adding an additional layer of Israeli-Jordanian regional communication.

Overall, such spill-over processes are limited and still very recent. In other cases, environmental cooperation between armed forces (Walters 2012) and low-level decision makers (Martin et al. 2011) contributed to peacebuilding once reconciliation started, but no such situation exists at present in the Israeli-Palestinian context. Some interviewees proposed that joint environmental (education) activities could set positive and symbolic counter-examples in public landscapes that are dominated by reports about the conflict, hence again highlighting the inter-scalar nature of (track III) education for environmental peacebuilding activities: “Suddenly, we received many phone calls from people saying: Wow, the media always show only the negative aspects of the situation, but never projects like this” (interview Tel Aviv, 12/04/2018).

So far, however, the impact of such positive examples on wider public landscapes is rather limited, especially in the context of the ongoing conflict. However, some effects may take time to develop. As an interviewee from the Arava Institute explained, regarding the potential long-term impact of environmental peacebuilding activities, “we have contributed [to peacebuilding] indirectly by providing the region with environmental leaders who understand the need for cross-border cooperation” (interview Arava Institute, 16/04/2018).

In line with our theoretical expectations, the fourth mechanism, *building institutions*, was not used by any of three projects under study (neither in the educational realm nor in any other respect). No formal institutions were established that could serve as communication channels and platforms for exchange between decision makers. Even the nearest example, the Arava Institute’s Track Two Initiative, is based on working groups and ad-hoc meetings. We have to acknowledge, however, that this study mostly focused on education processes and bottom-up and/or NGO-based projects, who are usually not primarily involved in the building of formal institutions.

But building institutions could become a relevant mechanism of education for environmental peacebuilding if the overall political situation improves. In the late 1990s, for instance, efforts to produce a joint Israeli-Palestinian textbook were initiated in the context of the (ultimately unsuccessful) peace process (Rohde 2013), while bilateral history textbook

commissions were established between France and Germany after World War II (Durand and Kaempf 2014). However, the prospects of this happening in the context of the ongoing Israeli-Palestinian conflict remain highly uncertain.

Problems of Education for Environmental Peacebuilding

Based on the 45 interviews, we identify two main problems and three secondary (but still relevant) problems faced by practitioners in education for environmental peacebuilding and their activities.

The first main problem is the tense overall political situation between Israel and Palestine, which deteriorated between 2010 and 2013 and then again between 2013 and 2018. Drivers of this deterioration were a lack of progress in negotiations, violent clashes in and around the Gaza Strip, small-scale terrorist attacks in Israel, the continued occupation of the West Bank and the expansion of Israeli settlements there, and the recent decision by the US President to recognise Jerusalem as the capital of Israel.

The related tensions have led to the intensification of a number of related problems such as local resistance and travel restrictions, which are discussed in greater detail below. But they also directly interfere with the education work of the three institutions under study. Interpersonal conflicts during joint meetings become more likely, hence reducing trust building and potential spill-over effects. Talking about a cross-border meeting with Israeli youths, for example, a Palestinian GWN staff member reported that “some asked me why we are attacking them” (interview Bethlehem region, 30/05/2013). Similarly, recent conflictive events and their dominant framing can overwrite the more cooperative narratives that GWN, BNKP and the Arava Institute aim to promote (Hammack 2009; Porat 2004). High levels of conflict also put additional strain on livelihoods and hence outweigh the positive impact of education for environmental peacebuilding activities (mechanism 1), for example as a result of import restrictions, reduced tourism and foreign investment, and Palestinian farmers facing eviction.

These are illustrative examples of how (failing) peace processes on the international scale can affect similar processes on other, more local scales (Megoran, McConnell, and Williams 2016). In line with this, the literature mostly agrees that the ability of environmental peacebuilding (Gaillard, Clavé, and Kelman 2008; Ide 2018b), peace education (Lopes Cardozo and Hoeks 2015; Staeheli and Hammett 2013) and track III activities (Peace Mediation Germany 2017) to promote everyday peace, and certainly formal peace, is considerably reduced when conditions are very tense and when there is a lack of support from political elites.

The second main problem is local resistance to education for environmental peacebuilding. In Israel, several interviewees reported instances where parents urged principals to cancel the GWN education programme at their school for political reasons or did not allow their children to go to transnational youth meetings due to security concerns. However, most Israeli interview partners reported that direct resistance is rare, and that indifference and scepticism towards the success of the project are more common.

In the West Bank, resistance against cooperation with Israelis in the context of the continued military occupation is much fiercer. People involved in education for environmental peacebuilding activities are considered to be “normalisers” and at times blacklisted for certain jobs or even threatened. One activist involved in the BKNB project, for example, was so scared about being publicly associated with the project that the person only agreed to a short telephone interview. EcoPeace recently lost its permission to implement the GWN project in public schools in the West Bank. In line with this, a GWN staff member reported that “some people [in the community] have attacked these camps [verbally], asking: Why do you take our students to the Israelis?” (interview Bethlehem region, 30 May 2013). And an employee of the Arava Institute explained that Palestinian alumni “get a lot of push back from their families, from their peers, from society in general” (interview Arava Institute, 15/04/2018). Naturally, this also raises a re-entry problem, that is, it limits the ability of Palestinian alumni of all three projects to act as mediators in their societies, and hence to “scale up” peace dynamics (Reynolds 2017).

The interviewees mention two primary strategies employed in order to work with or around this local resistance. On the one hand, the activities are often framed as environmental and scientific rather than as political. “We do not allow people to talk about politics. We are no political organisation. We are an environmental organisation” (interview Ramallah, 26/03/2018). Through this framing, the education projects simultaneously (i) legitimise their work as mutually beneficial (in contrast to interaction on zero-sum issues), (ii) try to avoid the attention of those potentially involved in resistance to cooperation, and (iii) seek to reduce conflicts during the joint meetings of Israelis and Palestinians.⁸

On the other hand, especially Palestinian interviewees emphasise the urgent need to generate concrete benefits in order to ensure local support. Examples of such benefits include the establishment of infrastructure (e.g., rainwater harvesting systems), knowledge transfer (e.g., on owl conservation and livestock health between farmers), and obtaining job-market relevant qualifications (e.g., formal degrees, business training). There is of course a risk that concrete benefits attract people who are less interested in peace or the environment. But given that such projects already have problems reaching people who do not support peacemaking and environmental protection in some way (Akçalı and Antonsich 2009), including such target groups could also be an opportunity.

Further, three secondary, but still relevant, problems of education for environmental peacebuilding emerge from the interviews and background talks we conducted:

- Mobility restrictions: Israelis are not allowed to move into the so called Area A zones in the West Bank that are administered by the Palestinian Authority (the major cities), while Palestinians need a permit to cross the border to Israel (which is especially hard to get when the security situation worsens). This complicates personal meetings between staff members, scientists, educators, farmers and youths involved in the projects under study, hence affecting everyday work as well as the creation of mutual understanding. As a consequence, EcoPeace and the Arava Institute have part-time staff responsible solely for

acquiring the respective permits for Palestinians (and Jordanians), while many GWN water trustee meetings now take place in Jordan.

- **Funding limitations:** The majority of interviewees mentioned the ongoing need to raise funds as well as the overall lack of financing as important challenges in their work. Financial shortages are of course not uncommon in either the education or the environmental NGO sector (Lopes Cardozo and Hoeks 2015; Zwirn 2001), but they still complicate education for environmental peacebuilding in three ways. Firstly, a lack of funds results in high workloads and comparatively low payment, which in turn leads to high staff turnover: “People are coming and going all the time. This is difficult” (interview Ashkelon, 28/03/2018). Secondly, striving for the limited funds available can increase competition between organisations advancing environmental peacebuilding projects, and in turn limit cooperation and synergies between them. Finally, the limited funding does not allow the projects to expand their activities in order to reach a much larger pool of participants.
- **Short-term meetings:** With the partial exception of the Arava Institute (where students study for at least three months), Israelis and Palestinians usually meet only for a few days in the context of the education activities. This can limit the potential to create mutual understanding and construct a sense of interdependence. Several peace education studies have demonstrated that the positive effects of short-term interactions can quickly fade once the participants return to their normal environment (Hart 2011; Kupermintz and Salomon 2005; Porat 2004). Sustained interaction is complicated by mobility restrictions (see above), but also by language barriers. Many GWN water trustees and farmers participating in the BKNB project, for instance, speak only Hebrew (Israelis) or Arabic (Palestinians), hence requiring the presence of interpreters. These findings are in line with Mac Ginty’s (2014) claim that everyday peacebuilding is much harder in physically and linguistically divided societies.

Discussion

The findings of this study relate in four main ways to wider debates on peacebuilding, education and environmental security.

In the first of these we show that education activities can support and contribute to environmental peacebuilding processes, mainly through *building trust and understanding* (mechanism 2), but also by *improving the environmental situation* (mechanism 1) and *cultivating interdependence* (mechanism 3). In the Israeli-Palestinian context, the success of education for environmental peacebuilding is currently limited to a small group of participants and to everyday or local forms of peace, mainly due to the tense political situation and to local resistance.

Still, there is room for moderate optimism. Promoting local peace can serve to prevent a further deterioration of relations, to keep communication channels open, and to broaden cooperation once a high-level peace process starts. The literature on environmental peacebuilding shows that pre-existing, low-level environmental cooperation can set the stage for processes of reconciliation once political elites commit to a peace process (Ide 2018a; Martin et al. 2011). Research on the geographies of peace and track III mediation also argues that “a lasting peace process [...] often requires a multi-track approach” (Peace Mediation Germany 2017: 6) operating on different (interlinked) scales (Woon 2017). To date, the three projects under study have rarely used more advanced mechanisms (spill-over of cooperation and especially building institutions). However, in light of the duration and intractability of the Israeli-Palestinian conflict and the numerous administrative and financial constraints faced by these projects, even limited success illustrates the potential of education activities to contribute to environmental peacebuilding.

In addition, environmental cooperation and education are both long-term processes, which thus might have a greater impact in the future. Recent spill-over processes (such as the Track Two Initiative and military coordination to preserve bird habitats) as well as several alumni of the

Arava Institute taking influential positions in the region could be interpreted as positive signs in this context.

Secondly, just as with other forms of peace education, education for environmental peacebuilding is by no means immune to the securitisation of education (Christodoulou 2018). As local resistance to all three projects studied demonstrates, educational activities that aim towards (or result from) environmental cooperation and reconciliation are considered a threat to national identity and national goals. The fierce resistance in the West Bank indicates that such perceptions might be particularly widespread in societies that are more intensely affected by the overall conflict or have a weaker position within it.

All interviewees stated that good, long-term relations with local communities are key to minimising resistance. As one of the local GWN coordinators (who are usually hired from and live in the respective community) put it: “The people here trust me. And this is why they support me” (interview Tulkarem, 31/05/2013). This finding provides further support for critiques of externally designed, liberal peacebuilding interventions, and for proponents of more locally grounded forms of peacebuilding (Autesserre 2017; Mac Ginty and Richmond 2013). As discussed above, framing the education activities as environmental or scientific rather than as political is another frequently used strategy to reduce local resistance. The interviewees further agreed that the environment is a good entry point for starting cooperative activities as it is less contested than other issues and can provide mutual benefits.

These insights provide the third connection to wider debates. Several authors have criticised environmental peacebuilding activities for depoliticising conflicts and for not addressing their political causes and related structural inequalities (Aggestam and Sundell 2016). Dealing specifically with the case of Israel and Palestine, Alatout (2006) argues that cross-border NGOs often adopt a narrow focus on environmental problems, hence ignoring wider socio-political contexts such as unequal distribution of water resources, the separation barrier and the ongoing Israeli occupation. A focus on cross-border interaction (and education), for example, assigns a

secondary role to questions of territoriality, which are key for many Palestinians. Similarly, Reynolds (2017) notes that environmental peacebuilding (including the related education activities) often provides little benefits to the weaker Palestinian parties, but directs attention away from more pressing and contentious political issues.

Education research also expresses concerns that education activities contribute to the “reproduction of normality” (Davies 2010: 492) in the context of structural inequalities and therefore have very little (positive) impact on peacebuilding. Many Palestinians resisting education for environmental peacebuilding activities as “normalisation” make similar arguments. They claim, also in line with critical geography research (Kirsch and Flint 2011), that the lack of direct violence coupled with ongoing inequalities (and the Israeli occupation in particular) might not be war, but is no peace either.

Our results demonstrate, however, that more politicised approaches are simply less likely to work in deeply conflictual settings. Many interviewees have stated that in such settings dealing directly with highly contested issues would lead to disagreement between the projects’ participants and/or may exacerbate local resistance. Besides, as discussed above, education for environmental peacebuilding can serve to prevent a deterioration of relations, to keep communication channels open, and to create spill-over processes at the macro level (e.g., military coordination, Track Two Initiative), but also at the micro level. At the Arava Institute, for instance, environmental concerns provide a shared entry point, but the different conflict narratives of all sides are later addressed in the context of the mandatory “peace-building leadership seminar”, which does not shy away from the most controversial issues. Such processes are akin to strategies of issue linkage in controversial political negotiations, which have frequently proven successful (Haas 1980). Similarly, many Jewish-Israeli GWN activists support Palestinian struggles against the occupation and the separation barrier, for instance by joining demonstrations or supporting legal claims (e.g., EcoPeace 2014). Education activities can also increase the visibility of inequalities.⁹

Fourthly, a crucial condition for success in education for environmental peacebuilding in the cases we studied was the provision of concrete, short-term benefits such as improved skills (e.g., through business training, workshops for farmers and pedagogical training) and formal qualifications (as issued by the Arava Institute). In the words of a local GWN coordinator: “The people in the villages want to get something from us. And not just advocacy” (interview Bethlehem region, 25/03/2018). In the West Bank particularly, such concrete benefits can improve livelihoods and hence reduce hostilities on the ground, but are also important in terms of avoiding local resistance and attracting participants. This is especially the case because the two main issues touched upon by education for environmental peacebuilding activities – environmental conservation and peacebuilding – provide the greatest benefits over longer time scales (Kupermintz and Salomon 2005; Swain 2016). Short-term, concrete benefits for the participants are therefore important to ensure commitment.

Seen from this perspective, our findings might not be too surprising or controversial. However, one should keep in mind that a strong focus on material benefits, technical knowledge transfer and employability is well in line with a neoliberal agenda on education. Such an agenda has been strongly criticised from the viewpoint of critical geographies of education, which argues that it promotes economic considerations over critical thinking (Nguyen, Daniel, and Huff 2017; Waters 2017). Criticism has also come from studies on education in peacebuilding, which assert that a neoliberal agenda ignores structural problems and confrontational discourses (Amster 2014; Novelli and Higgins 2017). We certainly appreciate such criticism and share the literature’s concerns about privatisation and competition in the education sector (which leave little time and resources for environment- and peace-related contents that are not exam-relevant).¹⁰ But our findings also demonstrate that providing material benefits and skills relevant for the labour market is necessary for successful education activities in the context of environmental peacebuilding.

Conclusion

This study represents the first systematic analysis of education activities in the context of environmental peacebuilding. It hypothesises that such activities can contribute to local or everyday peace through four main mechanisms, but make limited impact on formal peace processes. An in-depth, multi-year analysis of the education activities of three environmental peacebuilding projects in Israel and Palestine revealed that *creating trust and understanding* is the most frequently used mechanism, but that activities related to *improving the environmental situation* and *cultivating interdependence* take place as well. The mechanism of *building institutions* was not observed. Despite a number of important problems – primarily the tense political situation and local resistance – the education activities successfully catalyse processes of building everyday/local peace through environmental cooperation, at least among the (relatively small group of) people exposed to the project.

Although some spill-over processes are visible, it is currently hard to assess whether the long-term and diffuse effects of such education work (for instance, by setting positive examples in the public landscape or by training future mediators and decision makers) can impact more formal peace processes. Research suggests that peace dynamics might trickle across scales and that such track III initiatives can support formal peace processes (Megoran, McConnell, and Williams 2016; UNDPA 2017). Based on the existing evidence, we consider that such effects might only be possible when high-ranking decision makers on both sides opt to seek a peace agreement as well.

Our findings also enrich wider debates in the fields of peacebuilding, education and environmental security. They confirm that environmental security research benefits from more positive, peace-oriented ontologies (Barnett 2018), that environmental issues are a good entry point for peacebuilding (Conca and Dabelko 2002), that the success of environmental peacebuilding is strongly dependent on high-level political support (Ide 2018b), and that local resistance is one of the main obstacles to peacebuilding (Autesserre 2017). We also show that the

much criticised processes of depoliticising conflicts (Aggestam and Sundell 2016) and neoliberalising education (Novelli and Higgins 2017; Waters 2017) can, at least to a certain degree, be utilised for their positive effects on environmental peacebuilding (although issues related to political inequalities as well as increased competition and privatisation, among other, remain problematic).

Given these nuanced insights and the lack of research on the topic, we encourage further studies on the intersection of environmental cooperation, peacebuilding and education. Analysing additional cases would illustrate which of our findings can be generalised and which are driven by the singularities of the region we studied. In comparison with other relevant contexts, for example, the case of Israel and Palestine is characterised by strong physical and linguistic separation, high levels of educational enrolment and infrastructure (compared to many African conflict/post-conflict societies), and an ongoing intractable conflict (in contrast to post-conflict/post-agreement countries). The latter, for instance, might explain the prioritisation of trust building over other activities. Further, in the Israeli-Palestinian case, strong power inequalities and ongoing structural injustices (e.g., occupation, separation barrier, access to water) exist. These can hardly be addressed by (education for) environmental peacebuilding activities, and their supposed “normalisation” is an important cause of local resistance to the projects we studied. It would hence be worthwhile studying resistance to such environmental peacebuilding and/or peace education activities in contexts characterised by fewer inequalities (such as Cyprus or India/Pakistan).

Further, our research has mostly addressed education activities. Education structures, such as the content of curricula, access to education services, the teacher training system, and international structures to coordinate education contents can also be highly relevant for environmental peacebuilding, but remain under-researched. Shedding light on such structures would also enable scholars to compare the education work of NGOs, which are locally grounded and have more freedom when engaging in education for environmental peacebuilding, with

actors such as ministries or state commissions, which often have more resources and more direct access to formal political processes.

We can derive several practical recommendations from our work. One of them is that it is important to provide concrete, immediate benefits to the participants of (environmental) peacebuilding projects. Further, low politics, mutually beneficial issues (like the environment) are good entry points for peacebuilding activities. Especially in the contexts of intractable conflicts, “low level” activities such as creating trust and understanding are well suited to start (education for environmental) peacebuilding, with more ambitious forms of cooperation potentially following later (either through spill-over processes or when there is a window of opportunity at the level of high politics). However, such track III projects to facilitate local or everyday peace should, whenever possible, be complemented by macro-level (track I and II) initiatives in order to broaden their impact, for instance by including local decision makers or former high-ranking politicians.

Ultimately, environmental peacebuilding projects, and their educational components in particular, are certainly not easy to implement on the ground. But doing so may provide promising opportunities to address environmental, conflict and education-related problems simultaneously – an endeavour in which researchers would be well advised to participate.

Acknowledgements:

The authors gratefully acknowledge the constructive and helpful comments made by the anonymous reviewers. They also express their deep gratitude to the members of EcoPeace, Migrating Birds Know No Boundaries and the Arava Institute for Environmental Studies for sharing their time and insights as well as for providing the photographs used in the article. This research was partially funded by the German Federal Ministry of Education and Research (BMBF) and the Israeli Ministry of Science and Technology (MOST) under the Young Scientists Exchange Program (YSEP).

Authors:

TOBIAS IDE coordinates the research field Peace and Conflict at the Georg Eckert Institute for International Textbook Research, Celler Str 3, 38118 Braunschweig, Germany. E-mail: ide@gei.de. He was recently a visiting researcher at the Department of Geography, Hebrew University of Jerusalem. His research focuses on the various intersections between education, environmental change, peace and conflict.

AMIT TUBI is an Assistant Professor in the Department of Geography at The Hebrew University of Jerusalem, Mount Scopus, 9190501 Jerusalem. E-mail: amit.tubi@mail.huji.ac.il. His research interests include vulnerability and adaptation to climate change, the relationship between climate change and conflict/cooperation and climate migration.

References:

- Aggestam, K., and A. Sundell. 2016. Depoliticizing water conflict: functional peacebuilding in the Red Sea–Dead Sea Water Conveyance project. *Hydrological Science Journal* 61 (7):1302-1312.
- Akçalı, E., and M. Antonsich. 2009. “Nature knows no boundaries”: a critical reading of UNDP environmental peacemaking in Cyprus. *Annals of the Association of American Geographers* 99 (5):940-947.
- Alatout, S. 2006. Towards a bio-territorial conception of power: territory, population, and environmental narratives in Palestine and Israel. *Political Geography* 25 (6):601-621.
- Ali, S. H. 2011. The instrumental use of ecology in conflict resolution and security. *Procedia Social and Behavioral Sciences* 14 (9):31-34.
- Ali, S. H., and T. Walters. 2019. The experiential peacebuilding cycle: grassroots diplomacy, environmental education, and ecological norms. In *Behaviorial processes and systems of peace*, ed. by P. Verbeek and B. A. Peters, forthcoming. London: Wiley.

- Amster, R. 2014. Teaching to the test: climate change, militarism, and the pedagogy of hopefulness. *Journal of Peace Education* 11 (3):267-278.
- Aoki, C., A. Al-Lami, and S. Kugaprasatham. 2011. Lessons learned from environmental management of the Iraqi Marshlands in the post-conflict period. *Water International* 36 (2):197-206.
- Autesserre, S. 2009. Hobbes and the Congo: frames, local violence, and international intervention. *International Organization* 63 (2):249-280.
- . 2014. Going micro: emerging and future peacebuilding research. *International Peacekeeping* 21 (4):492-500.
- . 2017. International peacebuilding and local success: assumptions and effectiveness. *International Studies Review* 19 (1):114-132.
- Bajaj, M. 2015. 'Pedagogies of resistance' and critical peace education praxis. *Journal of Peace Education* 12 (2):154-166.
- Barnett, J. 2018. Global environmental change I: climate resilient peace? *Progress in Human Geography*, forthcoming.
- Barnett, J., and W. N. Adger. 2007. Climate change, human security and violent conflict. *Political Geography* 26 (6):639-655.
- Barquet, K. 2015. "Yes to Peace"? Environmental peacemaking and transboundary conservation in Central America. *Geoforum* 63 (1):14-24.
- Barquet, K., P. Lujala, and J. K. Rød. 2014. Transboundary conservation and militarized interstate disputes. *Political Geography* 42 (1):1-11.
- Böhmelt, T. 2010. The effectiveness of tracks of diplomacy strategies in third-party interventions. *Journal of Peace Research* 47 (2):167-178.
- Bukari, K. N., P. Sow, and J. Scheffran. 2018. Cooperation and co-existence between farmers and herders in the midst of violent farmer-herder conflicts in Ghana. *African Studies*, forthcoming.

- Burt, M., and B. J. Keiru. 2011. Strengthening post-conflict peacebuilding through community water-resource management: case studies from Democratic Republic of Congo, Afghanistan and Liberia. *Water International* 36 (2):232-241.
- Christodoulou, E. 2018. Deconstructing resistance towards textbook revisions: the securitisation of history textbooks and the Cyprus conflict. *Global Change, Peace and Security* 30 (3):373-393.
- Conca, K., and G. Dabelko. 2002. The problems and possibilities of environmental peacemaking. In *Environmental peacemaking*, ed. by K. Conca and G. Dabelko, 220-233. Baltimore: John Hopkins University Press.
- Conca, K., and J. Wallance. 2009. Environment and peacebuilding in war-torn societies: lessons from the UN environment programme's experience with post-conflict assessment. *Global Governance* 15 (4):485-504.
- Davies, L. 2010. The different faces of education in conflict. *Development Outreach* 53 (4):491-497.
- Djernaes, M., T. Jorgensen, and E. Koch-Ya'ari. 2015. Evaluation of environmental peacemaking intervention strategies in Jordan-Israel-Palestine. *Journal of Peacebuilding & Development* 10 (2):74-80.
- Dresse, A., I. Fischhendler, J. Ø. Nielsen, and D. Zikos. 2018. Environmental peacebuilding: towards a theoretical framework. *Cooperation and Conflict*, forthcoming.
- Durand, J.-L., and S. Kaempf. 2014. Reimagining communities: opening up history to the memory of others. *Millennium* 42 (2):331-353.
- EcoPeace. 2014. Israeli high court decision on Battir. <http://ecopeaceme.org/events/jan-29-2014-israeli-high-court-decision-battir/> (accessed 23/11/2018).
- Environmental Peacebuilding Initiative. 2017. About environmental peacebuilding. <https://environmentalpeacebuilding.org/about/about/> (accessed 25/03/2018).
- Fielke, S. J., and D. K. Bardsley. 2014. The importance of farmer education in South Australia. *Land Use Policy* 39 (1):301-312.

- Fröhlich, C. 2012. Security and discourse: the Israeli-Palestinian water conflict. *Conflict, Security & Development* 12 (2):123-148.
- Gaillard, J.-C., E. Clavé, and I. Kelman. 2008. Wave of peace? Tsunami disaster policy in Aceh, Indonesia. *Geoforum* 39 (1):511-526.
- Haas, E. B. 1980. Why collaborate? Issue-linkage and international regimes. *World Politics* 32 (3):357-405.
- Hammack, P. L. 2009. Exploring the reproduction of conflict through narrative: Israeli youth motivated to participate in a coexistence program. *Peace and Conflict* 15 (1):49-74.
- Hart, J. 2011. Young people and conflict: the implications for education. In *Education and reconciliation: exploring conflict and post-conflict situations*, ed. by J. Paulson, 11-31. London: Continuum Books.
- Haynes, K., and T. M. Tanner. 2015. Empowering young people and strengthening resilience: youth-centred participatory video as a tool for climate change adaptation and disaster risk reduction. *Children's Geographies* 13 (3):357-371.
- Ide, T. 2017. Space, discourse and environmental peacebuilding. *Third World Quarterly* 38 (3):544-562.
- . 2018a. Does environmental peacemaking between states work? Insights on cooperative environmental agreements and reconciliation in international rivalries. *Journal of Peace Research* 55 (3):351-365.
- . 2018b. The impact of environmental cooperation on peacemaking: definitions, mechanisms and empirical evidence. *International Studies Review*, forthcoming.
- Ide, T., and A. Detges. 2018. International water cooperation and environmental peacemaking. *Global Environmental Politics* 18 (4):63-84.
- Jensen, D., M. Lehtonen, A. Morton, D. Seierstad, P. Upla, and K. Sorensen. 2015. *Addressing the role of natural resources in conflict and peacebuilding: a progress report from UNEP's Environmental Cooperation for Peacebuilding Programme, 2008-2015*. Nairobi: UNEP.

- Keohane, R. O., and J. Nye. 2001. *Power and interdependence: world politics in transition*. New York: Longman.
- Kirsch, S., and C. Flint eds. 2011. *Reconstructing conflict: integrating war and post-war geographies*. Farnham: Ashgate.
- Koch, N. 2015. "Spatial socialization": understanding the state effect geographically. *Nordia Geographical Publications* 44 (4):29-35.
- Koopman, S. 2011. Let's take peace to pieces. *Political Geography* 30 (4):193-194.
- Kraftl, P. 2015. Alter-childhoods: biopolitics and childhoods in alternative educational spaces. *Annals of the Association of American Geographers* 105 (1):219-237.
- Krampe, F. 2016. Water for peace? Post-conflict water resource management in Kosovo. *Cooperation and Conflict* 52 (2):147-165.
- . 2017. Towards sustainable peace: a new research agenda for post-conflict natural resource management. *Global Environmental Politics* 17 (4):1-8.
- Krotz, U. 2007. Parapublic underpinnings of international relations: the Franco-German construction of Europeanization of a particular kind. *European Journal of International Relations* 13 (3):385-417.
- Kupermintz, H., and G. Salomon. 2005. Lessons to be learned from peace education in the context of intractable conflict. *Theory into Practice* 44 (4):293-302.
- Kuppens, L., and A. Langer. 2016. To address or not to address the violent past in the classroom? That is the question in Côte d'Ivoire. *Journal of Peace Education* 13 (2):153-171.
- Leshem, Y. 2017. Using birds as peacemakers in the Middle East. In *Wild lives: leading conservationis on the animals and the planet they love*, ed. by L. Robinson and J. Chodosh, 29-38. London: Skyhorse.
- Lipman Avizohar, A., and S. Backleh. 2013. *Good Water Neighbors: resource guide for educators*. Amman/Bethlehem/Jerusalem: FoEME.

- Lopes Cardozo, M. T. A., and C. C. M. Q. Hoeks. 2015. Losing ground: a critical analysis of teachers' agency for peacebuilding education in Sri Lanka. *Journal of Peace Education* 12 (1):56-73.
- Mac Ginty, R. 2014. Everyday peace: bottom-up and local agency in conflict-affected societies. *Security Dialogue* 45 (6):548-564.
- Mac Ginty, R., and O. P. Richmond. 2013. The local turn in peace building: a critical agenda for peace. *Third World Quarterly* 34 (5):763-783.
- Marijan, B. 2017. The politics of everyday peace in Bosnia and Herzegovina and Northern Ireland. *Peacebuilding* 5 (1):67-81.
- Martin, A., E. Rutagarama, A. E. Cascão, M. Gray, and V. Chhotray. 2011. Understanding the co-existence of conflict and cooperation: transboundary ecosystem management in the Virunga Massif. *Journal of Peace Research* 48 (5):621-635.
- McConnell, F., N. Megoran, and P. Williams eds. 2014. *Geographies of peace*. London: I.B. Tauris.
- McDonald, M. 2013. Discourses of climate security. *Political Geography* 33 (1):42-51.
- Megoran, N. 2011. War *and* peace? An agenda for peace research and practice in geography. *Political Geography* 30 (4):178-189.
- Megoran, N., F. McConnell, and P. Williams. 2016. Geography and peace. In *Palgrave handbook of disciplinary and regional approaches to peace*, ed. by O. P. Richmond, S. Pogodda and J. Ramović, 123-138. London: Palgrave Macmillan.
- Methmann, C., and A. Oels. 2015. From 'fearing' to 'empowering' climate refugees: governing climate-induced migration in the name of resilience. *Security Dialogue* 46 (1):51-68.
- Miranda, J. A., K. Slowing Umaña, and J. C. Raudales. 2010. South-south learning in the Trifinio Region: Transforming borderlands into areas of peace and development. *Development Outreach* 12 (2):30-31.
- Naoufal, N. 2014. Peace and environmental education for climate change: challenges and practices in Lebanon. *Journal of Peace Education* 14 (3):279-296.

- Nasie, M., A. H. Diamond, and D. Bar-Tal. 2016. Young children in intractable conflicts: the Israeli case. *Personality and Social Psychology Review* 20 (4):365-392.
- Nguyen, N., C. Daniel, and A. Huff. 2017. Catching the bus: a call for critical geographies of education. *Geography Compass*, forthcoming.
- Novelli, M., and S. Higgins. 2017. The violence of peace and the role of education: insights from Sierra Leone. *Compare* 47 (1):32-45.
- Novelli, M., M. T. A. Lopes Cardozo, and A. Smith. 2017. The 4Rs framework: analysing the contribution of education to sustainable peacebuilding in conflict-affected contexts. *Journal of Education in Emergencies* 3 (1):14-43.
- Ogden, L. E. 2018. Environmental peacebuilding. *BioScience* 68 (3):157-163.
- Paulson, J. 2015. "Whether and how?" History education about recent conflict: a review of research. *Journal of Education in Emergencies* 1 (1):7-37.
- Peace Mediation Germany. 2017. *Basics of mediation: concepts and definitions*. Berlin: Federal Foreign Office.
- Porat, D. A. 2004. *It's not written here, but this is what happened*: student's cultural comprehension of textbook narratives on the Israeli-Arab conflict. *American Educational Research Journal* 41 (4):963-996.
- Rasler, K., W. R. Thompson, and S. Ganguly. 2013. *How rivalries end*. Philadelphia: University of Pennsylvania Press.
- Reynolds, K. M. 2017. Unpacking the complex nature of cooperative interactions: case studies of Israeli-Palestinian environmental cooperation in the greater Bethlehem area. *Geojournal* 82 (4):701-719.
- Rohde, A. 2013. Learning each other's historical narrative: a road map to peace in Israel/Palestine? In *History education and postconflict reconciliation: reconsidering joint textbook projects*, ed. by K. V. Korostelina and S. Lässig, 177-191. Abingdon: Routledge.

- Roulin, A., M. Abu Rashid, B. Spiegel, M. Charter, A. N. D. Dreiss, and Y. Leshem. 2017. 'Nature knows no boundaries': the role of nature conservation in peacebuilding. *Trends in Ecology and Evolution* 32 (5):305-310.
- Schlosser, K. 2017. Education and intimate war of position: the National Security League's Committee on Patriotism through Education, 1917-1919. *Political Geography* 60 (1):66-75.
- Schoenfeld, S., A. Zohar, I. Alleson, O. Suleiman, and G. Sipos-Randor. 2015. A place of empathy in a fragile contentious landscape: environmental peacebuilding in the eastern Mediterranean. In *Geographies of peace*, ed. by F. McConnell, N. Megoran and P. Williams, 171-193. London: I.B. Tauris.
- Selby, J. 2013. Cooperation, domination and colonisation: the Israeli-Palestinian Joint Water Committee. *Water Alternatives* 6 (1):1-24.
- Smith Ellison, C. 2014. The role of education in peacebuilding: an analysis of five change theories in Sierra Leone. *Compare* 44 (2):186-207.
- Stacheli, L. A., and D. Hammett. 2013. 'For the future of the nation': citizenship, nation, and education in South Africa. *Political Geography* 32 (1):32-41.
- Swain, A. 2016. Water and post-conflict peacebuilding. *Hydrological Sciences Journal* 61 (7):1313-1322.
- Towers, G. 2000. Applying the political geography of scale: grassroots strategies and environmental justice. *The Professional Geographer* 52 (1):23-36.
- UNDPA. 2017. *Guidance on gender and inclusive mediation strategies*. Nairobi: UNDP.
- Walters, T. J. 2012. Environmental peace-building in Peru and Bolivia: the collaboration framework for Lago de Titicaca. In *Parks, peace, and partnership: global initiatives in transboundary collaboration*, ed. by M. S. Quinn, L. Broberg and W. Freimund, 135-154. Calgary: University of Calgary Press.
- Waters, J. L. 2017. Education unbound? Enlivening debates with a mobilities perspective on learning. *Progress in Human Geography* 41 (3):279-298.

- Wenden, A. L. 2014. Greening peace and sustaining justice. *Journal of Peace Education* 11 (3):261-266.
- Williams, P. 2013. Reproducing everyday peace in North India: process, politics, and power. *Annals of the Association of American Geographers* 103 (1):230-250.
- Woon, C. Y. 2017. Children, critical geopolitics, and peace: mapping and mobilizing children's hope for peace in the Philippines. *Annals of the American Association of Geographers* 107 (1):200-217.
- Zawahri, N. A. 2011. Using freshwater resources to rehabilitate refugees and build transboundary cooperation. *Water International* 36 (2):167-177.
- Zembylas, M., and Z. Bekerman. 2013. Peace education in the present: dismantling and reconstructing some fundamental theoretical premises. *Journal of Peace Education* 10 (2):197-214.
- Zohar, A., S. Schoenfeld, and I. Allesson. 2010. Environmental peacebuilding strategies in the Middle East: the case of the Arava Institute for Environmental Studies. *Peace and Conflict Review* 5 (1):1-14.
- Zwirn, M. J. 2001. Promise and failure: environmental NGOs and Palestinian-Israeli cooperation. *Middle East Review of International Affairs* 5 (4):116-126.

List of figure captions

Figure 1: Ecopeace summer camp in the Jordan Valley. Photo courtesy of Ecopeace Middle East.

Figure 2: Farmers participating in the BKNB project holding barn owls ready to be released.

Photo: Hagai Aharon.

Figure 3: Arava Institute biodiversity course. Photo courtesy of the Arava Institute.

¹ Low politics refers to all affairs that are traditionally not considered crucial for the survival and welfare of the state, such as culture, sports and the environment (Keohane and Nye 2001).

² See <http://ecopeaceme.org/projects/youth-education> for further information.

³ See <https://www.birds.org.il/he/index.aspx> for further information.

⁴ See <http://arava.org> for further information.

⁵ See also: <http://arava.org/alumni/meet-the-alums>.

⁶ The contact hypothesis states that increased (non-hostile) personal contact between members of opposed groups will reduce the level of hostility.

⁷ As of April 2018.

⁸ The three programmes under study draw on this strategy to different degrees, with GWN being the most frequent user and the Arava Institute the least frequent.

⁹ See, for example, the statement of an Israeli pupil with a conservative background cited in section 4.1.

¹⁰ One should note, however, that two Israeli GWN interviewees mentioned that schools gain a competitive advantage by having special projects like training water trustees.