



## Barrier Impacts on Water Resources

### General Barrier facts

- 1949 Armistice Line (Green Line): 320 km (excluding “No-Man’s Land”)
- Total planned Barrier length: 708 km
- Constructed: 438 km (61.8 per cent)
- Under construction: 58 km (8.2 per cent)

If completed according to the planned route, approximately 85 per cent of the Barrier will run inside the West Bank and effectively render about 9.4 per cent of its territory, including East Jerusalem and No-Man’s Land, off-limits to West Bank Palestinians. In conjunction with the gate and permit regime, the Barrier has already rendered access to the lands between the Green Line and the Barrier very difficult and impeded access to East Jerusalem for the overwhelming majority of West Bank Palestinians.

Source: OCHA-oPt, December 2011

### Environmental Impact Monitoring

Between 2011 and 2013 the Applied Research Institute - Jerusalem (ARIJ) and UNRWA’s Barrier Monitoring Unit project <sup>1</sup>, Jointly undertook research to identify the Environmental Impacts on the West Bank Barrier and its effects on the Palestinian population.

The Survey targeted 173 directly-affected communities through focus group discussions with village councils and municipality representatives, and farmers owning land behind the Barrier.

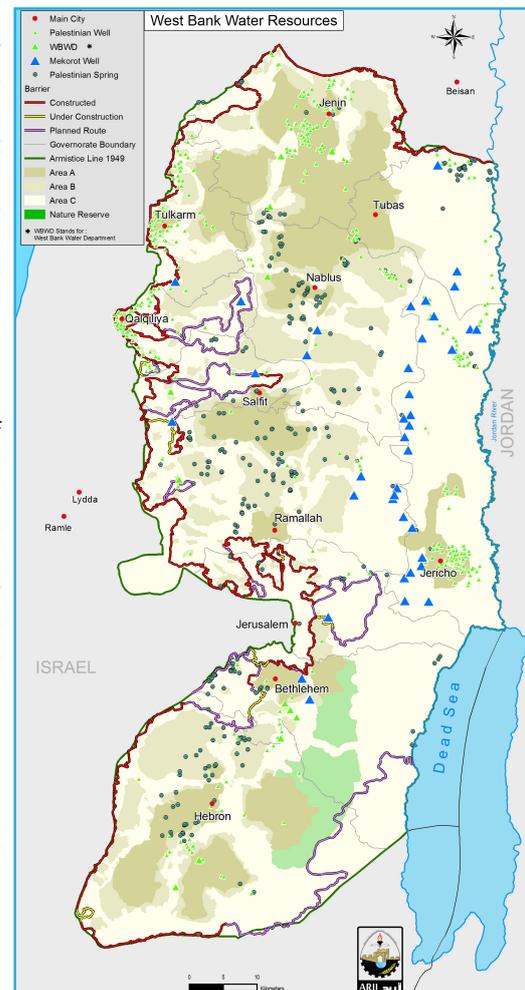
In 2002, following the outbreak of the second intifada, Israel started constructing the West Bank Barrier. Cutting through nine of the West Bank’s 11 governorates, the Barrier construction has isolated wells, springs and cisterns, and damaged or destroyed water infrastructure, especially irrigation networks. Of the 173 directly Barrier-affected communities,<sup>2</sup> 60 per cent reported that Barrier construction has impacted their domestic and/or agricultural water resources.

The Barrier is further aggravating an already dire water situation in the West Bank. Palestinians only have access to approximately 70 litres of water per person per day. This is much less than the amount recommended by the World Health Organizations (100 liters per capita a day). Rainwater harvesting cisterns remain an important water source for watering livestock, cultivating crops and in some cases, for domestic use, especially in rural communities.

In 1995, under Article 40 of the Oslo Interim Agreement, a Joint Israeli-Palestinian Water Committee (JWC) – in which Israel has the veto power - was established to deal with all water and sewage related issues in the West Bank. While for water and sanitation projects in the West Bank licenses are issued by the JWC, all planned projects in Area C (over 60 per cent of the West Bank<sup>3</sup>), including the area between the Barrier and the Green Line, need additional approval from the Israeli Civil Administration (ICA).

This procedure hinders the development of water resources in the West Bank. In addition, any structure built or rehabilitated in Area C without a permit from the ICA faces the risk of demolition by the Israeli Authorities. Between 2009 and 2011 the Israeli army destroyed 125 water, sanitation and hygiene structures in the West Bank, including 56 rainwater cisterns and 44 water wells.<sup>4</sup>

Water sources isolated If completed as planned, approximately 27 wells, 32 springs and numerous cisterns will be isolated behind the Barrier. The total extraction rate from these isolated wells is approximately 22 million m<sup>3</sup>/year.<sup>5</sup>



<sup>1</sup> The Barrier Monitoring Project was completed in 2013.

<sup>2</sup> According to criteria applied by UNRWA’s BMU and other organizations. The directly impacted communities list includes communities whose lands have been isolated by the Barrier and communities located between the Barrier and the Green Line, excluding most communities within the Israeli unilaterally-declared extended Jerusalem Municipal Area.

<sup>3</sup> OCHA oPt, Humanitarian Atlas, December 2011, p. 22.

<sup>4</sup> EWASH Advocacy Task Force Factsheet 2012: Demolition & destruction of water, sanitation & hygiene infrastructure in the Occupied Palestinian Territory (oPt), p.2

<sup>5</sup> Figures from ARIJ 2013

## Access to wells and impacts on agriculture

The functioning and maintenance of water wells behind the Barrier is dependent on whether the person operating them, in most cases, the farmer, is granted a permit to access the isolated lands. In addition, as farmers can only spend a limited number of hours on the lands (depending on the opening hours of the agricultural gates), the wells function only during this timeframe and can pump water for irrigation to the different plots. As such, the Barrier's associated gate and permit regime prevents farmers from irrigating during the most suitable times of the day – i.e. during the evening hours to avoid evaporation – and limits the quantities of water that can be extracted from the wells. Farmers have to adapt their agricultural practices accordingly.

Communities report to be unable to restore or rehabilitate wells, water tanks and irrigation networks located behind the Barrier. An approval from the ICA is needed in order to carry out any maintenance activity and/or bring construction materials, including for instance new pipes, to the lands behind the Barrier. Approval is rarely granted and in most cases only if the request is supported by an international organization. As a result, large water quantities are lost due to leakages in water tanks and pipes which are left unrepaired. This is reducing the potentially available water quantities for irrigation and increasing the cost for irrigation water. The farmers pay, in hours, for the time and quantity of water extracted from the well.



In addition, old wells that run on diesel generators are 40-50 per cent more expensive newer runs that run on electricity lines. Getting approval from the ICA for installing electricity behind the Barrier is a cumbersome and costly process which many communities are unable to afford. The high costs for water combined with the prevailing access restrictions place a high burden on farmers to remain cultivating their lands behind the Barrier.

Out of the 102 communities reporting impacts on their water sources, 10 say that irrigation networks were affected, cut or destroyed by Barrier construction. While some farmers were able to repair the network, others were forced to create a new network or give up irrigation of their lands completely. The community of Azzun (pop. 8,801 – 24.54 per cent refugees) in Qalqilya Governorate reports that the Barrier cut one irrigation system, which brought water to the community from water well now isolated behind the Barrier. Farmers had to build a new network, originating from a well, not isolated by the Barrier.

The Governorates of Tulkarm and Qalqilya with their vast agricultural lands and numerous wells are the most affected by the Barrier in terms of water resources. Around 50 artesian wells with a total extraction potential of 6.5 million m<sup>3</sup> / year are either isolated behind the Barrier or located in the so-called “Barrier buffer zone”, namely the area directly adjacent to the Barrier to which Palestinians have only limited or, in some areas, no access at all.<sup>6</sup> In Qalqilya Governorate, 19 agricultural wells which make up 34 per cent of the total water quantity available for extraction in the Governorate are isolated by the Barrier. In the past ten years, since the Barrier was constructed, the irrigated area has declined from 7,000-8,000 to 12,000 dunums, affecting incomes in many rural communities.<sup>7</sup>

6 Interview with Palestinian Water Authority (PWA) representative, November 2012

7 Interview with Ministry of Agriculture Qalqilya Area Office representative, January 2013



## Access to rainwater cisterns

About 30 per cent of the communities report that the Barrier construction has impacted cisterns previously used for watering livestock and/or irrigation of crops and trees. Cisterns were either destroyed during Barrier construction due to their location under the foreseen Barrier route or their close vicinity to the Barrier, or were no longer accessible with livestock. Only 18 of the 149 directly-affected communities located on the “West Bank side” of the Barrier are granted access through the Barrier gates with their livestock. Farmers who only have seasonal access to their lands isolated behind the Barrier are no longer able to make use of the cisterns located on those lands throughout the rest of the year. Some communities report to be forced to purchase more tankered water due to the isolation of water sources they previously used behind the Barrier, like the community of Ar Ramadin (pop. 3,810 - 85.49 per cent refugees) in Hebron Governorate.



The community of Jalbun (pop. 2,687 – 83.35 per cent refugees) in Jenin Governorate has ten cisterns isolated by the Barrier and only access to its lands during the annual olive harvest. Before the construction of the Barrier, farmers used the rainwater from the cisterns to water their livestock and irrigate their trees. Access through the agricultural gate with livestock is not permitted and farmers therefore need to find other water sources for their animals.



The Applied Research Institute Jerusalem (ARIJ) represents 20 years of combined organisational experience in the Palestinian Territory in the fields of economic, social, management of natural resources, water management, sustainable agriculture and political dynamics of development in the area. [www.arij.org](http://www.arij.org)