



New borehole being drilled in Debaga, Iraq. Photo: Hassan Ibrahim/Oxfam

THE CASE FOR IMPROVED WATER RESOURCE MANAGEMENT

How Oxfam hopes to facilitate change in Kirkuk, Iraq

In Kirkuk in northern Iraq, pressures on the quantity and quality of water resources are growing daily. This is having a detrimental impact on basic water supply services. Against this backdrop, the Government of Iraq is trying to strengthen institutions and the rule of law. Oxfam has been working for many years with the Directorate of Water in Kirkuk and Diyala to deliver improved water supplies. It is now challenging key water sector players to work on and address wider water resource management problems.



Funded by
European Union
Civil Protection and
Humanitarian Aid



OXFAM

1 WHY IS WATER RESOURCE MANAGEMENT IMPORTANT IN KIRKUK?

There has never been an outright war over water in Iraq, but access to and control of water resources are issues of growing strategic importance. The country is fractured and the risk of opposing groups seeking to control water resources for their own gain is real. Rivers, dams, canals and water treatment plants have all been targeted by armed actors during recent conflicts. Water resources have been diverted or cut off and water supply networks have been destroyed. This has contributed to large-scale human suffering.

Groundwater and surface water resources in the governorate of Kirkuk are facing increased demand- and supply-side pressures, including from a growing local population, an influx of internally displaced persons (IDPs) and expanding industry. In responding to these challenges, it is vital that sound water resource management approaches are established, supported and scaled up in the near future.

2 WHY IMPLEMENT WATER RESOURCE MANAGEMENT AS PART OF A WASH PROGRAMME?

Many international non-governmental organizations (INGOs) in Kirkuk – including Oxfam – are involved in delivering water, sanitation and hygiene (WASH) services to communities and households. For example, between August 2015 and May 2016, Oxfam provided emergency WASH assistance to newly displaced populations in Kirkuk governorate. The programme was funded by the European Commission's Humanitarian Aid and Civil Protection department (ECHO).

All organizations delivering WASH programmes strive for sustainability in their service delivery work. This requires them to work with government actors to develop improved plans and policies. Yet if INGOs wish to conduct further advocacy, they will need to collect scientific data to inform their priorities. Two inter-related environmental aspects need particular consideration. The first is the adequacy of water quantity and quality. Simple hydrometric monitoring techniques should be incorporated into WASH programmes to identify what changes to water and land resources are taking place. The second is the environmental impact of sanitation systems. For example, assessments should be undertaken to make sure that sanitation and wastewater facilities are not polluting the environment. A key underlying issue for both analyses should be the changing population density and the impact of IDP settlements on local water and sanitation systems.

This paper argues that the WASH sector is well placed to influence water resource management activities. This is because it can promote the principle of subsidiarity in monitoring and managing water resources and can encourage engagement between community-based institutions and government authorities.

3 WHAT CHANGE(S) DOES THE OXFAM PROGRAMME INTEND TO INFLUENCE THROUGH ITS RESEARCH?

Oxfam recognizes that water resource management in Kirkuk is an issue of growing importance. Its aim is to work with other INGOs, community-based institutions and government authorities to address these problems in a flexible and responsive manner.

For this research, between March and April 2016 Oxfam personnel conducted 36 separate interviews and seven focus group discussions (FGDs) across four sub-districts in Kirkuk. Meetings were held with a wide range of ethnic groups and governing authorities, involving 128 participants in total. These included urban and rural communities, displaced people, members of host communities and representatives of the Kirkuk Provincial Council (KPC). Research questions explored the underlying political dynamics, the current water situation and perceptions of the standards of WASH services. Broader questions about possible solutions and institutional roles and responsibilities were also discussed. Oxfam's programme has used this research to identify and distil the key issues to address and to make the case for improved water resource management in Kirkuk. The research was funded by ECHO under the Emergency WASH Assistance to Newly Displaced Populations of Kirkuk Governorate project.

It is hoped that this research will inspire other WASH sector actors to engage in the monitoring and management of water resources. By highlighting the real water security problems that community-based institutions experience, it helps to pinpoint the water management problems that WASH organizations and local government need to consider. These problems demand that organizations think about a range of water security issues. The research project experienced some challenges, such as difficulties in accessing remote rural communities and in locating historical hydrometric data for the Kirkuk region. Nevertheless, it is hoped that this research will provide 'food for thought' and will stimulate interest in more responsible water resource planning.

4 WHAT ISSUES EMERGE FROM OXFAM'S WATER RESOURCE MANAGEMENT RESEARCH IN KIRKUK?

The natural environment has been a major casualty of the Iraq crisis. The once bio-diverse ecology of Kirkuk has been devastated over the past 50 years. Upstream dams and water diversions have affected the once forested plains and hills north of Kirkuk city. These are now a desert in summer, creating frequent dust storms. The research has reaffirmed that large parts of Iraq's water supply, sanitation, agriculture and energy infrastructure have been damaged or destroyed in recent years. The governorate's water sector has suffered from years of under-investment and inadequate operation and maintenance to keep water supply systems functioning.

Oxfam's research has identified four key issues as potentially having a significant impact on Kirkuk's water resources. First, water resources are coming under growing pressure from an increasing population and growing demand. If not addressed, this has the potential to deepen divisions between different ethno-sectarian groups, as access to adequate quantity and quality of water may be reduced. Second, limited financial investment and weak government institutions have hamstrung development of the water sector. In particular, the question of how national or regional water resource management approaches will be applied in Kirkuk remains unresolved. Third (and on a more positive note), although INGOs like Oxfam and others carry out WASH service delivery on a relatively limited scale, their involvement in water resource management is important. In addition to directly benefiting the communities and households they serve, WASH organizations can undertake innovative water resource management work that will assist larger service providers like the Kurdistan Regional Government (KRG) and the Government of Iraq (GoI) to deliver at scale. Lastly, community-based institutions in Kirkuk have already demonstrated a willingness and interest to engage in the monitoring and management of water resources. Many user groups told Oxfam that they had their own informal arrangements for managing water resources, but they also expressed their unwillingness to just sit and wait for external solutions that were not forthcoming. This provides a moment of opportunity for the WASH sector to support and empower users to safeguard their own local water resources.

5 HOW DOES THE PROGRAMME INTEND TO BRING ABOUT CHANGE IN IMPROVING WATER RESOURCE MANAGEMENT?

Water resource management in Kirkuk is concerned with transitions, all potentially leading from an inferior situation to a much better one. The programme aims to adopt a flexible, 'learning by doing' approach so that it can help both local communities and key decision makers address real water management problems. To do this, a number of basic transitions are required to enhance water resource management in Kirkuk.

The first transition is strengthening standards of service delivery. This is all about ensuring that WASH services function consistently, safely and efficiently year-round. For example, are water points **climate-proofed**¹ so that they do not dry up in the summer months? Are multiple-use water systems (MUS) in place to maximize the use of wastewater for small-scale gardens and livestock? Do sanitation and solid waste facilities minimize the risk of groundwater and surface water contamination?

The second transition is strengthening local knowledge and understanding. Stakeholders in Kirkuk will not be able to manage water resources if they cannot properly analyse them. For example, if stakeholders do not know the relationship between rainfall, groundwater levels and surface water levels and flows, then evidence for changes in water availability will remain anecdotal. It is relatively simple to establish local hydrometric monitoring, and water sector stakeholders (including Oxfam) should endeavour to do so. At the same time, practitioners must ensure that the equipment and data collection methods adopted are acceptable to the government. Simple and cost-effective instrumentation needs to be of a

reasonable standard so that data are considered accurate and can contribute to the establishment of a national monitoring network and data repository in Iraq.

The third transition is exploring areas where different water users are willing to collaborate. Establishing effective systems for assessing water availability, allocating water equitably, applying water laws, establishing robust institutions that are responsible for water resource management and rehabilitating water supply infrastructure will take considerable time. Thus, it makes sense to encourage and empower community-based institutions and regional government to jointly address the most pressing water resource management problems.

The fourth transition is ensuring that community-based institutions are not isolated. Many water management problems will be beyond the capacity of community groups to address, and external assistance from regional and national government agencies and NGOs will be required. The dividing line between community responsibilities and those of external support organizations will be context-specific and will depend on the skills, knowledge and resources that both parties possess. Oxfam is keen to work with both parties to help define their roles and responsibilities.

The fifth transition is making service delivery sustainable. There is currently a preoccupation with building new water supply infrastructure in Kirkuk rather than keeping existing water supply services functioning. Communities require effective external support so that both minor and major repairs can be undertaken in a timely manner. Similarly, efforts need to be made to ensure the long-term future of sanitation systems.² The willingness and ability of households and communities to pay for services should be measured, and then supplemented with public funds as needed to keep services functioning. Oxfam's advocacy and influencing work should draw attention to recurrent operating costs³ because if these costs are not covered, services will gradually (or quickly) deteriorate.

6 WHAT ARE THE IMMEDIATE NEXT STEPS THAT OXFAM WILL PURSUE?

Oxfam hopes that this research will be of interest to other INGOs working in the WASH sector. It should also be of interest to local and regional government institutions that are responsible for water resource management. This is because water resource management problems in Kirkuk are significant and complex, demanding the involvement of many actors. However, there are a number of immediate steps that the WASH sector, including Oxfam, aims to undertake.

Oxfam believes that progress can be made at the local level through practical fieldwork, using analysed hydrometric data to help define Kirkuk's major water security challenges. Oxfam's research has identified eight main priorities and actions that it (and hopefully the broader WASH sector) will pursue, as follows:

1. Engage with the Ministry of Water Resources and other line agencies working around water resources to better understand their short- and medium-term priorities. Show a willingness to engage in water resource management activities and a desire to work with community-based and local government institutions.
2. Monitor rainfall using simple, low-cost rain gauges. This should be encouraged across Kirkuk, and community-based institutions that declare an interest should be involved.

3. Conduct hydro-geological studies at a small number of locations. This should be combined with monitoring of rainfall. The development of local-level monitoring programmes should be carried out in partnership with local government actors, who will need to provide external support to community-based institutions.
4. Monitor surface water flows at a small number of springs and streams; this will ultimately feed into a national hydrological monitoring network.
5. Review current WASH programmes to identify how measures can be put in place to climate-proof water sources and establish multiple-use water system (MUS).
6. Review sanitation and solid waste facilities to identify how contamination of water and land can be prevented.
7. Document customary water management practices in Kirkuk governorate. Oxfam's research indicates that some community-based institutions already have informal arrangements (such as operating principles) for managing water resources.
8. Consult with development partners and academic institutions to assess how this report can be revised into a funding proposal. It is worth noting in this regard that a water governance project in Iraq could generate useful lessons for other fragile states in the Middle East, including Syria and Yemen.

By demonstrating that local actors can collaborate in pursuit of these priorities, Oxfam hopes to inspire regional and central government leaders to work together on wider water security priorities. These include:

- Establishing an inter-ministerial framework for water governance. The inter-ministerial framework should look to clarify roles between different ministries, departments and agencies. It must also clarify constitutional arrangements between Baghdad and governorates and regions.
- Creating accountable and inclusive public-private partnerships, so that major water supply, sewerage and agriculture infrastructure projects are completed in a timely manner and in accordance with the national development plan. National duty bearers should ensure that these are managed and implemented in ways consistent with international aid effectiveness principles.
- Establishing robust policies and regulations for water and land management, supported by routine monitoring and compliance. These policies should be harmonized across the KRG and Gol. Similar regulatory regimes should be created for related sectors such as waste management (including industrial, medical, sewerage and consumer waste).
- Establishing a national hydrological monitoring network in a phased manner. This will help to ensure that relevant data are collected, validated, analysed and published for the benefit of national and local decision makers.
- Resolving land claims between the Gol and KRG in Kirkuk in an inclusive and fair manner. Clear, mutually agreed land tenure regulations and zoning laws will help to prevent ad hoc urbanization. Improved land ownership policies will also help farmers to become eligible for government subsidies.

7 CONCLUSION

This policy paper argues that water resource monitoring and management should be incorporated into existing WASH programmes in Kirkuk. WASH programmes provide a good starting point for strengthening levels of service delivery and establishing better water resource management at the local level. But it is only by collecting hydrometric data that problems can be understood and more informed management decisions can be made. While INGOs may initiate this monitoring, it should be rapidly transitioned to local communities, with external support from INGOs and local government. This information can be used to improve the management of community water supplies, while also helping different water users (such as major water abstractors) to understand the wider impacts they are having on water resources. Local-level water management practices also potentially provide a foundation for closer cooperation and engagement with regional and central governments. This is important because sound water resource management will require an ongoing, flexible and iterative process if it is to be effective.

BIBLIOGRAPHY

- Al-Ansari, N.A. (2013). *Management of Water Resources in Iraq: Perspectives and Prognosis*. Engineering 5, pp.667-684. <http://dx.doi.org/10.4236/eng.2013.58080>
- Al-Jiburi, H.K. and Al-Basrawi, N.H. (2012). *Hydrogeology*. In: *Geology of Low Folded Zone. Iraqi Bulletin of Geology and Mining*, Special Issue, No.5, pp.133-157.
- Al-Jiburi, H.K. and Al-Basrawi, N.H. (2013). *The Hydrogeological Map of Iraq*, 2nd edition. Scale 1:1,000,000.
- Chatham House (2013). *Iraq Ten Years On*, Royal Institute of International Affairs.
- FAO AQUASTAT (2008). *Iraq*. Country profile. http://www.fao.org/nr/water/aquastat/countries_regions/IRQ/
- Guardian* (2014). *Water supply key to outcome of conflicts in Iraq and Syria, experts warn*. <https://www.theguardian.com/environment/2014/jul/02/water-key-conflict-iraq-syria-isis>
- M. Knights and A. Ali (2010). *Kirkuk in Transition: Confidence Building in Northern Iraq*. Washington Institute for Near East Policy, Washington, DC. <http://www.washingtoninstitute.org/uploads/Documents/pubs/PolicyFocus102.pdf>
- Ministry of Irrigation (1986). *Water Resources and Management of Mesopotamian Plain*.
- The Sphere Project (2011). *Humanitarian Charter and Minimum Standards in Disaster Response*. Geneva. <http://www.sphereproject.org>
- United Nations Development Group (UNDG) (2005). *The National Water Master Plan – Phase 1 Water Resources Assessment*.
- UN Economic and Social Commission for Western Asia (ESCWA) (2005). *Module 8, Balancing Water Supply and Demand*.

NOTES

- 1 Climate-proofing means ensuring that current and future development policies, investments or infrastructure are resilient to climate variability and change, thus reducing climate-related risks to acceptable levels.
- 2 This refers to the collection, removal, transportation, treatment and disposal or re-use of human waste.
- 3 This refers to the full recurrent and replacement costs necessary to keep water supply (and sanitation) infrastructure functioning.

© Oxfam International August 2017

This paper was written by Oxfam (Iraq). It is part of a series of papers written to inform public debate on development and humanitarian policy issues.

For further information on the issues raised in this paper please email advocacy@oxfaminternational.org

This publication is copyright but the text may be used free of charge for the purposes of advocacy, campaigning, education, and research, provided that the source is acknowledged in full. The copyright holder requests that all such use be registered with them for impact assessment purposes. For copying in any other circumstances, or for re-use in other publications, or for translation or adaptation, permission must be secured and a fee may be charged. Email policyandpractice@oxfam.org.uk.

The information in this publication is correct at the time of going to press.

Published by Oxfam GB for Oxfam International under ISBN 978-1-78748-007-0 in August 2017.

DOI:10.21201/2017.0070

Oxfam GB, Oxfam House, John Smith Drive, Cowley, Oxford, OX4 2JY, UK.



Funded by
European Union
Civil Protection and
Humanitarian Aid

This document covers humanitarian aid activities implemented with the financial assistance of the European Union. The views expressed herein should not be taken, in any way, to reflect the official opinion of the European Union, and the European Commission is not responsible for any use that may be made of the information it contains.

The European Union and its Member States are a leading global donor of humanitarian aid. Through the European Commission's Humanitarian Aid and Civil Protection department (ECHO), the EU helps over 120 million victims of conflict and disasters every year. With headquarters in Brussels and a global network of field offices, ECHO provides assistance to the most vulnerable people solely on the basis of humanitarian needs, without discrimination of race, ethnic group, religion, gender, age, nationality or political affiliation.

OXFAM

Oxfam is an international confederation of 20 organizations networked together in more than 90 countries, as part of a global movement for change, to build a future free from the injustice of poverty. Please write to any of the agencies for further information, or visit www.oxfam.org

www.oxfam.org

