

THE SOCIAL AND CULTURAL REPERCUSSIONS OF MAKHOUL DAM

Iraq's Next Humanitarian Crisis

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EXECUTIVE SUMMARY



THE CONSTRUCTION OF MAKHOUL DAM WILL RESHAPE THE SOCIO-CULTURAL LANDSCAPE AND GEOGRAPHY OF SALAHEDDIN AND KIRKUK IN IRAQ AND CONSTITUTE THE NEXT HUMANITARIAN CRISIS IN IRAQ.

The intended purpose of Makhoul Dam is to create a reservoir with a capacity of three billion cubic meters to regulate water resources, and the Ministry of Water Resources is currently undertaking the project. Since work started in January 2021, there has been no attempt to speak or engage with communities. The dam can disrupt the everyday life of some 118,412 individuals at a time when a semblance of normalcy is gradually returning to the region, especially in the context of the recent Islamic State occupation and its detrimental aftermath.

Since work was initiated to build the dam, there has been no social or community-based assessment of its potential impact. Acknowledging this worrying situation, Liwan for Culture and Development — an Iraqi nongovernmental organization (NGO) — sought support from the International Organization of Migration (IOM) to study the social and cultural impact of the project and elevate and amplify community voices to the level of key stakeholders and decision-makers.

A people-based method was adopted to explore the socio-cultural dimensions of Makhoul Dam. Specifically, this project was designed to understand how communities in 39 villages and residential areas perceive the project and how it will affect livelihoods, the social and economic environment, and cultural landscape. An evidence-based dataset was collected to ensure

those voices were not forgotten or marginalized. In this context, this project addresses this shortcoming in communication and engagement with the people of the Makhoul basin to capture the perspectives of the population of the region. As such, this project intends to encourage large-scale consultation when no organized effort is being pursued to address the concerns of communities.

The absence of integrated plans concerning communities, the lack of inter-state agency coordination, and a general shortage of information and instructions about the dam have negatively affected perceptions of the project and its possible benefits. More specifically, there have been no attempts to assess civilian infrastructure losses, including health facilities, water and electricity and schools. Alternative arrangements and reparations have similarly not been discussed. As an outcome, an atmosphere of uncertainty clouds the entirety of the Makhoul Dam project.

The dearth of data and instructions from state agencies, especially from the Ministry of Water Resources, has led to society-wide suspicion about whether the dam is appropriate for addressing Iraq's water crisis. Indeed, 96% of respondents wished to obtain more information about how Makhoul Dam could affect them and their villages. Furthermore, the social and cultural costs that may result from the dam's



construction have not been calculated and are currently unknown. More specifically, inventories pertaining to households and communities have not been featured in any state-level plans. While such an endeavor should form a necessary component of any assessment, the outcomes of displacement, concomitant social fractures, and such issues as compensation, may disrupt social cohesion and existing life in the region and cause significant instability within households and in between communities.

This research has shown that there is an overwhelming apprehension and fear about how the dam, which is envisaged to be completed within five years, will affect the everyday lives of communities in the region. According to figures obtained from this study, over 150km² of inhabited villages will be flooded and 67km² of farmland submerged. Up to 61,000 heads of cattle may also be lost, which may induce further food security concerns for the entire country. This report, and this IOM-supported project more generally, is an attempt to situate people and communities at the heart of the Makhoul Dam project.

A mixed-methods approach was adopted to explore community perspectives in the Makhoul Dam basin, an area traversing both Salaheddin and Kirkuk provinces. Opinion polls, questionnaires, in-depth interviews, and village-by-village mapping of community assets and such things as livestock estimates comprised the central basis of this research.

This people-based approach, carried out with researchers from the region itself, represents the first attempt in Iraq to understand the social and cultural impact of national projects such as dam construction. In the history of building dams in

Iraq, many of which have devastated farmland, uprooted entire cities and populations, reduced biodiversity, and flooded large archaeological sites, Makhoul Dam would most likely repeat past mistakes. If anything, this report is a call to involve the most vulnerable populations in planning the Makhoul Dam project and ensure that decision-making at all facets of state and sub-state levels should first and foremost respect the interests of the local communities.

Amidst lingering distrust with state authorities, especially in light of recent war and conflict and the devastation wrought by the Islamic State, communities have been apprehensive about organizing themselves to air their grievances regarding Makhoul Dam. There is an absence of trust with decision-makers, and it was commonly stated that any expression of discontent with Makhoul Dam would fall on deaf ears, and their voices would be ignored, or worse, treated with suspicion.

Key findings in this research can form the basis of a new approach to considerations concerning the future of Makhoul Dam. Specifically, a comprehensive study of costs and benefits needs to take place before the dam is completed. Current landholdings have not been adequately assessed, and household and community assets similarly have not been measured. For example, community assets are in part jointly owned by families and communities. There are fears that compensation could be unfair, non-transparent, and not commensurate with existing assets. The possibility of unfair compensation would most likely cause friction and disputes within households and between communities.

Makhoul Dam would also weigh heavily on the relatively high number of female-headed

households resulting from the recent war. Female members of communities secure a semblance of economic independence through small-scale farming. There were questions as to whether any compensation would consider the specific and individual situations of different strata of society. The nature of local society has meant that women were particularly dependent on male members of their households or families. Any disruptions to income generation from small plots of land under their possession would disproportionately affect their livelihoods. Due to their relative vulnerability, women were generally more concerned about food insecurity than men. Other concerns pertained to disruptions to the existing support and service infrastructure currently available to them, including electricity - a necessity in Iraq's summer months – and access to potable water. An additional concern was that the dam could potentially disrupt the school life of children further, especially since many school-age children have missed out on education due to recent conflict.

Disruptions to employment, livelihoods, and sources of income were a significant concern amongst interviewees. Respectively, 60% of respondents were worried about losing their jobs. While a relatively small number of respondents saw the possibility of gaining new employment through the project, most communities believed that Makhoul Dam would negatively affect their existing sources of income. While salaried government workers were generally better cushioned to withstand the adverse outcomes of Makhoul Dam, they too noted that they were engaged in small-scale augment existing incomes. farming to Respondents who were farmworkers and landowners saw Makhoul Dam as a severe threat to their livelihoods and to the entire infrastructure of work and employment anchored in the region's agricultural economy.

Respect for people's ancestors, especially as burial sites and cemeteries would also be flooded in the region, was also a central concern among communities. This was a question that elicited apprehension in tightly knit communities that saw their continuity and legacy closely tied to their long history in the region. The flooding of centuries-old cemeteries was viewed as disrespectful to the deceased and the honor of tribes and families.

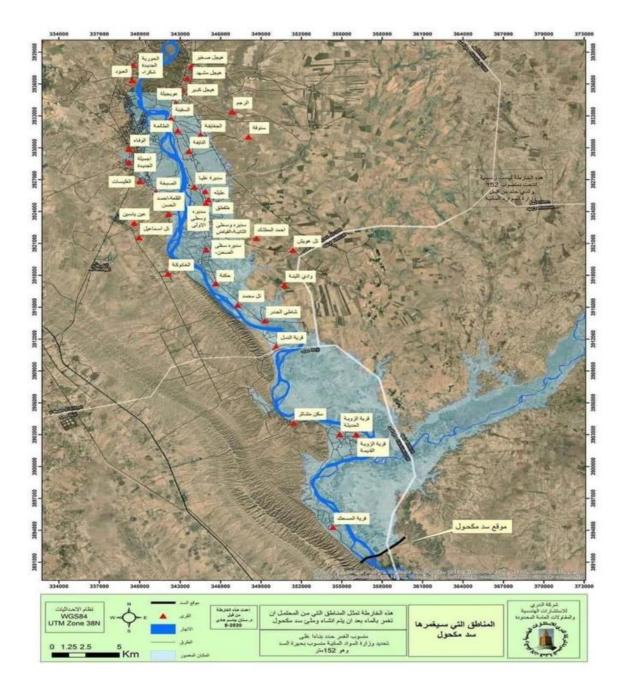
All respondents showed a strong interest in ensuring that the nature of compensation and resettlement should take their way of life into account. The replacement of their existing landholdings with apartment block allocations was rejected. Significantly, communities stated that they were interested in being close to their natural heritage, namely the natural landscape comprised of mountains (especially the Makhoul Mountain range), the Tigris River, and rural plains. Urban life was similarly rejected as a form of alternative mode of living.

Communities living close to archaeological sites had a semblance of knowledge about their significance, especially in the sub-district of Ashur, which contains the UNESCO World Heritage Site of Ashur. Otherwise, there was general disinterest in the rich body of archaeological sites, namely ancient Assyrian, Akkadian, Ubaid, and Uruk-era heritage. Knowledge and discussions about the region's tourism potential were generally ignored or did not feature in discussions about Makhoul Dam's impact and left much room for work with concerned cultural heritage-related agencies and organizations.

Ruptures to the existing social arrangements in the Makhoul Dam area, particularly at a time of increased attacks against Iraqi security forces, risks destabilizing the entire region. This was another fear amongst respondents as uprooting entire communities could result in social disarray and the possibility of further insecurity, which the Islamic State could exploit to its advantage.

The project to build Makhoul Dam requires interagency consultation. Budgetary funds from the central state have been directly allocated for the building of Makhoul Dam, even if there has been no coordination with other ministries, such as the

Ministry of Culture, Tourism, and Antiquities and the Ministry of Migration. Such a situation, which is indicative of Iraq's fractured politics — bodes poorly for communities, which are left secondguessing what the repercussions of this multibillion-dollar project might be. The report outlines a list of recommendations.



Map of over 40 villages which will be flooded by the Dam

Source: The Iraqi Ministry of Water Resources, 2021



Precarious Context and Vulnerable Communities



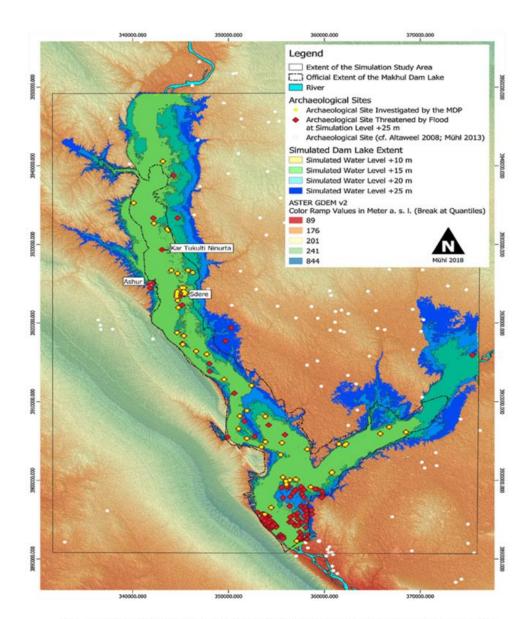
THE AREAS ENCOMPASSING THE MAKHOUL DAM BASIN, WHICH TRAVERSES SALAHEDDIN AND KIRKUK, HAVE WITNESSED UNPRECEDENTED INSTABILITY AND SOCIAL UPHEAVAL IN RECENT YEARS.

Starting in 2014, these areas were affected by the war to expunge the Islamic State, which destroyed life and large sections of infrastructure and livelihoods and resulted in uprooting entire populations from their homes. While life and people have returned to the region in recent years, and a semblance of stability has given rise to returnees' resettlement into the area, the construction of Makhoul Dam may destabilize the region once more.

Work to build the dam commenced in January 2021, though without prior consultation with the region's people, leaving many questions unanswered about the future of the area and its people. According to the Ministry of Water Resources, the entire project would be completed within five years. Unless an integrated and comprehensive plan is put into place, entire areas will be inundated with water, including major archaeological sites such as Ashur, a UNESCO World Heritage Site.

To date, there has been no social study or environmental impact assessment on Makhoul Dam, leading to widespread apprehension and frustration about what might happen to the local communities and livelihoods. The history of dam construction in Iraq has nearly always resulted in significant farmland losses, biodiversity, and archaeology and led to the resettlement of entire towns, communities, and cities. Once completed, Makhoul Dam will most likely reflect past experiences in dam construction and outcomes. Notwithstanding engineering and quality control issues, which are beyond this project's scope, the repercussions of Makhoul Dam on communities have not been properly studied, and existing assessments have ignored people and their life situations altogether.

Makhoul Dam is being constructed without coordination or planning with other concerned state ministries and agencies, including the Ministry of Planning, the Ministry of Migration, the Ministry of Culture, Tourism and Antiquities, and the Ministry of Labour and Social Affairs, requires national-level discussion. State-funded Ministry-led projects are implemented in a way that fails to consult with people and communities and lacks intra-state coordination. Local governments have also been sidelined. In this context, this project attempts to anchor people, particularly communities affected by Makhoul Dam, as a central pillar in decision-making, stability, and the pursuit of peace in the region.



Marchetti et al (2019): Assessing the Impact of Makhoul Dam on Archeological Sites

A Water Security Crisis

Iraq is facing the most calamitous water security crisis in its modern history. The flows of the Tigris and Euphrates are at an all-time low. The Iraqi population of 40 million needs at least 71 billion cubic meters of water annually, according to the Food and Agriculture Organization (FAO) of the United Nations, which is becoming harder to secure due to a combination of drought and water shortage. According to the United Nations,

the country is also ranked fifth in the world as the most vulnerable to the effects of climate change, including water and food insecurity. Drought has devastated agriculture in the southern plains in recent years, drying up the once fertile marshes and oases. As one of the least prepared countries to face crises, the land of Mesopotamia is also witnessing a health emergency due to the potable water shortfall. In Basra, for example,

about 100,000 people were hospitalized in 2018 due to the lack of adequate drinking water. Displacement due to natural disasters is on the rise in Iraq. In a report published in 2020 by the Norwegian Refugee Council and several other international organizations, water shortages have caused nearly 15,000 new displacement cases in the governorates of DhiQar, Maysan, and Basra since January 2019, while 37,000 were displaced due to storms and floods in 2018.

According to the Minister of Water Resources, Mahdi Rashid, the water levels from Turkey and feeding into the Tigris and Euphrates rivers have decreased by 50% in 2021 due to the decline in precipitation, climate change, and the number of colossal dams built by Turkey on the two rivers. Likewise, Iran has cut off the flows of the Darbandikhan River and reduced the flow of the Dokan River by 70%. Turkey and Iran both have additional plans to erect further dams in the next decade, which will make matters worse. Suffering from a fragmented central government since the US-led 2003 invasion, Iraq has not been successful in curbing the ambition of its neighbors over shared water resources.

The countries situated on the banks of the Tigris and Euphrates rivers still consider dams a sign of progress and development, backed up by archaic local decision-makers. This contrasts with the rising global trend calling for dismantling dams

due to their devastating effects on the environment and biodiversity. According to a report published in 2020 by the World Wildlife Fund (WWF), the world has lost more than 85% of its ecological freshwater diversity, in part due to dams obstructing the movement of fish species and completely obliterating the habitats of others.

The chosen dam location extends from Shirgat district and large parts of Baiji in the north of Salaheddin to large areas of Hawija district southwest of Kirkuk, where the Lower Zab River meets the Tigris River, forms a natural reservoir of fresh water. Hence, Iraqi authorities believe that such a project would remedy the country's increasing water shortage crisis by storing three billion cubic meters per year. The ministry also sees Makhoul Dam as an opportunity to revive the region's economy, prevent flooding risks over Samarra and Wadi al-Tharthar, generate additional electric power, and create over 20,000 new job opportunities. This highly optimistic vision has been challenged by several geological studies that argued against the effectiveness of the project and demonstrated the unstable nature of the soil on which it will be built, which may increase landslide risks. Former Minister of Water Resources Hassan Al-Janabi denounced the high humanitarian and cultural costs and the technical shortcomings of the Makhoul Dam, referring to studies previously commissioned by his cabinet.

Vulnerable Communities in Post-IS Salaheddin and Kirkuk

The residents of the Makhoul basin hail mostly from Arab Sunni tribes, including the Jabour, Jumaili, Shimmar, Obaid, Dulaim, Jaghayfa, Agaidat, and Lahib, with the Jabour being the largest. Some relocated Mosul inhabitants and a smaller number of Kurds and Turkmen can also be found in the region. The area's residents are mainly engaged in agriculture and livestock trade due to the favorable geographical location for such activities. Their crops include wheat, barley, cotton and sesame, and fruits and vegetables

that they trade with the neighboring cities. This seemingly prosperous rural locality has been the battleground for clashes between Iraqi forces and Islamic State militants, resulting in the destruction of private property and civilian infrastructure and the displacement of thousands of innocent families from the Ashur, Al-Zaweya, Al-Zab, and Al-Abbassi sub-districts.

Although many families have returned to their villages in recent years, many men are prevented from going back for security and tribal reasons.

Many households remain exclusively supported by widows who passed away during the 2016-2017 Mosul liberation war. The studied zone also suffers from high poverty rates and a lack of stable incomes, despite subsidies distributed by international organizations over the years. The International Organization for Migration (IOM) has classified Shirqat and Baiji, for example, as among the most economically fragile areas in terms of peaceful coexistence after the return.

As our field liaison team was carrying out interviews in the region, frequent Islamic State attacks continued to threaten the stability of these already at-risk communities. Dormant Islamic State cells hidden in the Makhoul ridge

persistently target southwest Kirkuk's Iraqi security and police forces. Weekly confrontations and casualties are announced across <u>media outlets</u>, spreading terror among the populations of the Makhoul basin.

An initial list of villages affected by the Makhoul Dam has been identified, yet so far, there has been no exhaustive study of the number of families and individuals who will be displaced during the upcoming years. This study attempted to map 40 villages surrounding the dam. However, more comprehensive research on the economic, social, and psychological impact of another wave of displacement on these vulnerable communities is urgently needed.

Makhoul Dam: A Timeline

Makhoul Dam was first proposed in 2001 as a strategic water management project for Iraq. The project never took off due to sanctions. Limited progress was made between the launch of the project and the time it was completely halted during the US invasion of Iraq in 2003 when its equipment was looted in the chaos that accompanied the occupation. Talks about reviving the project continued with the successive Iraqi governments until 2011 when the Minister of Water Resources Hassan Al-Janabi commissioned an Italian specialist firm to conduct a study entitled "The strategic study of water and land for 2035 Iraq" that argued against the benefits of Makhoul Dam and described its geological and technical flaws. As a result, the project was removed from the Ministry's list of future strategic projects.

Due to the pressure created by the looming water security crisis, drought, and competition with neighboring countries over the water shares of the Tigris and Euphrates, the Iraqi government decided to revive the project in 2020 and identified an engineering company to implement the construction. The Minister of Water Resources Mahdi Rasheed inaugurated the site in January 2021, and work started in May 2021. As of today, a services bridge has been established, and the company is presently laying the foundations for the main water reservoir. The project is estimated to be fully completed within five years. Uncertainties continue to surround the venture and whether the next government will support it or discontinue it once more.





A People-Centered Methodology



UNDERSTANDING THE SOCIAL AND CULTURAL IMPACT OF MAKHOUL DAM ON VILLAGES AND TOWNS IN AFFECTED AREAS IN SALAHEDDIN AND KIRKUK REQUIRED A MIXED METHOD OF PAIRING QUALITATIVE AND QUANTITATIVE APPROACHES.

Specifically, this involved using a combination of in-depth interviews and surveys. Village mapping was also undertaken, including assessments of existing infrastructure, such as livestock and other community assets.

Liwan's research team covered 39 inhabited villages and one deserted village. The community liaison crew, comprised of members from the region, were trained in good practices in data collection, ethics, and other necessary components of adequate documentation and engagement. The training was organized into multiple sessions, data gathering approaches were monitored, and quality control was conducted throughout the project. Where possible, video and audio recordings and photos were also used to augment this process. In total, 468 questionnaires were completed, which constitutes one of the core pillars of this research. In each one of the 39 inhabited villages, at least 12 opinion polls and four in-depth interviews were carried out.

The project relied on preparing a research and engagement team to access villages and, more widely, the region's populations. A team of four researchers, backed by additional expertise, gained access to 39 villages and spoke with and better understood the perspectives of a representative sample of individuals, including community leaders, tribal sheiks, and local authority representatives. The project used an existing network of contacts, stakeholders,

including state agencies and ministries, and their representatives, to put the data collected into context during this exercise.

In addition to data documentation, the project organized several events in the region that facilitated entry points for local community participation. Specifically, tens of families were consulted, and hundreds of inhabitants of the Makhoul basin participated in this project. Community-based roundtable discussions focused on the themes of livelihoods, water resources management, archaeology, displacement were organized. In addition, the participation of academics from both Kirkuk and Tikrit Universities was essential for building a knowledge base for preparing and developing this project. This two-pronged approach, utilizing research skills and data collection on the one hand and preparing community forums and other activities for active engagement of local populations on the other, was essential for ground-level effectiveness and ensuring the effective participation of affected communities.

Despite the region's instability, including recent conflict and ongoing Islamic State assaults on the security forces in the area, the project team effectively navigated and negotiated the challenges they commonly faced during their fieldwork. Much of these concerns were ameliorated by recruiting most of the project's team from within the tribal web of the region itself.

Ethical considerations were integrated into the fabric of this project and constituted a central element of concern. Deep-seated sensitivities concerning the deracination of entire populations from their homes and the significant loss of life that was witnessed from 2014 to 2017

were addressed. Gender sensitivity was also an important consideration, and female members of the research team were able to ensure adequate participation of women in this project — significantly to elevate otherwise marginalized voices in a context where entire communities may once again be uprooted.

EXPLORING THE HUMANITARIAN AND CULTURAL IMPACT OF MAKHOUL DAM

Alarming Material Losses

The community liaison team led a detailed field mapping of the potentially affected villages to identify estimative material losses for each one of the 39 populated villages. The collected data used records from local village headmen "mukhtars" and municipality mayors combined with field inventories and inquiries. The team recorded village GPS coordinates, surface sizes, population sizes, farmed surfaces, and livestock counts among the information collected. Civilian infrastructure and other facilities were also part of the documentation effort.

The mapping exercise reveals alarming numbers and the humanitarian and economic disaster dimensions if the Makhoul Dam submerges the area. The Makhoul Dam basin includes 39 populated villages and one deserted village covering a surface of over 156.83 km² and with a population of 118,412 inhabitants, including males, females, and children. This large population will need to be resettled to new locations, sheltered in camps or apartment complexes, and compensated for their homes and personal property losses. The study also revealed that more than 395 civilian facilities (schools, clinics, water and electric plants,

cemeteries, sports fields, cultural centers) would be flooded, depriving the local communities of essential services like health and electricity, potable water, education, and sewage. It will additionally engulf the graveyards of their ancestors and loved ones, which is a significant point of concern for the local populations.

Makhoul Dam will primarily affect the region's economic infrastructure, which relies exclusively on crop farming, pastoral farming, and livestock breeding. An estimated 67.65Km² of fertile farmland, estate, and orchards will be erased over the upcoming five years if the dam becomes operational at full capacity. The crops and fruits associated in popular Iragi culture with the region of Hawija, for example, will disappear from the markets and culinary traditions of the entire country. Approximately 61,146 heads of cattle will also be lost or have to be sold or relocated, including cows, sheep, and goats. Abruptly disturbing this thriving local economy based on agriculture will affect the livelihoods and lifestyles of the local populations and cause a food security crisis for all of Iraq, as this zone is known as the breadbasket of Mesopotamia.

Governorates and Districts	Sub-Districts	Villages	Surface size	Population size	Civilian Infrastructure	Farmlands	Livestock Count
Salaheddin Ashur Governorate, Sub-district &		Shatea Al Jidr village	6 Km²	3150	12	3 Km²	950
		Assafinah village	5 Km²	3350	7	1 Km²	2000
Shirqat District	Al-Sahl Al-Akhdar Sub- District	Al Hagna village	1 Km²	1300	5	0.6 Km ²	746
(15 villages)		Asdira Asahn village	8 Km²	2600	14	1.2 Km ²	2330
		Asadira Westa Ula village	11 Km²	1350	18	3 Km²	5000
		Awejela village	12 Km²	8642	21	2 Km²	1500
		Al-Khasm village	2 Km²	3450	10	0.7 Km ²	196
		TaqTaq Village	3.15 Km ²	5000	11	1.1 Km ²	1700
		Tal Mohamed village	1.5 Km²	320	4	0.2 Km ²	90
		Al Fayadh village	2.15 Km ²	1500	19	0.11 Km ²	3700
		Al-Talaa village	1.15 Km²	2000	7	0.8 Km ²	1600
		Asdira Ulya village	4 Km²	4774	11	6 Km²	750
		Alilla Village	6 Km²	3500	6	4 Km²	1500
		Al Nayfa village	1.17 Km ²	2500	8	0.9 Km ²	1700
		Al Hurriya village	4.1 Km ²	3700	12	1.5 Km²	3150
Salaheddin	Al-Zawya	Al-Zawiya Centre	5.579 Km ²	3651	13	4.4 Km ²	3000
Governorate,	Sub-District	Al-Zawya Old village	7.784 Km ²	5440	13	6 Km²	3130
Baiji District		Al-Meshag village	1.75 Km²	7500	21	1.37 Km ²	600
(4 villages)		Al Naml village	3 Km²	1340	12	0.4 Km ²	700
Kirkuk,	Al-Abassi	Al-Waraydia village	2.5 Km ²	1700	6	1.2 Km ²	3200
Al-Hawija District (12 villages)	Sub-District	Al-Shajara village	5K Km²	5100	10	2.1 Km ²	3600
		Al-Sabti village	4 Km²	418	1	0.61 Km ²	500
		Al-Shibintah village	3 Km²	300	1	0.9 Km ²	120
		Hawaij Uliya Village	3 Km²	450	3	1.3 Km ²	320
		Hawaij Westa village	2 Km²	2800	7	1.6 Km ²	2450
		Hawaij Sufla village	2 Km²	298	1	0.65 Km ²	850
		Ghraib Ulia village	2 Km²	530	6	0.48 Km ²	254
		Ghraib Westa village	3K Km²	1350	5	0.84 Km ²	1800
		Ghraib Soufla village	4 Km²	450	2	0.8 Km ²	500
		Al-Twiriya village	1.5 Km²	240	5	0.25 Km ²	470
		Anaseef village	2 Km²	0	0	0	0
Kirkuk,	Al-Zab	Asbih Tahtani village	2 Km²	3150	12	0.4 Km ²	950
Al-Hawija	Sub-District	Asbih Foukani village	6.5 Km ²	1600	5	1 Km²	100
District (9 villages)		Al-Zab Centre – Al Wahda	12.48 Km²	19,870	40	3.7 Km²	2100
		Al-Rawiyeen village	1.8 Km ²	310	5	0.15 Km ²	200
		Ashmeet village	2 Km²	2700	13	3 Km ²	4000
		Adbess village	2 Km ²	439	3	0.6 Km ²	290
		Ashaq Al Qassaba	3 Km²	5490	17	0.5 Km ²	1000
		Village	_				
		Al Namissa village	3 Km ²	1900	10	0.3 Km ²	2000
		Al-Sabaghiya village	4 Km ²	4250	12	9 Km²	2700
Total	5 Sub-Districts	40 villages	156.83 Km²	118,412	395	67.65 Km²	61,146



Community Perspectives on Makhoul Dam

Community Stance on the Project

Communities spoke of a general disregard by local and central state authorities for local populations, especially in light of the dam's potential impact to uproot and fundamentally transform life in the region. The respondents expressed general disapproval of the project, with 82% of the interviewees firmly standing against it due to rooted mistrust towards all government policies and plans, especially in this Sunni-majority region marked by recent and past sectarian troubles.

"I oppose the project because it will flood my village, my farm, and my history. It is just a way of extracting more money from corrupt government agencies. There is no confidence between the communities and the government. They are all thieves and not serious", says Watfa Ali Hussein, a farmer from Al-Sabti Village in Al-Abbasi District.

While respondents expressed a clear understanding of the water security crisis faced by Iraq and the centrality of this project to the country's future water management strategy, many also challenged the motivation and technical relevance of the project. The considerable disapproval of Makhoul Dam also emanates from the disappointment in delayed and inconsistent government indemnities system following the Islamic State war.

"I am against this project. I do not trust the authorities because of previous experiences during the IS war that resulted in our

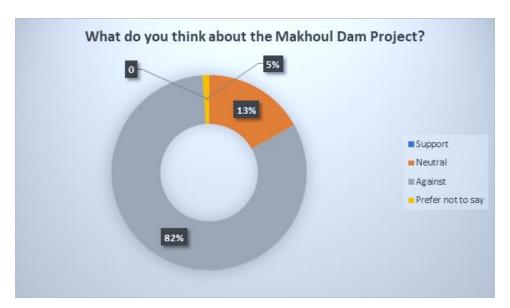
displacement for years. The local authorities did not provide us with any assistance, so how can we trust them now? But I do want to convey my voice through organizations and associations, and perhaps to form community delegations to present our vision to the government", notes Ali Issa Hassan, a livestock breeder from the village of Asdaira Wusta Al Awla in Ashur district.

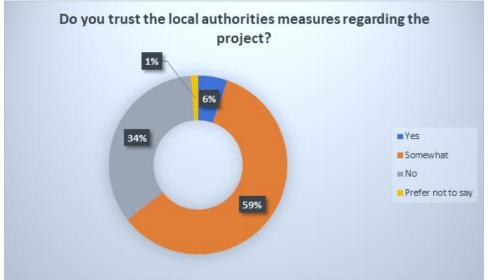
A small number of respondents saw an opportunity for job generation and local tourism development in the project, mainly those in government functions or students.

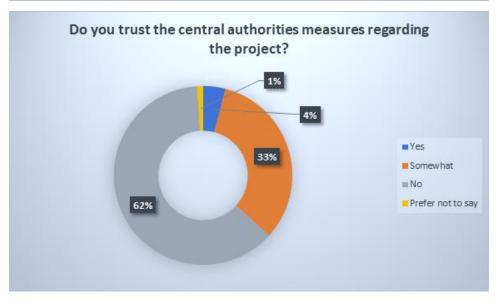
"This dam is a vital project for Iraq to provide great services and job opportunities. We all know that the waters of the Tigris will be scarce and that Turkey is building dams to cut-off water from us, which makes this project more necessary than ever", explains Maryam Mohsen Muhammad, a housewife from Al-Zawiya District, Baiji.

Another less openly discussed contention that would only be brought up in confidence and off the record is a fear of systematic revenge against Sunni villages, associated in a widespread belief with Islamic State insurgents. Some respondents disclosed confidentially that flooding the region might be a deliberate plan to eradicate these Sunni villages south of Mosul and north of Tikrit and Samarra as retribution to complex recent sectarian geopolitics and events. Interviewees did not wish to disclose their identities out of fear of retaliation.









Communication with the Authorities

The absence of clear communication from local or central state authorities, particularly from the Ministry of Water Resources, was evident across most interviews. Indeed, there have been no government consultations or discussions with local communities to date. Information concerning the dam was passed through word of mouth, commonly through friends and family members. Information sheets had not been distributed, and respondents had clearly stated that the lack of information contributed to a generalized apprehension about the construction of Makhoul Dam. Such dominant perceptions about the dam were exacerbated by the absence of clear plans regarding which specific villages would be flooded, the extent of flooding in their villages, and other pertinent issues regarding resettlement and compensation.

"We did not receive enough information about the construction of this dam. Most of what we know comes from rumors and what the media conveys, and none from the local authorities, the elected officials, or the central authorities. No one seems to care about the most affected people from this project, us", states Ahmed Abdullah Saleh, a civil servant from Alila village in Ashur district.

The vast majority of the respondents (96%) stated the need to obtain clear and professional information about Makhoul Dam. At the time of writing, there had been no government-led informational campaigns or leaflets distributed about the project. Indeed, villages and communities, in general, secure information

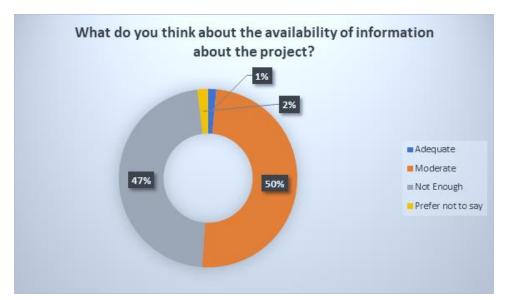
through family, friends, and on such social media platforms as Facebook, which led to public distrust with state authorities. Opinion polls indicated that respondents had a greater level of trust with local than central governmental authorities, even if they were not able to offer professional and sound advice regarding the impact of the dam. In light of this knowledge and the greater sense of trust that communities associated with local government authorities, any future plans regarding Makhoul Dam should undoubtedly actively involve local government institutions.

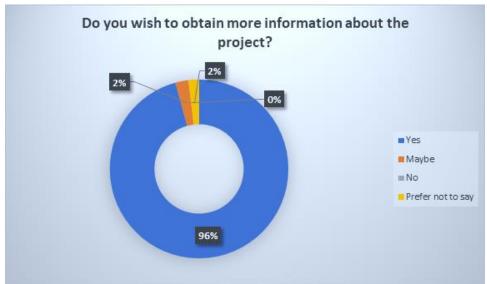
"We would like our voice to be heard by the local and central authorities and for community committees to be formed to negotiate on our behalf to discuss indemnities and displacement details and locations because we do not trust the measures and planning of the government alone", says Farha Yousef Khalaf, a housewife from Al-Mashak village in Baiji District.

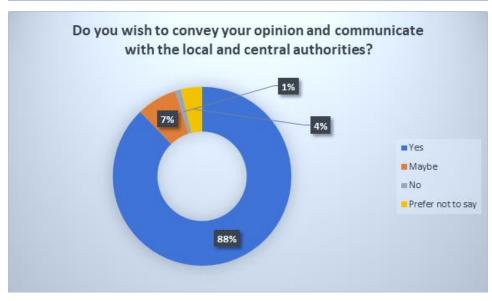
Professional information would go a long way in building trust and establishing a semblance of amicable relations between state institutions and communities.

"Citizens have lost trust in the government since 2003. For the authorities to win back our trust, they must appoint specialists in the fields of housing, agriculture, and education to offer acceptable alternatives to the homes, farms, and schools we will lose", says Mahmoud Matar Daoud Tohme, the headman of the lower Gharib village in Al-Abbasi district.









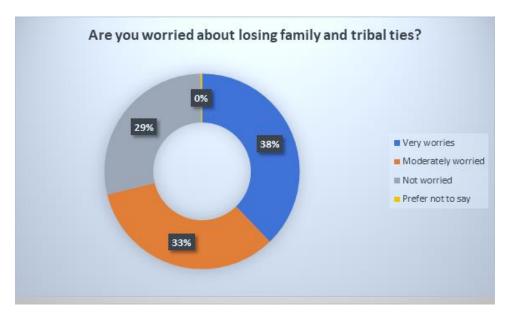
Tribal Ties and Community Cohesion

villages covered in this research. Those bonds made within and between tribes represent one of several social and cultural connections that connect otherwise geographically disparate communities. Researchers found that possible outcomes of Makhoul Dam and the displacement of populations would disrupt existing solidarity, which was on the mend after recent conflicts. Makhoul Dam may sever existing social and cultural connections altogether and cause friction within inter-dependent communities. The repercussions are not to be underestimated and should be put into a context of generalized insecurity and the absence of an effective state apparatus. Those concerns about tribal ties and community cohesion are, in reflection, a vital aspect of the conduct of everyday life. Social disarray may prevail if disrupted, as was the case during Islamic State occupation.

"I am worried about the loss of family and tribal ties. This will certainly reflect negatively on my family and clan. I am also worried about the loss of social cohesion and solidarity because we live in villages ruled by tribal laws that are like a constitution for us, but if we move to the city, most of these tribal traditions and customs will be lost", warns Khalaf Sumait Awaid Hindi, an engineer from Ililah village in Ashur district.

In addition to inter-community relations, displacement and uprooting would also affect intra-family relationships.

"The displacement of local communities will lead to the separation and estrangement of relatives and neighbors, and perhaps we will no longer see each other again. I am especially concerned about the loss of social solidarity, something we can never recover from", points-out Suad Ali Hamid, a teacher from Asdeira Al-Sahn village in Ashur district.



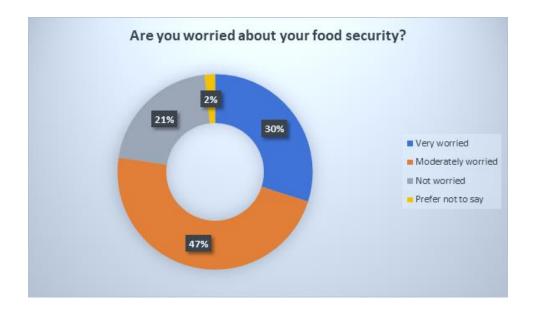
Livelihoods and Personal Property

The potential of Makhoul Dam to uproot communities in the basin area would have a heavy impact on existing sources of income, particularly farming. Farmland is generally well irrigated by the Tigris River and constitutes a local

and regional breadbasket for produce, particularly for large consumer markets in Baghdad, Mosul, Tikrit and Kirkuk. Disruptions to entire sources of income were a key concern for affected communities. To date, there have been

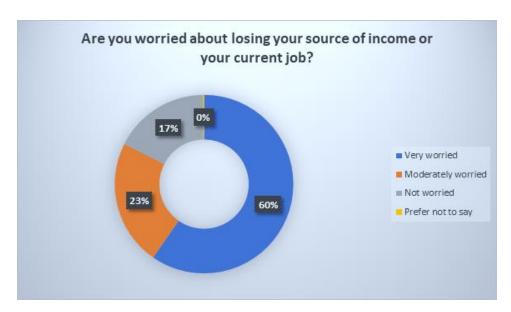
no discussions with respective government agencies and ministries, including the Ministry of Agriculture and other concerned institutions, about the economic and financial costs of Makhoul Dam on livelihoods.

"I rely on farming and livestock to provide for myself and my family. If they flood my land and where I usually sell my crops, how can I possibly survive without an income? The authorities should compensate us for every house and tree and every inch of land they destroy", explains Omar Ahmed Diab a farmer and livestock breeder from Al-Zawiya center in Baiji. Considering this ongoing neglect, this project undertook village mapping of community assets and infrastructure, paving the way for a rich dataset, which could be used to inform Iraqi government policy. A review of this data has shown that the local economy relying primarily on farming, including livestock and herding, would be disrupted by the dam project, mainly hitting segments of society hard that could not fall back on government salaries. The repercussions of Makhoul Dam, in this context, would have different outcomes depending on existing segments of society and sub-community interests.



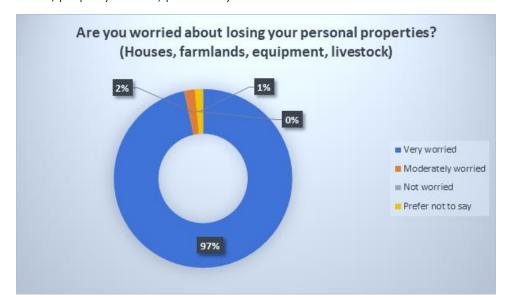
Polls showed that 60% of local communities covered in this study were apprehensive about the impact of Makhoul Dam on their livelihoods and sources of existing income. In addition, 23% stated they were moderately worried, the latter figure indicating that households were also reliant on non-agricultural sources of income, namely government employment.

"I am perturbed about losing my personal property, which constitutes my only source of income. I own an orchard containing 300 to 500 trees of various crops, a couple of shops, two homes, and farming equipment. We must be compensated before even moving from our villages, or our lives will be torn apart", says Muhammad Khaled Mahmoud Abdullah, a farmer from Alila village in Ashur district.



In addition to laborers and day workers whose income came directly and indirectly from the agricultural sector, property owners, particularly

those in possession of farms and orchards, were most concerned about economic losses because of Makhoul Dam.



"I saw my city, Mosul, crumble before my eyes. I lost my job and my only source of income with no hope of recovering anything. I am the only breadwinner of eight family members. If I lose my current job again, how can I feed my children or support myself?" asks Sabiha Ali Yahya, a teacher from Asbeeh Fawqani village in Al-Zab district.

The prospect of disruptions to income stability was viewed concerning the context of the region, which had suffered significant losses to human life and infrastructure from 2014. This

resounding fear — a reminder of recent conflict — produced a sense of anxiety throughout the process of discussions that this project facilitated. Female-led households are particularly vulnerable to losing livelihoods as many local men passed away during the conflict or are still detained in prisons in the Iraqi Kurdistan Region.

A key concern tied to livelihoods was compensation, especially property and agricultural land. Populations resolutely informed Liwan's researchers that indemnities should not

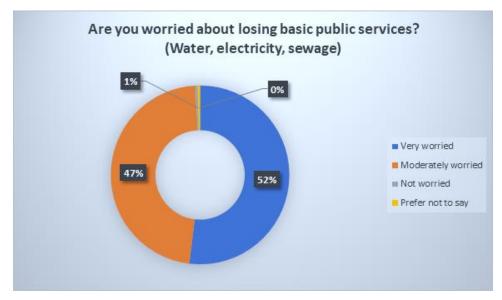
be allocated through corruption and nepotism. More specifically, it was stated that it had to be fair and commensurate with existing landholdings. Many feared that property-based compensation from the state would not reflect existing farmland and the size of the property, much of which in those villages covered in this research covered a minimum of 1,000 sqm.

"If the land distribution process is unfair, especially for the farmers, this might result in tribal disputes and tensions over land property and the fragmentation of social cohesion and ties", says Khader Abdullah Sal, a civil servant from Gharib Ulia village in Al-Abbasi district.

Civilian Infrastructure and Services

State services, namely electricity, potable water, and the region's civilian infrastructure, including clinics, hospitals, water and electric plants, and schools, would also be disrupted by Makhoul Dam. In addition to livelihoods, civilian facilities of the region are a fundamental source of worry amongst respondents. Local state agencies, including clinics and school representatives, were

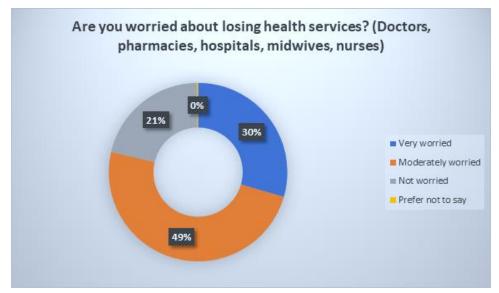
themselves unaware of any plans to address the detrimental outcomes of Makhoul Dam. The absence of any instructions from central state authorities gave rise to a significant level of frustration about whether state services would be prioritized in any potential relocation programs.

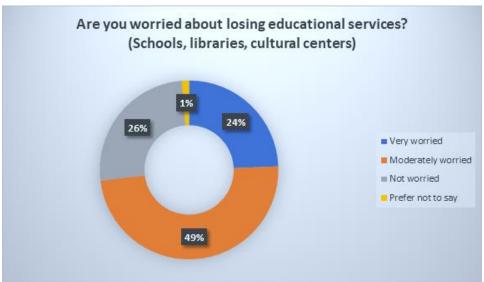


"Basic services are essential to living in dignity, especially electricity. We suffered for years after the IS war from damaged infrastructure and services, and now that we finally have electricity back, the ghost of the dam is coming to haunt us again", notes Karha Muhammad Ismail Hassan, a housewife from Al-Fayad village in Ashur district.

"My main concern is the flooding of health facilities. Our families need constant medical

care, pharmacies, doctors, and clinics. We urge the authorities to plan for adequate alternatives for our communities. I am equally worried about the destruction of schools, which will surely cause drop-outs and eventually spread illiteracy in our clan", says Dr. Anmar Daoud Salim, a professor at the University of Tikrit from Al-Horia Village in Al-Sahel Al-Akhdar Sub-district.





The Cultural and Archaeological Landscape

Salaheddin and Kirkuk hold some of Iraq's most significant cultural heritage, including the UNESCO World Heritage site of Ashur, located in Shirqat. According to an initial study conducted by Marchetti et al (2019), Makhoul Dam will partially or fully flood 183 archaeological sites in the region, including Ashur. Most of those sites have neither been documented nor adequately excavated. While there has been no comprehensive study of the area's rich cultural heritage to date, which comprises primarily

ancient Akkadian, Assyrian, Ubaid, and Uruk eras heritage, it is widely understood that there could be many more sites.

In terms of general opinion about the impact of Makhoul Dam, there was an overall disregard of the significance of archaeological sites. Indeed, most archaeological sites — other than Ashur — were viewed as ruins and therefore not worthy of sufficient attention as critical cultural and potentially economic assets in the region.



"I am not interested in historical or archaeological sites and do not think they impact my life. They are just ruins, but if the dam is built, there will be more attractive areas for tourism and job opportunities in the future", states Khalaf Sumait Awaid Hindi, an engineer from Ililah village in Ashur district.

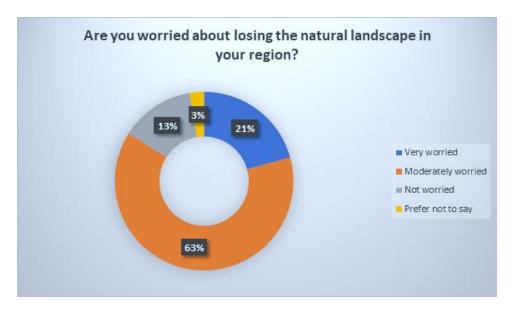
Only 22% of respondents were apprehensive about Makhoul Dam's damage could inflict on archaeological sites. An exception to this was the immediate community living in proximity to the ancient Assyrian city of Ashur, many of whom understood the cultural and historical significance of the site.

"We grew up in a particular cultural and natural landscape between the different archeological sites and the beautiful nature that shaped our personalities and lives. That is why I refuse and condemn the destruction of these important sites and would like the government to find a solution for this issue", urges Wadha Ali

Muhammad, a housewife from Shatie Al-Jidr village in Ashur district.

The dataset regarding public opinion about archaeological sites is indicative of a general lack of education about the significance of how cultural heritage could benefit communities, not least in terms of generating employment and tourism. The Ministry of Culture, Tourism, and Antiquities had little, if any, connections to local communities, a situation that led to the perception that cultural heritage was irrelevant to the everyday lives of communities.

"The archaeological sites represent the history of the country, especially the site of Ashur. The state must excavate the remaining archaeological sites, extract any important artifacts and place them in a dedicated museum that can be built near the dam to attract tourists and educate them about the importance of the area", suggests Farhan Abdullah Saad, a livestock breeder from Lower Hawaij village in Al-Abbasi District.



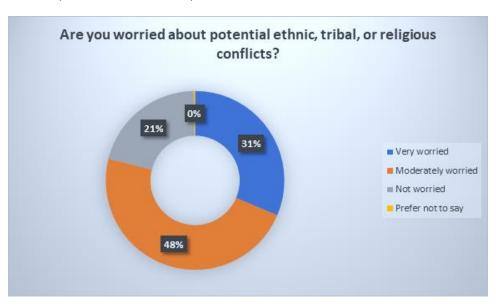
Safety and Security

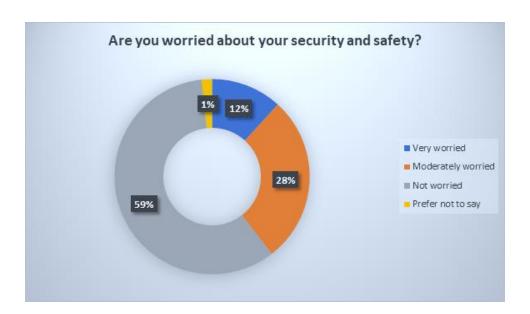
Salaheddin and Kirkuk continue to suffer from sporadic attacks on their security services. In a situation of forced displacement and the growth of new forms of insecurity associated with Makhoul Dam's possible impact on livelihoods and income generation, the region could suffer from further destabilization. Respondents in 39 villages overwhelmingly raised concern about the potential for renewed ethnic, tribal, and religious conflicts, a figure that reached 79% of all interviewees. Indeed, the generalized absence of an integrated plan and concerted effort by state actors to address the unfolding situation regarding Makhoul Dam only exacerbated those ongoing fears.

Respondents were generally worried about the repercussions of displacement on security and

safety. Social disruptions could negatively reflect on safety and security, as family and community units are also ruptured. The fallout of such devastating fractures on existing societal structures, including tribes and families, could lead to security threats.

"If we get forcefully displaced to unstable areas, we will be exposed to IS attacks again, and our safety and security will become a real issue. In another scenario, we might be relocated to areas that are different from us from sectarian, religious and ethnic points of view, and that might result in conflicts and clashes with the host communities", warns Yassin Muhammad Husayn Al-Jubouri, a civil servant from the old Zweya village in Baiji district.





The Cultural Cost of Makhoul Dam

In addition to the humanitarian and economic damage expected from Makhoul Dam, hundreds of significant world heritage and archaeological sites, including Ashur (Qal'at Sherqat), a UNESCO World Heritage site since 2003, are threatened and will be permanently lost. The project, undertaken by the Ministry of Water Resources, is projected to affect archaeological sites dating back to Uruk, Ubaid, the Neo-Assyrian Empire, the Parthian Empire, the Hatra Kingdom, and the early Islamic eras, some as far back as the 4th millennium BC.

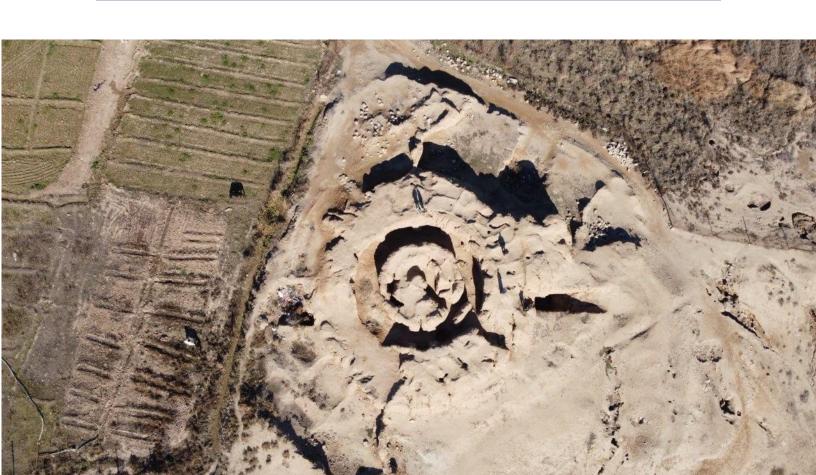
Marchetti et al. (2019) provided an initial investigation and found that the dam's project will flood 183 archaeological sites by assessing different scenarios and simulations. An earlier study, led by Arnulf Hausleiter, was carried by the UNESCO mission to Iraq in November 2002, when the project was initially announced during the Saddam era, as an attempt to evaluate the risks for Ashur and the surrounding archeological areas situated in the dam basin. A civil society coalition, Save the Tigris, is also pressuring UNESCO and the international community to intervene and undertake urgent measures to shield this immeasurable historical heritage before it gets submerged within the next five

years. The Iraqi State Board of Antiquities and Heritage (SBAH) identified 63 excavated sites that will be directly affected by the project, and has been actively working with the international community to find a solution for this cultural calamity.

To complement these efforts, Liwan's team of specialized archeologists have recorded 11 of the most notable excavated sites, including some less known by the international community. The study includes drone and photo documentation and the description of the sites and their historical, social, economic, and archeological significance. The team also led an assessment of current damage and recommended steps for immediate action. These sites are Ashur City, Kar-Tukulti-Ninurta, Tal Al-Zab, Tal Al-Naml, Tal Al-Hogna, Tal Al-Faras, Tal Al-Noul, Tal Farha, Tal Marmous 1 and 2, Kasr Al-Bint, and Khan Al-Naml. These sites were selected to reflect the diverse and rich cultural landscape of the affected region in both Salaheddin and Kirkuk, mainly since many of the remaining locations have not yet been excavated by specialized archeological missions, although the Ministry classifies them as heritage sites.

Name of the Site	GPS Coordinates	Туре	Date - Era	Excavation History	Documented Facilities	Significance
Ashur -Qal'at Sherqat	35.456246 43.260665	Archaeological city	Assyrian era 612 – 2000 BC	First mission (1847- 1852) by Austen Henry Layard, and last (2000 – 2001) by the University of Halle	- Enlil ziggurat - 3 temples - 4 palaces - 2 walls - 3 gates	- First Assyrian capital - UNESCO world heritage site since 2003 - Major Akkadian and Assyrian economic and cultural center
Kar-Tukulti- Ninurta	35.496288 43.268811	Archaeological city	Middle Assyrian era 1233–1207 BC	First mission (1913 - 1914) by the Deutsche Orient- Gesellschaft led by Walter Bachmann, and last by (1986- 1989) by the German Research Foundation led by R. Dittman	- Remains of a ziggurat - Remains of a 1 wall - Remains of 1 palace	- Capital of the Assyrian empire between 1233–1207 BC - New religious and administrative center under king Tukulti-Ninurta I - Highly damaged by geological elements
Tal Al-Hogna	35.386255 43.296159	Human settlement	Middle Assyrian and Islamic eras	(June to October 1999)	- Human settlement from the Middle Assyrian period - Assyrian and Islamic artifacts	- Site damaged by agricultural activities and used as a local cemetery by nearby villages - Needs further excavation
Tal Al-Faras	35.201054 43.402066	Temple and ritual site	Early Assyrian era 2800–2650 BC	(2001 – 2002)	- Circular structure of over 110m of a temple or citadel	- The circular structure has 5 layers, 3 dating back to the Early Assyrian period, one Akkadian, and one Neo-Assyrian - Damaged by agricultural activities and used as a local cemetery
Tal Al-Zab	35.268321, 43.441580	Human settlement	Assyrian, Parthian, and Islamic eras	(2001 – 2002)	- Elliptical structure	- 150x210m Elliptical structure dating back to the Assyrian era - Site used as a sand quarry by locals - A 65x65m pit created in the structure by locals, used for construction
Kasr Al-Bint	35.280140 43.351132	Castle	Parthian and Sassanian eras	Declared as an archeological site in 1944	- Fortress - Castle - Trench	- Described in the accounts of several European travelers - Architecture similar to the fortress of Tell Bandar in Kish - Probably used for defense purposes
Khan Al- Naml	35.348649, 43.332511	Khan	Hatra Kingdom, Arthian, and Sassanid eras	Declared as an archeological site in 1944	- 6 ×75 ×125 Khan structure - Pottery fragments	- The site contains pottery fragments dating back to the Parthian and Sassanid eras, and in large part to the Arab Hatra Kingdom era - Damaged by Tigris River flooding
Tal Farha	35.274200 43.484890	Human settlement	Middle Assyrian era	2002	- Pottery fragments	- The presence of clay figures and cylinder

Tal Marmous	35.160670 43.433393	Human settlement	Ubaid, Akkadian, Neo- Assyrian	2002	- Clay figures and seals - Two adjacent settlements Tal Marmous 1 and Tal Marmous 2	seals used for contracts testify that the site was an important economic center Damaged by the housing and agricultural expansion of nearby villages The excavations showed that the site consists of 5 layers, two from the Ubaid era, one
						to the Akkadian era, and two to the neo- Assyrian era. - Mentioned in the accounts of European explorers
Tal Al-Noul	35.275899 43.425371	Human settlement	Uruk, Middle Assyrian eras 4 th millennium BC	Discovered in 1998, and last excavated in 2002 Iraqi mission led by Burhan Shakir	- Rectangular shape 70 ×30 ×3m settlement	- The excavations revealed 3 layers, the lower from the Uruk era and the upper layers from the Middle Assyrian Upper layer completely damaged and used as sand quarry
Tal Al-Naml	35.330838 43.355889	Temple and ritual site	Ubaid and Assyrian eras	Declared as an archeological site in 1944, excavated in 1997.	- Nineveh pottery fragments - Structure dedicated to the Sumerian God of fire Gibil	- Presence of Nineveh pottery fragments in the site - Nearby villages expanded into the ground of the site and used heavy machinery to build houses and a cemetery







RECOMMENDATIONS FOR ACTION



THE PROJECT GATHERED AN ARRAY OF RECOMMENDATIONS THROUGH THE DIFFERENT INTERVIEWS, COMMUNITY FORUMS, MEETINGS WITH LOCAL AND CENTRAL DECISION-MAKERS, AND DISCUSSIONS WITH SPECIALIZED ACADEMICS.

These suggestions are concrete steps for immediate action addressed to local leaders and civil society actors, the Iraqi local and central government, and international organizations that can use this study as a basis for putting local communities at the center of any future planning regarding the dam.

For community leaders and civil society

- o To develop community-based advocacy groups and to raise community concerns and interests to local and central government institutions.
- o To form committees with community influencers, tribal leaders, and public figures to coordinate and lobby local parliament members to influence the legislative branch of the government for equitable compensation and better communication and transparency.
- o To organize an extensive consultation with the local communities of the affected villages to agree on a unified list of demands that will be presented and negotiated with the authorities.
- o To develop civil society and community-based documentation mechanisms to preserve the heritage and memory of the local landscape and region, including a digital audiovisual archive of the area.
- To conduct awareness sessions by local civil society and media to counter rumors, provide mediation with the authorities and address questions and concerns about the project.

For the Iraqi Government

- o To conduct a thorough cost and benefit analysis of the impact of Makhoul Dam, considering communities and their life situations and existing inventories.
- o To develop information resources, including creating an advice center designed to support communities in the Makhoul Dam basin area.
- o To explore alternative arrangements for managing water resources, including water reservoirs and dams in less populated and culturally significant areas.
- o To develop inter-agency and inter-ministerial coordination, communication, and planning task force that would assess the project's entirety.
- o To ensure that any significant decision-making with the potential to disrupt or transform life must include consultation with the local communities and their active participation.

- o To develop a professional and expert-led compensation committee whose work should be informed by the specificities of each household and community. This process should be transparent, fair, and commensurate with existing conditions, particularly household and community assets.
- o To study the ecological impact of the inundation of the ecosystem and document and preserve any endangered fauna or flora species typical to the region.
- o To consider the repercussions of the disruption of agricultural activities in the region on the food security of Iraq and offer alternatives for the crops and cattle lost.
- o Coordinate with specialized international organizations and agencies to provide planning, advice, and resources for managing the humanitarian and cultural crisis resulting from the project.

For International Organizations

- o To offer technical support to the government of Iraq to ensure that Makhoul Dam's adverse outcomes on local communities are minimized.
- o To introduce the Iraqi government to international best practices of crisis management in complex national projects and their humanitarian and cultural impact.
- o To fund follow-up studies on the economic, cultural, social, and psychological impact of community displacement and the destruction of entire villages and heritage sites and provide financial and psychological assistance to affected populations in close coordination with the Iraqi authorities.
- o To offer advice to the Iraqi government and civil society organizations on community stabilization to help ease any tensions resulting from the displacement and compensation process and help support efforts promoting social cohesion and peaceful coexistence.
- o To assist in documenting and preserving the tangible and intangible heritage of the region and its inhabitants for future generations of Iraqis and the world.



About Liwan:

Liwan for Culture and Development is a leading Iraqi people-oriented heritage organisation. It was established in response to the ongoing cultural devastation witnessed in the country since 2003. The organisation works in heritage rehabilitation, emergency response, research, and sustainability planning.

About Australian Aid:

Australian Aid is the brand name used to identify projects in developing countries supported by the Australian Government. The Direct Aid Program (DAP) is a small grants program funded from Australia's aid budget. It has the flexibility to work with local communities in developing countries on projects that reduce poverty and achieve sustainable development consistent with Australia's national interest.

About IOM Iraq:

IOM has maintained a presence in Iraq since 2003, working together with Iraqi government authorities and civil society organizations to support safe, orderly, and regular migration and the revitalization of the country's social, economic, and political life. IOM Iraq operates a multi-sectoral response to address the needs of internally displaced persons and host communities and find durable solutions to displacement.

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