



Palestinian Hydrology Group
For Water and Environmental Resources Development



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1. Palestinian Hydrology Group (PHG) in Brief

PHG is an NGO established in 1987 and registered in 2001 in accordance with the Palestinian NGO Law number 1 of the year 2000 under registration number **QR-156-A**.

Mission Statement

PHG is a nongovernment organization strives to maintain its lead position in delivering quality and innovative actions that contributes to protect and develop local water and environmental resources as well as to ensure just allocation of water and sanitation services to all Palestinian Communities and to build the capacity of water and sanitation practitioners. Furthermore, to contribute in building a civil society and empowers the vulnerable groups, including women, to participate in decision making and to promote good water governance and the right to water as well as to improve water and food security for all Palestinian Communities.

Strategic objectives

- 1) Contribute to building effective civil society and to ensure equity and the involvement of marginalized groups, specifically women in decision-making and promote good governance especially in water sector.
- 2) work to achieve sustainable and integrated management of water resources and the environment in Palestine
- 3) Work to achieve an equitable distribution of water sources in line with the water rights and improve conditions of water and sanitation services in the Palestinian communities
- 4) Establish partnerships and alliances with various sectors and relevant authorities in the areas of research and implementation to ensure the development of the water sector.
- 5) Training and preparation of qualified technical staff able to manage and operate water facilities on a sustainable basis.

2. Report of the Board of Directors

In response to the political, social and economic challenges facing the Palestinian civil society, and out of the need to maintain the institution to its leading role as one of the important institutions in the water sector and the environment and civil society in general, the Board has provided the necessary means to carry out the new projects to maintain the leading role of the institution and give it a value-added excellence.

Despite the harsh political and economic conditions in Palestine, PHG was able to achieve the goals set for the year 2013. This was evident from the type of interventions implemented by PHG that contributed to the improvement of social and economic conditions of the target communities.

The Board of Directors held during the year 2013 (6) meeting formally and a number of consultative meetings, the Board has taken several decisions, including procedural and strategic in nature, namely:

- Adoption of the emergency plan for the year 2014
- Adoption of the 2014 budget
- recommending adoption of financial and administrative report for the year 2012
- continue to cooperate with government and non-governmental institutions
- Adoption of the need to conduct distinct quality projects and to stay away from planning

Finally, the Board extends its sincere appreciation to all the partner organizations, donors and supporters of PHG who enabled us from accomplishing what we accomplished this year. Moreover, the Board continue its refusal to the conditional and politicized funding, and seeks to develop the role of the institution in defending the values of a genuine civil society.

Chairman of the Board
Muammar Orabi

3. Executive Summary

PHG has carried out many activities, which contributed to improve water and sanitation services in the Palestinian communities. The main activities implemented during this year can be summarized as follows:

- **Groundwater Wells:** PHG rehabilitated 3 groundwater wells in Gaza for agricultural use, benefiting about 300 beneficiaries.
- **Spring Rehabilitation:** 6 springs were rehabilitated in the West Bank for the benefit of 260 beneficiaries.
- **Ponds:** 3 earth ponds were constructed in the West Bank for water harvesting and water storage. In addition, 4 small water ponds rehabilitated to store spring water and improve water management.
- **Cisterns:** 258 cisterns were also constructed in the West Bank to improve access to water for agricultural and domestic purposes for the benefit of 2736 beneficiaries and 1070 students.
- **Integrated Irrigation Water Management:** 1200 m of irrigation pipes was implemented to improve irrigation and irrigate new areas in the West Bank.
- **Drinking water supply improvement:** PHG has also constructed and rehabilitated 6 domestic water networks with total length of 5000 m of various diameters and constructed one reservoir of 100 m³ volume in the West Bank.
- **School Sanitation:** 2 school sanitation units for mixed schools of 8 openings have been implemented in Bani and Saeer area in the southern part of West Bank for the benefit of 850 boy and girl students.
- **Food Security:** 7 home gardens in the West Bank benefiting 56 persons. In addition 182 green houses were rehabilitated in Gaza for the benefit of 3500 beneficiaries and 10 baby greenhouse has been constructed in Ramallah Area for the benefit of 70 beneficiaries.
- **Drought Mitigation:** PHG has also assisted in reducing the impact of drought on the marginal communities in the Northern Jordan Valley through providing 4875 m³ of tankered water to the affected communities. PHG also conducted 100 water quality tests to make sure that water used by marginal communities in the south is safe.
- **Poverty Alleviation:** PHG has also carried out 45 projects on small income-generating activity in the West Bank, of which 25 of very low income families benefited and 280 projects in Gaza for the benefit of 280 poor families. These projects have contributed to the improvement of the economic situation and standard of living of these families.
- **Gray Water Collection, Treatment and Reuse:** PHG has implemented 3 grey water treatment units in Tubas - West Bank and participated with ACF in implementing 40 units in Gaza where, 43 families have benefitted.
- **Wastewater Collection, treatment and Reuse:** PHG in cooperation with GVC has extended 12.66 km sewer lines to the treatment plant of Sarra and also upgraded the wastewater treatment plant to be able to treat wastewater collected from the entire village. PHG has also implemented a new wastewater treatment plant in Beit Hasan in cooperation with ACPP. PHG has also rehabilitated both the wastewater treatment

plants of Kharas and Nuba in Hebron area to serve the entire villages. Finally PHG implemented a solar energy powered wastewater treatment plant in Gaza serving 18 household and reusing the treated effluent in irrigation.

- **Emergency Response: WASH and Shelter;** PHG as part of its role in emergency response to has supplied 157 mobile latrines in West Bank and 142 plastic water tanks and 25 tents and animal shed, metal shed as well as drinkers and fence for affected families from demolishings.
- **Public Awareness:** To help raise awareness towards the preservation of water resources, environmental and behavioral change, PHG has implemented many awareness-raising and training activities to the beneficiary groups who benefited from the projects implemented. This has contributed positively to improve the quality and durability of the implemented activities.
- **Training and Capacity Building:** PHG through its Water Training Institute has accomplished more than 315 hours of training where nearly 312 male (60%) and female (40%) trainees benefited from the various training programs conducted by the Group.

The main obstacles faced the work of PHG during the last year can be summarized as follows:

1. Escalated Israeli restrictions on access and work in marginal area in the West Bank especially those classified as Area C.
2. Poor economic conditions and low beneficiary contribution.

However, the organization through its experience and its distinguished relations with the local communities and stakeholders has eased the impact of these obstacles mentioned above and managed to maximize the benefit from the projects implemented during this year.

4. General Overview of the Situation in oPt

The rigidity of the political process and the increasing expansion of settlements in the occupied Palestinian territory (oPt) are considered the biggest factors in hindering the process of improving social and economic conditions. The impact of settlements is not only through the direct act of land confiscation and expansion of settlements but also beyond that. The more dangerous is the act of settlers in preventing people from developing their land in area C and prevent them from accessing their local resources (eg. Springs) and destroy infrastructure and means of Palestinian livelihoods (destruction of wells, roads and cutting trees).

It is worth noting that the Israeli Authorities imposed very strict conditions on the communities living in the seam zone and in marginal areas such as northern Jordan Valley, Tubas Governorate, Masafir Yatta and Tana East of Beit Dajan - Nablus. Some communities were obliged to leave their locations and their properties were destroyed several times. All emergency assistance for these affected communities were also threatened by the Israeli Army and some equipment and cars were even confiscated by the Army including items of assistance supplied by Humanitarian Organizations. Beneficiaries and workers involved in delivery and installation of various humanitarian assistance substances have also been arrested and beaten by the Army.

These restrictions have created a new challenge for local and international humanitarian NGOs in responding to the needs of communities leaving them very vulnerable to face very hard conditions.

5. Water and Environmental Situation in oPt

Despite all the efforts made by the government and nongovernment organizations in the field of water and environment, the needs are still huge. The situation can be summarized in the following key features:

- The institutional status in each of the sectors of water and the environment need to be structured and there is an urgent need for legal arrangements, especially the role of municipalities in the management of these sectors. It is good to mention that there is an ambitious plan by the Water Authority to re-structure and reform the water sector, yet it is not clear how it will end or where it stands at the moment.
- The gap between supply and demand is still very high and is estimated at nearly 300 million cubic meters. Moreover, Palestinian per capita water use has decline by 15% from previous years due to reduced amounts sold to Palestinians by the occupation authorities.
- The main constraint to the development of resources and infrastructure is that the Israeli occupation army and military orders are still the main controlling elements in the water and the environment sectors.
- The un-clarity in the roles and responsibilities among the competent ministries, leads to fragmentation of the sector.
- Infrastructure is still poor where losses may reach up to 45% on average year.
- Poor social and economic conditions lead to lower ability of people to pay for water services and this effect the overall ability of supply providers to provide the services properly. It is good to mention that bill collection percentage varies from 20-80%.
- The continued drilling of deep wells in the eastern basin raises huge concern especially after the sharp drop in the groundwater level in the basin. Drilling policy in the basin should be reviewed and stopped in the areas that already suffering the most.

6. Activities

6.1 Conventional Water Resources Development

Palestine is classified as a scarce country in terms of water availability. Most of conventional water resources are in bad conditions due to the Israeli restrictions imposed on the rehabilitation of these resources in the West Bank and the war on Gaza. The main water sources developed during the year 2013 were:

6.1.1 Groundwater Wells:

PHG rehabilitated 3 wells in Gaza whereby the production of wells improved by more than 20% and benefited 300 families and served to irrigate 549 dunums. The improved efficiency of wells have reduced the production cost of water by nearly 30%



and thus contributed directly to improve the income from agriculture to the benefitted farmers. Furthermore, the additional water quantities made available from rehabilitating the wells encouraged farmers to rehabilitate more lands and created more job opportunities for local farmers who were obliged to work as cheap laborers in the Israeli Settlements.

6.1.2 Spring Rehabilitation:

PHG has rehabilitated 3 springs and the total beneficiaries were 423 beneficiary in KHALLET KHADER, EL FARISIEH and EL HIMMEH. Moreover, PHG has completed the three spring rehabilitation in Ramallah - Ittihad area. Activities included the rehabilitation of 3 main springs and 4 agricultural pools. In addition, 150 m of water channels and

transmission lines have been rehabilitated and drip irrigation networks for 20 dunums (about 2 hectares) of land in the targeted area have been installed.



6.2 Non-Conventional Water Resources Development

6.2.1 Grey Water Treatment and Reuse:



PHG has promoted the treatment technology of grey water treatment to help promote the concept of grey water as a resource and to help improve the environmental and health conditions of the rural communities and eliminate social and environmental problems caused by cesspits. PHG has managed to construct 3 treatment units for the benefit of 3 families in the West Bank and participated in implemented 20 units in Gaza in cooperation with ACF. In addition, PHG constructed 10 baby

greenhouse to previously implemented units in the West Bank to benefit from the treated gray Water in irrigation and to improve the livelihood of communities

6.2.2 Wastewater Collection Treatment and Reuse

PHG in cooperation with GVC has extended 12.66 km sewer lines and also upgraded the wastewater treatment plant in Sarra to be able to treat all wastewater



from the entire village. In addition a new wastewater treatment plant implemented in Beit Hassan in cooperation with ACPP. PHG has also upgraded the treatment plants of both Nuba and Kharas where additional reservoirs and sewer lines have been constructed to serve the entire villages. Finally PHG has implemented a **solar energy powered wastewater treatment plant** in Gaza to serve 18 households and irrigating 54 dunums from the treated effluent.



6.2.3 Water Harvesting:

Water Harvesting is one of the priorities that PHG has been promoting since its establishment. Such projects are relatively cheap and traditionally known and they secure sufficient and safe water quantities to the communities. PHG has implemented number of water harvesting projects as follows:

- **Earth and Cement Ponds:** PHG has implemented 3 earth ponds in both Hajja and Sarra to enable farmers from utilizing the treated effluent from the treatment plants implemented in the two villages.

- **Cisterns:**

PHG has implemented 256 cisterns for domestic use. Out of which 5 are serving 5 schools with total student number of 1070 students in Hebron Area while the rest is for household use.

In total the beneficiaries from individual as well as public domestic and agricultural cisterns were 2689 persons and 1070 school students.



6.3 Emergency Drought Mitigation

PHG has delivered nearly 4875 m³ of tankered water to the areas that mostly suffer from the drought in the northern Jordan Valley (Tubas and Nablus). The targeted areas were Al Malih, Humsa, ELhadidyeh, Samra, Makhoul, El farisiyeh and Um elibar of Tubas Governorate and Tel El khashabeh in Nablus. They mostly herders communities. They have no access to water and they purchase water through tankers. The quantities allocated to each household or beneficiary was calculated based on the number of animal heads he owns and also the number of family members. The minimum requirements for animals (sheep and goats were considered as 30l/head /day (max 60 heads per farmer) and nearly 20 l/c/d per individual in the households. The total beneficiaries from these activities were nearly 1263 beneficiaries in the area.

6.4 Deprived families Economic Empowerment Program

PHG has supported the poor families directly through establishing income generating projects for those families. PHG has implemented 45 interventions for the benefit of 45 families in the West Bank and 280 projects in Gaza Strip. Moreover, the poverty gap was reduced by 70-80% for these families and nearly 20% of them were graduated completely from poverty.

6.5 Food and Water Security Projects: Improve Access to Water and Food

PHG has targeted poor and marginal families in the southern part of West Bank to improve their food security through developing home gardens. During 2013 a total of 7 home gardens were implemented in the West Bank with a total area of nearly 4000 m² (4 dunums) benefiting nearly 7 families. In addition, 182 greenhouse were rehabilitated in Gaza. In addition, to 10 baby greenhouse have been constructed in the West Bank.



6.6 Integrated Irrigation Water Management



This activity aims at optimizing the use of agricultural water resources and to maximize the benefits of farmers through reducing the cost of purchased water and reducing losses. PHG implemented one integrated irrigation systems in Beit Hasan Area in the Northern Jordan Valley which included the extension of water lines from the well and connected to a circular metallic distribution reservoir with the size of 500 m³. In addition, irrigation water distribution pipelines were implemented in Beit Hasan to benefit 100 farmers and serving 250 dunums. The integrated system included the installation of water meter for each farmer to facilitate operation and management of the water used by each one of them.

6.7 Water Supply Development

PHG has implemented two water supply development and rehabilitation projects in the West Bank.



It rehabilitated and upgraded 1.7 km length main line of 4" in AL Zbeidat Marj Naaja and the second one was Build a water supply reservoir in Azmout in cooperation with ACP. In



addition it rehabilitated the drinking water reservoir in Beit Dajan in cooperation with GVC. Moreover, nearly 12 km length of HDPE pipes of various diameters have been installed in Masafir Yatta and Sawahreh - Jerusalem . One filling point has also been constructed in Yatta.

6.8 Emergency Response: WASH & Shelter

PHG in cooperation with other partners, ACPP, GVC, etc have implemented various emergency WASH response activities to support marginal communities living in Area C. PHG has managed to provide 157 mobile latrines and 122 plastic water tank for storage of drinking water in Tubas and Nablus area. In addition, PHG has distributed 22 plastic water tank and 20 solar water heater in Gaza.

As part of its contribution to emergency response mechanism, PHG has also supplied emergency shelter response to demolishing in Area C. PHG has provided residential tents of various sizes, animal sheds, fencings, metal sheds, drinkers and troughs for the affected communities in Tubas area.



6.9 Awareness and Capacity Building

PHG believes that capacity building of beneficiaries is an important component of any project in order to ensure its sustainability. Training the beneficiaries on the operation and maintenance of the interventions improves the sustainability of these projects and serves them better. Moreover, raising the awareness of various constituency of society helps promote the best practice in water use and management as well as help in protecting the environment. In this context, PHG has accomplished more than 315 hours of training for the target beneficiaries on issues such as groundwater well operation and maintenance, cisterns operation and maintenance, water supply network O&M, while trained them on how to maintain home gardens and how to make composting. The total beneficiaries from these activities were nearly 312 trainee out of which 123 were females.

In addition, PHG has conducted 25 workshops for various target groups where nearly 280 beneficiaries



participated (120 female). Moreover, 15 lectures for schools and community were organized where nearly 320 students (183 girl students) benefited. In addition, PHG produced 2000 brochure on gray water collection, treatment and reuse.

In the mean time PHG distributed nearly 10,000 leaflets and 2000 posters as well 1500 kid story to raise awareness and encourage water conservation.

Workshops and Conferences



PHG through PWTI, has organized several workshops to address critical local water issues. One of the conferences was organized in Hebron to address the water problems facing the city and rural communities in the Governorate. The conference was attended by the Minister of Local Governments, Head of Water Authority and the Governor of Hebron in addition to mayors and head of village councils.

In addition, another workshop was organized to address one of the critical and controversial issues related to the pre paid water meter installation in the West Bank as a mean to improve revenue collection. Although this issue has been advocated for by some local authorities in order to ensure revenue collection and reduce the debt that burdens their shoulder, it is not well adopted due to its potential consequence on poor people who can't afford paying for water. If they can't afford paying means they will not be served which contradicts the basic human right "access to Water".

In addition, PHG has organized two other workshops one related to privatization of water services, prose and cones and whether this can be applied in oPt and the other workshop was on adopting water conservation devices to rationalize the water use inside the house.

6.10 Research and Studies

PHG has participated in a number of local and international research projects to help improve water management at local as well as at Mediterranean Basin Level. PHG is involved in several EU funded research projects among which the (ENPI_CBCMED) funded SWMED project which aims at improving domestic water conservation and management in the Mediterranean Basin. In addition, SEARCH project in cooperation with IUCN to study the impact of climate change on the resilience of both social and ecological systems in the southern Mediterranean Basin. PHG has also accomplished number of local research and assessments related to the existing water access and water quality as well as state WASH of vulnerable communities in marginal areas.

6.11 Lobby and Advocacy

PHG has always played a major role at the national level and through the effective participation in several committees and also public events. Moreover, PHG has initiated several activities to

help promote the water awareness to decision makers as well as international visitors. PHG has accomplished the following:

- Participation in all committees that coordinate the activities of a national level (the Committee Against the Wall, the National Action Committee to develop the Jordan Valley) and others.
- PHG has given more than 25 lectures to local and international delegates and groups on the current water problems and the impact of Israeli water policy on Palestinian Water Security.
- PHG is also one of effective institutions in civil society issues, whether performed individually or through its presence in the Coordinating Committee for NGOs Network PNGO or PENGON (Environmental NGO Network). In this regard the role of PHG was as follows:
 - Represent civil society in many local committees and international forums.
- To empower small organizations and community initiatives through their integration in the programs of PHG.
- Coordinate among the local and international agencies working in the water and sanitation in oPt under the coordination mechanism known as EWASH.
- Finally PHG in its endeavor to advance water justice, it empowers people to act positively toward realizing their water rights and to raise their capacity to demand their right to access water.

