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How a water trucking governance mechanism in the West Bank enhances equity and sustainability

Giovanni Cesari, Sarah Oz Johnson, Giorgio Cancelliere, and Gregor Von Medeazza

Abstract: *In the Oslo Accord-defined Area C of the West Bank, approximately 11,000 Palestinians are unserved by the water network, forced to rely on water trucking at extremely high prices. In response to this situation, Gruppo di Volontariato Civile (GVC), in partnership with UNICEF, created a programme to subsidize water trucking that alleviates water scarcity while enhancing the sustainability of water service delivery, equitability of tariffs, and predictability of demand. Established in 2014, the programme now covers all the water-vulnerable communities in the West Bank and has reached 35,000 people. The programme links humanitarian and development interventions by using a* contiguum *approach, where the humanitarian provision of trucked water is accompanied by the construction of water infrastructure and the creation of a multilevel water trucking governance system that defines the roles and responsibilities of all national, regional, and local actors in the water supply chain. By embedding water trucking into the Palestinian Water Authority's normal activities, the programme is designed to escape a cycle of chronic emergency humanitarian response, in line with the national water sector reform agenda. Eventually, the international donor funding on which the programme depends should be phased out by implementing an equitable, universal water tariff schedule across the entire West Bank, with rates set high enough to subsidize the provision of reliable, safe, and affordable water to the vulnerable residents of Area C.*

Keywords: Area C, water access, water governance, water trucking, equity

THE PURPOSE OF THIS PAPER is to document the water trucking programme jointly designed and implemented by Gruppo di Volontariato Civile (GVC) and UNICEF in response to protracted water access restrictions in the West Bank, sharing lessons learned about how to develop water response programmes that couple humanitarian response with longer-term sustainable development in the Palestinian context. While water distribution programmes have been implemented in similar

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geographies (e.g. Syria, Iraq), they are typically temporary emergency responses. The permanent state of political uncertainty in the West Bank has given rise to unique challenges and opportunities for humanitarian development.

United Nations Resolution 64/292 explicitly recognizes the human right to water and sanitation, acknowledging that clean drinking water and sanitation are essential to the realization of all human rights. Every person should have safe and affordable access to water. This global commitment is reflected in the Sustainable Development Goals and the Convention on the Rights of the Child. For Palestine to realize this commitment in Oslo Accord-defined Area C of the West Bank, water pipelines must be constructed such that every home is connected to the public water network and receives water at the same rates and quantities that regional water utilities charge residents of Areas A and B. However, this goal is obstructed in the near term by the fact that any water infrastructure built in Area C is at high risk of demolition; consequently, obtaining funding for construction is extremely difficult.

GVC is an Italian NGO active in international aid, supporting safe livelihoods, local development and governance, shelter, and water, sanitation, and hygiene (WASH). GVC has been present in Palestine since 1992.

Background and context

Palestinians living in the West Bank are subjected to walls and checkpoints that impede movement, limited access to services and natural resources, and the ever-present threat of demolition of houses, facilities, and places of business (OCHA HRS, 2017). The Oslo Accords II divided the West Bank into Area A, which includes all main Palestinian population centres and is ruled by the Palestinian Authority; Area B, which includes all villages and suburbs in the periphery of the main cities and is ruled by both the Palestinian civil and the Israeli security authorities; and Area C (61 per cent of the land area), which includes the remaining areas and all large Israeli settlements, under full Israeli control (Oslo Accords II, 1995). As a result, approximately 270,000 Palestinians in Area C have inadequate access to WASH-related infrastructure (OCHA HNO, 2017). Among these, about 153,000 are unconnected to the water network (GVC et al., 2017). The most vulnerable residents of Area C are the 11,000 Palestinians who face water prices of approximately US$6/m^3 and are unable to access the international minimum standards of 100 litres per capita per day (OCHA HRP, 2016). These residents live in 60 different rural, Bedouin communities, with populations ranging from a few dozen to a few hundred people, and family sizes averaging about seven people. Bedouins' lives are strongly affected by water, which drives the communities' movements and shapes their lifestyle; specific people are dedicated to different water-related tasks. Water is typically trucked to these communities by for-profit private vendors, but given the remote locations of the communities, Israeli restrictions on the movement of vehicles, and the risk of truck damage or confiscation, the cost of water that these private vendors charge inhabitants can be as high as NIS 50/m^3 (approximately $15). This price is 10 times higher than the public water fees paid by Palestinians residing

in Areas A and B. While some NGOs have responded to this problem with their own humanitarian initiatives, these responses have often been short in duration, limited in reach, and uncoordinated with institutional actors.

Strategic approach and methodology

Two different types of vulnerable communities have been served by the water trucking programme: 1) unserved communities that are unconnected to a water network due to protracted Israeli military restrictions on infrastructure construction; and 2) underserved communities that are connected to a water network but experience water service interruptions of up to several months, and are thus considered unserved. Since 2014, GVC has conducted an annual survey of actual household expenditures on water by community and by season, using this data to set programme eligibility requirements and measure need. For a community to be considered vulnerable and thus eligible for the programme, water consumption must be lower than 30 litres per capita per day and/or the private market water price must be higher than NIS 20/m^3 (approximately $6) (Table 1). These water prices are largely determined by the risks assumed by the trucking companies rather than by distance driven, and thus differ greatly depending on the community. Programme eligibility criteria were agreed by the Palestinian Water Authority (PWA), the UNICEF/PWA-led WASH cluster, and its Water Scarcity Task Force.

The water trucking programme aligns with the Transitional Water Scarcity Response Proposal, developed by UNICEF in 2013 (Muenchenbach, 2013), and consists of different projects funded since 2014 by UNICEF and implemented by GVC. The programme is endorsed by the Palestinian Authority Prime Minister's Office and by the PWA. In the short term, the objective of the programme is an equitable response to the immediate water needs of unserved communities in Area C, increasing their security, reducing the risk of their displacement, and improving the wellbeing of vulnerable groups, particularly women and girls. In the medium term, the objectives are: 1) to establish a sustainable and sound drinking water distribution and governance mechanism in Area C, managed by

Table 1 Private market trucking prices in different areas

Governorate	*Area (cluster)*	*Number of communities*	*Average price (US$/$m^3$)*
Hebron	Rural Yatta	34	6
	Masafer Yatta	10	15
	Ar Ramadeen	8	6
Bethlehem	East Slopes of Bethlehem	7	10
Ramallah	Ramallah Area	5	9
Jericho	Jericho Area	8	12
Nablus	Nablus Area	2	9
Tubas	Tubas Area	15	7
Jenin	Jenin Area	1	9

the Palestinian Authority; and 2) to improve social cohesion and institutional accountability across water delivery stakeholders.

The programme functions at four levels:

Distributing trucked water

Water provision coupons are generated by the PWA's software at the central level, received via the same software by local Joint Service Councils (JSCs), and sold in paper by JSCs or Village Representatives (VRs) to households. Figure 1 indicates the flow of water coupons, money, and water among the various actors involved in the water distribution chains. A database for coupon management stores data about all beneficiaries, facilitating advance planning for predicted water needs. The database has a multilevel structure that gives different stakeholders different data access privileges and responsibilities. The database also has communication tools that have helped connect decentralized field-level actors to central management, and an informal complaint tool allows household recipients to send feedback directly to JSCs, PWA, and/or GVC.

Developing the capacities of water distribution stakeholders at national and local levels

Technical support and capacity building activities with authorities have enabled them to take on an increasingly significant role in managing the programme. These activities can be summarized as follows: 1) technical skills at the local level, related to the water distribution system; 2) functional skills at the local and national levels, increasing managerial ability to set measurable goals, objectives,

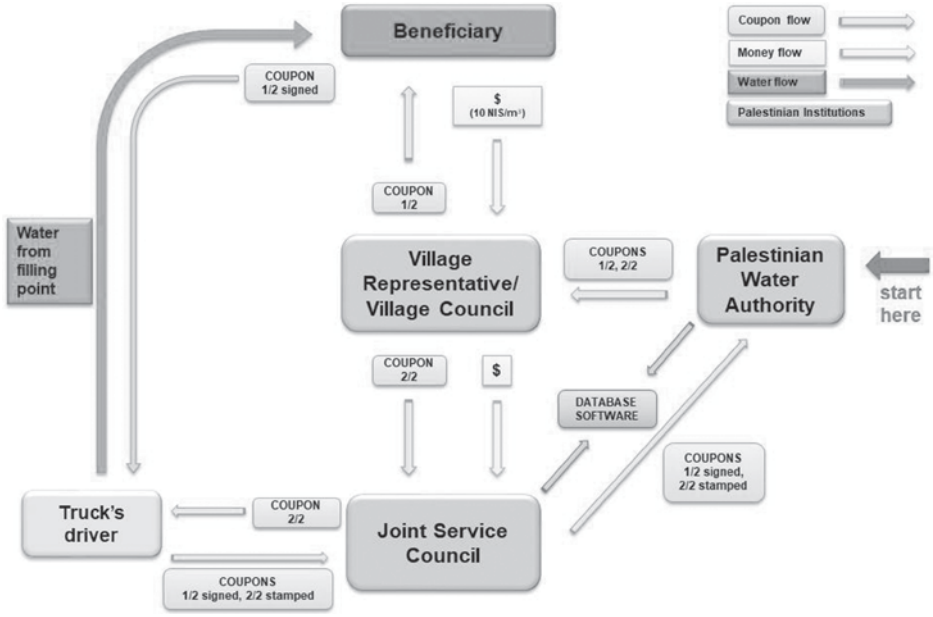

Figure 1 Actors involved in the multilevel governance system for water trucking in Area C

outcomes, and indicators; and 3) behavioural skills across all stakeholders, including awareness of water storage and management needs.

Introducing a multilevel governance system to regulate the water distribution

The programme's multilevel governance and coordination system has increased the efficiency and effectiveness of water distribution. Because the system benefits governmental bodies as well as implementing and donor agencies, it has fostered close cooperation over the long run. Figure 2 represents roles, responsibilities, and inter-linkages between local, regional, national, and international bodies.

Connecting communities to water supply systems

This work is performed in accordance with an agreed water supply master plan for the West Bank (GVC et al., 2017), and entails creating water filling points closer to Area C and assisting water service providers with trucks for water transportation. These actions constitute a meaningful step in the direction of building a national system for water management that can ensure water access for all.

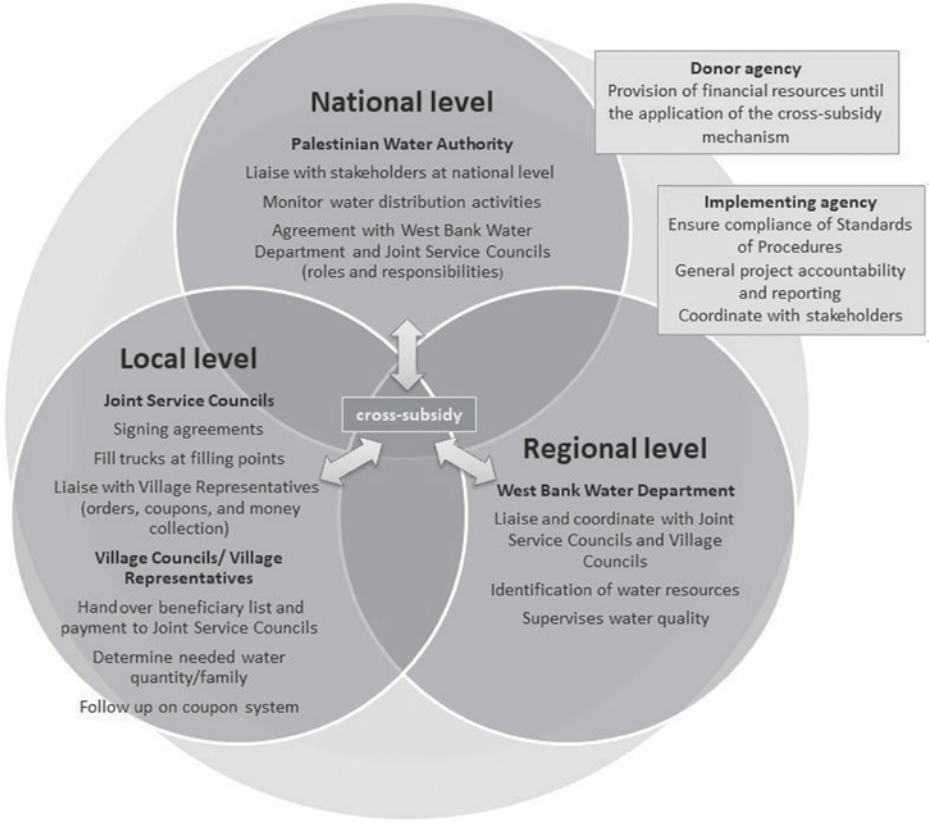

Figure 2 Multilevel governance in water distribution

Constraints

Geopolitical constraints

The protracted crisis in the West Bank and Gaza is generated by a set of different factors. The Israeli occupation imposes inter alia control on all movement and construction in the West Bank, including the drilling of new and substitute wells, the rehabilitation of existing wells (including routine repair work), increased extraction from existing wells, and the construction, rehabilitation, and modification of water supply and sewage infrastructure (Selby, 2013). Israeli-enforced territorial fragmentation in the West Bank can be seen in the 'Palestinian Archipelago' (OCHA Map, 2017), and represents an additional barrier to water access in Area C. In 2017 alone, Israel impeded the water trucking programme described in this paper by confiscating two water delivery trucks and closing the only three roads leading to 13 unserved communities. In other words, the limited access to water and other natural resources in the West Bank results largely from politically made rather than natural scarcity; the lack of adequate water and water infrastructure is a by-product of the occupation (von Medeazza, 2008; Messerschmid, 2013).

Governance and institutional reform constraints

Until Palestinian actors have the political freedom to build water infrastructure across Area C, there will be the short-and medium-term need to regulate, improve, and subsidize the existing water trucking system. Although the Palestinian Authority takes responsibility for water service delivery throughout the West Bank, including Area C, it still lacks a structured system for involving all relevant stakeholders in water supply decision-making (Muenchenbach, 2013). The lack of clear institutional mandates has contributed to ineffective governance and weak capacity in the Palestinian water sector. These institutional weaknesses, coupled with the difficulties imposed by the occupation, impair the development of adequate policies for water resource management, infrastructure development, and service provision.

Results

All vulnerable people in Area C now have increased water access

Over the four year period 2014–18, the programme trucked in a total 318,894 m^3 of drinking water to a cumulative 90,136 people in 90 communities, 46,627 students in 46 schools, and 2,140 patients in 3 hospitals/clinics, with a total cost of water, excluding all related supporting costs, of about $1.4 m (UNICEF et al., 2016). Residents of these communities purchased water at a subsidized price of NIS 10/m^3 (approximately $3), and the 46 schools and 3 medical clinics received water free of charge. The programme now covers all the water-vulnerable communities in the West Bank. As part of these activities, the programme donated three 16 m^3 water trucks to public water service providers and installed five 100 m^3

steel water reservoirs and about 10 km of main transmission pipeline. Although this installation was mainly in Area B, its purpose was to bring water storage and filling points closer to Area C.

Humanitarian and development efforts are effectively linked

The main innovation in the programme lies in building on the concept of transitional development by using a water trucking system as a mechanism for providing developmental assistance alongside humanitarian aid. This approach, described as a *contiguum*, links short-term support with the conditions for long-term success and stability rather than adhering to the more traditional sequential *continuum* approach in which relief comes first, rehabilitation comes next, and cooperative development comes last (GVC, 2017a). Indeed, given the protracted crisis in the West Bank, development cannot wait for conflict resolution; the water trucking programme endeavoured to understand the capabilities and constraints of the existing water market and embed tools for development within it. This was accomplished by enhancing the PWA's water and emergency management and response services, providing water assets to water utilities, and enabling capacity building and institutional development at local, regional, and national levels. The humanitarian response to the water access crisis thus was institutionally embedded in the Palestinian Authority's normal water distribution services, in recognition of the fact that water is a critical human right for residents of Area C and must be treated as such by public institutions (Ministry of Planning and Administrative Development, 2014).

A water distribution database ensures that allocated water reaches vulnerable communities

The programme has developed water distribution software to manage data for the water coupons distributed in the targeted communities. All transactions related to water distribution are recorded by the system in a user-friendly manner. The system generates comprehensive reports about the quantities of distributed water, water providers, filling points, communities, and individual water consumption. The software has been used by the PWA and the JSCs for the duration of the water trucking programme and is considered to be stable and running properly. The database contains detailed information about people in need, thus allowing for better predictions of water demand before the beginning of the dry season and enabling an efficient emergency response. It fosters equity of water distribution by using demand thresholds that ensure sufficient water quantities for all. The system also facilitates efficient water distribution by matching water sources (filling points) with water needs (communities), avoiding coverage overlaps and water shortages. Data show that during the programme period, despite the chronic summer water cuts by the Israeli utility Mekorot, available water was allocated more efficiently, dramatically reducing water shortages for the most vulnerable people by giving every family the opportunity to purchase water rather than giving unfair preference

to those who live in more easily accessible communities or who hold more sway with local leaders. With the help of the database, the water distribution system also has a positive environmental impact by preventing the over-exploitation of filling points and the mismanagement of the limited quantities of water available. Overall, the software has increased the geographical connectivity of Areas A, B, and C by facilitating the movement of trucked water in a manner that is structured and predictable but can also dynamically respond to changing political and infrastructural conditions and human needs. It has also bolstered the institutional connectivity of national, regional, and local institutions, whose roles are defined and mediated through the platform. Figure 3 shows how the programme enhanced

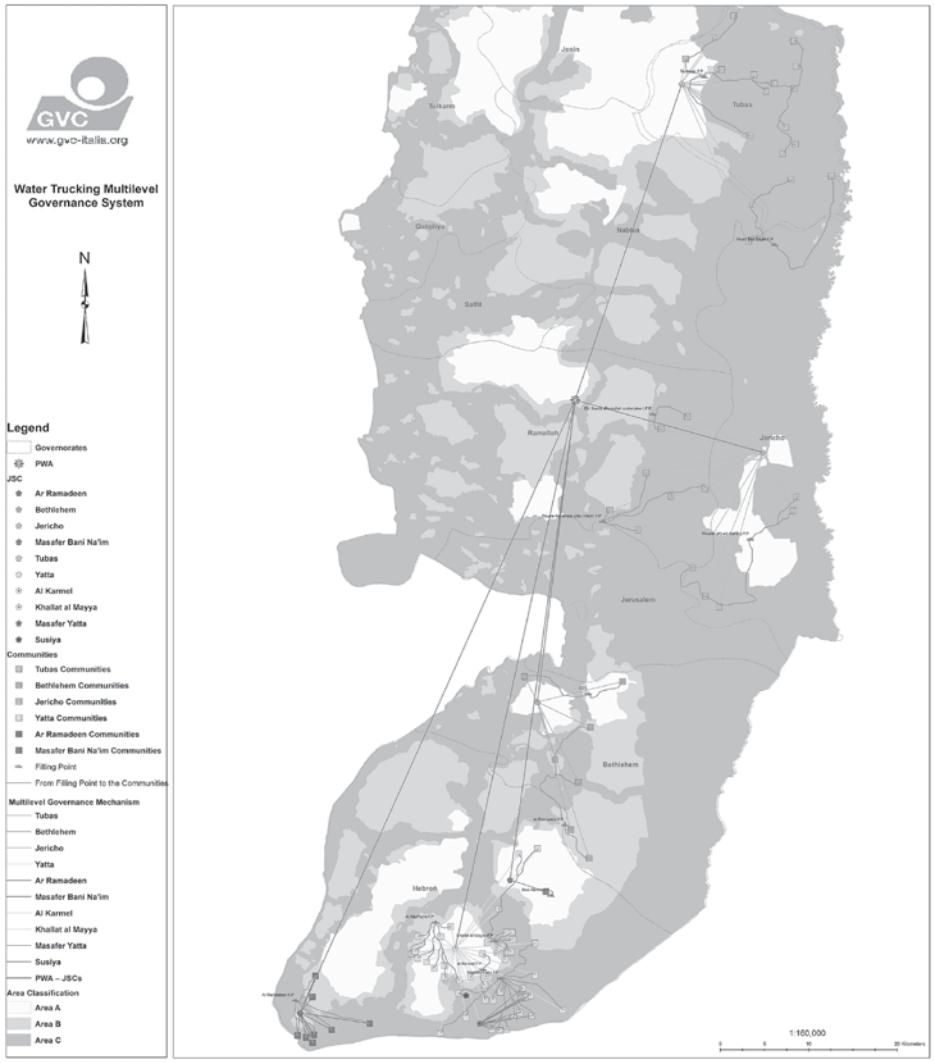

Figure 3 Geographical and institutional connectivity

geographical connectivity (between Areas A and B, and C) and institutional connectivity (among national, regional, and local institutions).

Next step: establishing an equitable water tariff

The water trucking programme relies on significant external grant funding, which is uncertain from year to year and impedes the goal of fully institutionalizing water trucking within the PWA's normal activities. Eventually, this funding should be phased out by implementing a universal water tariff schedule across the entire West Bank, with rates set high enough to subsidize the provision of water to the vulnerable residents of Area C. If the approximately NIS 5/m^3 ($1.50) base rate of water tariffs for residents of Areas A and B were raised to NIS 5.10/m^3 – an extra annual cost of only NIS 3.27 per person (approximately $1) – NIS 7.5 m (approximately $2.2 m) in annual funding for the water trucking programme would be generated, covering programme expenses and allowing residents of Area C to pay for water using the same tariff schedule as that used in Areas A and B. This cross-subsidization plan would be challenging to implement at present, even though the work described in this paper creates an evidence-based foundation for it; the 270 water service providers in the West Bank are not centrally managed and suffer from budget deficits, so cannot be compelled to raise tariffs or direct revenues towards a subsidy rather than their own financial gaps. As water sector reform unfolds in the Palestinian territories, however, these providers will be consolidated into four regional utilities. At that time, the cost of providing water to Area C can and should be integrated into water tariff calculations. Much of this cost could be recouped through improved revenue collection and other efficiency improvements.

Conclusions

Because water trucking is the only source of water in many communities in the West Bank, the institutionalization and regular, affordable provision of water trucking services – including the same management and tariff system as piped water – is of the utmost importance. The institutionalization of the water trucking programme described in this paper is a large step towards this goal, helping implement a multilevel water trucking governance system that is unprecedented in Palestine yet in line with both the PWA public strategy for trucked water (PWA, 2013) and the 2014 Water Law. Thanks to the extensive technical support and capacity building activities, local authorities like the PWA, West Bank Water Department, municipalities, and JSCs have effectively transitioned from being beneficiaries of humanitarian aid to managers of provided water resources.

Benefits to Palestinian stakeholders include enhanced geographic reach of water trucking, increased accountability and involvement of the Palestinian Authority, greater equity and efficiency of water distribution and pricing, and reduced incidence of overlapping service responsibilities and other management problems. The programme has reduced household expenses and improved water quality and security for Palestinian families. It has been found to be particularly helpful for

women and girls, who are typically responsible for water management in the house as well as water-intensive household tasks; the greater accessibility and quality of water has decreased their daily workload and increased their feeling of physical safety (GVC, 2017b).

Recommendations

The work described in this paper is only the first step towards an institutionalized water trucking system. The most critical next step is for the Palestinian Authority to adopt it as an entirely nationally owned and operated programme, funded through a cross-subsidy of water tariffs from Areas A and B to Area C, rather than a seasonal humanitarian response dependent on precarious external donor funding. Looking ahead, the following steps are also essential:

- Strengthen local oversight of the programme and prevent abuse by: 1) publishing maximum prices for trucking to promote competition and avoid monopoly pricing; 2) delineating specific trucking routes to ensure all communities are equitably and transparently served; and 3) creating community committees that manage the distribution of coupons.
- Transition oversight of the programme from NGOs to the Palestinian Authority, using the same couponing system. The PWA appointment of specific employees to oversee the water trucking mechanism would be an important first step towards this goal.
- Strengthen the Palestinian water governance sector at the highest levels by promoting greater transparency, accountability, and civil society involvement in water sector reform (through, for instance, convening a working group with regular public meetings).
- Commission additional research on the impact of water trucking on household income, water quality, and child health, particularly on the incidence of waterborne disease.
- Informed by prior GVC research, introduce additional water distribution programming aimed at improving the conditions of vulnerable groups, particularly women and girls.

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